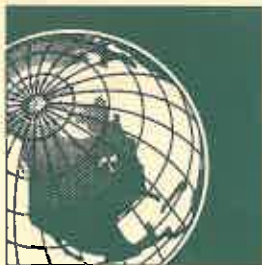


INITIAL ASSESSMENT REPORT
NAO FLINT OPERATIONS
Flint, Michigan

Tank #059/86
Facility ID No. 0-002763



**Global
Environmental
Engineering Inc.**

**Global Project Number F174
June 9, 1997**



**LEAKING UNDERGROUND STORAGE TANK
INITIAL ASSESSMENT REPORT**

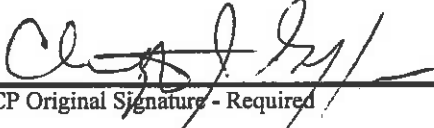
INSTRUCTIONS: COMPLETION OF THIS REPORT WITH ALL APPLICABLE INFORMATION IS MANDATORY. Complete this form with all applicable information. The Certified Underground Storage Tank Professional (CP) MUST sign below. Failure to submit a report within the stated time period may result in Administrative Penalties as provided for in Part 213, Section 21321 of Act 451, P.A. 1994 as amended.

FACILITY NAME: NAO FLINT OPERATIONS (Tanks 081/31T-92 and 132/31, 133/31)	FACILITY ID NUMBER: 0-002763
ADDRESS: 902 East Hamilton Avenue, Flint, Michigan 48420 COUNTY: Genesee	MERA SITE ID NUMBER:
DATE(S) RELEASE DISCOVERED:	CONFIRMED RELEASE NUMBER(S):
O/O NAME: General Motors Corporation	MUSTFA CLAIM NUMBER:
O/O ADDRESS: 902 East Hamilton Avenue, Flint, MI 48550	
CONTACT PERSON: Mr. Dan Harrett	PHONE NUMBER: (810) 236-3436
ANSWER ALL QUESTIONS. (DO NOT LEAVE BLANKS):	

- Has the UST been emptied? Yes No (If no, explain why):
- Free product present: a. Currently? YES NO If YES, total gallons recovered since last report:
b. Previously? YES NO If YES, total gallons recovered to date:
- Have vapors been identified in any confined spaces (basement, sewers)? YES NO
- State the number of homes where drinking water is or was affected as a result of a release from this facility: None
- Estimated distance and direction from point of release to nearest:
a. Private well: > 1/2 mile b. Municipal well: > 1/2 mile c. Surface water/wetland: Flint River > 1000 feet East
- Since last report: a. cubic yards of soil remediated: 0 b. gallons of groundwater remediated: 0
- Totals to date: a. cubic yards of soil remediated: Unknown b. gallons of groundwater remediated: Unkonwn
- Michigan RBCA Site Classification (1-4): 4

CERTIFICATION OF REPORT COMPLETION

I, the undersigned CP, hereby attest to the best of my knowledge and belief that the statements in this document and all attachments are true, accurate and complete. I certify that it was submitted to the USTD on June 9, 1997
(date submitted-Required)

	June 9 1997	Amanda L. Kurzman
CP Original Signature - Required	Date	PRINT QC Project Manager's Name
Christopher J. Griffin, P.E.		Global Environmental Engineering Inc.
PRINT CP's Name		CONSULTANT
5467 Hill 23 Drive, Ste. B, Flint, Michigan 48507	(810) 238-9190	(810) 238-9195
ADDRESS	PHONE NO.	FAX NO.

PLEASE RETURN THIS COMPLETED REPORT AND ASSOCIATED ATTACHMENTS TO THE APPROPRIATE USTD DISTRICT OFFICE, LISTED ON THE BACK OF THIS PAGE.

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

UNDERGROUND STORAGE TANK DIVISION OFFICES AND LOCATIONS

Determine in which county the UST release occurred. Return all completed forms and associated reports to the USTD office listed next to that county in the following table. Addresses for the USTD offices are listed below.

COUNTY	USTD OFFICE	COUNTY	USTD OFFICE	COUNTY	USTD OFFICE	COUNTY	USTD OFFICE
Alcona	Grayling	Dickinson	Marquette	Lake	Grayling	Oceana	Grand Rapids
Alger	Marquette	Eaton	Shiawassee	Lapeer	Shiawassee	Ogemaw	Grayling
Allegan	Plainwell	Emmet	Grayling	Leelanau	Grayling	Ontonagon	Marquette
Alpena	Grayling	Genesee	Shiawassee	Lenawee	Jackson	Osceola	Grayling
Antrim	Grayling	Gladwin	Grayling	Livingston	Shiawassee	Oscoda	Grayling
Arenac	Grayling	Gogebic	Marquette	Luce	Marquette	Otsego	Grayling
Baraga	Marquette	Grand Traverse	Grayling	Mackinac	Marquette	Ottawa	Grand Rapids
Barry	Plainwell	Gratiot	Shiawassee	Macomb	SE Michigan	Presque Isle	Grayling
Bay	Saginaw-Bay	Hillsdale	Jackson	Manistee	Grayling	Roscommon	Grayling
Benzie	Grayling	Houghton	Marquette	Marquette	Marquette	Saginaw	Saginaw-Bay
Berrien	Plainwell	Huron	Saginaw-Bay	Mason	Grayling	Sanilac	Saginaw-Bay
Branch	Jackson	Ingham	Shiawassee	Mecosta	Grand Rapids	Schoolcraft	Marquette
Calhoun	Jackson	Ionia	Grand Rapids	Menominee	Marquette	Shiawassee	Shiawassee
Cass	Plainwell	Iosco	Grayling	Midland	Saginaw-Bay	St Clair	SE Michigan
Charlevoix	Grayling	Iron	Marquette	Missaukee	Grayling	St Joseph	Plainwell
Cheboygan	Grayling	Isabella	Saginaw-Bay	Monroe	SE Michigan	Tuscola	Saginaw-Bay
Chippewa	Marquette	Jackson	Jackson	Montcalm	Grand Rapids	Van Buren	Plainwell
Clare	Grayling	Kalamazoo	Plainwell	Montmorency	Grayling	Washtenaw	Jackson
Clinton	Shiawassee	Kalkaska	Grayling	Muskegon	Grand Rapids	Wayne	SE Michigan
Crawford	Grayling	Kent	Grand Rapids	Newaygo	Grand Rapids	Wexford	Grayling
Delta	Marquette	Keweenaw	Marquette	Oakland	SE Michigan		

<p align="center"><u>CADILLAC OFFICE</u></p> <p>ROUTE #1 8015 MACKINAW TRAIL CADILLAC MI 49601</p> <p>616-775-9727 (PHONE) 616-775-9671 (FAX)</p>	<p align="center"><u>JACKSON OFFICE</u></p> <p>301 E LOUIS GLICK HIGHWAY JACKSON MI 49201</p> <p>517-780-7900 (PHONE) 517-780-7855 (FAX)</p>	<p align="center"><u>SAGINAW BAY OFFICE</u></p> <p>503 N EUCLID AVE SUITE 9 BAY CITY MI 48706</p> <p>517-684-9141 (PHONE) 517-684-9799 (FAX)</p>
<p align="center"><u>GAYLORD OFFICE</u></p> <p>P0 BOX 667 GAYLORD MI 49735</p> <p>517-732-3541 (PHONE) 517-732-0794 (FAX)</p>	<p align="center"><u>MARQUETTE OFFICE</u></p> <p>1990 US 41 SOUTH MARQUETTE MI 49855</p> <p>906-228-6561 (PHONE) 906-228-5245 (FAX)</p>	<p align="center"><u>SHIAWASSEE OFFICE</u></p> <p>10650 BENNETT DR MORRICE MI 48857-9792</p> <p>517-625-4600 (PHONE) 517-625-5000 (FAX)</p>
<p align="center"><u>GRAND RAPIDS OFFICE</u></p> <p>350 OTTAWA ST NW GRAND RAPIDS MI 49503</p> <p>616-456-5071 (PHONE) 616-456-1239 (FAX)</p>	<p align="center"><u>PLAINWELL OFFICE</u></p> <p>1342 SR-89 SUITE B PLAINWELL MI 49080-1915</p> <p>616-692-2120 (PHONE) 616-692-3050 (FAX)</p>	<p align="center"><u>SE MICHIGAN OFFICE</u></p> <p>38980 SEVEN MILE RD LIVONIA MI 48152</p> <p>313-953-0241 (PHONE) 313-953-0243 (FAX)</p>
<p align="center"><u>GRAYLING OFFICE</u></p> <p>1955 NORTH I-75 BL GRAYLING MI 49738 517-348-6371 (PHONE) 517-348-8825 (FAX)</p>		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

TABLE OF CONTENTS

SECTION	TITLE	PAGE
	COVER SHEET	
	FACILITY AND OWNER OR OPERATOR INFORMATION	
	SITE QUESTIONS	
	REPORT CERTIFICATION	
	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - USTD DISTRICT OFFICES AND CONTACTS	2 of 23
	TABLE OF CONTENTS	3 of 23
	LIST OF ATTACHMENTS	4 of 23
1.0	IMMEDIATE RESPONSE TO SPILLS AND RELEASES	5 of 23
1.1	REPORTING AND RESPONSE TO RELEASES	5 of 23
1.2	REPORTING AND RESPONSE TO RELEASES INVOLVING FREE PRODUCT	7 of 23
2.0	SITE CHARACTERIZATION INFORMATION	9 of 23
2.1	SITE AND AREA MAPS	9 of 23
2.2	SOIL CONDITIONS AND CHARACTERISTICS	10 of 23
2.3	GROUNDWATER CONDITIONS AND CHARACTERISTICS	12 of 23
2.4	CONDITIONS AND CHARACTERISTICS IN OTHER ENVIRONMENTAL MEDIA	15 of 23
3.0	SITE CLASSIFICATION	17 of 23
4.0	RESULTS OF THE TIER I OR TIER II EVALUATION	19 of 23
4.1	EXPOSURE PATHWAY CHARACTERIZATION	19 of 23
4.2	OPTIONAL TIER II EVALUATION	21 of 23
4.3	IDENTIFICATION OF TIER I RISK-BASED SCREENING LEVELS OR TIER II SITE-SPECIFIC TARGET LEVELS AND COMPARISON TO SITE DATA	22 of 23
4.4	PROPOSED FOLLOW-UP ACTIVITIES	23 of 23
5.0	WORK PLAN FOR FURTHER SITE CHARACTERIZATION AND ASSESSMENT ACTIVITY	23 of 23

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

LIST OF ATTACHMENTS

(Include as Required and Check Box if Attached)

Attachments 1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 27, 28, and 29 are to be submitted if applicable.

Attachments 6, 7, 8, 17, 18, 19, 24, 25, and 26 are found in the back of this document and should be completed and submitted when necessary.

ATTACHMENT DESCRIPTION
NUMBER

1. Site Map Showing Extent of Remaining Free Product
2. Free Product Recovery System Schematic
3. Area Map Showing Site Boundaries in Relation to Nearby Area
4. Site Map Highlighting Principal Physical Features and Sampling Locations
5. Schedule for Delineation of Off-Site Soil Impacts
6. Field Screening Results Table for Soils (See Soil Boring Logs - Attachment 12)
7. Laboratory Results Table for Soils
8. Tier I RBSL / Tier II SSTL Comparison Table for Soils
9. Site Map Showing Soil Sampling Locations, Maximum Contaminant Concentrations, and Sampling Depths
10. Site Map(s) Showing Vertical and Horizontal Distribution of Contaminants in Soil
11. Cross Sections Showing the Vertical and Horizontal Distribution of Soil Contaminants
12. Soil Boring Logs
13. Well Construction Diagrams
14. Groundwater Flow Map Showing Water Level Measurement Locations
15. Description of Hydrogeologic Factors That Could Influence Groundwater Flow
16. Schedule for Delineation of Off-Site Groundwater Impacts
17. Field Screening Results Table for Groundwater
18. Laboratory Results Table for Groundwater (Including Time Series Presentation)
19. Tier I RBSL / Tier II SSTL Comparison Table for Groundwater
20. Site Map Showing Groundwater Sampling Locations and Maximum Contaminant Concentrations
21. Cross Sections Showing the Vertical and Horizontal Distribution of Groundwater Contaminants
22. Presentation of Time Series Groundwater Results
23. Schedule for Delineation of Off-Site Impacts in Other Media
24. Field Screening Results Tables for Other Media
25. Laboratory Results Tables for Other Media
26. Tier I RBSL / Tier II SSTL Comparison Tables for Other Media
27. Site Map Showing Sampling Locations and Maximum Contaminant Concentrations for Other Media
28. Calculations Supporting the Tier II SSTLs and Evaluation
29. Work Plan for Further Site Characterization and Assessment Activity

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

1.0 IMMEDIATE RESPONSE TO SPILLS AND RELEASES

1.1 REPORTING AND RESPONSE TO RELEASES

A. Date and Time Release Discovered: 12 / 13 / 88 _____ AM / PM

B. Date and Time Release Reported: Unknown _____ AM / PM

C. From what portion of the underground storage tank system did the release occur or is the release believed to have likely occurred?

- Piping
- Underground storage tank
- Overfill of underground storage tank (delivery of fuel from supplier)
- Other (*Specify*): _____

D. Briefly describe how the release was discovered: According to a report by EDI Engineering and Science, tank removal activities were initiated on December 8, 1988 when the UST was emptied. On December 13, 1988, the UST was removed from the ground. Based on elevated PID readings, an unknown quantity of soil was excavated on December 13 and 14, 1988. The excavation continued to the water table and a sump was dug at the base of the excavation. A six-inch well was installed within the sump. The soil was taken to Grand Blanc Landfill for disposal.

E. Has there been tank tightness testing performed in response to this release? (*If data is not available, answer "No".*) Yes No

If "Yes", complete questions F, G and H; otherwise skip to question I.

F. Date of the testing: _____ / _____ / _____

G. Method of testing: _____

H. Results of the testing: _____

I. List the underground storage tanks at this facility and identify the tank(s) associated with this release by placing an "X" in the "LUST" column. (*Complete the last two columns for the LUST entries only*):

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

1.1 REPORTING AND RESPONSE TO RELEASES (Continued)

TANK ID NUMBER	CONTENTS (Regulated Substances) - Specify grade if gasoline -		LUST? (Yes or No)	HAS THE TANK BEEN EMPTIED? (Yes/Date or No <small>See J below</small>)	HAS THE TANK BEEN REMOVED? (Yes/Date or No <small>See J below</small>)
	At Time of Release	Previous Contents			
059/86	gasoline	gasoline	Yes	Yes/Dec. 8, 1988	Yes/Dec. 13, 1988

J. If "No" was specified in either of the last two columns for any leaking underground storage tank, provide an explanation below: _____

K. What initial response actions were performed at this site?

PURPOSE OF INITIAL RESPONSE ACTIONS	WERE ACTIONS TAKEN? (Yes/Date or No)	IF "Yes", DESCRIBE THE ACTIONS TAKEN AND THEIR RESULTS. IF "No", INDICATE WHY NOT.
To identify and mitigate fire, explosion and vapor hazards (e.g., relating to free product, vapors in nearby buildings) [324.21307(2)(a)] [324.21307(2)(c)(iii)]	No	Free product or vapors were not identified.
To prevent further release and migration into the soil or groundwater, including removing product from the UST [324.21307(2)(b)] [324.21307(2)(c)(i) and (ii)]	Yes/1988	The UST was emptied and removed.
To excavate and contain, treat, or dispose of visibly contaminated soil above the water table that are likely to cause a fire hazard or spread and increase the cost of corrective action [324.21307(2)(d)]	Yes/1988	Soil was excavated to the water table, and in each direction based on PID readings. An unknown quantity of soil was taken to the Grand Blanc Landfill for disposal.

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

REPORTING AND RESPONSE TO RELEASES (Continued)

PURPOSE OF INITIAL RESPONSE ACTIONS	WERE ACTIONS TAKEN? (Yes/Date or No)	IF "Yes", DESCRIBE THE ACTIONS TAKEN AND THEIR RESULTS. IF "No", INDICATE WHY NOT.
To abate an immediate threat to public health, safety, or welfare, or the environment [324.21307(2)(e)]	No	No immediate threats to public health, safety or welfare, or the environment were identified.

L. Has free product ever been discovered as a result of the release? Yes No

NOTE: If "No", skip to Section 2.0; if "Yes", complete questions "M" through "S":

M. Date and Time Free Product Was Discovered: _____ / _____ / _____ AM / PM

N. Date and Time Free Product Fax Transmittal Sheet Submitted: _____ / _____ / _____ AM / PM

- O. Has there ever been free product in the on-site or off-site soils? Yes No
- P. Is there currently free product in the on-site or off-site soils? Yes No
- Q. Is there currently free product in or around buried underground utilities? Yes No
- R. Has there ever been free product on/in the groundwater? Yes No
- S. Is there currently free product on/in the groundwater? Yes No

1.2 REPORTING AND RESPONSE TO RELEASES INVOLVING FREE PRODUCT

A. What initial response actions were performed at this site to address the presence of free product?

PURPOSE OF INITIAL RESPONSE ACTIONS	WERE ACTIONS TAKEN? (Yes/Date or No)	IF "Yes", DESCRIBE THE ACTIONS TAKEN AND THEIR RESULTS. IF "No", INDICATE WHY NOT.
To identify the presence of free product [324.21307(2)(c)]		
To recover free product in a manner that minimizes the spread of contamination into previously uncontaminated zones [324.21307(2)(c)(i)]		
To utilize recovery and disposal techniques appropriate to site conditions [324.21307(2)(c)(i)]		

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

1.2 REPORTING AND RESPONSE TO RELEASES INVOLVING FREE PRODUCT (Continued)

PURPOSE OF INITIAL RESPONSE ACTIONS	WERE ACTIONS TAKEN? (Yes/Date or No)	IF "Yes", DESCRIBE THE ACTIONS TAKEN AND THEIR RESULTS. IF "No", INDICATE WHY NOT.
To properly treat recovery by-products as required by law (identify the type of treatment applied and the expected effluent quality) [324.21307(2)(c)(i)]		
To properly discharge recovery by-products as required by law (identify the location of all on-site and off-site discharge points and all steps taken to obtain necessary permit) [324.21307(2)(c)(iv)]		
To properly dispose of recovery by-products as required by law [324.21307(2)(c)(i)]		
To handle any flammable products in a safe and competent manner to prevent fires and explosions [324.21307(2)(c)(iii)]		

B. Complete the following table relating to free product recovery:

LOCATION OF OBSERVED FREE PRODUCT (Specify ID No.)	THICKNESS OF FREE PRODUCT OBSERVED (nearest 1/8")	TYPE OF FREE PRODUCT OBSERVED	LNAPL OR DNAPL*?	QUANTITY OF FREE PRODUCT RECOVERED (gallons)
IN WELLS				
IN BOREHOLES				
IN EXCAVATIONS				
OTHER LOCATIONS (Specify)				
TOTAL FREE PRODUCT RECOVERED TO DATE				

*LNAPL = Light Non-Aqueous Phase Liquid; DNAPL = Dense Non-Aqueous Phase Liquid

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

1.2 REPORTING AND RESPONSE TO RELEASES INVOLVING FREE PRODUCT (Continued)

C. Has the extent of any remaining free product been defined? Yes No

D. If "Yes", include the extent of the remaining free product on the site map included as Attachment 1.

E. Describe the free product recovery system that was or is being used or is proposed (Include a schematic as Attachment 2 if appropriate): _____

F. If "proposed", what is the planned installation date? _____/_____/_____

G. Has the recovered free product been properly disposed? Yes No

H. If "No", provide an explanation: _____

I. Provide the name of the person or persons responsible for implementing the free product removal measures:

Company Name _____

Company Address _____

Company Telephone No. _____ (_____) _____

Contact Person _____

Contact Telephone No. _____ (_____) _____

2.0 SITE CHARACTERIZATION INFORMATION

2.1 SITE AND AREA MAPS

A. Attach an area map (Attachment 3) and a site map (Attachment No. 4), drawn to scale, which include the following if applicable. (If it is not possible to include all required information on one map, additional maps may be used. Use of multiple maps should be minimized.)

- Site boundaries in relation to the surrounding area and the nearest major roads (area map)
- Location of each underground storage tank and associated piping in the leaking underground storage tank system (prior to excavation if tanks have been removed)
- Location of the release and the component of the underground storage tank system from which the release occurred
- Location of any other existing and former underground storage tanks at the site
- Approximate location of fill ports, dispensers, and other pertinent system component
- Location of nearby buildings, roadways, paved areas, or other structures
- Location of nearby surface waters or wetlands
- Location and possible depth of nearby underground sewers and utility lines
- Location of all wells on-site and off-site within 100 feet of the property line
- Soil, groundwater, surface water, sediment or air sample locations, as applicable

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
 INITIAL ASSESSMENT REPORT (Continued)

2.2 SOIL CONDITIONS AND CHARACTERISTICS

A. Is soil contamination present?

Yes No

If "Yes", complete this Section; if "No", skip to Section 2.3.

B. Total volume of soil remediated or disposed to date:

Unknown yds³

C. Describe any soil remediation or disposal activities performed to date: According to an EDI Engineering and Science report, the UST was removed from the ground on December 13, 1988. On December 13 and 14, 1988, soil was excavated in each direction based on PID readings. The excavation continued to the water table, and the soil was taken to the Grand Blanc Landfill for disposal.

D. Describe steps that have been taken, or will be taken, to secure access to off-site properties, including easements and right-of-ways, to complete the delineation of the extent of the off-site impact of the release to soil: At this time, there is no evidence to indicate that off-site impact to soil or groundwater has occurred.

STEPS TAKEN OR PLANNED TO SECURE ACCESS TO OFF-SITE PROPERTIES	OFF-SITE PROPERTY OWNER'S NAME	OFF-SITE PROPERTY OWNER'S ADDRESS

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

2.2 SOIL CONDITIONS AND CHARACTERISTICS (Continued)

E. Provide the schedule for completing the delineation of the extent of the off-site impact of the release to soil (*indicate here or include as Attachment No.*

5): _____

F. Attach Field Screening Results (Attachment No. 6) and Laboratory Results (Attachment No. 7) tables showing the results of all soil sampling performed to date for the listed parameters. *(NOTE: The USTD may request copies of the laboratory data sheets, chain-of-custody forms, and all available QA/QC information.)*

G. Provide in the Comparison Table for Soils (Attachment No. 8) the maximum contaminant concentrations detected to date in all soils for each listed parameter. *(NOTE: Enter "ND" with the appropriate method detection limit when the parameter was not detected, and enter "NA" when the chemical was not analyzed. In areas where remediation has occurred, do not include sample results for areas where the soil has been subsequently removed or the characteristics of the soil left in place have been altered due to the remediation.)*

H. Show the maximum concentrations, sample depths, and estimated horizontal extent of contamination in relation to the soil sampling locations on the site map included as Attachment No. 9.

I. Describe the estimated vertical extent and distribution of the soil contaminants using depth-coded site maps (Attachment No. 10), cross sections (Attachment No. 11), and/or boring logs (Attachment No. 12): Contamination has been noted in the soil at depths ranging from 11 - 17 feet below ground surface. Depth-coded site maps, cross sections and soil boring logs have been included as attachments to this report.

J. If there is known soil contamination not related to the release, complete the following:

ON-SITE CONTAMINANTS NOT RELATED TO THE RELEASE	SOURCE OF THIS CONTAMINATION (If Known)	LOCATION OF THIS CONTAMINATION

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

2.3 GROUNDWATER CONDITIONS AND CHARACTERISTICS

A. Has groundwater been encountered at the site? Yes No

B. If "No", provide the total depth investigated and the date of investigation:

Depth of Investigation: _____ ft BGS

Date of Investigation: _____ / _____ / _____

If "No", skip to Section 2.4; if "Yes", continue with Section 2.3.

C. Is the groundwater potable? Yes No

D. Is the groundwater currently a source of drinking water? Yes No

E. Is groundwater being used for a purpose other than potable drinking use? Yes No

F. Is more than one groundwater unit present beneath the site? Yes No

Unknown

Hydrogeologic Characteristics (*if appropriate and where available*):

A six-inch well was installed within a sump located in the excavation. Additional details regarding the sump construction are not available. To date, groundwater monitoring wells have not been installed (See Work Plan). Soil borings drilled adjacent to the former excavation identified several saturated sand and gravel lenses at depths varying from 14 to 17 feet below grade. The groundwater flow direction is assumed to be east toward the Flint River.

Most of the potable water wells within Genesee County are located beneath the glacial drift in the Saginaw Formation. The depth to the Saginaw Formation varies throughout the County, but is located roughly 300 feet below ground surface.

G. Average depth to groundwater (as measured in site well(s)): _____ ft BGS

H. Depth to bottom of water-bearing layer: _____ ft BGS

I. Depth to a potable groundwater unit: _____ ft BGS

J. Attach copies of boring logs (Attachment No. 12) and well construction diagrams (Attachment No. 13) for all monitoring wells.

Groundwater Flow Rate and Direction:

K. Predominant soil type in water-bearing stratum (*e.g., sand, silt*): _____

L. Effective porosity of water-bearing stratum: _____ $\text{cm}^3 \text{ void} / \text{cm}^3 \text{ soil}$

M. Hydraulic conductivity (measured estimated): _____ cm/sec

N. Lateral hydraulic flow gradient (attach a site map with groundwater flow direction and elevation data as Attachment No. 14 - USGS datum preferred): _____ ft/ft
to _____ (direction)

O. Effective groundwater flow rate: _____ ft/yr

P. Identify hydrogeologic conditions that could influence flow direction (*describe here or attach description as Attachment No. 15*): A sump was dug in the base of the excavation and a six-inch well was installed. The presence of the sump may have a localized influence.

Q. Is there any indication of a vertical flow gradient? Yes No

R. If "Yes", describe: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

2.3 GROUNDWATER CONDITIONS AND CHARACTERISTICS (Continued)

S. Has the groundwater quality been affected by the release? Yes No

If "No", skip to Section 2.4; if "Yes", continue with Section 2.3.

T. Has the groundwater quality in more than one groundwater unit been affected by the release?
 Yes No

U. Describe any groundwater remediation activities performed to date: None

V. Total volume of groundwater remediated to date: 0 gallons

W. Does the known plume currently extend off-site?
 Yes No
 Unknown

X. Describe steps that have been taken, or will be taken, to secure access to off-site properties, including easements and right-of-ways, for the purpose of completing the delineation of the extent of the release to groundwater: At this time, there is no evidence to indicate that off-site impact has occurred.

STEPS TAKEN OR PLANNED TO SECURE ACCESS TO OFF-SITE PROPERTIES	OFF-SITE PROPERTY OWNER'S NAME	OFF-SITE PROPERTY OWNER'S ADDRESS

Y. Provide the schedule for completing the delineation of the extent of the off-site impact of the release to groundwater (*indicate here or include as Attachment No. 16*): _____

Z. Attach Field Screening Results (Attachment No. 17) and Laboratory Results (Attachment No. 18) tables showing the results of all groundwater sampling performed to date for the listed parameters. (NOTE: The USTD may request copies of the laboratory data sheets, chain-of-custody forms, and all available QA/QC information.)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

2.3 GROUNDWATER CONDITIONS AND CHARACTERISTICS

AA. Provide in the Comparison Table for Groundwater (Attachment No. 19) the maximum contaminant concentrations detected to date in the on-site or off-site groundwater for each listed parameter. (*NOTE: Enter "ND" with the appropriate method detection limit when the parameter was not detected, and enter "NA" when the chemical was not analyzed.*)

BB. Show the maximum concentrations and the estimated aerial horizontal extent of the contaminated plume in relation to the groundwater sampling locations on the site map and include as Attachment No. 20.

CC. Describe the estimated vertical extent and distribution of the groundwater contaminants using depth-coded cross sections (Attachment No. 21) that show screened intervals of the monitoring wells. Cross sections locations should be included on the site map: A depth-coded cross section has been included as an attachment to this report.

DD. Were multiple groundwater sampling events conducted at the site? Yes No

EE. If "Yes", include a chronological summary of the results for each sampling location using the data tables provided in Attachment No. 18 and include as Attachment No. 22.

2.4 CONDITIONS AND CHARACTERISTICS IN OTHER ENVIRONMENTAL MEDIA

A. Is contamination present in any environmental media other than soil or groundwater? Yes No

NOTE: If "Yes", complete this Section; if "No", skip to Section 3.0.

B. What other environmental media were investigated as part of this corrective action?
(Check all that apply):

- Air
- Surface Water
- Sediments
- Biota
- Other (Specify): _____

NOTE: For each environmental media checked, answer questions "C" through "K".

C. Total volume of each of the other specified media remediated or disposed to date (*Specify units*): _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

2.4 CONDITIONS AND CHARACTERISTICS IN OTHER ENVIRONMENTAL MEDIA (Continued)

D. Describe any remediation, treatment or disposal activities performed to date relative to each of the other specified media: _____

E. Describe steps that have been taken, or will be taken, to secure access to off-site properties, including easements and right-of-ways, to complete the delineation of the extent of the off-site impact of the release to the other specified environmental media:

STEPS TAKEN OR PLANNED TO SECURE ACCESS TO OFF-SITE PROPERTIES	OFF-SITE PROPERTY OWNER'S NAME	OFF-SITE PROPERTY OWNER'S ADDRESS

F. Provide the schedule for completing the delineation of the extent of the off-site impact of the release to the other specified environmental media (*indicate here or include as Attachment No. 23*):

G. Attach Field Screening Results (Attachment No. 24) and Laboratory Results (Attachment No. 25) tables showing the results of all sampling performed to date for the listed parameters in the other specified environmental media. *(NOTE: The USTED may request copies of the laboratory data sheets, chain-of-custody forms, and all available QA/QC information.)*

H. Provide in the Comparison Table for Other Environmental Media (Attachment No. 26) the maximum contaminant concentrations detected to date in each other specified environmental media for each listed parameter. *(NOTE: Enter "ND" with the appropriate method detection limit when the parameter was not detected, and enter "NA" when the chemical was not analyzed. In areas where remediation has occurred, do not include sample results for areas where the material has been subsequently removed or the characteristics of the material left in place have been altered due to the remediation.)*

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

2.4 CONDITIONS AND CHARACTERISTICS IN OTHER ENVIRONMENTAL MEDIA (Continued)

I. Show the maximum concentrations, sample depths, and estimated extent of contamination in the other specified environmental media (*as appropriate*) in relation to the sampling locations on the site map included as Attachment No. 27.

J. Describe the extent and distribution of the contaminants in the other specified media: _____

K. If there is known contamination in the other specified media not related to the release, complete the following:

ON-SITE CONTAMINANTS NOT RELATED TO THE RELEASE	SOURCE OF THIS CONTAMINATION (If Known)	LOCATION OF THIS CONTAMINATION

3.0 SITE CLASSIFICATION

A. Indicate the current Site Classification Level (*See Attachment No. 10 of the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks"*):

- Class 1: Immediate threat to human health, safety, or sensitive environmental receptors
- Class 2: Short-term threat to human health, safety, or sensitive environmental receptors
- Class 3: Long-term threat to human health, safety, or sensitive environmental receptors
- Class 4: No demonstrable long-term threat to human health, safety, or sensitive environmental receptors

NOTE: Regardless of the classification level, all reports must be submitted within the legislative time frame unless an alternate schedule is approved in writing by the USTD.

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

3.0 SITE CLASSIFICATION (Continued)

B. If "Class 1" is checked above, complete the following table using the instructions contained in the heading as it applies to each of the conditions or scenarios described:

CHECK BOX IF CONDITION IS CURRENTLY PRESENT	DATE OF CLASSIFICATION
IDENTIFY THE EVIDENCE USED TO CONFIRM THAT THE CONDITION IS OR IS NOT PRESENT AND, IF PRESENT, DESCRIBE ALL ACTIONS THAT ARE CURRENTLY BEING PERFORMED TO MITIGATE THE CONDITION	
<input type="checkbox"/> Explosive levels or concentrations of vapors that could cause acute health effects are present in a residence or facility	/ /
<input type="checkbox"/> Explosive levels of vapors are present in subsurface utility system(s), but no building or residences are impacted	/ /
<input type="checkbox"/> Free product is present	/ /
<input type="checkbox"/> An active public or private water supply well, public water supply line, or public surface water intake is impacted or immediately threatened	/ /
<input type="checkbox"/> Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint	/ /
<input type="checkbox"/> Sensitive habitat or sensitive resources (sport fish, economically important species, threatened and endangered species, surface water, wetlands, etc.) are impacted and affected	/ /

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

3.0 SITE CLASSIFICATION (Continued)

C. If "Class 2", "Class 3", or "Class 4" is checked above, complete the following table with respect to the current site classification level using the criteria and prescribed scenarios presented in Attachment No. 10 of the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks":

IDENTIFY THE CURRENT CONDITION(S) THAT LED TO THE CLASSIFICATION	IDENTIFY THE PRESCRIBED INITIAL RESPONSE ACTION AND THE DATE THE ACTION WAS IMPLEMENTED
Impacted soil is beneath asphalt/concrete paving and is greater than 3 feet below ground surface.	Statutory reporting requirements will be met.
Groundwater samples indicate water has been impacted at levels below the Tier I Health-Based Drinking Water RBSLs.	Statutory reporting requirements will be met.

4.0 RESULTS OF THE TIER I OR TIER II EVALUATION

4.1 EXPOSURE PATHWAY CHARACTERIZATION

A. Check all that apply to this site:

Potential Source(s)

- Impacted Soils
- Dissolved Groundwater Plume
- Free Phase Liquid Plume
- Impacted Sediments or Surface Water
- Other (Specify): _____

Potential Transport Mechanism(s)

- Wind Erosion and Atmospheric Dispersion
- Volatilization and Atmospheric Dispersion
- Volatilization and Enclosed-Space Accumulation
- Leaching and Groundwater Transport
- Mobile Free-Liquid Migration
- Stormwater/Surface Water Transport
- Utility Corridors
- Other (Specify): _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

Potential Exposure Routes(s)

- Soil Ingestion
- Direct Contact of Soil with Skin
- Inhalation of Airborne Particulates
- Inhalation of Volatiles
- Potable Water Use
- Use of Non-Potable Water
- Other (Specify): _____

Potential Receptor(s)

- Resident
- Commercial Worker III*
- Commercial Worker IV*
- Industrial Worker
- Construction Worker
- Sensitive Habitat
- Structures
- Utilities
- Surface Waters
- Water Supply Wells
- Other (Specify): _____

* As defined in Attachment No. 11 to the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks"

NOTE: A pathway must include three necessary elements:

- 1) a source (e.g., contamination);*
- 2) a mechanism by which the contamination can become available to result in exposures at the source or via migration to other locations (e.g., free product and contaminated groundwater movement along a buried utility corridor); and*
- 3) an individual who may come into contact, ingest, or inhale the contamination at the point of exposure (e.g., a utility maintenance worker digging to repair the line).*

Examples of a complete pathway include:

- 1. inhalation of impacted soils by an on-site construction worker*
- 2. impacted soils leaching into potable ground water and being used by a nearby resident for drinking and bathing*
- 3. inhalation of vapors resulting from the migration of free product by a neighboring industrial worker*
- 4. impacted groundwater discharging to wetlands*

B. List the most plausible potential residential exposure pathway(s) for the site: No plausible residential exposure pathways have been identified.

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)**

4.1 EXPOSURE PATHWAY CHARACTERIZATION (Continued)

C. List the most plausible potential commercial exposure pathway(s) for the site: No plausible commercial exposure pathways have been identified.

D. List the most plausible potential industrial exposure pathway(s) for the site: The site is an industrial facility. Based on the evaluation of current site conditions, exposure is not anticipated. However, if the pavement is removed and subsurface soils are disturbed, then inhalation of impacted soil or volatiles, or direct contact with impacted soils or groundwater may occur. It should be noted, however, that concentrations noted in the soil and groundwater do not exceed the Tier I Residential Direct Contact RBSLs for either soil or groundwater.

E. List the most plausible potential sensitive habitat exposure pathway(s) for the site: No plausible sensitive habitat exposure pathways have been identified.

4.2 OPTIONAL TIER II EVALUATION

A. Has a site-specific Tier II evaluation been conducted for this Initial Assessment Report?
 Yes No

B. If "Yes", identify and justify where alternate assumptions or site-specific information was used in place of the default assumptions as defined in Attachment No. 11 of "Guidance Document For Risk-Based Corrective Action At Leaking Underground Storage Tanks":

ASSUMPTION	DEFAULT USTD TIER I SELECTION	ALTERNATE SELECTION	JUSTIFICATION OR BASIS FOR SUBSTITUTION <i>(Attach sheets if needed)</i>

C. Include the calculations supporting the development of Tier II SSTLs as Attachment No. 28.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

4.3 IDENTIFICATION OF TIER I RISK-BASED SCREENING LEVELS OR TIER II SITE-SPECIFIC TARGET LEVELS AND COMPARISON TO SITE DATA

- A. For each contaminated medium, complete a Tier I RBSL / Tier II SSTL Comparison Table (Attachment No. 8 for soil, Attachment No. 19 for groundwater or Attachment No. 26 for other media, as appropriate) by:
- Checking the box associated with the applicable land use scenario;
 - Checking the boxes associated with the contaminants currently present at the site;
 - Entering the current maximum detected on-site or off-site concentration for each selected contaminant, along with the corresponding sample identification number and date of sampling;
 - Entering the lowest applicable RBSL value for soil or groundwater from the Tier I Look-Up Tables (refer to Attachment No. 11 of the "Guidance Document For Risk-Based Corrective Action At Leaking Underground Storage Tanks") for the specific exposure routes present and environmental medium being considered or a corresponding optional Tier II SSTL. [NOTE: Include the exposure route code that identifies the basis for each applicable criterion noted. For example, 12 ug/kg (A) for a cleanup goal based on the direct contact with soil exposure route, and 12 ug/kg (B) for a cleanup goal based on the soil leaching to groundwater exposure route];
 - Comparing the contaminant-specific maximum concentration to the corresponding RBSL or SSTL criterion; and Identifying and recording whether or not there is an exceedence of the RBSL or the SSTL.

B. Tier I RBSL / Tier II SSTL Comparison Tables are attached for the following: (Check all that apply)

LAND USE	ENVIRONMENTAL MEDIUM		
	SOIL	GROUNDWATER	OTHER (Specify)
Residential	<input type="checkbox"/>	<input type="checkbox"/>	
Commercial III	<input type="checkbox"/>	<input type="checkbox"/>	
Commercial IV	<input type="checkbox"/>	<input type="checkbox"/>	
Industrial	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

4.4 PROPOSED FOLLOW-UP ACTIVITIES

A. Based on the results of the Tier I or optional Tier II evaluation, indicate the follow-up activities proposed for the site:

<input type="checkbox"/> Site conditions do not exceed Tier I RBSLs or Tier II SSTLs	Proceed with site closure
<input checked="" type="checkbox"/> Site conditions exceed some or all Tier I RBSLs or Tier II SSTLs	Propose interim corrective action and subsequent reevaluation of the site (Complete Section 5.0)
<input type="checkbox"/> Site conditions exceed some or all Tier I RBSLs or Tier II SSTLs	Propose final corrective action to achieve Tier I RBSLs or Tier II SSTLs (Complete Section 5.0)
<input type="checkbox"/> Site conditions exceed some or all Tier I RBSLs or Tier II SSTLs	Perform further site-specific Tier II or Tier III evaluation to establish alternative SSTLs that meet the target risk goals (Complete Section 5.0)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
INITIAL ASSESSMENT REPORT (Continued)

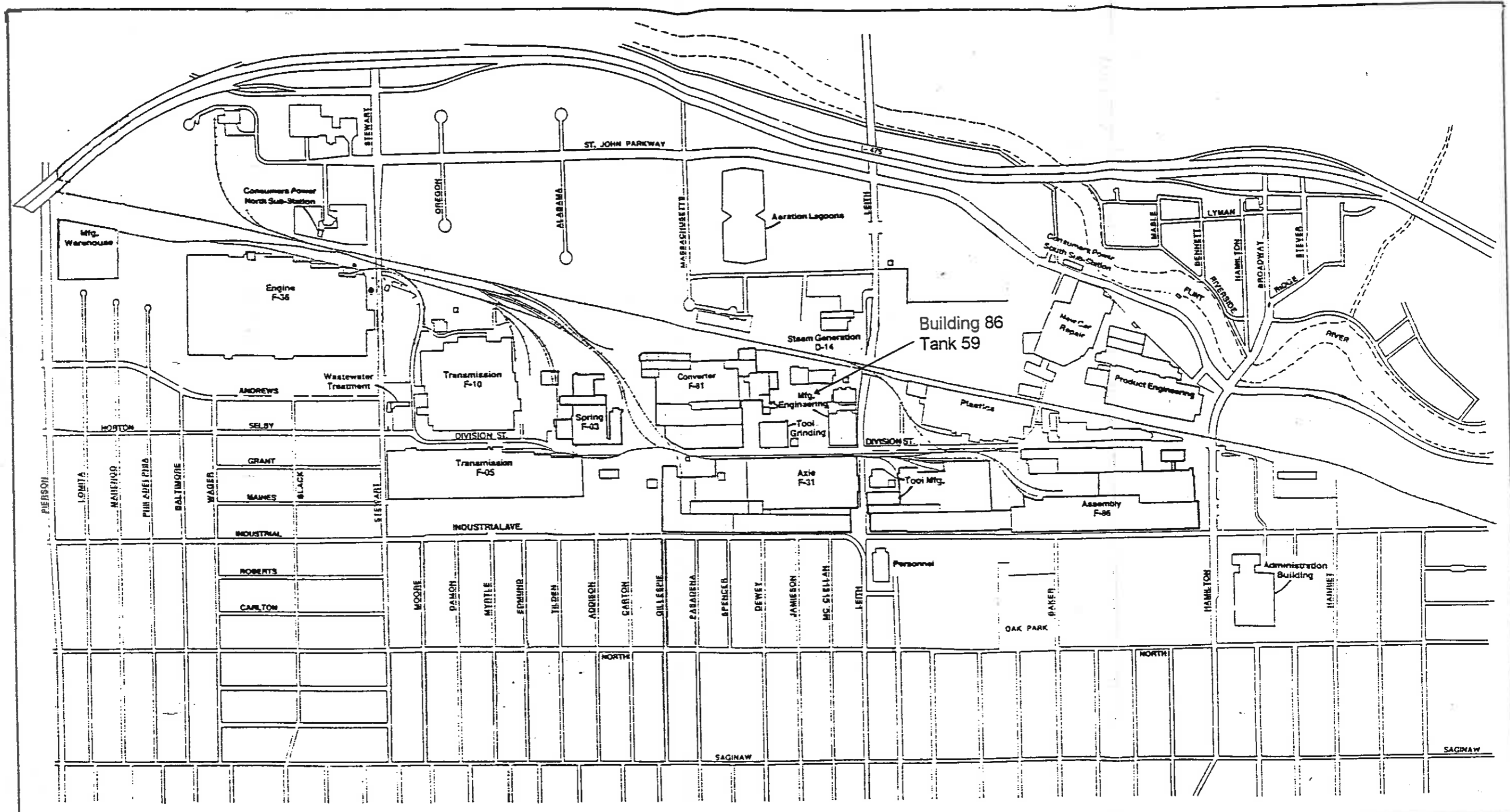
4.4 PROPOSED FOLLOW-UP ACTIVITIES (Continued)

B. Provide justification for the option chosen (*attach additional sheets, if needed*): Some of the applicable Tier I RBSLs have been exceeded in the soil. Further site investigation is necessary to fully delineate the horizontal extent of impact. At that time, the site may be re-evaluated for Tier II analysis and possible closure.

5.0 WORK PLAN FOR FURTHER SITE CHARACTERIZATION AND ASSESSMENT ACTIVITY

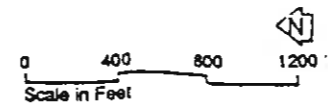
If an interim or final corrective action or a further Tier II evaluation is proposed, additional on-site or off-site characterization work may be required to obtain the information needed to establish alternate protective clean-up levels or to select and implement a cost-effective corrective action program. In these cases, a Work Plan must be developed to describe the proposed additional site characterization activities.

A. Provide a brief Work Plan and implementation schedule (Attachment No. 29) that describes the proposed site characterization activities to be performed to determine the horizontal and vertical extent of contamination, and establish the site conditions needed to prepare a Corrective Action Plan.



LEGEND

- F-36 Factory Number
- D-14 Division Number
- Hazardous Waste Storage Area
- 38 Building Number
- Property Line
- Gate House
- Pedestrian Entrance
- - - Fence



BOC FLINT OPERATIONS (BUICK SITE)

Area Map/Site Boundaries
Attachment 3

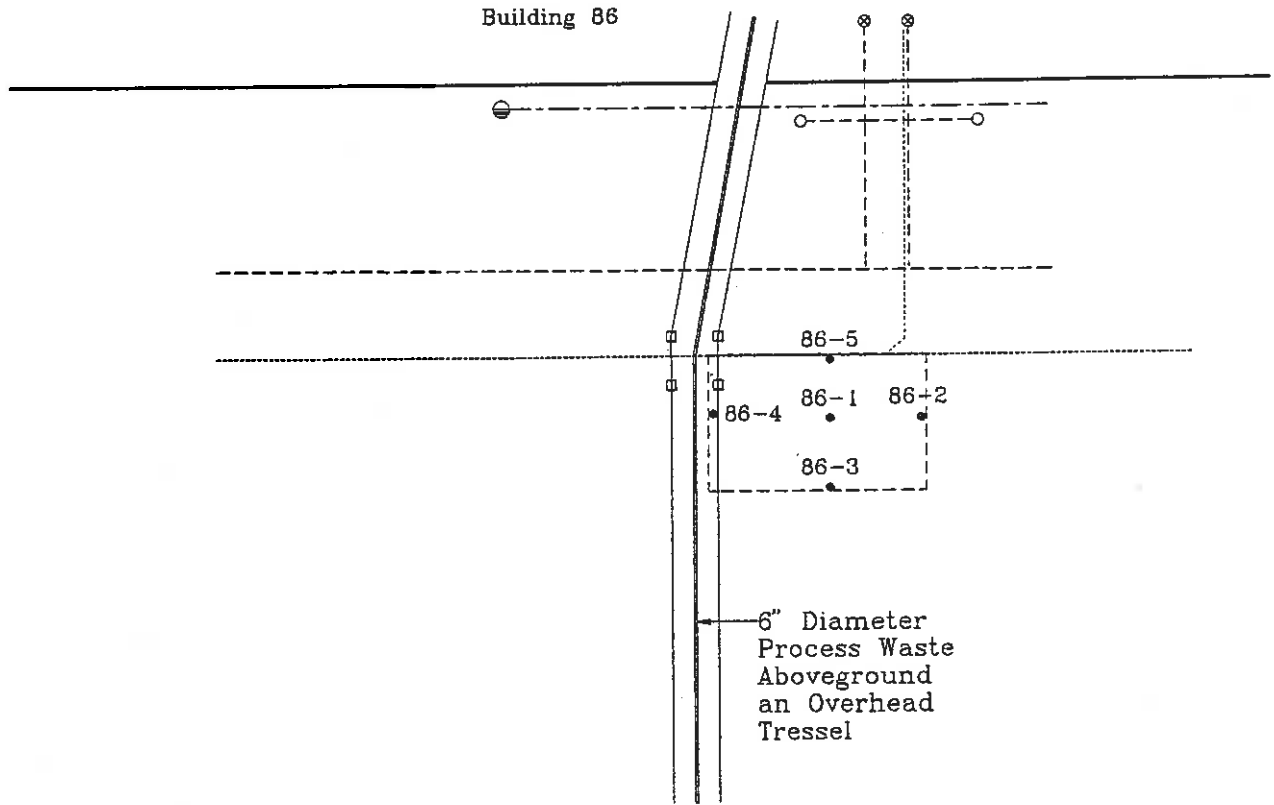
Adapted from

EDI Engineering & Science

June, 1989


21080

NORTH



LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")

GM CLCD NORTH	
TITLE: SAMPLE LOCATIONS BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER 4
PROJECT NUMBER: F174	

ATTACHMENT 6

**SEE SOIL BORING LOGS
ATTACHMENT 12**

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION
CLOSURE ASSESSMENT REPORT

ATTACHMENT NO. 7

SOIL VERIFICATION SAMPLING RESULTS (LABORATORY)
 FACILITY NAME: NAO FLINT OPERATIONS - TANK 059/86
 FACILITY NUMBER: 0-002763

VOLATILES	BLD 86-1		BLD 86-2		BLD 86-1		BLD 86-2		BLD 86-2		BLD 86-3	
	Sample ID	8-9	9-10	11-15	17-19	7/23/96	7/26/96	7/23/96	7/26/96	7/23/96	15-17	7/23/96
Sample Depth (feet BGS)												
Date Collected	7/23/96	7/23/96	7/23/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96
Date Analyzed	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96
Analytical Method No.	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260
Collection Method*	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
<input type="checkbox"/> Benzene	ND	10	ND	10	ND	10	ND	10	ND	10	ND	10
<input type="checkbox"/> Toluene	ND	10	ND	10	ND	10	ND	10	ND	10	ND	10
<input type="checkbox"/> Ethylbenzene	ND	10	ND	10	1100	10	1100	10	ND	10	3300	10
<input type="checkbox"/> Total Xylenes	ND	10	ND	10	2200	10	2200	10	ND	10	6600	10
<input type="checkbox"/> MTBE	ND	100	ND	100	ND	100	ND	100	ND	100	ND	100
POLYNUCLEAR AROMATICS (PNAs)												
Sample ID												
Sample Depth (feet BGS)												
Date Collected												
Date Analyzed												
Analytical Method No.												
Collection Method*												
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
<input type="checkbox"/> Acenaphthene												
<input type="checkbox"/> Acenaphthylene												
<input type="checkbox"/> Anthracene												
<input type="checkbox"/> Benzo(a)anthracene												
<input type="checkbox"/> Benzo(a)pyrene												
<input type="checkbox"/> Benzo(b)fluoranthene												
<input type="checkbox"/> Benzo(g,h,i)perylene												
<input type="checkbox"/> Benzo(k)fluoranthene												

BGS = Below Ground Surface
 *Collection Method Codes (List all that apply): Grab Sample (GS), Split Spoon (SS), Hand Auger (HA), Geoprobe (GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP),
 Hydroponch (HP)
 If Other (OT), Specify here: _____
 MDL = Method Detection Limit

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION
CLOSURE ASSESSMENT REPORT

ATTACHMENT NO. 7
 SOIL VERIFICATION SAMPLING RESULTS (LABORATORY)
 FACILITY NAME: NAO FLINT OPERATIONS - TANK 059/86
 FACILITY NUMBER: 0-002763

VOLATILES	BLD 86-3		BLD 86-4		BLD 86-4		BLD 86-5		BLD 86-5	
	Sample ID	19-21	15-17	21-23	13-15	19-21	7/23/96	7/26/96	7/23/96	7/26/96
Sample Depth (feet BGS)										
Date Collected	7/23/96	7/23/96	7/23/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96
Date Analyzed	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96
Analytical Method No.	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260
Collection Method*	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
<input type="checkbox"/> Benzene	ND	10	ND	10	ND	10	ND	500	ND	10
<input type="checkbox"/> Toluene	ND	10	ND	10	ND	10	ND	500	ND	10
<input type="checkbox"/> Ethylbenzene	ND	10	ND	10	ND	10	2300	500	ND	10
<input type="checkbox"/> Total Xylenes	ND	10	20	10	ND	10	15300	500	ND	10
<input type="checkbox"/> MTBE	ND	100	ND	100	ND	100	ND	5000	ND	100
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
<input type="checkbox"/> Acenaphthene										
<input type="checkbox"/> Acenaphthylene										
<input type="checkbox"/> Anthracene										
<input type="checkbox"/> Benzo(a)anthracene										
<input type="checkbox"/> Benzo(a)pyrene										
<input type="checkbox"/> Benzo(b)fluoranthene										
<input type="checkbox"/> Benzo(g,h,i)perylene										
<input type="checkbox"/> Benzo(k)fluoranthene										

BGS = Below Ground Surface
 *Collection Method Codes (List all that apply): Grab Sample (GS), Split Spoon (SS), Hand Auger (HA), Geoprobe (GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP),
 Hydroprunch (HP)
 If Other (OT), Specify here: _____
 MDL = Method Detection Limit

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION
INITIAL ASSESSMENT REPORT (continued)

ATTACHMENT NO. 8
TIER I RBSL/TIER II OR TIER III SSTL COMPARISON TABLE FOR SOILS
FACILITY NAME: NAO OPERATIONS (TANK 059/86)
FACILITY NUMBER: 0-002763

Residential Exposure Codes Commercial III Commercial IV Industrial

A. Direct Contact		B. Soil Leaching to Potable Groundwater				Criterion Exceeded?	
Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/kg)	Applicable Criterion with Exposure Codes (ug/kg)	Tier I RBSL	Tier II/III SSTL	(Yes or No)
							Tier I RBSL Tier II/III SSTL
VOLATILES							
<input type="checkbox"/> Benzene			ND		100 (B)		No
<input type="checkbox"/> Toluene			ND		1600 (B)		No
<input type="checkbox"/> Ethylbenzene	Bldg 86-3 (15-17')	07/23/96	3300		1500 (B)		Yes
<input type="checkbox"/> Total Xylenes	Bldg 86-3 (15-17')	07/23/96	6600		5600 (B)		Yes
<input type="checkbox"/> MTBE			ND		4800 (B)		No
POLYNUCLEAR AROMATICS							
<input type="checkbox"/> Acenaphthene			NA				
<input type="checkbox"/> Acenaphthylene			NA				
<input type="checkbox"/> Anthracene			NA				
<input type="checkbox"/> Benzo(a)anthracene			NA				
<input type="checkbox"/> Benzo(a)pyrene			NA				
<input type="checkbox"/> Benzo(b)fluoranthene			NA				
<input type="checkbox"/> Benzo(g,h,i)perylene			NA				
<input type="checkbox"/> Benzo(k)fluoranthene			NA				
<input type="checkbox"/> Chrysene			NA				
<input type="checkbox"/> Dibenzo-(a,h)anthracene			NA				
<input type="checkbox"/> Fluoranthene			NA				
<input type="checkbox"/> Fluorene			NA				
<input type="checkbox"/> Indeno(1,2,3-cd)pyrene			NA				
<input type="checkbox"/> Naphthalene			NA				
<input type="checkbox"/> Phenanthrene			NA				
<input type="checkbox"/> Pyrene			NA				

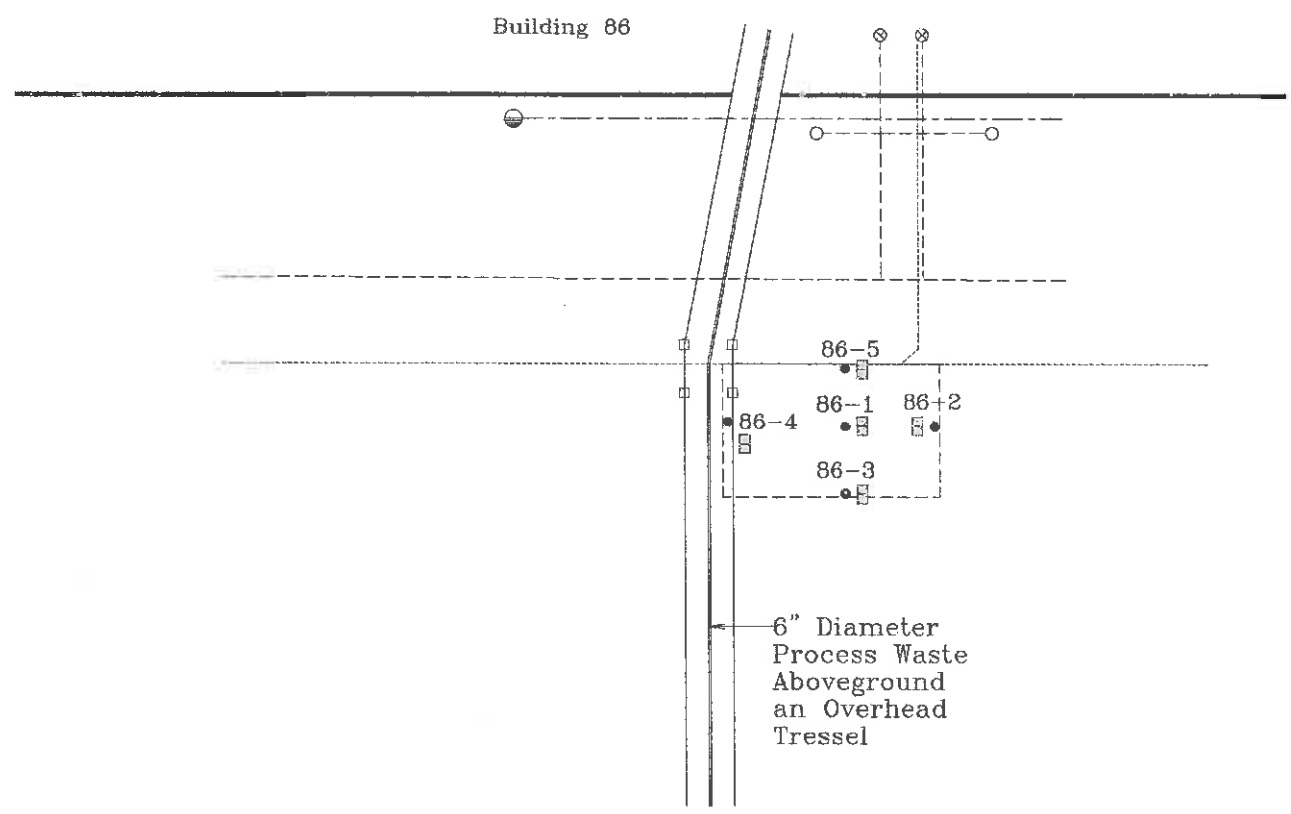
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION
 INITIAL ASSESSMENT REPORT (continued)

ATTACHMENT NO. 8 (Continued Page 2 of 2)
 TIER I RBSL/TIER II OR TIER III SSTL COMPARISON TABLE FOR SOILS
 FACILITY NAME: NAO OPERATIONS (TANK 059/86)
 FACILITY NUMBER: 0-002763

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/kg)	Applicable Criterion with Exposure Codes		Criterion Exceeded? (Yes or No)	
				Tier I RBSL	Tier II/III SSTL	Tier I RBSL	Tier II/III SSTL
METALS							
<input type="checkbox"/> Cadmium			NA				
<input type="checkbox"/> Chromium III			NA				
<input type="checkbox"/> Chromium VI			NA				
<input type="checkbox"/> Total Lead			NA				
PCBs							
<input type="checkbox"/> Aroclor 1016			NA				
<input type="checkbox"/> Aroclor 1221			NA				
<input type="checkbox"/> Aroclor 1232			NA				
<input type="checkbox"/> Aroclor 1242			NA				
<input type="checkbox"/> Aroclor 1248			NA				
<input type="checkbox"/> Aroclor 1254			NA				
<input type="checkbox"/> Aroclor 1280			NA				
HALOGENATED HYDROCARBONS							
<input type="checkbox"/> Carbon Tetrachloride			NA				
<input type="checkbox"/> 1,1-Dichloroethane			NA				
<input type="checkbox"/> 1,2-Dichloroethane			NA				
<input type="checkbox"/> 1,1-Dichloroethylene			NA				
<input type="checkbox"/> cis-1,2-Dichloroethylene			NA				
<input type="checkbox"/> trans-1,2-Dichloroethylene			NA				
<input type="checkbox"/> Tetrachloroethylene			NA				
<input type="checkbox"/> 1,1,2-Trichloroethane			NA				
OTHER*							
<input type="checkbox"/>							
<input type="checkbox"/>							
<input type="checkbox"/>							

HEREIN IS UNCLASSIFIED


DATE 08-14-2011

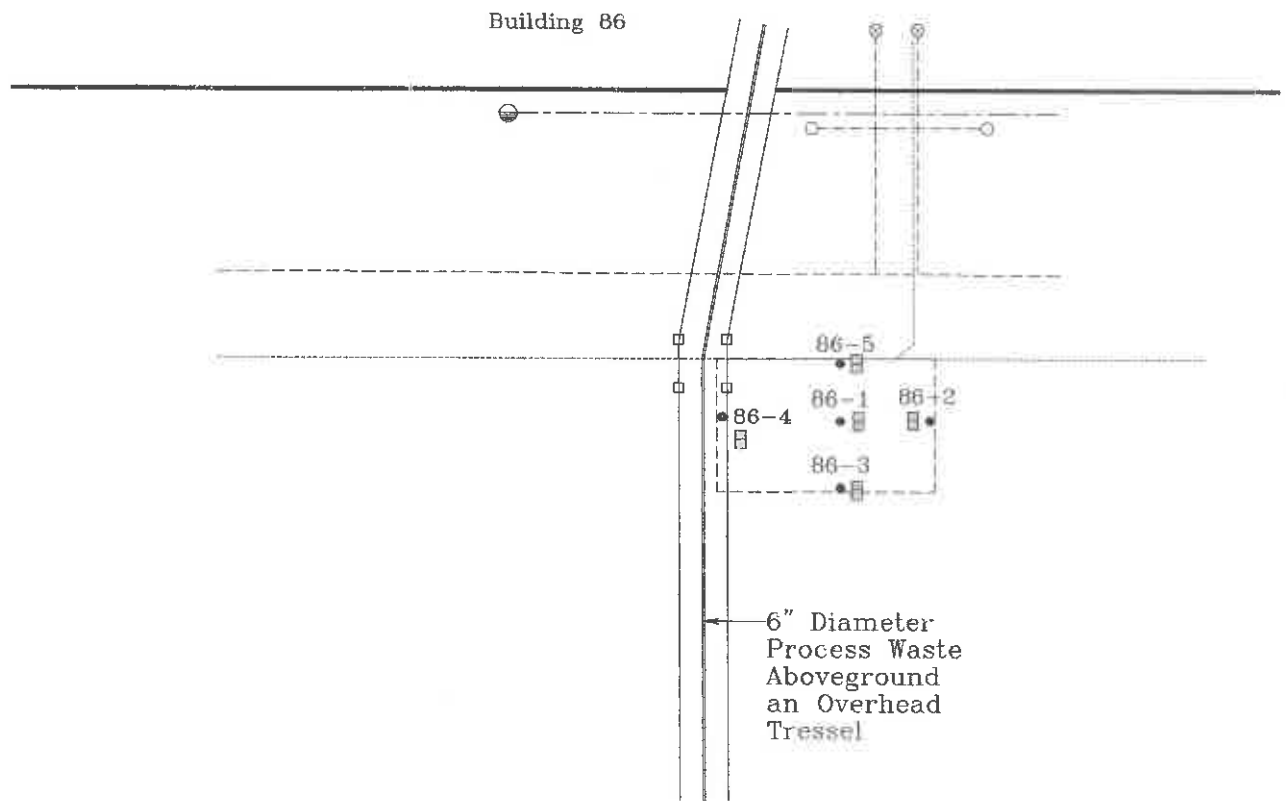


- Not Analyzed
- Not Detected
- Elevated levels below the Soil Leaching to Groundwater RBSLs
- Elevated levels above the Soil Leaching to Groundwater RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


<h2>GM-CLCD NORTH</h2>	
TITLE: SOIL CONCENTRATION MAP: BENZENE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 <p>Global Environmental Engineering Inc.</p>	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9a
PROJECT NUMBER: F174	

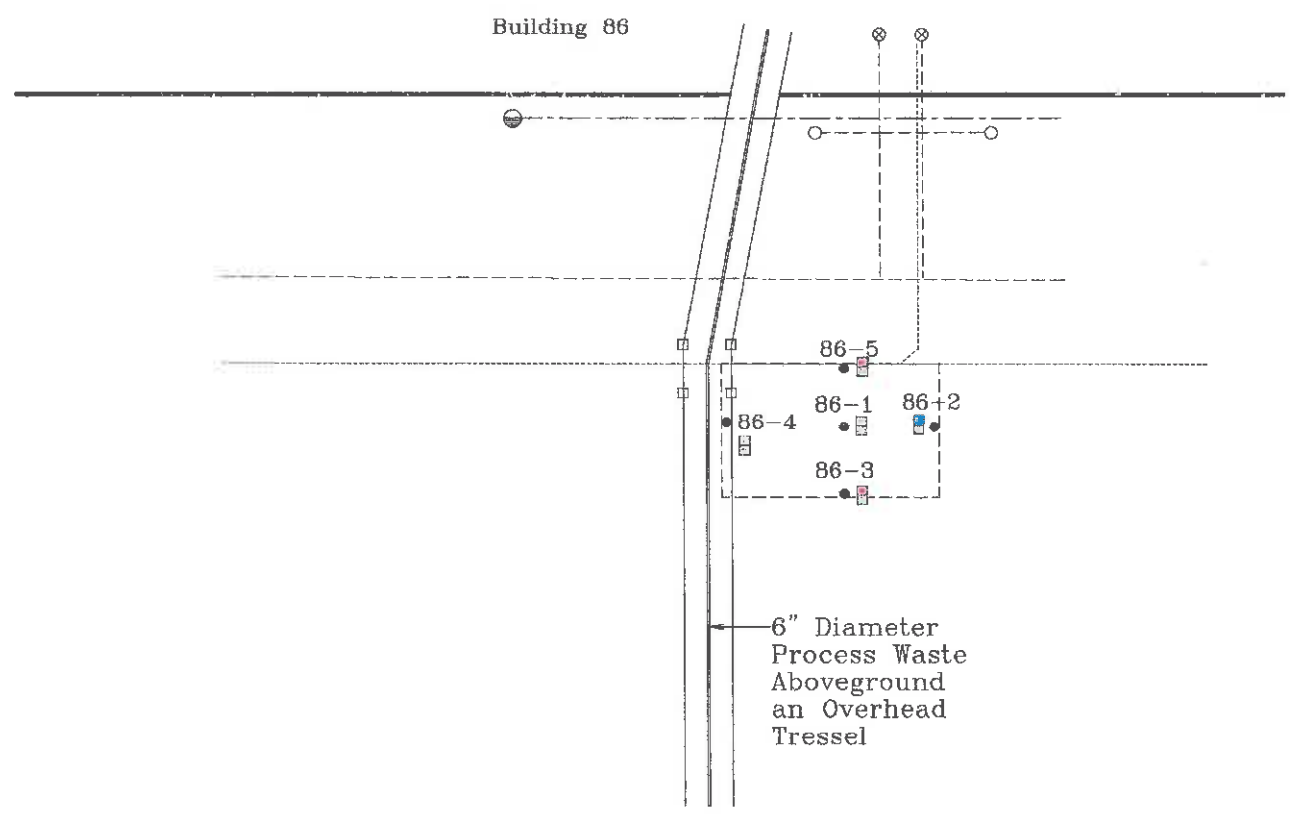


- Not Analyzed
- Not Detected
- Elevated levels below the Soil Leaching to Groundwater RBSLs
- Elevated levels above the Soil Leaching to Groundwater RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


<h3>GM-CLCD NORTH</h3>	
TITLE: SOIL CONCENTRATION MAP: TOLUENE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9b
PROJECT NUMBER: F174	

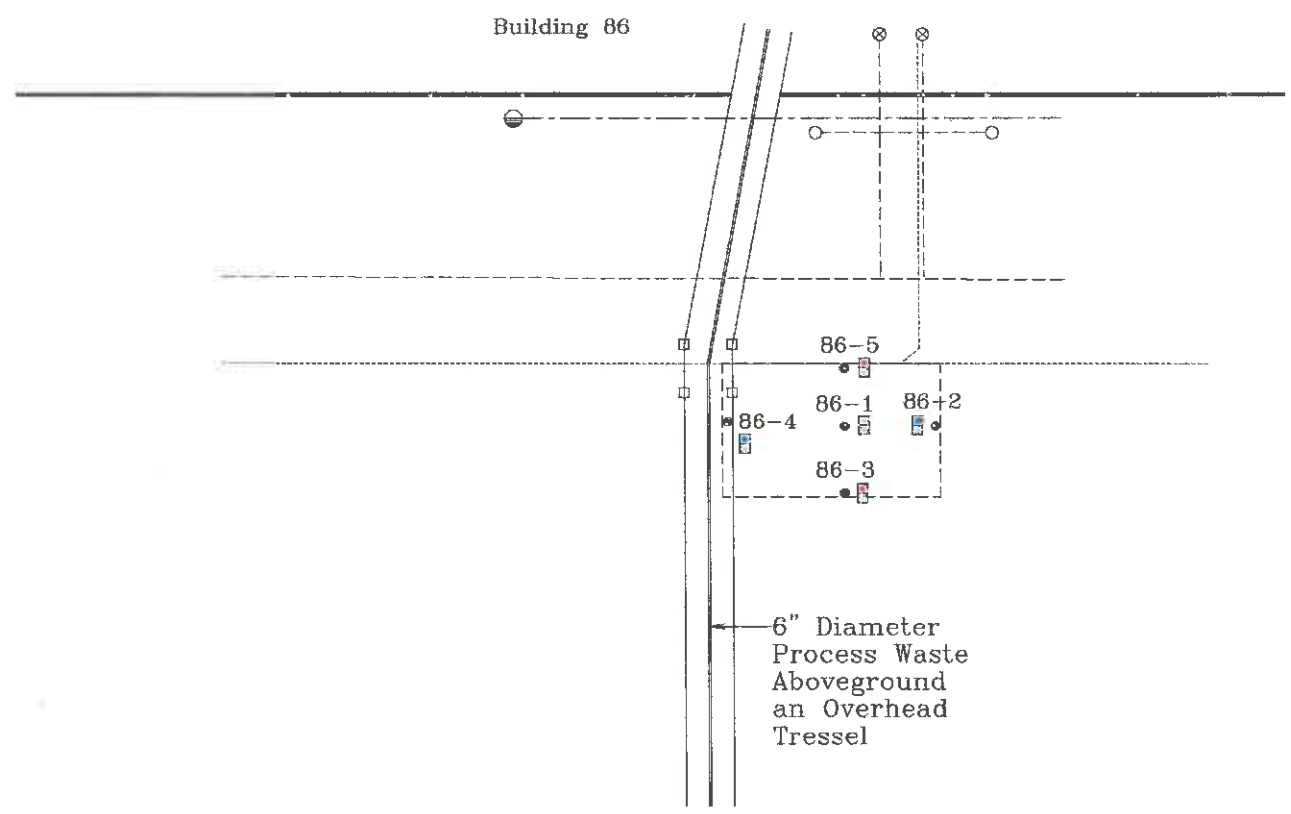


- Not Analyzed
- Not Detected
- Elevated levels below the Soil Leaching to Groundwater RBSLs
- Elevated levels above the Soil Leaching to Groundwater RBSLs

LEGEND:

- Geoprobe Sample Locations
- ==== Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


<h3>GM-CLCD NORTH</h3>	
TITLE: SOIL CONCENTRATION MAP: ETHYLBENZENE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9c
PROJECT NUMBER: F174	

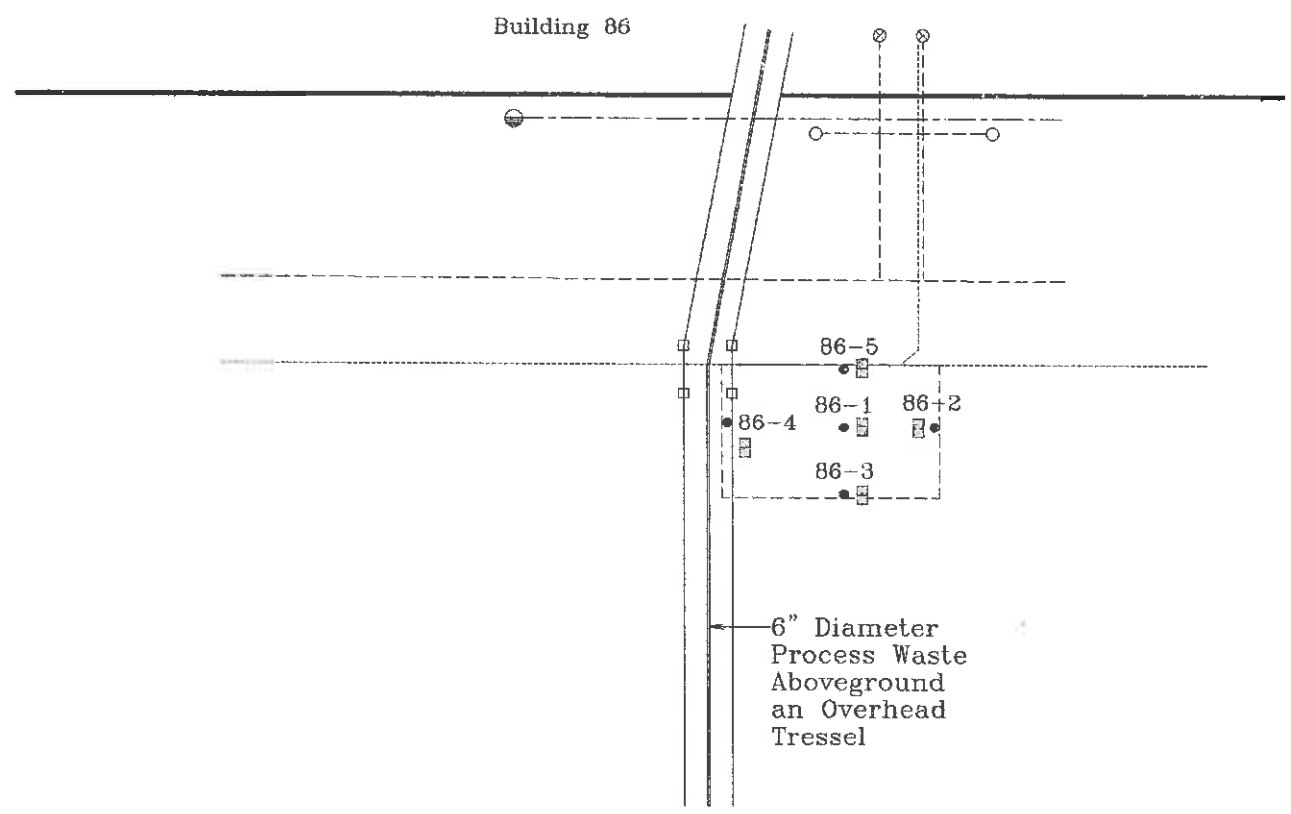


- Not Analyzed
- Not Detected
- Elevated levels below the Soil Leaching to Groundwater RBSLs
- Elevated levels above the Soil Leaching to Groundwater RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


GM-CLCD NORTH	
TITLE: SOIL CONCENTRATION MAP: XYLENE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9d
PROJECT NUMBER: F174	



- Not Analyzed
- Not Detected
- Elevated levels below the Soil Leaching to Groundwater RBSLs
- Elevated levels above the Soil Leaching to Groundwater RBSLs

LEGEND:

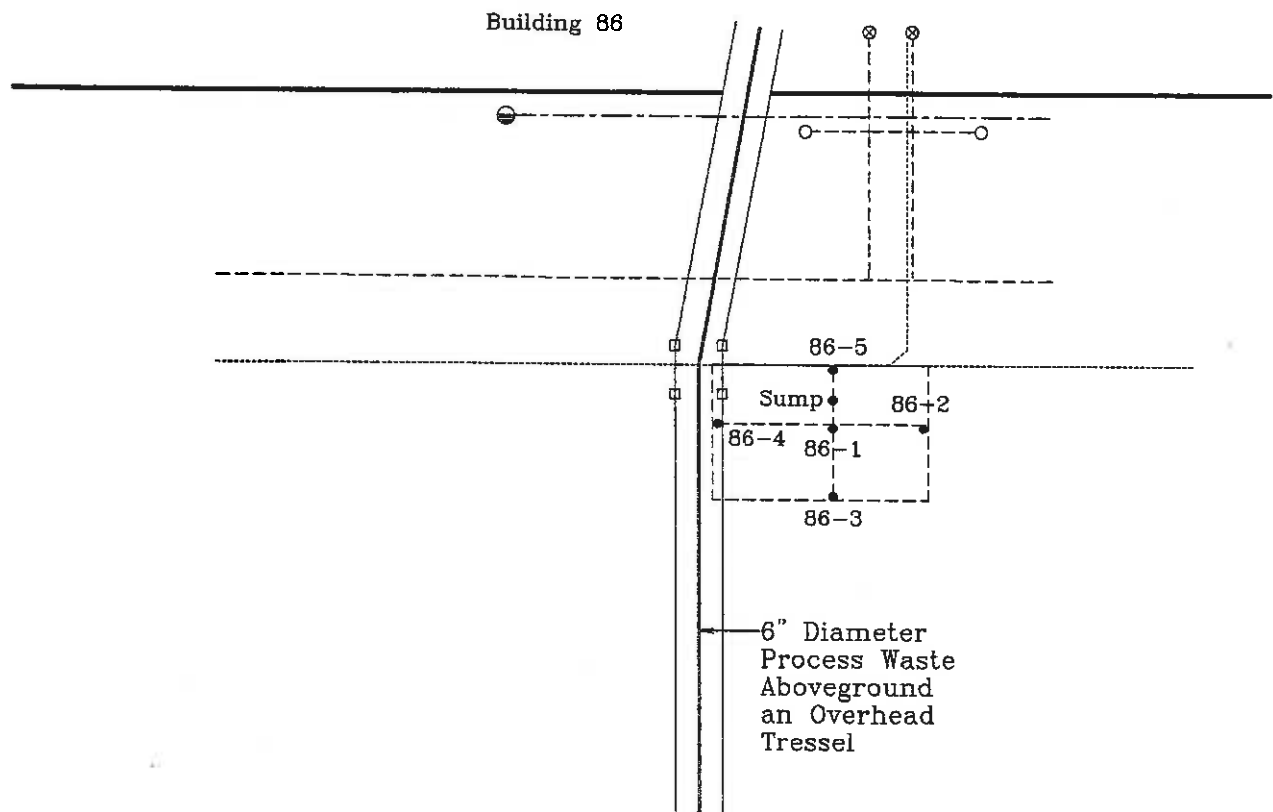
- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")

GM-CLCD NORTH	
TITLE: SOIL CONCENTRATION MAP: MTBE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9e
PROJECT NUMBER: F174	




ATTACHMENT 10

-- SEE ATTACHMENT 9 --

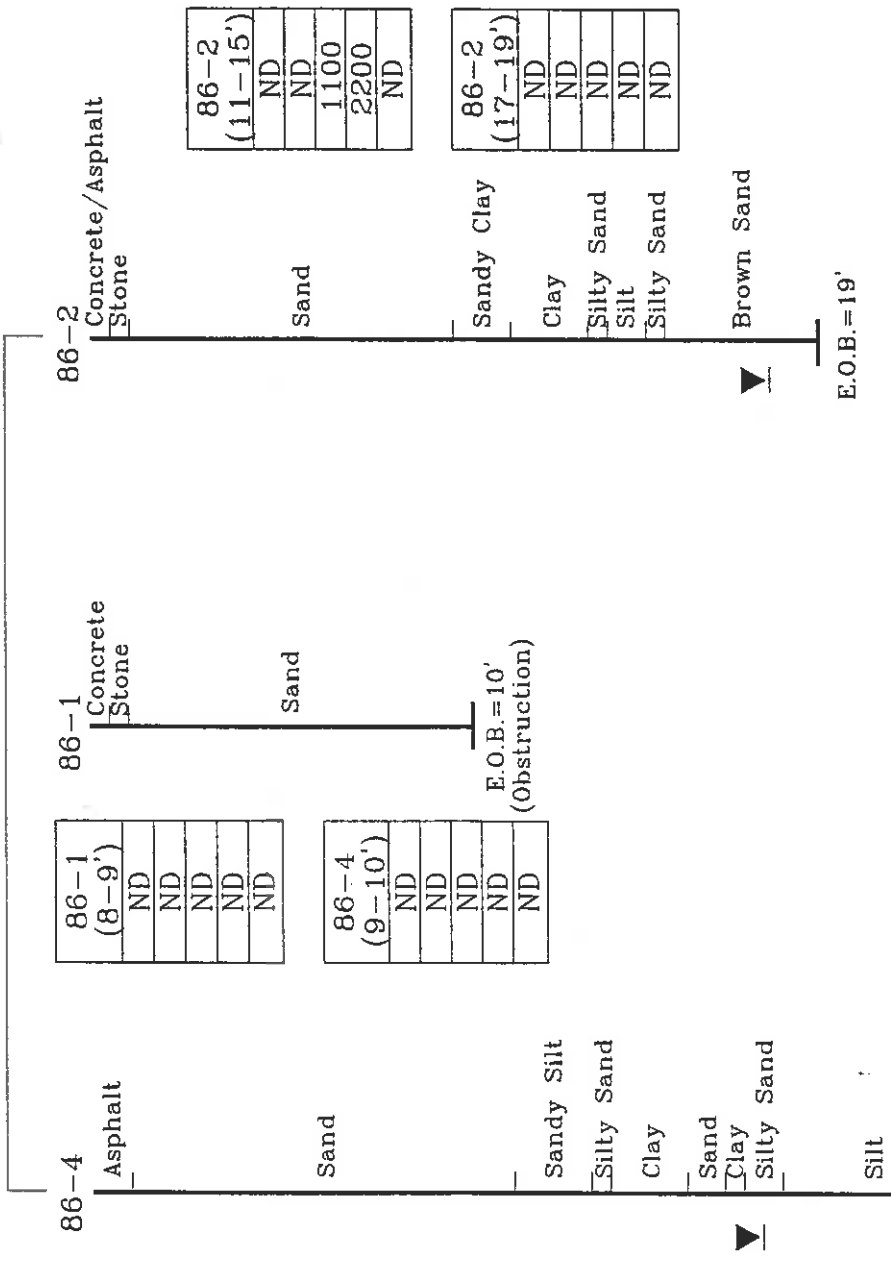


LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")

GM-CLCD NORTH	
TITLE: CROSS SECTIONAL DIAGRAM GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 11a
PROJECT NUMBER: F174	

A' A'



86-4 (15-17')
ND
ND
ND
20
ND

86-4 (21-23')
ND
ND
ND
ND
ND

86-1 (8-9')
ND
ND
ND
ND
ND

86-4 (9-10')
ND
ND
ND
ND
ND

86-2 (11-15')
ND
ND
1100
2200
ND

86-2 (17-19')
ND
ND
ND
ND
ND

Sample ID
Benzene
Toluene
Ethylbenzene
Xylenes
MTBE

All results reported in ug/kg
 ND=Not Detected
 E.O.B.=End of Boring
 ▼ Static Water Level

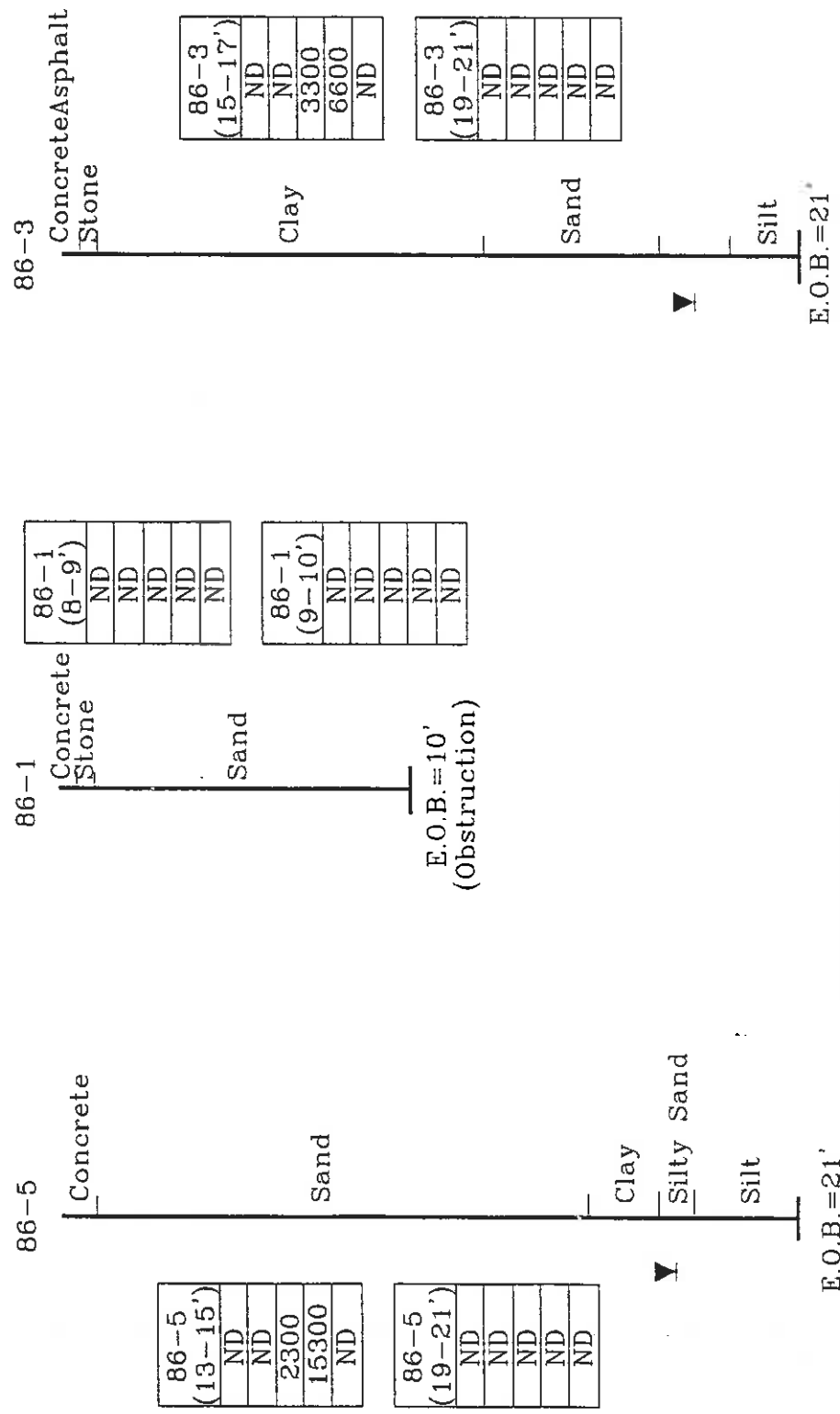


Global Environmental Engineering Inc.

North - South Cross Sectional Diagram A - A'
 NAO Flint Operations - GM-CLCD North Building 86

DATE: 3/7/97
 APPROVED BY: A.L.K.
 PREPARED BY: C.G.S.
 ATTACHMENT NUMBER: 11b
 PROJECT NUMBER: F174

B' B'



86-5
(13-15')
ND
ND
2300
15300
ND

86-5
(19-21')
ND
ND
ND
ND
ND

86-1
(8-9')
ND
ND
ND
ND
ND

86-1
(9-10')
ND
ND
ND
ND
ND

86-3
(15-17')
ND
ND
3300
6600
ND

86-3
(19-21')
ND
ND
ND
ND
ND

Sample ID
Benzene
Toluene
Ethylbenzene
Xylenes
MTBE

X-1"=5'
Y-1"=5'

All results reported in ug/kg
 ND-Not Detected
 E.O.B.- End of Boring
 ▼ Static Water Level

Global
 Environmental
 Engineering Inc.



East - West Cross Sectional Diagram B - B'
 NAO Flint Operations - GM-CLCD North
 Building 86

DATE: 3/7/97
 APPROVED BY: A.L.K.
 PREPARED BY: C.G.S. 11c
 ATTACHMENT NUMBER:
 PROJECT NUMBER: F174

Global Environmental Engineering, Inc.
 352 South Saginaw St., Suite 600
 Flint, Michigan 48502
 Tel: (810) 238-9190
 Fax: (810) 238-9195

Soil Boring: Bldg 86-1 Project: GM CLCD North UST Closure
 Date: 7/23/96 Project #: F174
 Drilling Contractor: YECI Location: Hamilton & Industrial Ave.
 Prepared By: JCW Twp/Sec.:
 Time Started: Depth Drilled: 10'
 Time Completed: Hole Diameter: 2"
 Length Coring Device: 2' Coring Device: 2'

Boring Methods:

Groundwater Information:

<input type="checkbox"/>	Hollow Stem Auger	GW Encountered at	Fluid Used: None
<input type="checkbox"/>	Hand Auger	Monitor Wells Installed	Driller: Ken
<input checked="" type="checkbox"/>	Geoprobe	Yes No	Helper: N/A
			Weight/Drop: N/A

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
		1	SP	Concrete	Brown, Moist, Fine/Medium	ND	
	GP-1			Stone			
		2		Sand			
		3					
		4					
		5					
	GP-2	6					
		7					
		8					
	[X]	9					
	GP-3	10	E.O.B	End of Boring 10'	Sample Refusal	30.0	
	[X]						
		11					
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon HA-Hand Auger Sample PID-Photoionization Detector (ppm) AL-Acetate Liner
 NR-No Recovery [X]-Laboratory/Jar Sample GC-Gas Chromatograph (ppb) FS-Field Screening Container

Global Environmental Engineering, Inc.
 352 South Saginaw St., Suite 600
 Flint, Michigan 48502
 Tel: (810) 238-9190
 Fax: (810) 238-9195

Soil Boring:	Bldg 86-2	Project:	GM CLCD North UST Closure
Date:	7/23/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	9:20	Depth Drilled:	19'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"

Boring Methods

Groundwater Information

<input type="checkbox"/>	Hollow Stem Auger	GW Encountered at	Fluid Used:	None
<input type="checkbox"/>	Hand Auger	Monitor Wells Installed	Driller:	Ken
<input checked="" type="checkbox"/>	Geoprobe	Yes	Helper:	N/A
		No	Weight/Drop:	N/A

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
		1		Concrete/Asphalt			
	GP-1		SP	Stone			
		2		Sand	Dark Brown, Moist, Fine/Medium		
		3				ND	
		4					
		5				ND	
	GP-2						
		6					
		7				ND	
		8					
		9				ND	
	GP-3						
		10	CL	Sandy Clay	No Fractures		
		11		Clay	Brown/Gray, Fractures	10	
		12					
	[X]	13				820	
	GP-4		SM	Silty Sand	Black/Gray, Moist, Fine/Medium		
		14	ML	Silt	Gray		
		15	SM	Silty Sand	Black/Gray	20	
	GP-5		SP	Sand	Brown		
		16					
		17				20.0	
	GP-6						
		18					
	[X]	19				8.0	
		20	E.O.B	End of Boring 19'			
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon HA-Hand Auger Sample PID-Photoionization Detector (ppm) AL-Acetate Liner
 NR-No Recovery [X]-Laboratory/Jar Sample GC-Gas Chromatograph (ppb) FS-Field Screening Container

Global Environmental Engineering, Inc.
 352 South Saginaw St., Suite 600
 Flint, Michigan 48502
 Tel: (810) 238-9190
 Fax: (810) 238-9195

Soil Boring: Bldg 86-3 Project: GM CLCD North UST Closure
 Date: 7/23/96 Project #: F174
 Drilling Contractor: YECI Location: Hamilton & Industrial Ave.
 Prepared By: JCW Twp/Sec.:
 Time Started: 11:00 Depth Drilled: 21'
 Time Completed: Hole Diameter: 2"
 Length Coring Device: 2' Coring Device: 2"

Boring Methods

Groundwater Information

<input type="checkbox"/>	Hollow Stem Auger	GW Encountered at 14'	Fluid Used: None
<input type="checkbox"/>	Hand Auger	Monitor Wells Installed	Driller: Ken
<input checked="" type="checkbox"/>	Geoprobe	Yes No	Helper: N/A
			Weight/Drop: N/A

Penetration Tons/54-ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
		1	SP	Concrete/Asphalt Stone Sand	Dark Brown, Moist, Fine/Medium		
	GP-1	2					
		3		6.0			
		4					
		5		8.0			
	GP-2	6					
		7		28.0			
		8					
		9		4.0			
	GP-3	10					
		11		Brown 3.0			
		12					
		13	CL Clay Brown/Gray, Fractures 32.0				
	GP-4	14	Brown/Green, Fine/Medium				
		15	Brown/Gray, 3" Silty Sand, Wet 7.0				
		16					
	[X]	17	SP Sand 2" Black Sand Lens, Wet Brown >1000				
		18					
		19	26.0				
		20	ML Silt Gray, Moist				
		21	[X] E.O.B End of Boring 21' ND				
		22					
		23					
		24					
		25					

SS-Split Spoon HA-Hand Auger Sample PID-Photoionization Detector (ppm) AL-Acetate Liner
 NR-No Recovery [X]-Laboratory/Jar Sample GC-Gas Chromatograph (ppb) FS-Field Screening Container

Global Environmental Engineering, Inc.
 352 South Saginaw St., Suite 600
 Flint, Michigan 48502
 Tel: (810) 238-9190
 Fax: (810) 238-9195

Soil Boring: Bldg 86-4 Project: GM CLCD North UST Closure
 Date: 7/23/96 Project #: F174
 Drilling Contractor: YECI Location: Hamilton & Industrial Ave.
 Prepared By: JCW Twp/Sec.:
 Time Started: 13:00 Depth Drilled: 23'
 Time Completed: Hole Diameter: 2"
 Length Coring Device: 2" Coring Device: 2"

Boring Methods		Groundwater Information	
	Hollow Stem Auger	GW Encountered at	17'
	Hand Auger	Monitor Wells Installed	
X	Geoprobe	Yes	No
		Fluid Used:	None
		Driller:	Ken
		Helper:	N/A
		Weight/Drop:	N/A

Penetration Tons/Sq. ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Asphalt			
	GP-1	1	SP	Sand	Dark Brown, Moist, Fine/Medium		
		2					
		3					
		4				ND	
		5					
	GP-2	6				ND	
		7					
		8				ND	
		9					
	GP-3	10			Brown	ND	
		11					
		12	SM	Sandy Silt	Brown/Gray, No Fractures, Mottled	ND	
		13					
	GP-4	14	CL	Silty Sand Clay	Brown, Fine/Medium No Fractures	8.0	
		15				7.0	
		16	SP	Sand			
	[X]	17	CL	Clay		>1000	
	GP-5	18	SM	Silty Sand	Wet		
		19	ML	Silt	Moist	42.0	
	GP-6	20			Gray		
		21					
	GP-7	22				18.0	
		23					
	[X]	23				ND	
		24	E.O.B	End of Boring 23'			
		25					

SS - Split Spoon HA - Hand Auger Sample PID - Photoionization Detector (ppm) AL - Acetate Liner
 NR - No Recovery [X] - Laboratory/Jar Sample GC - Gas Chromatograph (ppb) FS - Field Screening Container

Global Environmental Engineering, Inc.
 352 South Saginaw St., Suite 600
 Flint, Michigan 48502
 Tel: (810) 238-9190
 Fax: (810) 238-9195

Soil Boring: Bldg 86-5 Project: GM CLCD North UST Closure
 Date: 7/23/96 Project #: F174
 Drilling Contractor: YECI Location: Hamilton & Industrial Ave.
 Prepared By: JCW Twp/Sec.:
 Time Started: 14:55 Depth Drilled: 21'
 Time Completed: Hole Diameter: 2"
 Length Coring Device: 2' Coring Device: 2"

Boring Methods		Groundwater Information	
<input type="checkbox"/>	Hollow Stem Auger	GW Encountered at	Fluid Used: None
<input type="checkbox"/>	Hand Auger	Monitor Wells Installed	Driller: Ken
<input checked="" type="checkbox"/>	Geoprobe	Yes No	Helper: N/A
			Weight/Drop: N/A

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
		1	SP	Concrete			
	GP-1	2		Sand	Dark Brown, Moist, Fine/Medium		
		3					ND
		4					
		5			Brown		ND
	GP-2	6			Dark Brown		
		7					ND
		8					
		9					ND
	GP-3	10			Brown		
		11					ND
		12					
		13					ND
	GP-4	14					
	[X]	15		CL	Clay	Brown/Gray, Moist, Fractures	>1000
		16					
		17					
	GP-5	18	SM	Silty Sand	Brown, Fine/Medium	620	
		19	ML	Silt	Gray		
		20					
	GP-6	21					
	[X]	21	E.O.B	End of Boring 21'		3.0	
		22					
		23					
		24					
		25					

SS - Split Spoon HA - Hand Auger Sample PID - Photoionization Detector (ppm) AL - Acetate Liner
 NR - No Recovery [X] - Laboratory/Jar Sample GC - Gas Chromatograph (ppb) FS - Field Screening Container

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION
CLOSURE ASSESSMENT REPORT
ATTACHMENT NO. 18
 GROUNDWATER VERIFICATION SAMPLING RESULTS (LAB)
 FACILITY NAME: NAO FLINT OPERATIONS - TANK 059/86
 FACILITY NUMBER: 0-002763

VOLATILES	BLD 86-2 H2O		BLD 86-3 H2O		BLD 86-4 H2O		BLD 86-5 H2O		BLD 86 SUMP	
	Sample ID		Sample ID		Sample ID		Sample ID		Sample ID	
Sample Depth (feet BGS)										
Date Collected	7/23/96	7/23/96	7/23/96	7/23/96	7/23/96	7/23/96	7/23/96	7/23/96	7/23/96	7/23/96
Date Extracted	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96
Date Analyzed	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96	7/26/96
Collection Method*	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Analytical Method No.	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
<input type="checkbox"/> Benzene	ND	1	ND	1	ND	1	ND	1	ND	1
<input type="checkbox"/> Toluene	21	1	ND	1	ND	1	ND	1	ND	1
<input type="checkbox"/> Ethylbenzene	ND	1	ND	1	ND	1	86	1	ND	1
<input type="checkbox"/> Total Xylenes	23	1	13	1	14	1	203	1	ND	1
<input type="checkbox"/> MTBE	ND	10	ND	10	ND	10	ND	10	ND	10
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
<input type="checkbox"/> Acenaphthene										
<input type="checkbox"/> Acenaphthylene										
<input type="checkbox"/> Anthracene										
<input type="checkbox"/> Benzo(a)anthracene										
<input type="checkbox"/> Benzo(a)pyrene										
<input type="checkbox"/> Benzo(b)fluoranthene										
<input type="checkbox"/> Benzo(g,h,i)perylene										
<input type="checkbox"/> Benzo(k)fluoranthene										
<input type="checkbox"/> Chrysene										
<input type="checkbox"/> Dibenzo(a,h)anthracene										

BGS. = Below Ground Surface
 MDL = Method Detection Limit
 *Collection Method Codes (List all that apply): Bailer (BL), Geoprobe (GP), Purge Pump (PP), Cone Penetrometer (CP), Hydropunch (HP)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY-UNDERGROUND TANK DIVISION
INITIAL ASSESSMENT REPORT (Continued)

ATTACHMENT NO. 19
TIER I RBSL/TIER II OR TIER III SSTL
COMPARISON TABLE FOR GROUNDWATER
FACILITY NAME: NAO OPERATIONS (TANK 059/86)
FACILITY ID NO. 0-002763

<input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Industrial		B. Groundwater/Surface Water Interface		Applicable Criterion with Exposure Code		Criterion Exceeded?	
A. Potable		Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/l)	Tier I RBSL	Tier II/III SSTL	(Yes or No)
Contaminant							Tier I RBSL
VOLATILES							
<input type="checkbox"/> Benzene				ND	5 (B)		No
<input type="checkbox"/> Toluene	Bld 86-2 H ₂ O	07/23/96		21	790 (B)		No
<input type="checkbox"/> Ethylbenzene	Bld 86-5 H ₂ O	07/23/96		86	74 (B)		No
<input type="checkbox"/> Total Xylenes	Bld 86-5 H ₂ O	07/23/96		203	280 (B)		No
<input type="checkbox"/> MTBE				ND	240 (B)		No
POLYNUCLEAR AROMATICS (PNAs)							
<input type="checkbox"/> Acenaphthene				NA			
<input type="checkbox"/> Acenaphthylene				NA			
<input type="checkbox"/> Anthracene				NA			
<input type="checkbox"/> Benzo(a)anthracene				NA			
<input type="checkbox"/> Benzo(a)pyrene				NA			
<input type="checkbox"/> Benzo(b)fluoranthene				NA			
<input type="checkbox"/> Benzo(g,h,i)perylene				NA			
<input type="checkbox"/> Benzo(k)fluoranthene				NA			
<input type="checkbox"/> Chrysene				NA			
<input type="checkbox"/> Dibenzo-(a,h)anthracene				NA			
<input type="checkbox"/> Fluoranthene				NA			
<input type="checkbox"/> Fluorene				NA			
<input type="checkbox"/> Indeno(1,2,3-cd)pyrene				NA			
<input type="checkbox"/> Naphthalene				NA			
<input type="checkbox"/> Phenanthrene				NA			
<input type="checkbox"/> Pyrene				NA			

BGS=Below Ground Surface

D.L. = Detection Limit

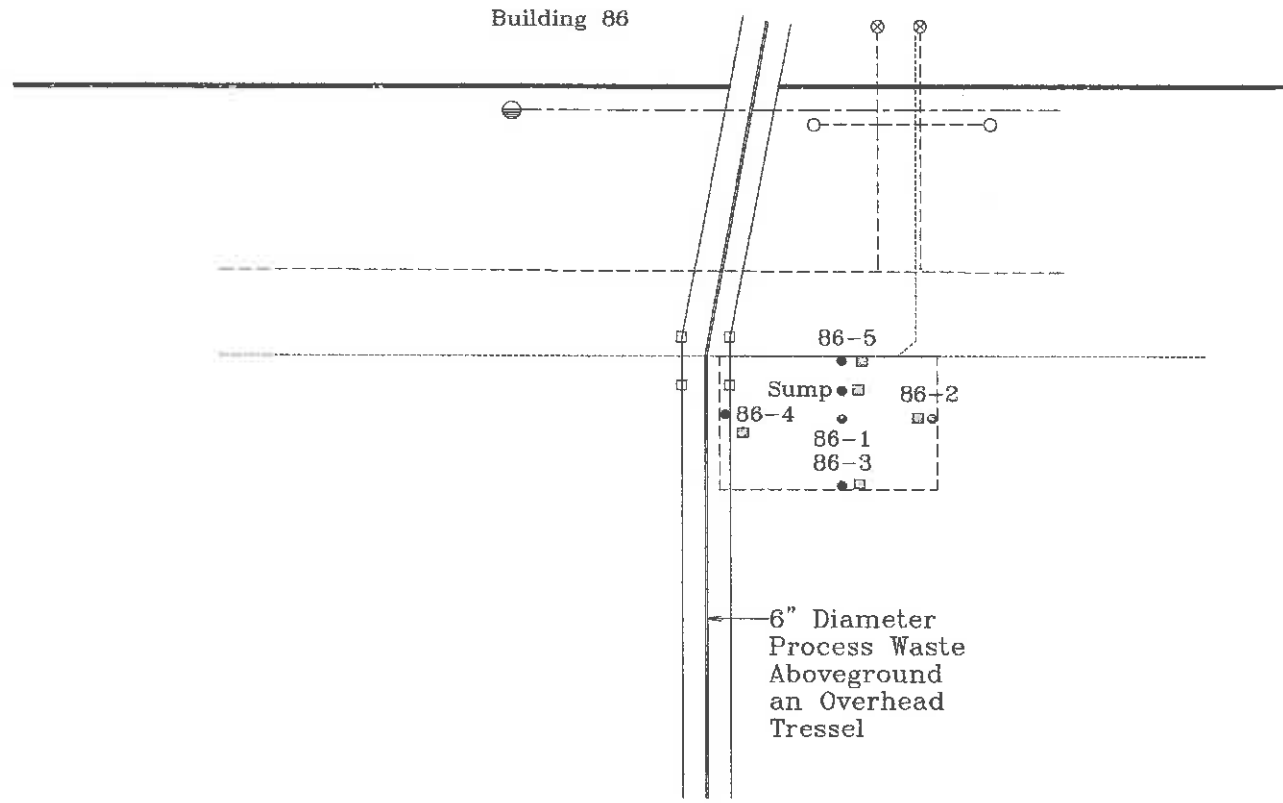
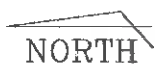
* Collection Method Codes (Select all that apply): Bailer (BL), Geoprobe (GP), Purge Pump (PP), Cone Penetrometer (CP), Hydropunch (HP)
If Other (OT), specify here: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY-UNDERGROUND TANK DIVISION
INITIAL ASSESSMENT REPORT (Continued)

ATTACHMENT NO. 19 (CONTINUED PAGE 2 OF 2)
 TIER I RBSL/TIER II OR TIER III SSSL
 COMPARISON TABLE FOR GROUNDWATER
 FACILITY NAME: NAO OPERATIONS (TANK 059/86)
 FACILITY ID NO. 0-002763

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/l)	Applicable Criterion with Exposure Code (ug/l)		Criterion Exceeded? (Yes or No)
				Tier I RBSL	Tier II/III SSSL	
METALS - FILTERED						
<input type="checkbox"/> Cadmium			NA			
<input type="checkbox"/> Chromium III			NA			
<input type="checkbox"/> Chromium VI			NA			
<input type="checkbox"/> Total Lead			NA			
PCBs						
<input type="checkbox"/> Aroclor 1016			NA			
<input type="checkbox"/> Aroclor 1221			NA			
<input type="checkbox"/> Aroclor 1232			NA			
<input type="checkbox"/> Aroclor 1242			NA			
<input type="checkbox"/> Aroclor 1248			NA			
<input type="checkbox"/> Aroclor 1254			NA			
<input type="checkbox"/> Aroclor 1280			NA			
HALOGENATED HYDROCARBONS						
<input type="checkbox"/> Carbon Tetrachloride			NA			
<input type="checkbox"/> 1,1-Dichloroethane			NA			
<input type="checkbox"/> 1,2-Dichloroethane			NA			
<input type="checkbox"/> 1,1-Dichloroethylene			NA			
<input type="checkbox"/> cis-1,2-Dichloroethylene			NA			
<input type="checkbox"/> trans-1,2-Dichloroethylene			NA			
<input type="checkbox"/> Tetrachloroethylene			NA			
<input type="checkbox"/> 1,1,2-Trichloroethane			NA			
OTHER *						
<input type="checkbox"/>						


BGS=Below Ground Surface
 D.L. = Detection Limit
 * Collection Method Codes (Select all that apply): Bailer (BL), Geoprobe (GP), Purge Pump (PP), Cone Penetrometer (CP), Hydropunch (HP)
 If Other (OT), specify here: _____

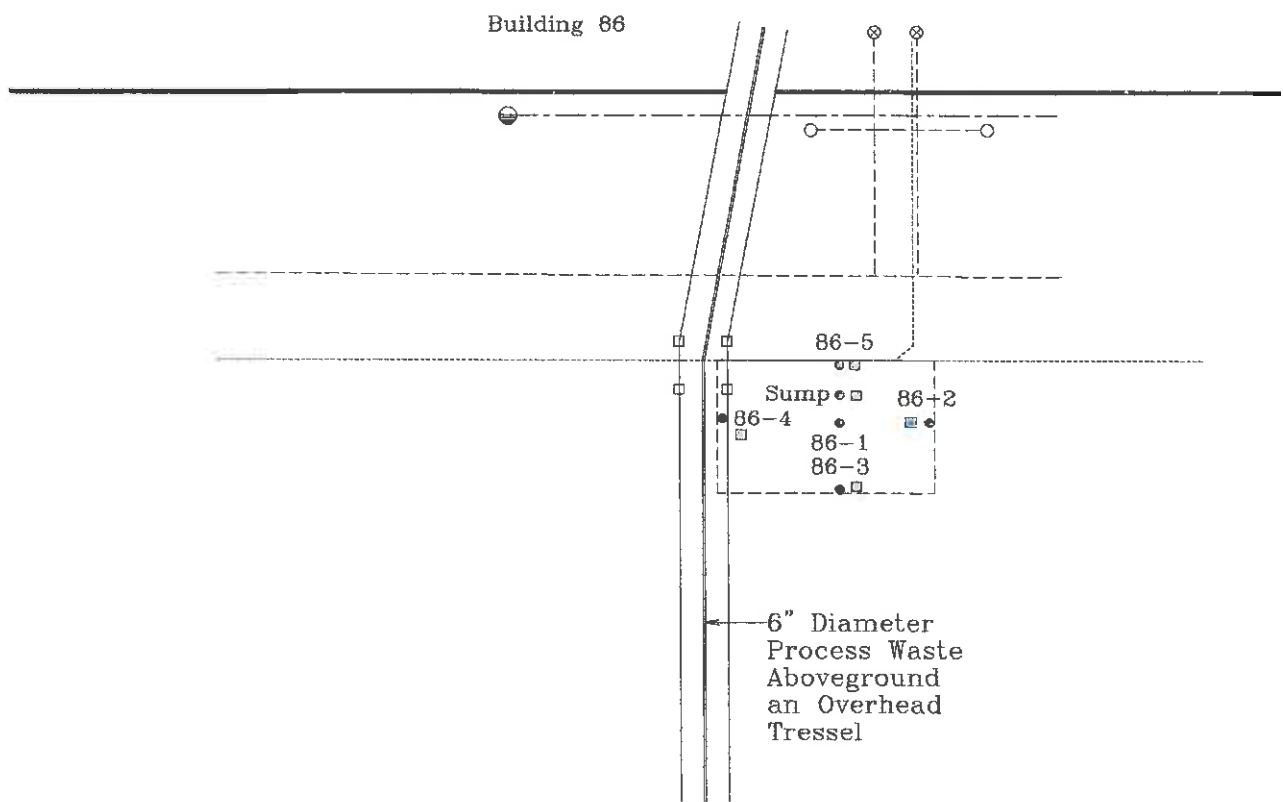


- Not Analyzed
- Not Detected
- Elevated levels below the Tier I Industrial Health-Based Drinking Water RBSLs
- Elevated levels above the Tier I Industrial Health-Based Drinking Water RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


<h2>GM-CLCD NORTH</h2>	
TITLE: GROUNDWATER CONCENTRATION MAP: BENZENE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 20a
PROJECT NUMBER: F174	

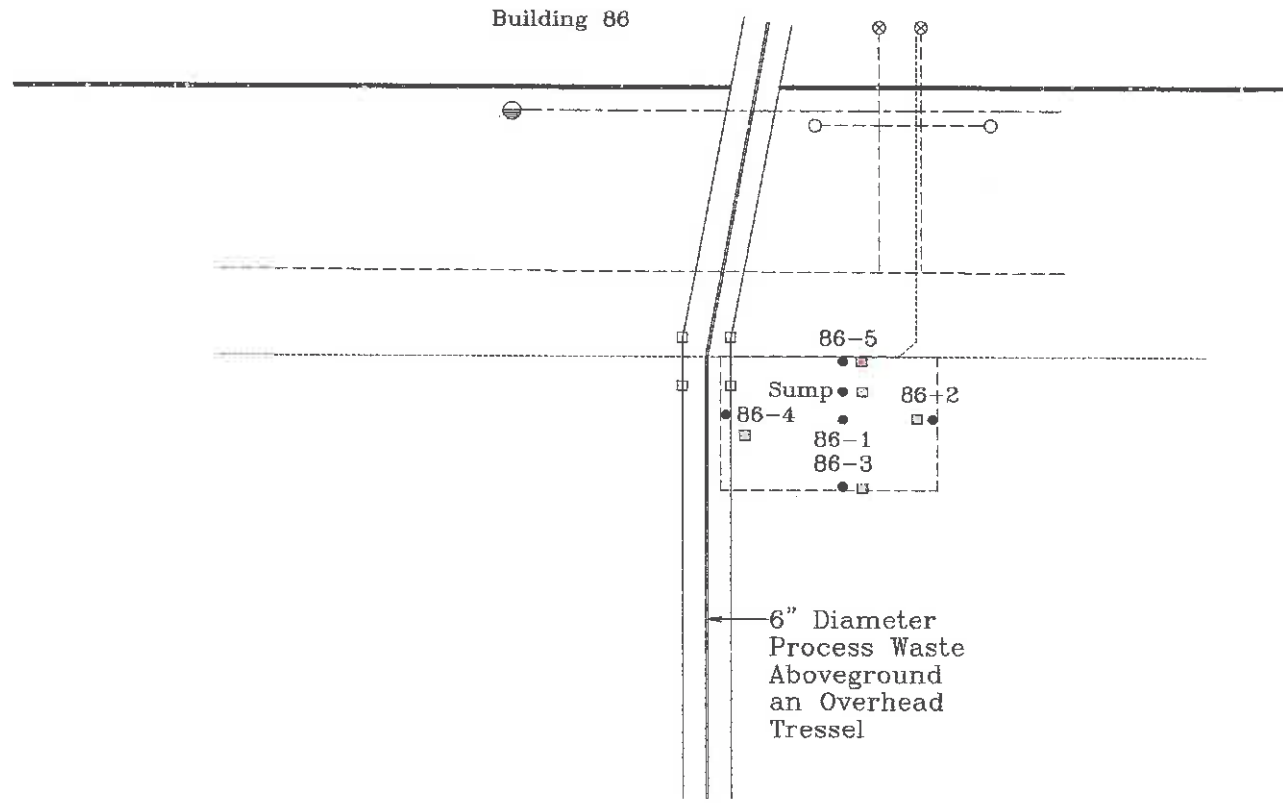


- Not Analyzed
- Not Detected
- Elevated levels below the Tier I Industrial Health-Based Drinking Water RBSLs
- Elevated levels above the Tier I Industrial Health-Based Drinking Water RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


<h2>GM-CLCD NORTH</h2>	
TITLE: GROUNDWATER CONCENTRATION MAP: TOLUENE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 20b
PROJECT NUMBER: F174	

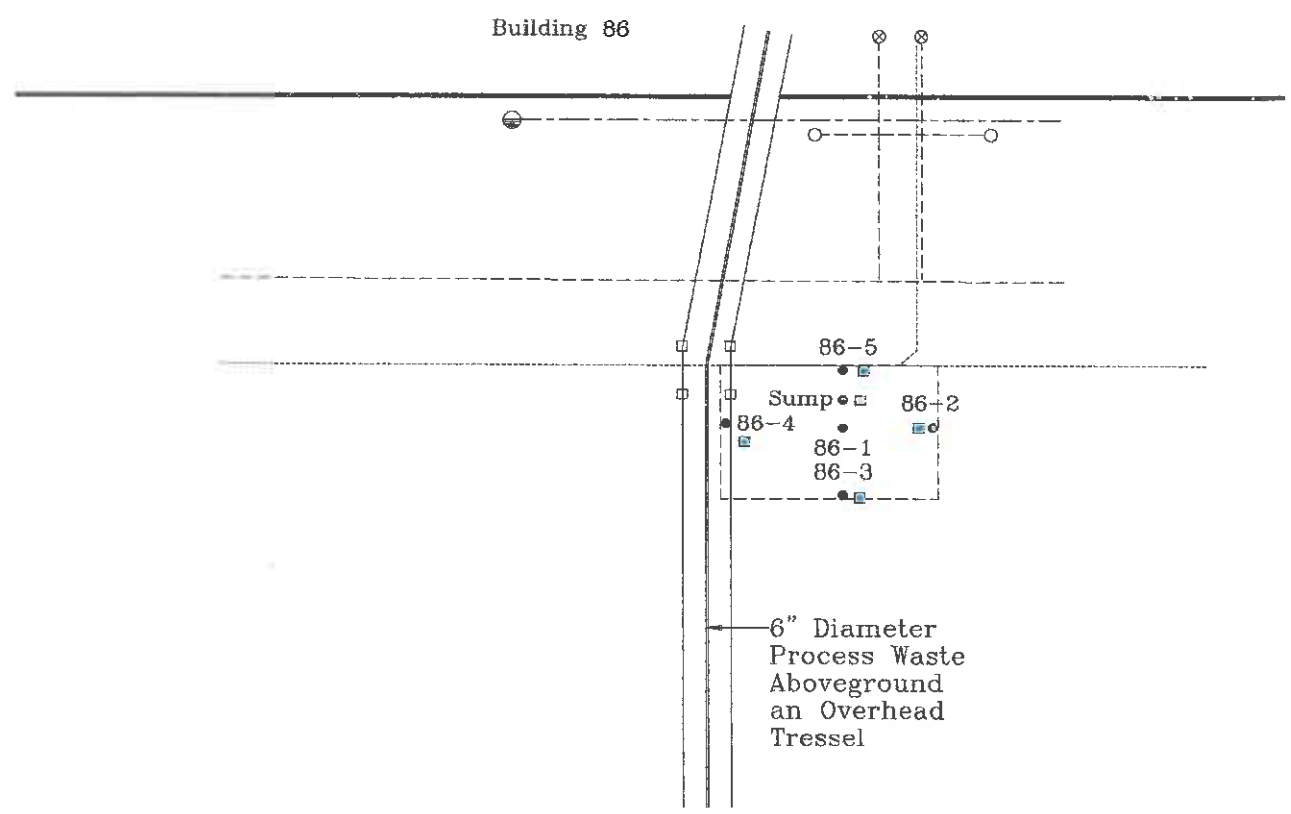


- Not Analyzed
- Not Detected
- Elevated levels below the Tier I Industrial Health-Based Drinking Water RBSLs
- Elevated levels above the Tier I Industrial Health-Based Drinking Water RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")


GM-CLCD NORTH	
TITLE: GROUNDWATER CONCENTRATION MAP: ETHYLBENZENE GM-CLCD NORTH - BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 20c
PROJECT NUMBER: F174	

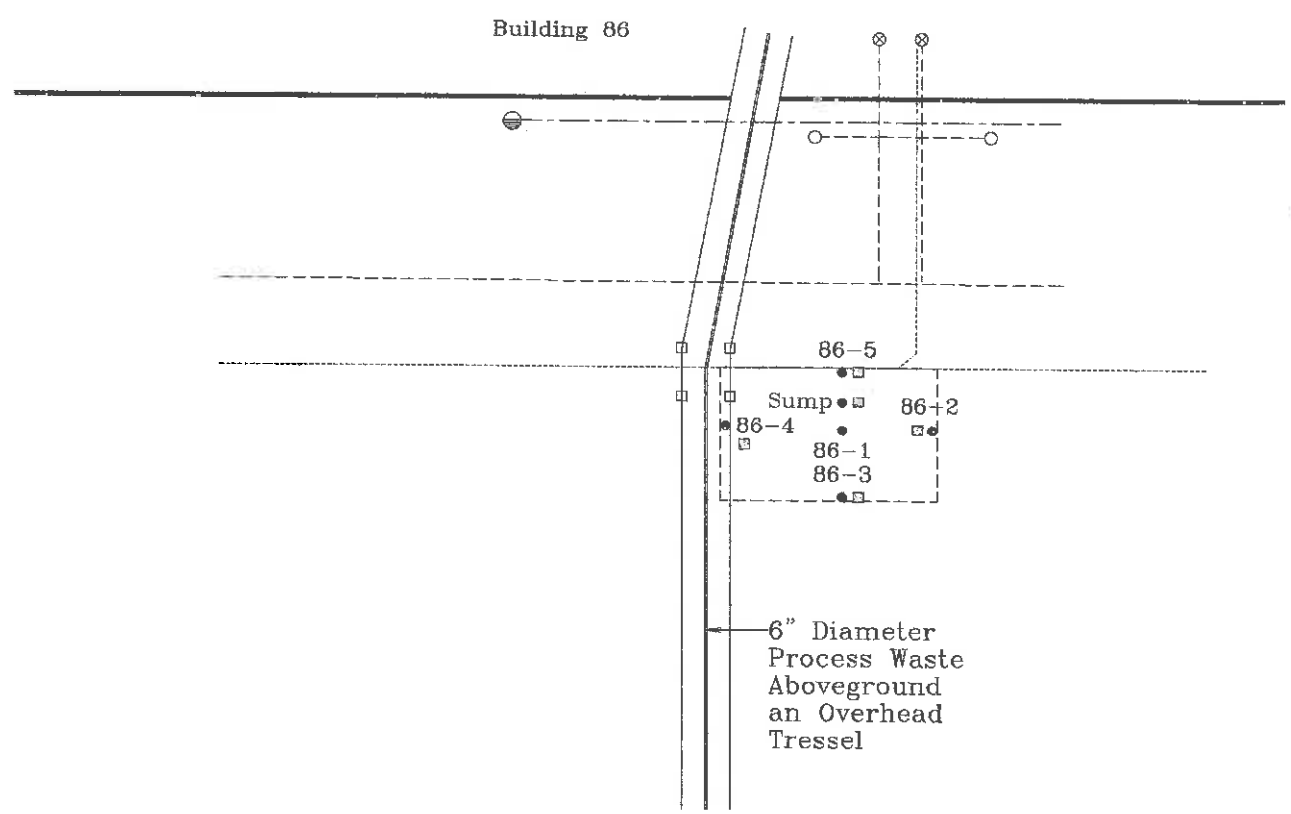


- Not Analyzed
- Not Detected
- Elevated levels below the Tier I Industrial Health-Based Drinking Water RBSLs
- Elevated levels above the Tier I Industrial Health-Based Drinking Water RBSLs

LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")

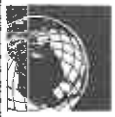
GM-CLCD NORTH	
TITLE: GROUNDWATER CONCENTRATION MAP: XYLENES GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 20d
PROJECT NUMBER: F174	

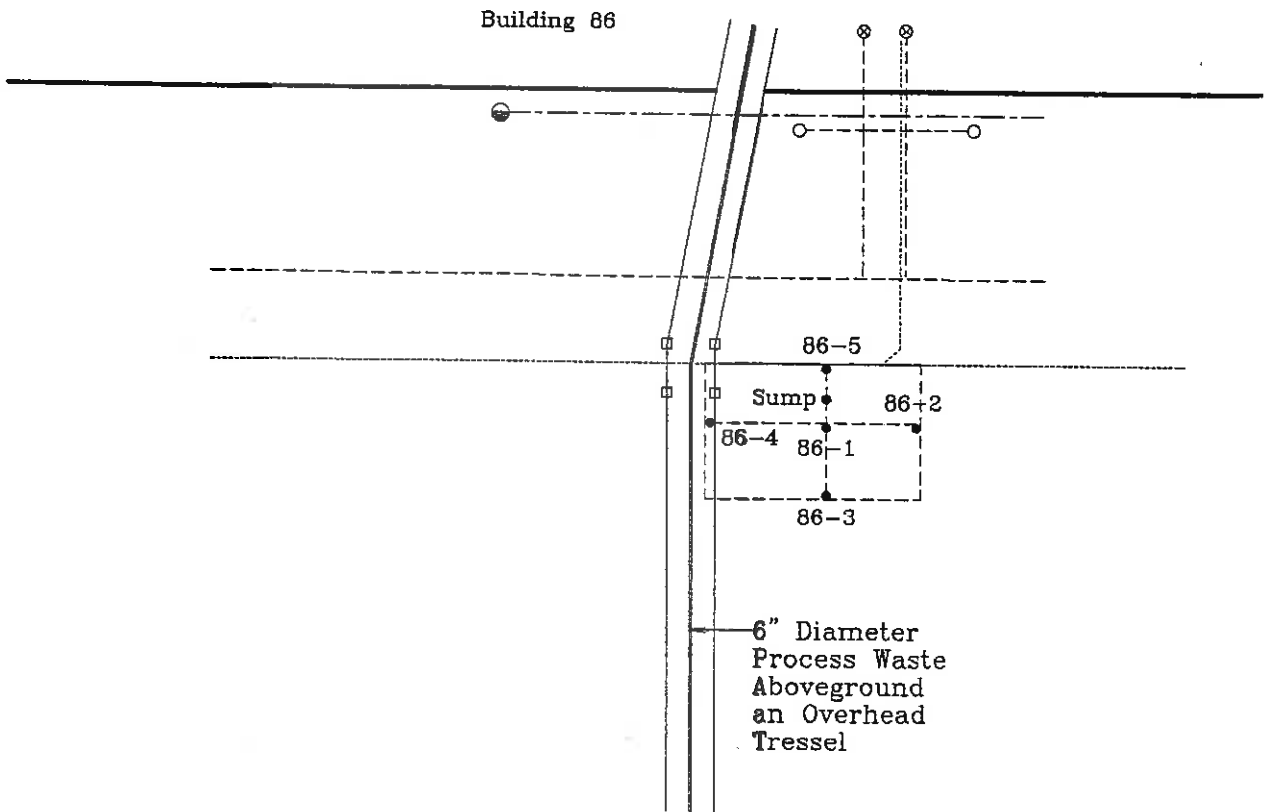


- Not Analyzed
- Not Detected
- Elevated levels below the Tier I Industrial Health-Based Drinking Water RBSLs
- Elevated levels above the Tier I Industrial Health-Based Drinking Water RBSLs

LEGEND:

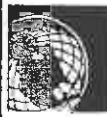
- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- ===== Storm Sewer Line (8")

<h3>GM-CLCD NORTH</h3>	
TITLE: GROUNDWATER CONCENTRATION MAP: MTBE GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 20e
PROJECT NUMBER: F174	



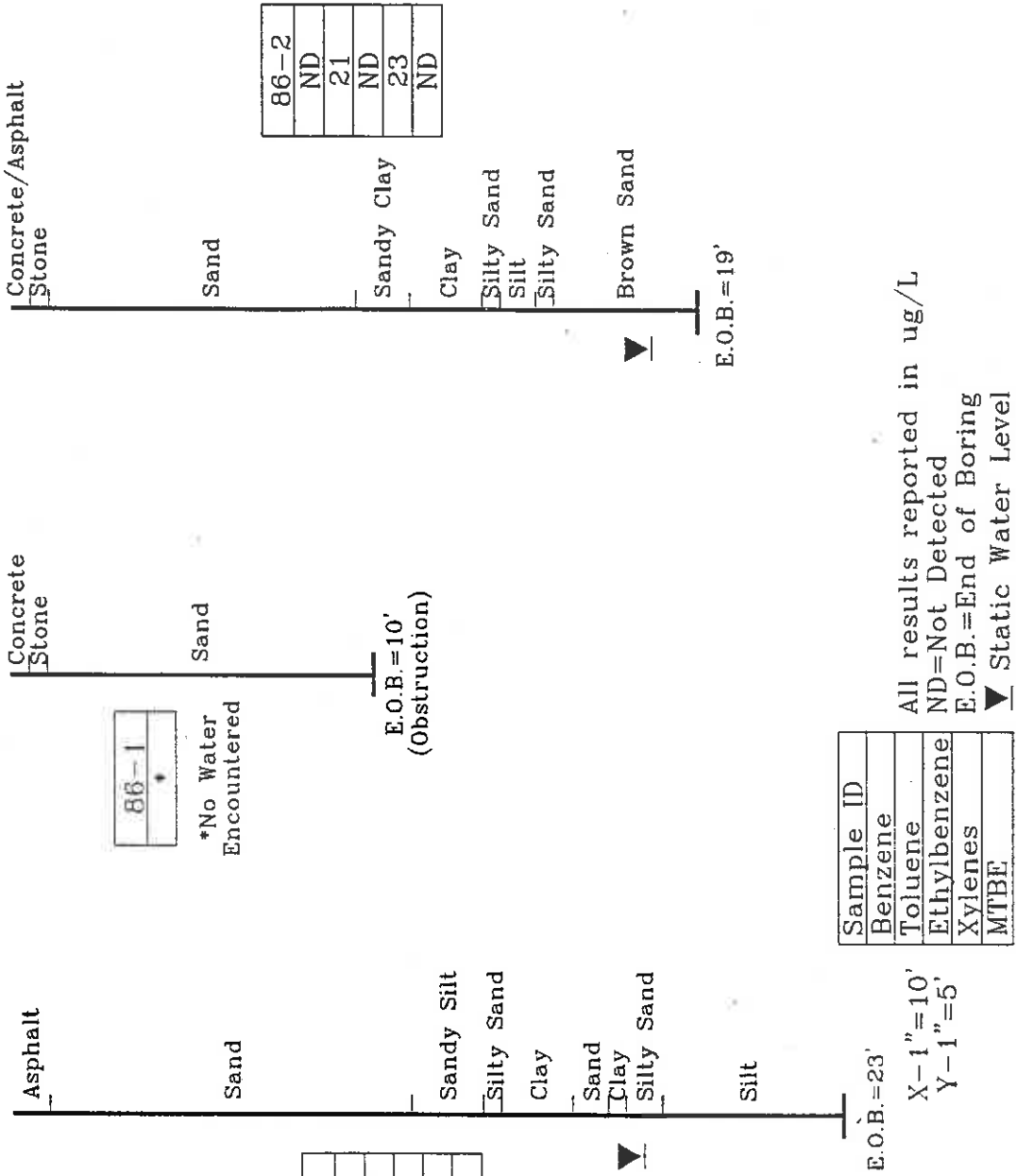
LEGEND:

- Geoprobe Sample Locations
- Fire Protection Line (8")
- Sanitary Sewer Line (12")
- Storm Sewer Line (8")

GM-CLCD NORTH	
TITLE: CROSS SECTIONAL DIAGRAM GM-CLCD NORTH BUILDING 86 - TANK 59	
SCALE: 1"=40'	DATE: 8/13/96
 Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 21a
PROJECT NUMBER: F174	

A'

A



86-4
ND
ND
ND
14
ND

86-2
ND
21
ND
23
ND

Sample ID
Benzene
Toluene
Ethylbenzene
Xylenes
MTBE

E.O.B. = 23'
 X-1" = 10'
 Y-1" = 5'

All results reported in ug/L
 ND=Not Detected
 E.O.B.=End of Boring
 ▼ Static Water Level

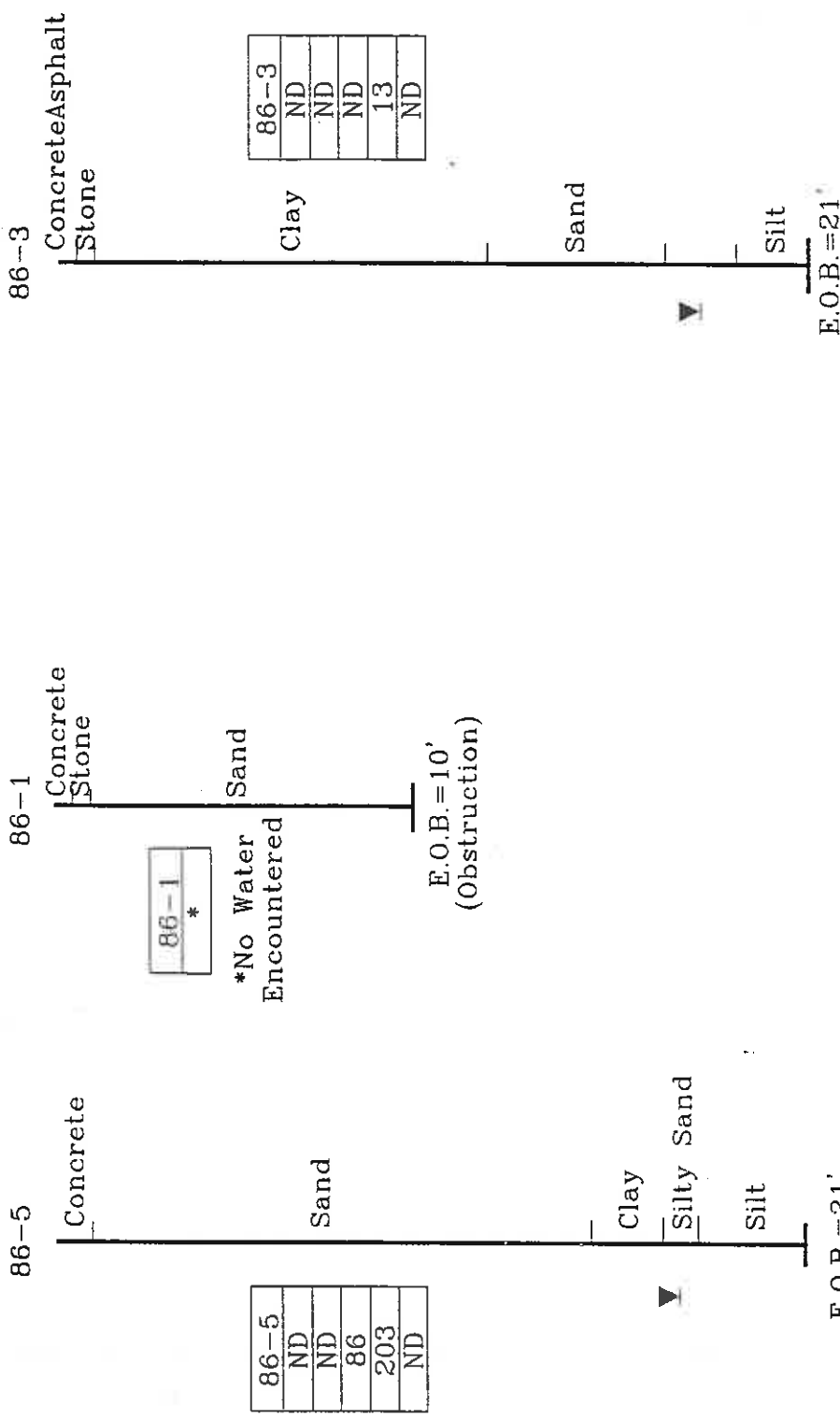
Global
 Environmental
 Engineering Inc.



North - South Cross Sectional Diagram A - A'
 NAO Flint Operations - GM-CLCD North
 Building 86

DATE: 3/7/97
 APPROVED BY: A.L.K.
 PREPARED BY: C.G.S.
 ATTACHMENT NUMBER: 21b
 PROJECT NUMBER: F174

B' B'



86-5
ND
ND
86
203
ND

86-3
ND
ND
ND
13
ND

86-1
*

*No Water Encountered

E.O.B. = 10'
(Obstruction)

E.O.B. = 21'

E.O.B. = 21'

Sample ID
Benzene
Toluene
Ethylbenzene
Xylenes
MTBE

X-1" = 5'
Y-1" = 5'

All results reported in ug/L
ND - Not Detected
E.O.B. - End of Boring
▼ Static Water Level



Global Environmental Engineering Inc.

East - West Cross Sectional Diagram B - B'
GM-CLCD North - NAO Flint Operations Building 86

DATE: 3/7/97

APPROVED BY: A.L.K.

PREPARED BY: C.G.S.

ATTACHMENT NUMBER: 21c

PROJECT NUMBER: F174

**ATTACHMENT 29
NAO FLINT OPERATIONS
TANK 059/86**

WORK PLAN AND IMPLEMENTATION SCHEDULE

Hydrogeologic Study

Three groundwater monitoring wells will be installed, one upgradient and two downgradient (based on topography). Soil samples from split-spoons will be field-screened and two soil samples from each boring will be submitted for laboratory analysis. The wells will be developed, sampled, surveyed, and slug tested in accordance with applicable Michigan Department of Environmental Quality (MDEQ) standards to obtain information regarding the extent of impact, hydraulic gradient, hydraulic conductivity, and natural groundwater velocity. Based on the former UST contents, samples collected for laboratory analysis will be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), and lead.

The results of the hydrogeologic study will be included in a site-wide Remedial Action Plan (RAP). The site-wide RAP is currently being coordinated by Mr. Bob Metcalf of General Motors Corporation (GM), and questions regarding the RAP and implementation schedule should be directed to GM.