SUMMARY REPORT

BUILDING 31/HAMILTON AVENUE TANK FARM

GM-CLCD NORTH
NAO FLINT OPERATIONS
FLINT, MICHIGAN

FACILITY ID: 0-002763

CONFIRMED RELEASE NO.: C-028-90

August 22, 1997

Prepared by:

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TABLE OF CONTENTS

ATTACHMENTS

1.0 UNDERGROUND STORAGE TANKS

Thirteen underground storage tanks (USTs) were associated with the Hamilton Avenue Tank Farm.

1.1 Location

The Hamilton Avenue Tank Farm is located on the southeast corner of Hamilton Avenue and Industrial Avenue at the complex known as GM-CLCD North, NAO Flint Operations, Flint, Michigan. The Flint River is located approximately 1000 feet to the east. See Attachment 1.

1.2 UST Contents

The identification number, size, and contents of the USTs, detailed on the Buick Motor Division Storage Tank layout drawing number 42361-M dated 1973, are summarized as follows:

081/31T	12,000-gallon	Unleaded Gasoline
082/31T	12,000-gallon	Unleaded Gasoline
083/31T	12,000-gallon	Anti-freeze
084/31T	12,000-gallon	Anti-freeze
085/31T	12,000-gallon	BOPS (Solvent)
086/31T	12,000-gallon	Unleaded Gasoline
087/31T	12,000-gallon	Power Steering Fluid
088/31T	12,000-gallon	93 PS Thinner
089/31T	12,000-gallon	55 PS Thinner
090/31T	12,000-gallon	105 PS Thinner
091/31T	12,000-gallon	93 PS Thinner
132/31	12,000-gallon	#1 Diesel Oil
133/31	12,000-gallon	#1 Diesel Oil

1.3 Installation and Removal Dates

The USTs were installed in 1960 with the exception of UST 132 and 133 which were installed in 1979. Each UST was removed in December of 1986. The confirmed release number assigned to this tank farm is C-028-90.

2.0 INVESTIGATION ACTIVITIES

The USTs were removed in December, 1986. Information contained in internal General Motors files indicates that Mr. Ben Hall from the Michigan Department of Natural Resources (now Michigan Department of Environmental Quality) was on-

site during UST removal and soil excavation activities. These records also indicate that soil was excavated to clay boundaries that contained the tank farm. An unknown quantity of soil was taken to the Grand Blanc Landfill for final disposal.

2.1 Summary of Investigation Activities

Global Environmental Engineering, Inc. (Global) conducted a record review of internal General Motors files. The records indicated that further investigation was required to establish the condition of impacted soils and groundwater. Sample locations are summarized on Attachment 2.

On July 30, 1996 and July 31, 1996 Global supervised the advancement of eight Geoprobe borings (31-1 through 31-8). Two soil samples were collected from each boring, and groundwater samples were collected from six of the eight soil borings. See Attachment 6: Soil Boring Logs.

Global returned to the site on November 12, 1996 and supervised the advancement of three additional Geoprobe soil borings (31-9 through 31-11). Two soil samples were collected from each boring; however, it was not possible to collect groundwater samples from these locations using the Geoprobe.

On June 4, 1997, Global supervised the installation of five groundwater monitoring wells (MW-1 through MW-4D). Two soil samples were collected from each monitoring well location. The location of each monitoring well was chosen based on the groundwater and soil analytical sample results obtained during previous investigation activities. The screened intervals and soil types for the monitoring wells are listed below. See also Attachment 10: Monitoring Well Logs.

Well ID	Screened Interval (feet bgs)	Soil Type
MW-1	15.5 - 20.5	Silty Clay
MW-2	7 - 12	Sand/Silty Clay
MW-3	13 - 18	Sand/Silty Clay
MW-4S	7 - 12	Silty Clay
MW-4D	11- 16	Silty Clay

Groundwater samples from the monitoring wells were collected for laboratory analysis on June 10, 1997.

2.1.1 *Sample Collection and Analysis*

A minimum of two soil samples were collected for laboratory analysis from each soil boring based on the highest organic vapor analyzer reading (OVA) and/or the groundwater water interface, and the bottom-of-bore. Soil samples were collected from depths ranging from 7 to 27 feet below ground surface. Actual sample depths are given in Attachment 3. OVA results can be found on the soil boring logs, Attachment 6.

Each of the soil samples collected was placed into an unpreserved four-ounce container and transported at four degrees Celsius (4°C) using chain-of-custody procedures to Fire & Environmental Consulting Laboratories, Inc., in East Lansing, Michigan. Samples were analyzed in accordance with recommendations contained in *Environmental Response Division Operation Memorandum #6, Revision #4*, dated September 13, 1995.

Groundwater samples were collected from Geoprobe borings whenever possible using a screen point sampler attachment. The screen point sampler was driven to the desired sampling depth and an inner core, consisting of stainless steel wire screen, was pushed into the borehole allowing water to collect in the sampler. Monitoring wells were developed prior to sampling using a stainless steel bailer until water clarity stabilized. Approximately 48 hours following development, the monitoring wells were sampled. At the time of sampling, the monitoring wells were purged a minimum of three well volumes to ensure sample clarity.

Each of the groundwater samples collected for laboratory analysis was placed in laboratory-prepared glass bottles. Samples to be analyzed for dissolved lead were filtered in the field and preserved with nitric acid. Samples to be analyzed for volatile organics were preserved with hydrochloric acid. Each sample was transported at 4°C using chain-of-custody procedures to Fire & Environmental Consulting Laboratories, Inc., in East Lansing, Michigan. Samples were analyzed in accordance with recommendations contained in *Environmental Response Division Operational Memorandum #6, Revision #4*, dated September 13, 1995.

2.2 Summary of Geological Information

There are four basic rock formations comprising the bedrock of Genesee County: the Coldwater, Marshall, Michigan, and Saginaw formations. The Coldwater formation consists of sandy shale, and is a poor water producer. The Marshall formation consists of white to gray sandstone of varying grain size in the lower portion, and Napoleon Sandstone and Marshall Sandstone in the upper portion. The Marshall formation yields high quality groundwater. The Michigan formation consists of a gray shale and some thick dolostone layers, and is not a principal water bearing formation. The Saginaw formation is the youngest formation, and consists of sandstone, shale, sandy shale, limestone, and coal layers. Groundwater may be obtained from the sandstone layers within the Saginaw formation. Glacial drift material overlies the bedrock.

2.3 Summary of Hydrogeological Information

2.3.1 Depth to usable aquifer

The City of Flint is on a municipal water system. 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.

2.3.2 Local Groundwater Flow Direction

Based on static water level measurements obtained from the groundwater monitoring wells, groundwater flow is east toward the Flint River. See Attachment 11.

2.3.3 Hydraulic Gradient

The hydraulic gradient, also based on static water level measurements of on-site wells, was estimated to be 0.022 ft/ft.

2.3.4 Hydraulic Conductivity

Slug test data obtained using a Hermit 2000© and analyzed using Aqtesolv© software indicated an average hydraulic conductivity of 0.004 ft/min. See Attachment 12.

0.002 cm/sec

2.3.5 *Natural Groundwater Velocity (Seepage Velocity)*

The monitoring wells were screened in silty clay. The effective porosity of this water bearing unit is assumed to be 20% as recommended in MDEQ *Operational Memorandum No. 10, Attachment 2*, dated November 6, 1996. The natural groundwater velocity was estimated to be approximately 0.00044 ft/min or 230 ft/yr.

3.0 SOIL SAMPLE ANALYTICAL RESULTS

Soil samples were submitted to Fire & Environmental Consulting Laboratories, Inc., located in East Lansing, Michigan for analysis. Based on the former UST contents, the samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), polynuclear aromatic hydrocarbons (PNAs), chlorinated solvents, total lead, ethylene glycol, and propylene glycol. Analysis indicated the presence of the following constituents in concentrations exceeding the Tier I Soil Leaching to Groundwater Risk-Based Screening Levels (RBSLs): benzene, toluene, ethylbenzene, xylenes, and benzyl chloride. Additional constituents were detected in concentrations that did not exceed the RBSLs. No exceedances of the Tier I Direct Contact RBSLs were noted. See Attachment 3 for a summary of soil analytical results, Attachment 4 for a Tier I comparison table, and Attachment 5 for soil concentration maps.

4.0 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Groundwater samples were submitted to Fire & Environmental Consulting Laboratories, Inc., located in East Lansing, Michigan for analysis. Based on the former UST contents, the samples were analyzed for BTEX, PNAs, chlorinated solvents, dissolved lead, ethylene glycol, and propylene glycol. Analysis indicated the presence of the following constituents in concentrations exceeding the Tier I Residential Health-Based Drinking Water and/or the Groundwater-Surface Water Interface RBSLs: benzene, toluene, ethylbenzene, xylenes, and 4,6-Dinitro-2-methylphenol. Additional constituents were detected in concentrations that did not exceed RBSLs. No exceedances of the Tier I Direct Contact RBSLs were noted. See Attachment 7 for a summary of soil analytical results, Attachment 8 for a Tier I comparison table, and Attachment 9 for groundwater concentration maps.

5.0 CONCLUSION

Soil concentrations exceeding the Tier I Soil Leaching to Groundwater RBSLs are present; however, the concentrations do not exceed the Tier I Direct Contact RBSLs. As the site is under pavement, exposure to impacted soil is not expected.

Groundwater concentrations exceeding the Tier I Residential Health-Based Drinking Water and Groundwater Surface Water Interface RBSLs are noted.

5.1 Sensitive Receptors

The Flint River is located approximately 1000 feet east of the former tank farm. See Attachment 1. Groundwater flow is east toward the east; however, current data indicates it is unlikely that impacted groundwater emanating from the former tank farm has or will reach the river.

The City of Flint is on a municipal water system. 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. It is unlikely that impacted groundwater will reach this aquifer.

5.2 Delineation

According to MDEQ Guidelines as established in the Memorandum dated January 19, 1996, the extent of contamination both horizontally and vertically must be delineated to below the Tier I residential unrestricted values.

Soil impacted with BTEX constituents is not delineated horizontally at boring 31-3 located on the west side of the former tank farm, and is not delineated vertically at boring SB-2/MW-2 located on the east side of the tank farm. See Attachment 5a.

Groundwater impacted with BTEX constituents is not delineated to the south, east or west. See Attachment 9a. Monitoring wells associated with Building 04 located to the north across Hamilton Avenue indicate non-detectable levels of BTEX.

5.3 Closure Potential

The site cannot be closed at this time. The site has not yet been fully delineated with respect to soil or groundwater, and closure potential cannot yet be thoroughly evaluated.

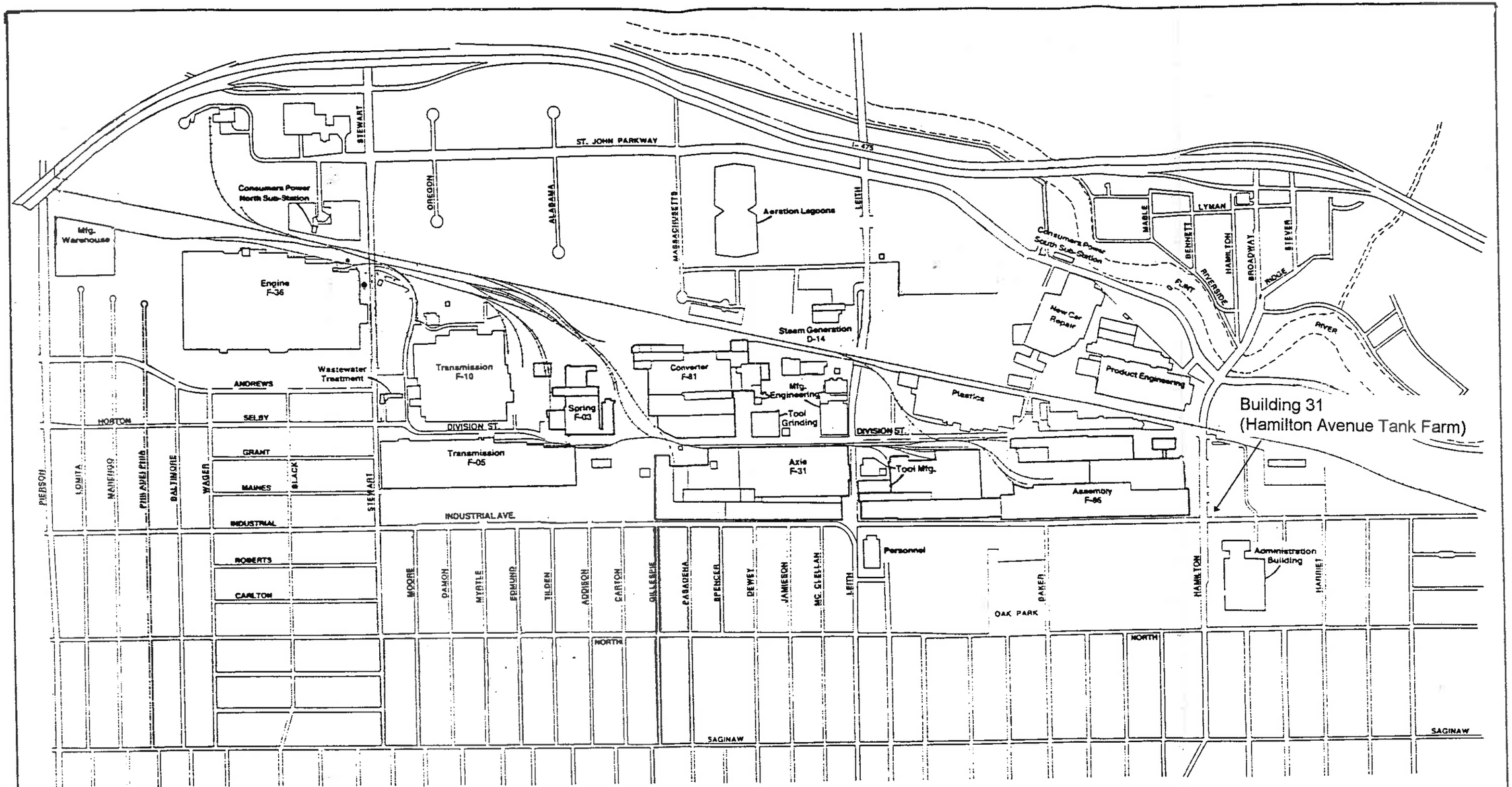
5.4 Future Work

Global recommends the following activities:

1. Complete the horizontal delineation of impacted soil at boring 31-3.
2. Complete the vertical delineation of impacted soil at boring SB-2/MW-2.
3. Complete the horizontal delineation of impacted groundwater to the south, east, and west of the former tank farm.

These recommendations may change based on negotiations with the MDEQ and the development of a site-wide remedial action plan.

ATTACHMENT 1



LEGEND

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

0 400 800 1200
Scale in Feet

Adapted from
EDI Engineering & Science

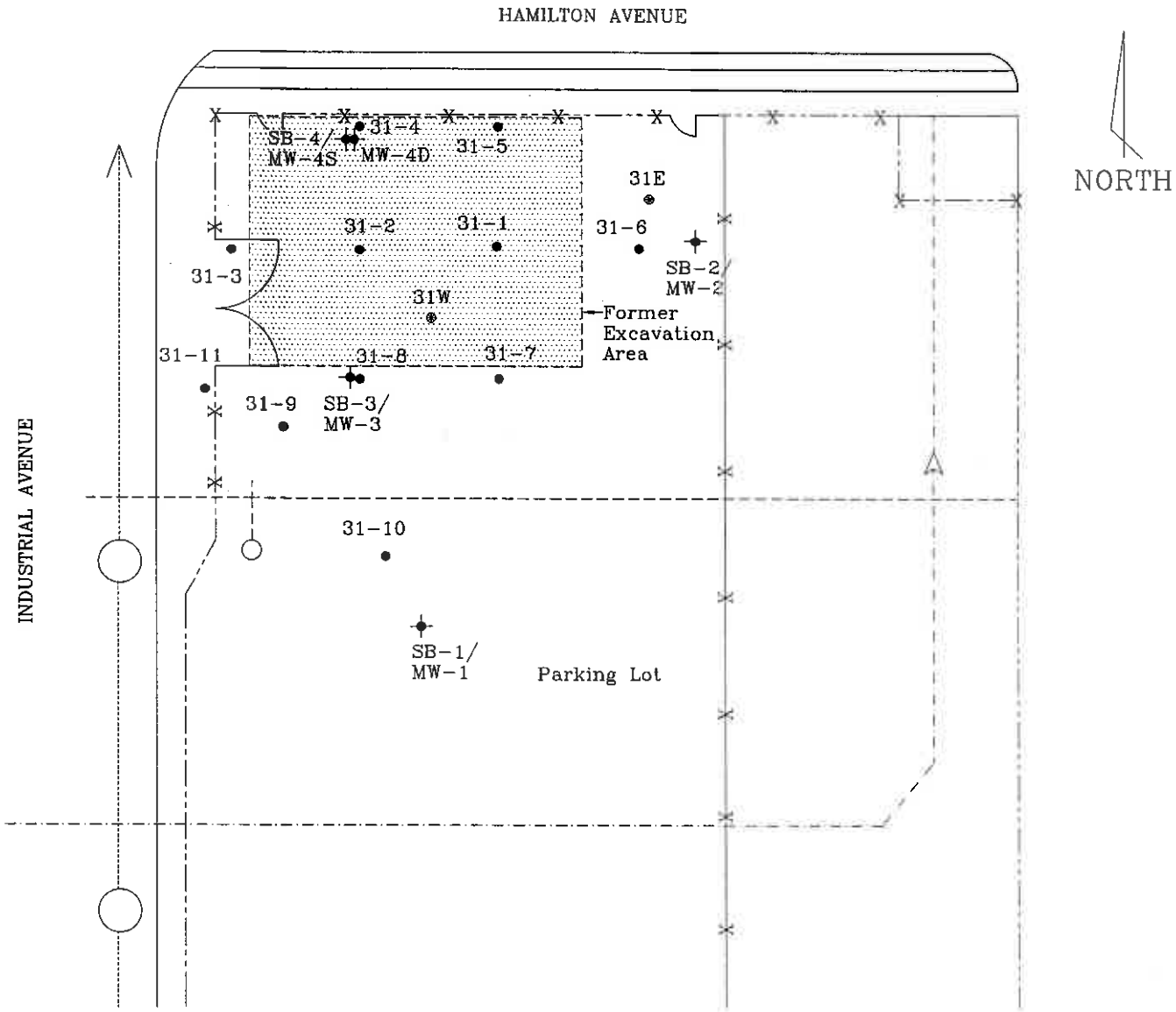
BOC FLINT OPERATIONS (BUICK SITE)

TANK FARM LOCATION/SITE DIAGRAM
ATTACHMENT 1

June, 1989

21080

ATTACHMENT 2



LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: SITE DIAGRAM/SOIL SAMPLE/ MONITORING WELL LOCATIONS BUILDING 31- FLINT, MICHIGAN

DATE: 8/13/96

SCALE: 1"=40'

APPROVED BY: A.L.K.

PREPARED BY: C.G.S.

ATTACHMENT NUMBER: 2

PROJECT NUMBER: F174

Global Environmental Engineering Inc.

ATTACHMENT 3

BUILDING 31/HAMILTON AVENUE TANK FARM
SUMMARY REPORT (Continued)

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Date Analyzed	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Analytical Method No.	8020		8020		8020		8020		8020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	10	ND	10	ND	10	ND	10	20	10
☐ Toluene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ Ethylbenzene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ Total Xylenes	ND	10	ND	10	ND	10	ND	10	ND	10
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/02/96		08/02/96		08/02/96		08/02/96		08/02/96	
Date Analyzed	08/07/96		08/07/96		08/07/96		08/07/96		08/07/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Acenaphthylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(b)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(g,h,i)perylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(k)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300

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), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= **Method Detection Limit**

(Continued page 2 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/02/96		08/02/96		08/02/96		08/02/96		08/02/96	
Date Analyzed	08/07/96		08/07/96		08/07/96		08/07/96		08/07/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Dibenzo(a,h)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluorene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Indeno(1,2,3- cd)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Naphthalene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Phenanthrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ 2-Methylnaphthalene	ND	300	ND	300	ND	300	ND	300	ND	300
METALS										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Date Analyzed	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	2600	1000	3900	1000	4800	1000	3200	1000	4900	1000

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 3 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Date Analyzed	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

BUILDING 31/HAMILTON AVENUE TANK FARM
SUMMARY REPORT (Continued)

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS (Cont.)										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Date Analyzed	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ trans-1,2- Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ Tetrachloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID	Bldg 31-1 (11-13')		Bldg 31-1 (15-17')		Bldg 31-1 (17-19')		Bldg 31-2 (13-15')		Bldg 31-2 (17-19')	
Sample Depth (feet BGS)	11-13		15-17		17-19		13-15		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/12/96		08/12/96		08/12/96		08/12/96		08/12/96	
Date Analyzed	08/12/96		08/12/96		08/12/96		08/12/96		08/12/96	
Analytical Method No.	GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐ Propylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Date Analyzed	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Analytical Method No.	8020		8020		8020		8020		8020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	500	ND	10	ND	100	60	10	ND	100
☐ Toluene	9800	500	ND	10	ND	100	ND	10	ND	100
☐ Ethylbenzene	4600	500	ND	10	ND	100	ND	10	ND	100
☐ Total Xylenes	27,700	500	ND	10	100	100	ND	10	100	100
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/02/96		08/02/96		08/02/96		08/02/96		08/02/96	
Date Analyzed	08/07/96		08/07/96		08/07/96		08/07/96		08/07/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Acenaphthylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(b)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(g,h,i)perylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(k)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/02/96		08/02/96		08/02/96		08/02/96		08/02/96	
Date Analyzed	08/07/96		08/07/96		08/07/96		08/07/96		08/07/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Dibenzo(a,h)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluorene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Indeno(1,2,3- cd)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Naphthalene	400	300	ND	300	ND	300	ND	300	ND	300
☐ 2-Methylnaphthalene	700	300	ND	300	ND	300	ND	300	ND	300
☐ Phenanthrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
METALS										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Date Analyzed	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	4600	1000	8400	1000	5800	1000	5900	1000	3700	1000

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

SUMMARY REPORT (Continued)

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Date Analyzed	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Date Analyzed	08/03/96		08/03/96		08/03/96		08/03/96		08/03/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10
☐ trans-1,2- Dichloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10
☐ Tetrachloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	500	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID	Bldg 31-3 (7-9')		Bldg 31-3 (13-15')		Bldg 31-4 (11-15')		Bldg 31-4 (15-19')		Bldg 31-5 (11-13')	
Sample Depth (feet BGS)	7-9		13-15		11-15		15-19		17-19	
Date Collected	07/30/96		07/30/96		07/30/96		07/30/96		07/30/96	
Date Extracted	08/12/96		08/12/96		08/12/96		08/12/96		08/12/96	
Date Analyzed	08/12/96		08/12/96		08/12/96		08/12/96		08/12/96	
Analytical Method No.	GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐ Propylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐										
☐										
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31-5 (15-17')		Bldg 31-6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/03/96		08/06/96		08/06/96		08/06/96		08/06/96	
Date Analyzed	08/03/96		08/06/96		08/06/96		08/06/96		08/06/96	
Analytical Method No.	8020		8020		8020		8020		8020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	10	ND	10	60	10	ND	10	ND	100
☐ Toluene	ND	10	ND	10	ND	10	ND	10	ND	100
☐ Ethylbenzene	ND	10	ND	10	ND	10	ND	10	ND	100
☐ Total Xylenes	ND	10	ND	10	ND	10	ND	10	ND	100
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-5 (15-17')		Bldg 31- 6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/02/96		08/06/96		08/06/96		08/06/96		08/06/96	
Date Analyzed	08/06/96		08/08/96		08/08/96		08/08/96		08/08/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Acenaphthylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(b)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(g,h,i)perylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(k)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-5 (15-17')		Bldg 31-6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/02/96		08/06/96		08/06/96		08/06/96		08/06/96	
Date Analyzed	08/06/96		08/08/96		08/08/96		08/08/96		08/08/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Dibenzo(a,h)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluorene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Indeno(1,2,3- cd)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Naphthalene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ 2-Methylnaphthalene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Phenanthrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Pyrene	ND	300	ND	300	ND	300	ND	330	ND	300
METALS										
Sample ID	Bldg 31-5 (15-17')		Bldg 31-6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Date Analyzed	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	7100	1000	1800	1000	5500	1000	5200	1000	3500	1000

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

SUMMARY REPORT (Continued)

(Continued page 3 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-5 (15-17')		Bldg 31-6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/03/96		08/06/96		08/06/96		08/06/96		08/06/96	
Date Analyzed	08/03/96		08/06/96		08/06/96		08/06/96		08/06/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10

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), Hydropunch(HP)

If Other (OT), Specify here: _____

MDL= Method Detection Limit

SUMMARY REPORT (Continued)

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-5 (15-17')		Bldg 31-6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/03/96		08/06/96		08/06/96		08/06/96		08/06/96	
Date Analyzed	08/03/96		08/06/96		08/06/96		08/06/96		08/06/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ trans-1,2- Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ Tetrachloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID	Bldg 31-5 (15-17')		Bldg 31-6 (13-14')		Bldg 31-6 (15-17')		Bldg 31-7 (15-17')		Bldg 31-7 (19-21')	
Sample Depth (feet BGS)	7-9		13-14		15-17		15-17		19-21	
Date Collected	07/30/96		07/31/96		07/31/96		07/31/96		07/31/96	
Date Extracted	08/12/96		08/12/96		08/12/96		08/12/96		08/12/96	
Date Analyzed	08/12/96		08/12/96		08/12/96		08/12/96		08/12/96	
Analytical Method No.	GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐ Propylene Glycol	ND	5000	ND	5000	ND	5000	5000	5000	ND	5000
☐										
☐										
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Date Analyzed	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Analytical Method No.	8020		8020		8020		8020		8020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ Toluene	34,000	100	20	10	ND	10	ND	10	ND	10
☐ Ethylbenzene	31,700	100	ND	10	ND	10	120	10	ND	10
☐ Total Xylenes	81,000	100	20	10	ND	10	ND	10	ND	10
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Date Analyzed	08/08/96		08/08/96		11/27/96		11/27/96		11/27/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Acenaphthylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(a)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(b)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(g,h,i)perylene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Benzo(k)fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300

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), Hydropunch(HP)

*If Other (OT), Specify here:*_____

MDL= Method Detection Limit

SUMMARY REPORT (Continued)

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Date Analyzed	08/08/96		08/08/96		11/27/96		11/27/96		11/27/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Dibenzo(a,h)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluoranthene	400	300	ND	300	ND	300	ND	300	ND	300
☐ Fluorene	300	300	ND	300	ND	300	ND	300	ND	300
☐ Indeno(1,2,3- cd)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Naphthalene	3200	300	ND	300	ND	300	ND	300	ND	300
☐ 2-Methylnaphthalene	1500	300	ND	300	ND	300	ND	300	ND	300
☐ Phenanthrene	500	300	ND	300	ND	300	ND	300	ND	300
☐ Pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
METALS										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/08/96		08/08/96		11/20/96		11/20/96		11/20/96	
Date Analyzed	08/08/96		08/08/96		11/20/96		11/20/96		11/20/96	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	1600	1000	4100	1000	1800	1000	3800	1000	4800	1000

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), Hydropunch(HP)

If Other (OT), Specify here: _____

MDL= Method Detection Limit

SUMMARY REPORT (Continued)

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Date Analyzed	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzyl Chloride	2300	100	ND	10	ND	10	ND	10	ND	10
☐ Carbon Tetrachloride	ND	100	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	100	ND	10	ND	10	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	100	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Date Analyzed	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ trans-1,2- Dichloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ Tetrachloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	100	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/12/96		08/12/96		12/09/96		12/09/96		12/09/96	
Date Analyzed	08/12/96		08/12/96		12/09/96		12/09/96		12/09/96	
Analytical Method No.	GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐ Propylene Glycol	ND	5000	ND	5000	ND	5000	ND	5000	ND	5000
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

Other: SEMI-VOLATILE ORGANICS										
Sample ID	Bldg 31-8 (13-15)		Bldg 31-8 (17-19)		Bldg 31-9 (17-19')		Bldg 31-9 (19-21')		Bldg 31-10 (7-9')	
Sample Depth (feet BGS)	13-15		17-19		17-19		19-21		7-9	
Date Collected	07/31/96		07/31/96		11/12/96		11/12/96		11/12/96	
Date Extracted	08/06/96		08/06/96		11/19/96		11/19/96		11/19/96	
Date Analyzed	08/08/96		08/08/96		11/27/96		11/27/96		11/27/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ p,m-Cresol	1600	300	ND	10	ND	10	ND	10	ND	10
☐ o-Cresol	1000	300	ND	10	ND	10	ND	10	ND	10
☐ Di-n-butyl phthalate	900	300	ND	10	ND	10	ND	10	ND	10
☐ Di-n-octyl phthalate	400	300	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')		SB1/MW1 (17-19')		SB1/MW1 (25-27')	
Sample Depth (feet BGS)	15-17		14-16		18-21		17-19		25-27	
Date Collected	11/13/96		11/13/96		11/13/96		06/04/97		06/04/97	
Date Extracted	11/19/96		11/19/96		11/19/96		06/12/97		06/12/97	
Date Analyzed	11/19/96		11/19/96		11/19/96		06/12/97		06/12/97	
Analytical Method No.	8020		8020		8020		8260		8260	
Collection Method*	GP		GP		GP		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	10	ND	10	ND	10	ND	10	ND	10
☐ Toluene	760	10	ND	10	ND	10	410	10	640	10
☐ Ethylbenzene	30	10	ND	10	ND	10	30	10	100	10
☐ Total Xylenes	130	10	ND	10	ND	10	60	10	350	10
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')		SB1/MW1 (17-19')		SB1/MW1 (25-27')	
Sample Depth (feet BGS)	15-17		14-16		18-21		17-19		25-27	
Date Collected	11/12/96		11/12/96		11/12/96		06/04/97		06/04/97	
Date Extracted	11/19/96		11/19/96		11/19/96		06/12/97		06/12/97	
Date Analyzed	11/27/96		11/27/96		11/27/96		06/12/97		06/12/97	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Acenaphthylene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Anthracene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Benzo(a)anthracene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Benzo(a)pyrene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Benzo(b)fluoranthene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Benzo(g,h,i)perylene	ND	300	ND	300	ND	300	ND	330	ND	330
☐ Benzo(k)fluoranthene	ND	300	ND	300	ND	300	ND	330	ND	330

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), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')		SB1/MW1 (17-19')		SB1/MW1 (25-27')	
Sample Depth (feet BGS)	15-17		14-16		18-21		17-19		25-27	
Date Collected	11/13/96		11/13/96		11/13/96		06/04/97		06/04/97	
Date Extracted	11/19/96		11/19/96		11/19/96		06/12/97		06/12/97	
Date Analyzed	11/27/96		11/27/96		11/27/96		06/12/97		06/12/97	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Dibenzo(a,h)anthracene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluoranthene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Fluorene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Indeno(1,2,3- cd)pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Naphthalene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ 2-Methylnaphthalene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Phenanthrene	ND	300	ND	300	ND	300	ND	300	ND	300
☐ Pyrene	ND	300	ND	300	ND	300	ND	300	ND	300
METALS										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')		SB1/MW1 (17-19')		SB1/MW1 (25-27')	
Sample Depth (feet BGS)	15-17		14-16		18-21		17-19		25-27	
Date Collected	11/13/96		11/13/96		11/13/96		06/04/97		06/04/97	
Date Extracted	11/20/96		11/20/96		11/20/96		06/12/97		06/12/97	
Date Analyzed	11/20/96		11/20/96		11/20/96		06/12/97		06/12/97	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	5800	1000	2300	1000	3600	1000	3400	1000	2300	1000

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')		SB1/MW1 (17-19')		SB1/MW1 (25-27')	
Sample Depth (feet BGS)	15-17		14-16		18-21		17-19		25-27	
Date Collected	11/13/96		11/13/96		11/13/96		06/04/97		06/04/97	
Date Extracted	11/19/96		11/19/96		11/19/96		06/12/97		06/12/97	
Date Analyzed	11/19/96		11/19/96		11/19/96		06/12/97		06/12/97	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzyl Chloride	ND	10	ND	10	ND	10	ND	10	ND	10
☐ Carbon Tetrachloride	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	10	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	10	ND	10	ND	10	ND	10	ND	10

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')		SB1/MW1 (17-19')		SB1/MW1 (25-27')	
Sample Depth (feet BGS)	15-17		14-16		18-21		17-19		25-27	
Date Collected	11/13/96		11/13/96		11/13/96		06/04/97		06/04/97	
Date Extracted	11/20/96		11/20/96		11/20/96		06/12/97		06/12/97	
Date Analyzed	11/20/96		11/20/96		11/20/96		06/12/97		06/12/97	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ trans-1,2- Dichloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ Tetrachloroethylene	ND	100	ND	10	ND	10	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	100	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')					
Sample Depth (feet BGS)	15-17		14-16		18-21					
Date Collected	11/12/96		11/12/96		11/12/96					
Date Extracted	12/09/96		12/09/96		12/09/96					
Date Analyzed	12/09/96		12/09/96		12/09/96					
Analytical Method No.	GC/FID or 8015m		GC/FID or 8015m		GC/FID or 8015m					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	5000	ND	5000	ND	5000				
☐ Propylene Glycol	ND	5000	ND	5000	ND	5000				
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

Other: SEMI-VOLATILE ORGANICS										
Sample ID	Bldg 31-10 (15-17)		Bldg 31-11 (14-16)		Bldg 31-11 (18-21')					
Sample Depth (feet BGS)	15-17		14-16		18-21					
Date Collected	11/13/96		11/13/96		11/13/96					
Date Extracted	11/20/96		11/20/96		11/20/96					
Date Analyzed	11/20/96		11/20/96		11/20/96					
Analytical Method No.	8270		8270		8270					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ p,m-Cresol	ND	10	ND	10	ND	10				
☐ o-Cresol	ND	10	ND	10	ND	10				
☐ Di-n-butyl phthalate	ND	10	ND	10	ND	10				
☐ Di-n-octyl phthalate	ND	10	ND	10	ND	10				
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	SB2/MW2 (7-9')		SB2/MW2 (17-19')		SB3/MW3 (13-15')		SB3/MW3 (19-21')		SB4/MW4 (19-21')	
Sample Depth (feet BGS)	7-9		17-19		13-15		19-21		19-21	
Date Collected	06/04/97		06/04/97		06/04/97		06/04/97		06/05/97	
Date Extracted	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Date Analyzed	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Analytical Method No.	8260		8260		8260		8260		8260	
Collection Method*	SS		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	100	200	100	ND	1000	ND	10	ND	10
☐ Toluene	100	100	1900	100	51,000	1000	80	10	ND	10
☐ Ethylbenzene	100	100	2900	100	19,000	1000	ND	10	ND	10
☐ Total Xylenes	400	100	7500	100	73,000	1000	ND	10	ND	10
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	SB2/MW2 (7-9')		SB2/MW2 (17-19')		SB3/MW3 (13-15')		SB3/MW3 (19-21')		SB4/MW4 (19-21')	
Sample Depth (feet BGS)	7-9		17-19		13-15		19-21		19-21	
Date Collected	06/04/97		06/04/97		06/04/97		06/04/97		06/05/97	
Date Extracted	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Date Analyzed	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Analytical Method No.	8270		8270		8260		8260		8270	
Collection Method*	SS		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Acenaphthylene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Anthracene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(a)anthracene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(a)pyrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(b)fluoranthene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(g,h,i)perylene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(k)fluoranthene	ND	330	ND	330	ND	330	ND	330	ND	330

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

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LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	SB2/MW2 (7-9')		SB2/MW2 (17-19')		SB3/MW3 (13-15')		SB3/MW3 (19-21')		SB4/MW4 (19-21')	
Sample Depth (feet BGS)	7-9		17-19		13-15		19-21		19-21	
Date Collected	06/04/97		06/04/97		06/04/97		06/04/97		06/05/97	
Date Extracted	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Date Analyzed	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Analytical Method No.	8270		8270		8260		8260		8270	
Collection Method*	SS		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Dibenzo(a,h)anthracene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Fluoranthene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Fluorene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Indeno(1,2,3- cd)pyrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Naphthalene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ 2-Methylnaphthalene	420	330	ND	330	ND	330	ND	330	ND	330
☐ Phenanthrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Pyrene	ND	330	ND	330	ND	330	ND	330	ND	330
METALS										
Sample ID	SB2/MW2 (7-9')		SB2/MW2 (17-19')		SB3/MW3 (13-15')		SB3/MW3 (19-21')		SB4/MW4 (19-21')	
Sample Depth (feet BGS)	7-9		17-19		13-15		19-21		19-21	
Date Collected	06/04/97		06/04/97		06/04/97		06/04/97		06/05/97	
Date Extracted	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Date Analyzed	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	SS		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	5200	1000	4400	1000	1300	1000	5900	1000	3500	1000

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 3 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	SB2/MW2 (7-9')		SB2/MW2 (17-19')		SB3/MW3 (13-15')		SB3/MW3 (19-21')		SB4/MW4 (19-21')	
Sample Depth (feet BGS)	7-9		17-19		13-15		19-21		19-21	
Date Collected	06/04/97		06/04/97		06/04/97		06/04/97		06/05/97	
Date Extracted	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Date Analyzed	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	SS		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzyl Chloride	ND	10	ND	10	ND	1000	ND	10	ND	10
☐ Carbon Tetrachloride	ND	10	ND	10	ND	1000	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	10	ND	10	ND	1000	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	10	ND	10	ND	1000	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	10	ND	10	ND	1000	ND	10	ND	10

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	SB2/MW2 (7-9')		SB2/MW2 (17-19')		SB3/MW3 (13-15')		SB3/MW3 (19-21')		SB4/MW4 (19-21')	
Sample Depth (feet BGS)	7-9		17-19		13-15		19-21		19-21	
Date Collected	06/04/97		06/04/97		06/04/97		06/04/97		06/05/97	
Date Extracted	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Date Analyzed	06/12/97		06/12/97		06/12/97		06/12/97		06/12/97	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	SS		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	100	ND	10	ND	1000	ND	10	ND	10
☐ trans-1,2- Dichloroethylene	ND	100	ND	10	ND	1000	ND	10	ND	10
☐ Tetrachloroethylene	ND	100	ND	10	ND	1000	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	100	ND	10	ND	1000	ND	10	ND	10
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	SB4/MW4 (19-21')									
Sample Depth (feet BGS)	19-21									
Date Collected	06/05/97									
Date Extracted	06/12/97									
Date Analyzed	06/12/97									
Analytical Method No.	8260									
Collection Method*	SS									
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	10								
☐ Toluene	ND	10								
☐ Ethylbenzene	ND	10								
☐ Total Xylenes	ND	10								
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	SB4/MW4 (19-21')									
Sample Depth (feet BGS)	19-21									
Date Collected	06/05/97									
Date Extracted	06/12/97									
Date Analyzed	06/12/97									
Analytical Method No.	8270									
Collection Method*	SS									
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	330								
☐ Acenaphthylene	ND	330								
☐ Anthracene	ND	330								
☐ Benzo(a)anthracene	ND	330								
☐ Benzo(a)pyrene	ND	330								
☐ Benzo(b)fluoranthene	ND	330								
☐ Benzo(g,h,i)perylene	ND	330								
☐ Benzo(k)fluoranthene	ND	330								

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	SB4/MW4 (19-21')									
Sample Depth (feet BGS)	19-21									
Date Collected	06/05/97									
Date Extracted	06/12/97									
Date Analyzed	06/12/97									
Analytical Method No.	8270									
Collection Method*	SS									
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	330								
☐ Dibenzo(a,h)anthracene	ND	330								
☐ Fluoranthene	ND	330								
☐ Fluorene	ND	330								
☐ Indeno(1,2,3- cd)pyrene	ND	330								
☐ Naphthalene	ND	330								
☐ 2-Methylnaphthalene	ND	330								
☐ Phenanthrene	ND	330								
☐ Pyrene	ND	330								
METALS										
Sample ID	SB4/MW4 (19-21')									
Sample Depth (feet BGS)	19-21									
Date Collected	06/05/97									
Date Extracted	06/12/97									
Date Analyzed	06/12/97									
Analytical Method No.	6020									
Collection Method*	SS									
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	4100	1000								

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), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

(Continued page 3 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	SB4/MW4 (19-21')									
Sample Depth (feet BGS)	19-21									
Date Collected	06/05/97									
Date Extracted	06/12/97									
Date Analyzed	06/12/97									
Analytical Method No.	8010									
Collection Method*	SS									
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzyl Chloride	ND	10								
☐ Carbon Tetrachloride	ND	10								
☐ 1,1-Dichloroethane	ND	10								
☐ 1,2-Dichloroethane	ND	10								
☐ 1,1-Dichloroethylene	ND	10								

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

(Continued page 4 of 4)
LABORATORY RESULTS SOIL
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	SB4/MW4 (19-21')									
Sample Depth (feet BGS)	19-21									
Date Collected	06/05/97									
Date Extracted	06/12/97									
Date Analyzed	06/12/97									
Analytical Method No.	8010									
Collection Method*	SS									
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	10								
☐ trans-1,2- Dichloroethylene	ND	10								
☐ Tetrachloroethylene	ND	10								
☐ 1,1,2-Trichloroethane	ND	10								
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										

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), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

ATTACHMENT 4

BUILDING 31/HAMILTON AVENUE TANK FARM
SUMMARY REPORT (Continued)

TIER I RBSL/TIER II OR TIER III SSTL COMPARISON TABLE FOR SOILS
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

☑ **Residential** ☐ **Commercial III** ☐ **Commercial IV** ☐ **Industrial**
Exposure Codes

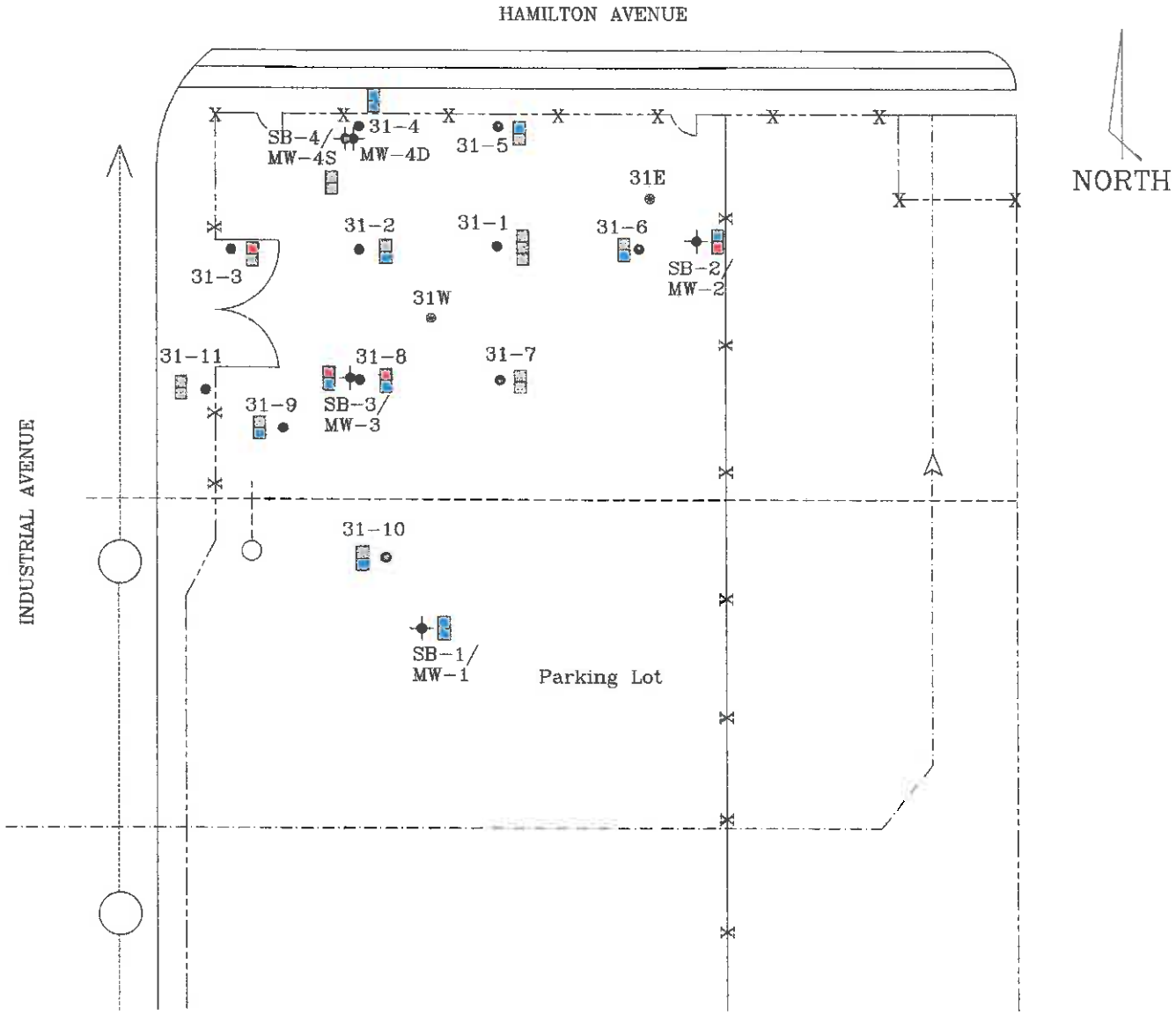
Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/kg)	Applicable Criterion (ug/kg)		
				Tier I Soil Leaching to Groundwater	Tier I Residential Direct Contact	Tier I Residential Infinite Source VSIC
VOLATILES						
☐ Benzene	SB2/MW2 (17-19')	06/04/97	200	100	88,000	9600
☐ Toluene	SB3/MW3 (13-15')	06/04/97	51,000	16,000	>620,000	2E+6
☐ Ethylbenzene	Bldg 31-8 (13-15')	07/31/96	31,700	1500	>380,000	6.7E+6
☐ Total Xylenes	Bldg 31-8 (13-15')	07/31/96	81,000	5600	>400,000	3.2E+7
☐ MTBE	NA					
POLYNUCLEAR AROMATICS						
☐ Acenaphthene			ND	300,000	76,000	5.7E+7
☐ Acenaphthylene			ND	520	1,500,000	ID
☐ Anthracene			ND	6,900,000	420,000,000	9.8E+8
☐ Benzo(a)anthracene			ND	E	14,000	ID
☐ Benzo(a)pyrene			ND	E	1400	ID
☐ Benzo(b)fluoranthene			ND	E	14,000	ID
☐ Benzo(g,h,i)perylene			ND	E	1,500,000	ID
☐ Benzo(k)fluoranthene			ND	E	140,000	ID
☐ Chrysene			ND	E	1,400,000	ID
☐ Dibenzo-(a,h)anthracene			ND	E	1400	ID
☐ Fluoranthene	Bldg 31-8 (13-15')	07/31/96	400	3,000,000	51,000,000	5.3E+8
☐ Fluorene	Bldg 31-8 (13-15')	07/31/96	300	390,000	51,000,000	8.9E+7
☐ Indeno(1,2,3- cd)pyrene			ND	E	14,000	ID
☐ Naphthalene	Bldg 31-8 (13-15')	07/31/96	3200	17,000	15,000,000	9.8E+6
☐ Phenanthrene	Bldg 31-8 (13-15')	07/31/96	500	12,000	1,500,000	ID
☐ Pyrene			ND	1,800,000	32,000,000	4.7E+8
☐ 2-Methylnaphthalene	Bldg 31-8 (13-15')	07/31/96	1500	5200	15,000,000	ID

Shading indicates concentration exceeds one or more Tier I RBSLs
"E" = Chemical, due to its physiochemical properties, is not expected to leach through soils to groundwater under most conditions
"ID" = Insufficient Data
"ND" = Non-Detect

TIER I RBSL/TIER II OR TIER III SSTL COMPARISON TABLE FOR SOILS
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/kg)	Applicable Criterion (ug/kg)		
				Tier I Soil Leaching to Groundwater	Tier I Residential Direct Contact	Tier I Residential Infinite Source VSIC
METALS						
☐ Cadmium						
☐ Chromium III						
☐ Chromium VI						
☐ Total Lead	Bldg 31-3 (13-15')	07/30/96	8400	21,000	400,000	ID
PCBs						
☐ Aroclor 1016						
☐ Aroclor 1221						
☐ Aroclor 1232						
☐ Aroclor 1242						
☐ Aroclor 1248						
HALOGENATED HYDROCARBONS						
☐ Carbon Tetrachloride			ND	100	20,000	2600
☐ 1,1-Dichloroethane			ND	18,000	>1,100,000	2.2E+7
☐ 1,2-Dichloroethane			ND	100	28,000	4400
☐ 1,1-Dichloroethylene			ND	140	110,000	830
☐ cis-1,2-Dichloroethylene			ND	1400	>1,000,000	2.9E+7
☐ trans-1,2-Dichloroethylene			ND	2000	1,900,000	2.0E+5
☐ Tetrachloroethylene			ND	100	50,000	1.3E+5
☐ 1,1,2-Trichloroethane			ND	100	45,000	5.2E+7
OTHER*						
☐ Benzyl Chloride	Bldg 31-8 (13-15')	07/31/96	2300	100	15,000	10,000
☐ Ehtlyene Glycol			ND	300,000	>10,000,000	ID
☐ Propylene Glycol	Bldg 31-7 (15-17')	07/31/96	5000	3,000,000	>10,000,000	ID
☐ p,m-Cresol	Bldg 31-8 (13-15')	07/31/96	1600	Not Available	Not Available	Not Available
☐ 0-Cresol	Bldg 31-8 (13-15')	07/31/96	1000	Not Available	Not Available	Not Available
☐ Di-n-butyl phthalate	Bldg 31-8 (13-15')	07/31/96	900	960,000	>2,300,000	4.9E+8
☐ Di-n-octyl phthalate	Bldg 31-8 (13-15')	07/31/96	400	100,000,000	>7,600,000	ID

ATTACHMENT 5



- Not Analyzed
- Not Detected
- Elevated levels below Tier I Industrial Soil Leaching to Groundwater RBSLs
- Elevated levels above Tier I Industrial Soil Leaching to Groundwater RBSLs

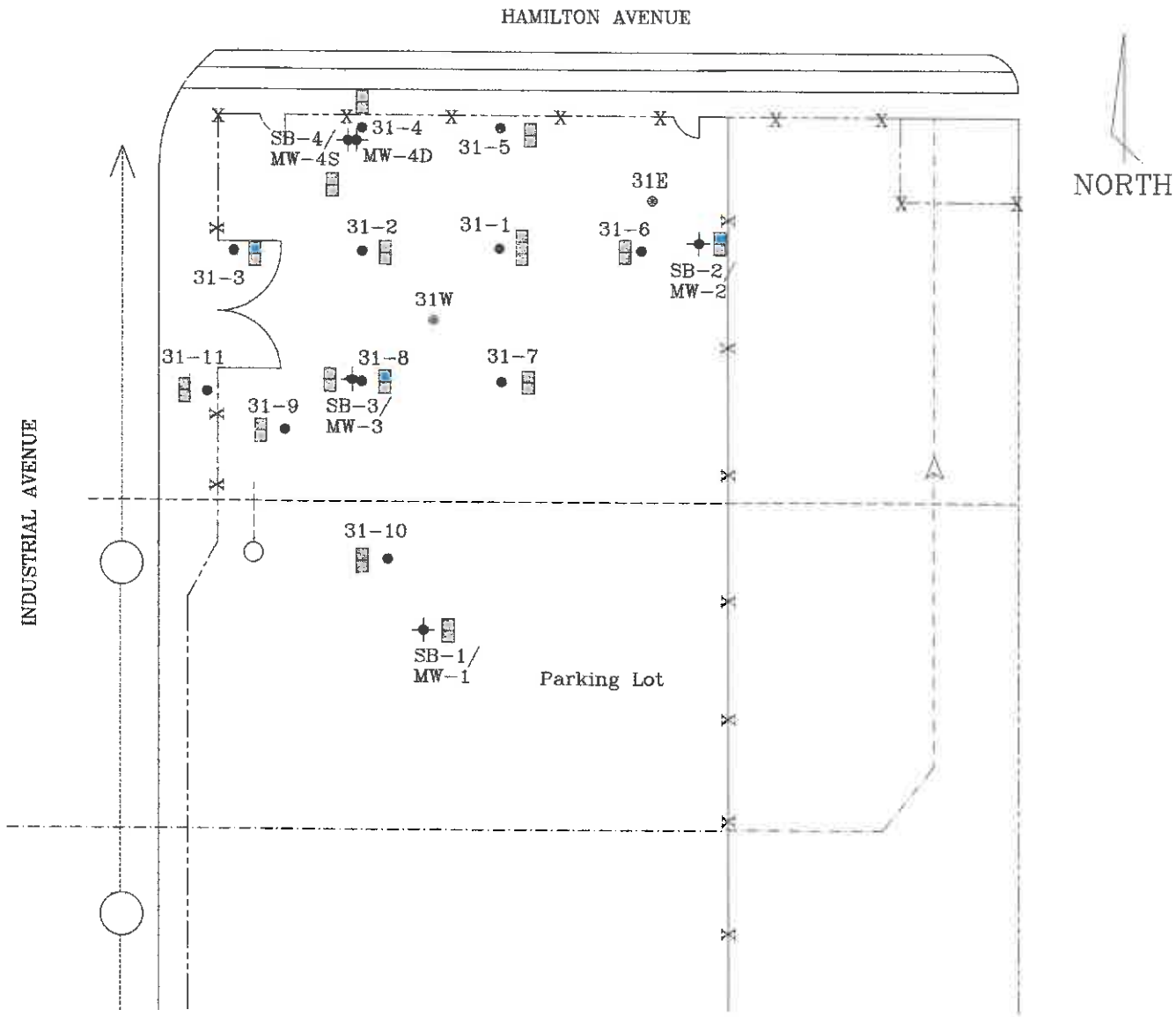
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: BTEX
BUILDING 31
TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5A
	PROJECT NUMBER: F174



- Not Analyzed
- Not Detected
- Elevated levels below Tier I Industrial Soil Leaching to Groundwater RBSLs
- Elevated levels above Tier I Industrial Soil Leaching to Groundwater RBSLs

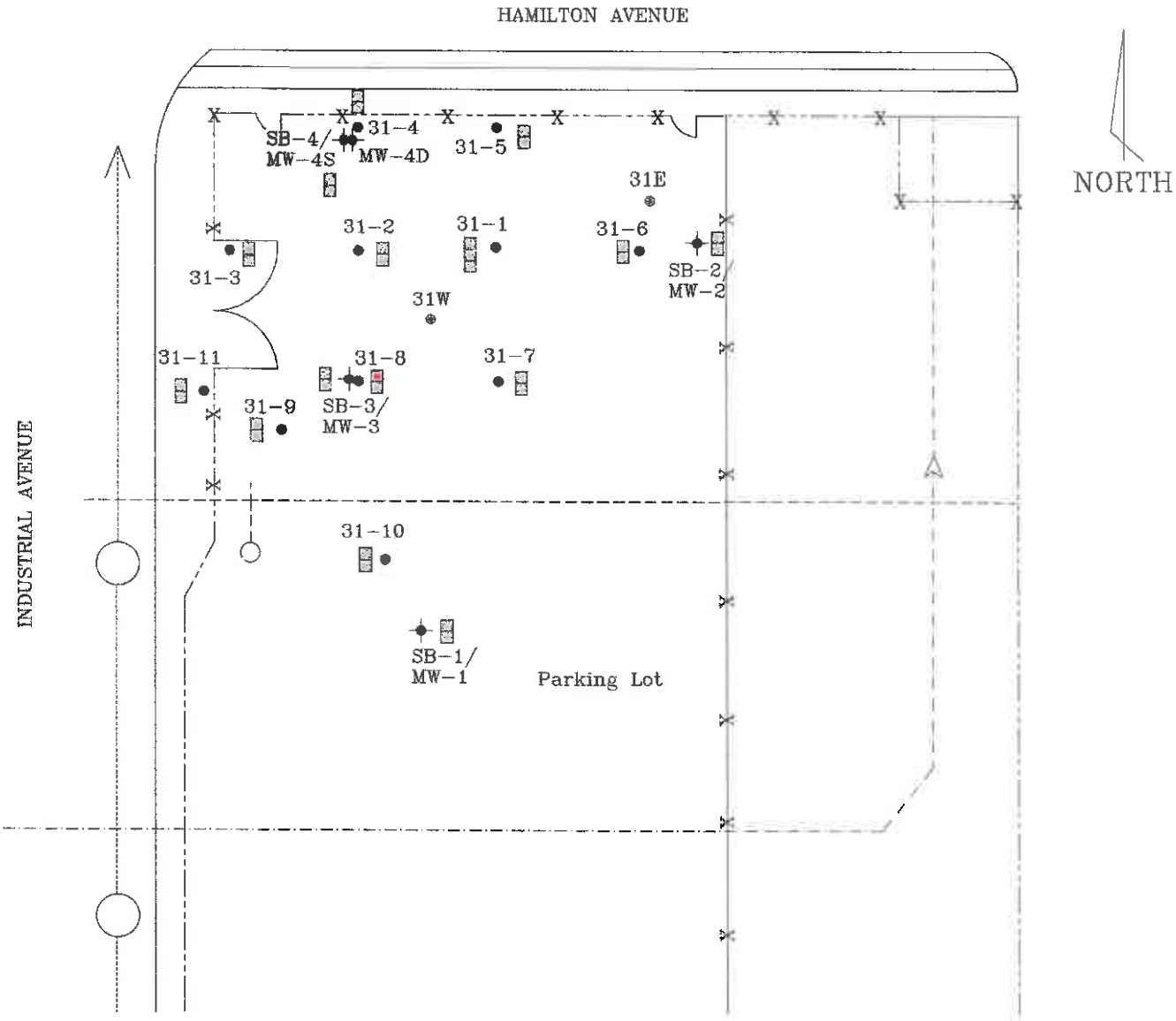
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: PNAHs
BUILDING 31
TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5B
	PROJECT NUMBER: F174



- Not Analyzed
- Not Detected
- Elevated levels below Tier I Industrial Soil Leaching to Groundwater RBSLs
- Elevated levels above Tier I Industrial Soil Leaching to Groundwater RBSLs

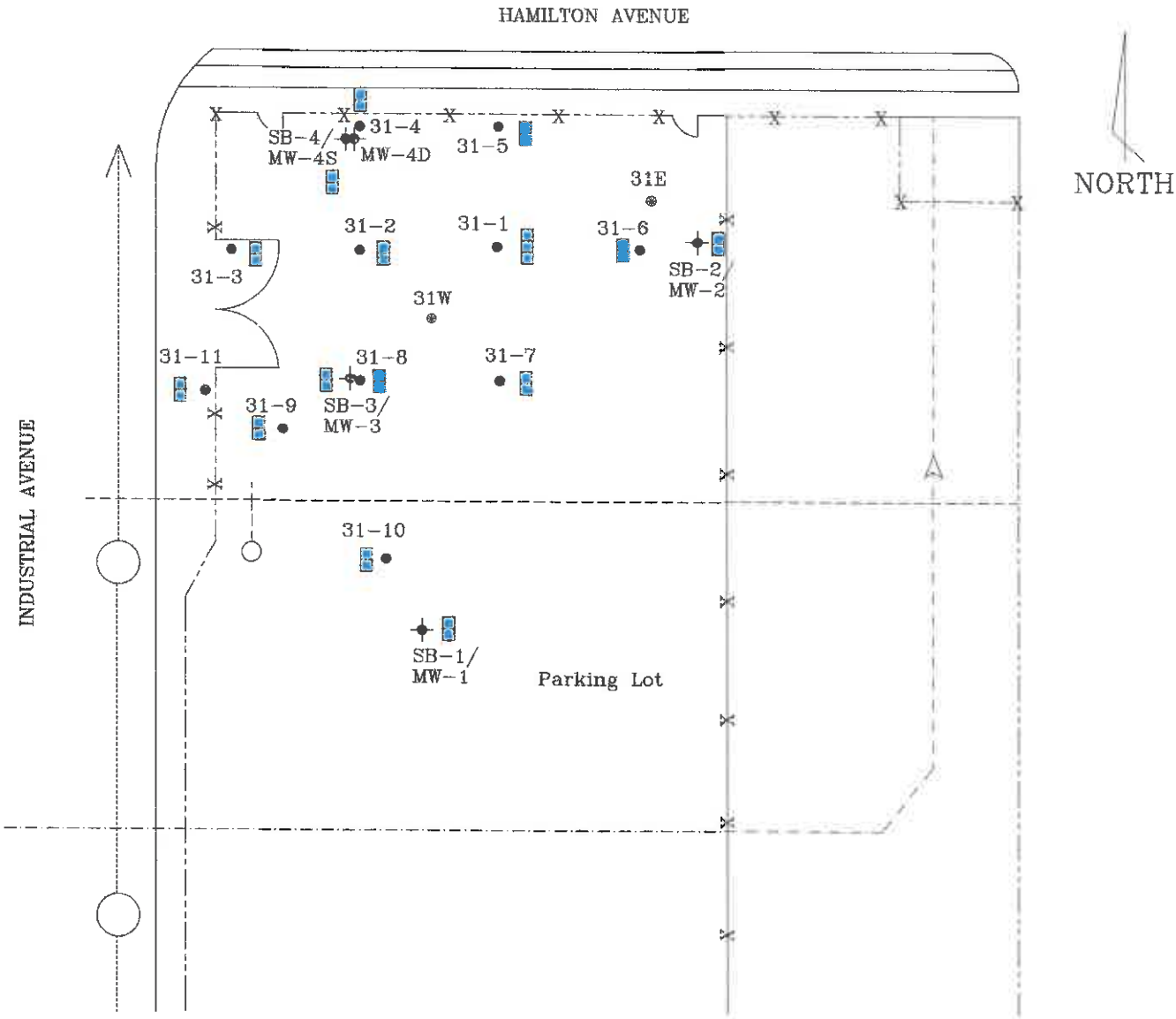
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: HALOGENATED HYDROCARBONS, BUILDING 31 TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5C
	PROJECT NUMBER: F174



- Not Analyzed
- Not Detected
- Elevated levels below Tier I Industrial Soil Leaching to Groundwater RBSLs
- Elevated levels above Tier I Industrial Soil Leaching to Groundwater RBSLs

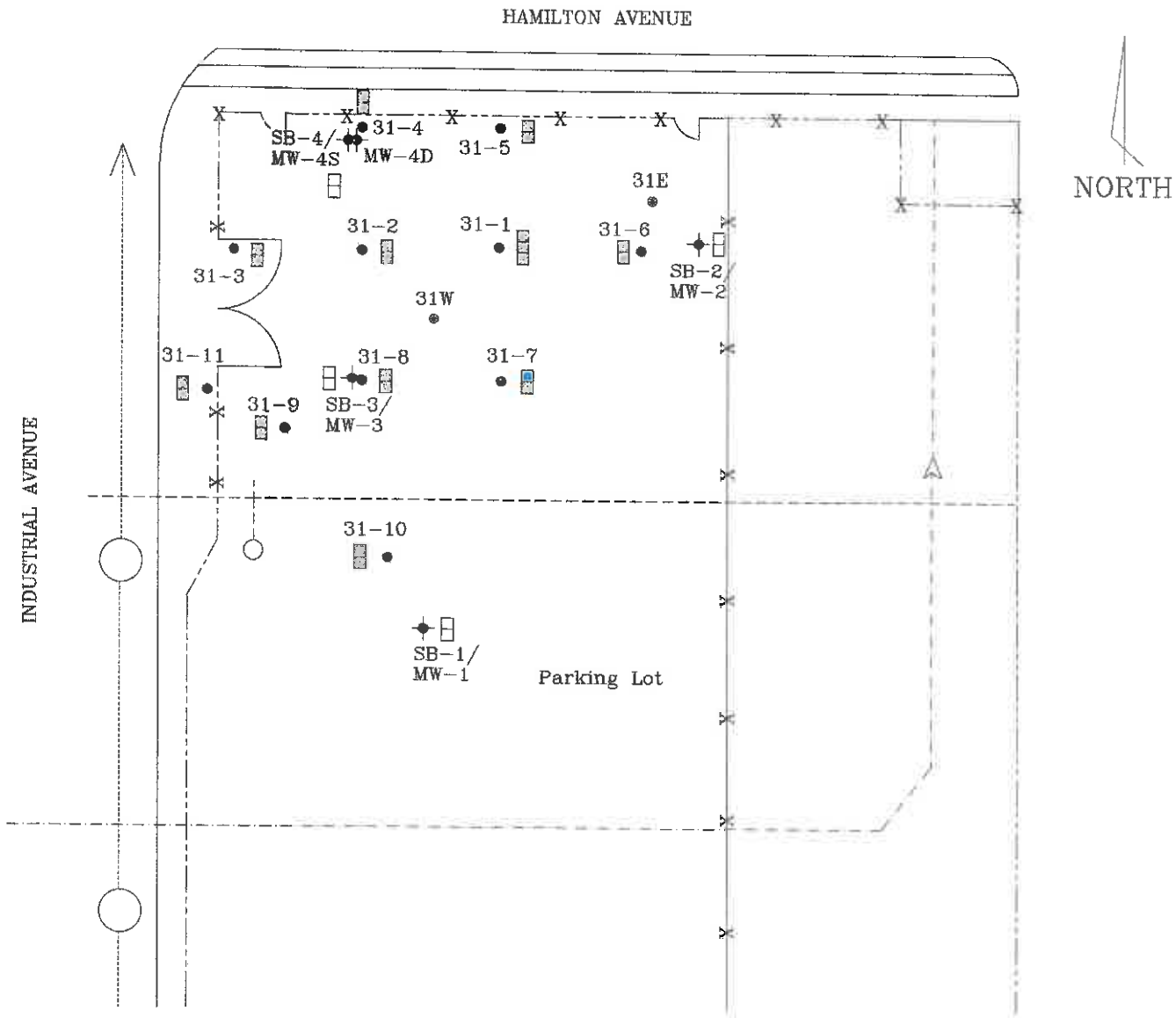
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: LEAD
BUILDING 31
TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5D
	PROJECT NUMBER: F174



- Not Analyzed
- Not Detected
- Elevated levels below Tier I Industrial Soil Leaching to Groundwater RBSLs
- Elevated levels above Tier I Industrial Soil Leaching to Groundwater RBSLs

LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: GLYCOL BUILDING 31 TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5E
	PROJECT NUMBER: F174

ATTACHMENT 6

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

Soil Boring:	SB-1/MW-1	**Project:**	**GM - Building 31**
Date:	6/4/97	**Project #:**	F329
Drilling Contractor:	GEEI	**Location:**	
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	8:30	**Depth Drilled:**	27
Time Completed:		**Hole Diameter:**	8.25"
Length Coring Device:	4'	**Coring Device:**	4.5"
		Fluid Used:	None
		Driller:	Norm
		Helper:	Ash
		Weight/Drop:	140#/30"

Boring Methods		**Groundwater Information**	
X	**Hollow Stem Auger**	**GW Encountered at**	
	Hand Auger	**Monitor Wells Installed**	
	Geoprobe	**Yes X**	**No**

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	OVA	GC
	SS		CL	Silty Clay	Gray, Moist, No Fractures		
	SS	24.			1" Sand Lens		
	SS					400.0	
	SS	25.					
	SS		SP	Sand	Wet, Medium/Coarse		
	SS	26.					
	SS					840.0	
	SS	27.		Silty Sand	Fine		
			E.O.B.	End of Boring 27			
		28.					
		29.					
		30.					
		31.					
		32.					
		33.					
		34.					
		35.					
		36.					
		37.					
		38.					
		39					
		40.					
		41.					
		42.					
		43.					
		44.					
		45.					
		46.					

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

Global Environmental Engineering, Inc.
5467 Hill 23 Dr., Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	SB-2/MW-2	**Project:**	**GM - Building 31**
Date:	6/4/97	**Project #:**	F329
Drilling Contractor:	GEEI	**Location:**	
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	11:45	**Depth Drilled:**	19'
Time Completed:		**Hole Diameter:**	8.25"
Length Coring Device:	4'	**Coring Device:**	4.5"

Boring Methods		**Groundwater Information**		**Fluid Used:**	None
X	**Hollow Stem Auger**	**GW Encountered at**		**Driller:**	Norm
	Hand Auger	**Monitor Wells Installed**		**Helper:**	Ash
	Geoprobe	**Yes** X	**No**	**Weight/Drop:**	140lb/30"

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Asphalt	Approximately 8"		
		1.					
	SS		SP	Sand	Brown, Moist, Fine/Medium		
	SS	2.					
	SS						
	SS	3.				3.0	
	SS						
	SS	4.					
	SS						
	SS	5.				3.0	
	SS						
	SS	6.					
	SS						
	SS	7.				5.0	
	SS-[X]						
	SS-[X]	8.			Wet		
	SS-[X]				Black		
	SS-[X]	9.	CL	Silty Clay	Brown, Moist, No Fractures	>1000	
	SS						
	SS	10.			Gray, Trace of Gravel		
	SS						
	SS	11.				720.0	
	SS						
	SS	12.					
	SS						
	SS	13.			3" Gray Sand Lens, Wet	52.0	
	SS				2" Sand Lens, Wet		
	SS	14.					
	SS						
	SS	15.				32.0	
	SS				Gray, Moist, No Fractures, 2" Silt Lens, Wet		
	SS	16.					
	SS					34.0	
	SS	17.					
	SS-[X]						
	SS-[X]	18.					
	SS-[X]					34.0	
	SS-[X]	19.					
			E.O.B.	End of Boring 19'			
		20.					
		21.					
		22.					
		23.					

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

Global Environmental Engineering, Inc.
5467 Hill 23 Dr., Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	SB-3/MW-3	**Project:**	**GM - Building 31**
Date:	6/4/97	**Project #:**	F329
Drilling Contractor:	GEEI	**Location:**	
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	16:15	**Depth Drilled:**	21'
Time Completed:		**Hole Diameter:**	8.25"
Length Coring Device:	4'	**Coring Device:**	4.5"
		Fluid Used:	None
		Driller:	Norm
		Helper:	Ash
		Weight/Drop:	140lb/30"

Boring Methods		**Groundwater Information**	
X	**Hollow Stem Auger**	**GW Encountered at**	
	Hand Auger	**Monitor Wells Installed**	
	Geoprobe	**Yes** X	**No**

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Asphalt			
		1.					
	SS		SP	Sand	Brown, Moist, Fine/Medium		
	SS	2.					
	SS						
	SS	3.				6.0	
	SS						
	SS	4.	CL	Silty Clay	Brown/Gray, Fractures		
	SS						
	SS	5.				22.0	
	SS						
	SS	6.					
	SS						
	SS	7.				200.0	
	SS						
	SS	8.					
	SS				3" Sand Lens, Wet		
	SS	9.			2" Sand Lens, Wet	>1000	
	SS						
	SS	10.					
	SS						
	SS	11.			Gray, No Fractures	260.0	
	SS						
	SS	12.					
	SS						
	SS	13.				26.0	
	SS		SP	Sand	Wet, Fine/Medium		
	SS	14.					
	SS						
	SS	15.	CL	Silty Clay	Moist	>1000	
	SS-[X]		SP	Sand	Gray, Wet		
	SS-[X]	16.					
	SS-[X]					>1000	
	SS-[X]	17.	CL	Silty Clay	Moist		
	SS						
	SS	18.					
	SS					100.0	
	SS	19.					
	SS-[X]						
	SS-[X]	20.					
	SS-[X]					56.0	
	SS-[X]	21.					
			E.O.B.	End of Boring 21'			
		22.					
		23.					

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

Global Environmental Engineering, Inc.
5467 Hill 23 Dr., Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	SB-4/MW-4S	**Project:**	**GM - Building 31**
Date:	6/5/97	**Project #:**	F329
Drilling Contractor:	GEEI	**Location:**	
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	8:20	**Depth Drilled:**	21'
Time Completed:		**Hole Diameter:**	8.25"
Length Coring Device:	4'	**Coring Device:**	4.5"
		Fluid Used:	None
		Driller:	Norm
		Helper:	Ash
		Weight/Drop:	140lb/30"

Boring Methods		**Groundwater Information**
X	**Hollow Stem Auger**	**GW Encountered at**
	Hand Auger	**Monitor Wells Installed**
	Geoprobe	**Yes** X **No**

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Asphalt	Approximately 9"		
		1.					
	SS		SP	Sand	Brown, Moist, Fine/Medium		
	SS	2.					
	SS						
	SS	3.				3.0	
	SS						
	SS	4.	CL	Silty Clay	Brown/Gray, Fractures		
	SS						
	SS	5.				ND	
	SS						
	SS	6.					
	SS						
	SS	7.				1.0	
	SS						
	SS	8.			Wet		
	SS						
	SS	9.				3.0	
	SS						
	SS	10.					
	SS						
	SS	11.				28.0	
	SS						
	SS	12.					
	SS						
	SS	13.				720.0	
	SS						
	SS	14.					
	SS				Black		
	SS	15.				>1000	
	SS						
	SS	16.					
	SS		CL	Silty Clay	Gray, Moist, No Fractures		
	SS-[X]	17.				>1000	
	SS						
	SS	18.					
	SS						
	SS	19.				300.0	
	SS						
	SS	20.					
	SS						
	SS-[X]	21.				180.0	
			E.O.B.	End of Boring 21'			
		22.					
		23.					

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

Global Environmental Engineering, Inc.
5467 Hill 23 Dr., Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	SB-4/MW-4D	**Project:**	**GM - Building 31**
Date:	6/5/97	**Project #:**	F329
Drilling Contractor:	GEEI	**Location:**	
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	9:40	**Depth Drilled:**	21'
Time Completed:		**Hole Diameter:**	8.25"
Length Coring Device:	4'	**Coring Device:**	4.5"

Boring Methods		**Groundwater Information**			
X	**Hollow Stem Auger**	**GW Encountered at**		**Driller:**	Norm
	Hand Auger	**Monitor Wells Installed**		**Helper:**	Ash
	Geoprobe	**Yes** X	**No**	**Weight/Drop:**	140lb/30"

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Asphalt	Approximately 9"		
		1.					
	SS		SP	Sand	Brown, Moist, Fine/Medium		
	SS	2.					
	SS						
	SS	3.				3.0	
	SS						
	SS	4.	CL	Silty Clay	Brown/Gray, Fractures		
	SS						
	SS	5.				ND	
	SS						
	SS	6.					
	SS						
	SS	7.				1.0	
	SS						
	SS	8.			Wet		
	SS						
	SS	9.				3.0	
	SS						
	SS	10.					
	SS						
	SS	11.				28.0	
	SS						
	SS	12.					
	SS						
	SS	13.				720.0	
	SS						
	SS	14.					
	SS				Black		
	SS	15.				>1000	
	SS						
	SS	16.					
	SS		CL	Silty Clay	Gray, Moist, No Fractures		
	SS-[X]	17.				>1000	
	SS						
	SS	18.					
	SS						
	SS	19.				300.0	
	SS						
	SS	20.					
	SS						
	SS-[X]	21.				180.0	
			E.O.B.	End of Boring 21'			
		22.					
		23.					

SS-Split Spoon
NR-No Recovery

HA-Hand Auger Sample
[X]-Laboratory/Jar Sample

PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)

AL-Acetate Liner
FS-Field Screening Container

ATTACHMENT 7

BUILDING 31/HAMILTON AVENUE TANK FARM
SUMMARY REPORT (Continued)

LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 -5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/31/96		7/31/96		7/31/96		7/31/96		7/31/96	
Date Extracted	8/02/96		8/02/96		8/02/96		8/02/96		8/06/96	
Date Analyzed	8/02/96		8/02/96		8/02/96		8/02/96		8/06/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	602		602		602		602		8260	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	1	1	2	1	60	10	8	1	ND	1
☐ Toluene	3	1	5	1	ND	10	2	1	ND	1
☐ Ethylbenzene	3	1	8	1	20	10	2	1	ND	1
☐ Total Xylenes	15	1	29	1	110	10	11	1	ND	1
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 -5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/31/96		7/31/96		7/31/96		7/31/96		7/31/96	
Date Extracted	8/01/96		8/01/96		8/01/96		8/01/96		8/01/96	
Date Analyzed	8/06/96		8/06/96		8/06/96		8/06/96		8/06/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	8270		8270		8270		8270		8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Acenaphthylene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Anthracene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Benzo(a)anthracene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Benzo(a)pyrene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Benzo(b)fluoranthene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Benzo(g,h,i)perylene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Benzo(k)fluoranthene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Chrysene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Dibenzo(a,h)anthracene	ND	10	ND	10	ND	10	ND	1	ND	1

LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 -5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/31/96		7/31/96		7/31/96		7/31/96		7/31/96	
Date Extracted	8/01/96		8/01/96		8/02/96		8/02/96		8/06/96	
Date Analyzed	8/06/96		8/06/96		8/06/96		8/06/96		8/06/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	8270		8270		8270		8270		8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Fluoranthene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Fluorene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Indeno(1,2,3- cd)pyrene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Naphthalene	ND	10	ND	10	20	10	ND	1	ND	1
☐ 2-Methylnaphthalene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Phenanthrene	ND	10	ND	10	ND	10	ND	1	ND	1
☐ Pyrene	ND	10	ND	10	ND	10	ND	1	ND	1
METALS - FILTERED										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 -5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/31/96		7/31/96		7/31/96		7/31/96		7/31/96	
Date Extracted	8/08/96		8/08/96		8/08/96		8/08/96		8/08/96	
Date Analyzed	8/08/96		8/08/96		8/08/96		8/08/96		8/08/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	200.8		200.8		200.8		200.8		200.8	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	ND	3	ND	3	ND	3	ND	3	ND	3

LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

Glycols										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 -5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/31/96		7/31/96		7/31/96		7/31/96		7/31/96	
Date Extracted	8/06/96		8/06/96		8/06/96		8/06/96		8/06/96	
Date Analyzed	8/09/96		8/09/96		8/09/96		8/09/96		8/09/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	624/8260M		624/8260M		624/8260M		624/8260M		624/8260M	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	500	ND	500	ND	500	ND	500	ND	500
☐ Propylene Glycol	ND	500	ND	500	ND	500	ND	500	ND	500
☐										
☐										
☐										
☐										
☐										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 - 5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/30/96		7/30/96		7/30/96		7/30/96		7/30/96	
Date Extracted	8/02/96		8/02/96		8/02/96		8/02/96		8/10/96	
Date Analyzed	8/02/96		8/02/96		8/02/96		8/02/96		8/10/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	601		601		601		601		601	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	1	ND	10	ND	10	ND	10	ND	1
☐ 1,1-Dichloroethane	ND	1	ND	10	ND	10	ND	10	ND	1
☐ 1,2-Dichloroethane	ND	1	ND	10	ND	10	ND	10	ND	1
☐ 1,1-Dichloroethylene	ND	1	ND	10	ND	10	ND	10	ND	1
☐ cis-1,2-Dichloroethylene	ND	1	ND	10	ND	10	ND	10	ND	1
☐ trans-1,2- Dichloroethylene	ND	1	ND	10	ND	10	ND	10	ND	1

SUMMARY REPORT (Continued)

(Continued Page 4 of 4)
LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS
(BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS (Cont.)										
☐ Tetrachloroethylene	ND	1	ND	10	ND	10	ND	10	ND	1
☐ Trichloroethylene	ND	1	ND	10	ND	10	ND	10	ND	1
☐ 1,1,2-Trichloroethane	ND	1	ND	10	ND	10	ND	10	ND	1
☐ Vinyl Chloride	ND	1	ND	10	ND	10	ND	10	ND	1
OTHER *(Specify)*										
Sample ID	Bldg 31 - 1		Bldg 31 - 2		Bldg 31 - 4		Bldg 31 - 5		Bldg 31 - 6	
Sample Depth (feet BGS)	-		-		-		-		-	
Date Collected	7/30/96		7/30/96		7/30/96		7/30/96		7/30/96	
Date Extracted	8/06/96		8/06/96		8/06/96		8/06/96		8/06/96	
Date Analyzed	8/06/96		8/06/96		8/06/96		8/06/96		8/06/96	
Collection Method*	GP		GP		GP		GP		GP	
Analytical Method No.	8270		8270		8270		8270		8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Di-n-butyl phthalate	ND	10	ND	10	10	10	ND	10	20	10
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										

LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 31-8		Bldg 31 - W		Bldg 31 - E		Bldg 31 - N			
Sample Depth (feet BGS)	-		-		-		-			
Date Collected	7/31/96		7/24/96		7/24/96		7/24/96			
Date Extracted	8/09/96		7/28/96		7/28/96		7/28/96			
Date Analyzed	8/09/96		7/28/96		7/28/96		7/28/96			
Collection Method*	GP		Bailer		Bailer		Bailer			
Analytical Method No.	8260		8020		8020		8020			
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	600	1	ND	1	ND	1	ND	1		
☐ Toluene	149,000	1	ND	1	ND	1	ND	1		
☐ Ethylbenzene	7400	1	ND	1	ND	1	ND	1		
☐ Total Xylenes	57,600	1	ND	1	ND	1	ND	1		
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-8		Bldg 31 - W		Bldg 31 - E		Bldg 31 - N			
Sample Depth (feet BGS)	-		-		-		-			
Date Collected	7/31/96		7/24/96		7/24/96		7/24/96			
Date Extracted	8/06/96		7/26/96		7/26/96		7/26/96			
Date Analyzed	8/06/96		7/28/96		7/28/96		7/28/96			
Collection Method*	GP		Bailer		Bailer		Bailer			
Analytical Method No.	601		601		601		601			
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	10	ND	5	ND	5	ND	5		
☐ Acenaphthylene	ND	10	ND	5	ND	5	ND	5		
☐ Anthracene	ND	10	ND	5	ND	5	ND	5		
☐ Benzo(a)anthracene	ND	10	ND	5	ND	5	ND	5		
☐ Benzo(a)pyrene	ND	10	ND	5	ND	5	ND	5		
☐ Benzo(b)fluoranthene	ND	10	ND	5	ND	5	ND	5		
☐ Benzo(g,h,i)perylene	ND	10	ND	5	ND	5	ND	5		
☐ Benzo(k)fluoranthene	ND	10	ND	5	ND	5	ND	5		
☐ Chrysene	ND	10	ND	5	ND	5	ND	5		
☐ Dibenzo(a,h)anthracene	ND	10	ND	5	ND	5	ND	5		

(Continued Page 2 of 4)
LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 31-8		Bldg 31 - W		Bldg 31 - E		Bldg 31 - N			
Sample Depth (feet BGS)	-		-		-		-			
Date Collected	7/31/96		7/24/96		7/24/96		7/24/96			
Date Extracted	8/06/96		7/26/96		7/26/96		7/26/96			
Date Analyzed	8/09/96		7/2996		7/2996		7/29/96			
Collection Method*	GP		Bailer		Bailer		Bailer			
Analytical Method No.	8270		8270		8270		8270			
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Fluoranthene	ND	10	ND	5	ND	5	ND	5		
☐ Fluorene	ND	10	ND	5	ND	5	ND	5		
☐ Indeno(1,2,3- cd)pyrene	ND	10	ND	5	ND	5	ND	5		
☐ Naphthalene	50	10	ND	5	ND	5	ND	5		
☐ 2-Methylnaphthalene	ND	10	ND	5	ND	5	ND	5		
☐ Phenanthrene	ND	10	ND	5	ND	5	ND	5		
☐ Pyrene	ND	10	ND	5	ND	5	ND	5		
METALS - FILTERED										
Sample ID	Bldg 31-8		Bldg 31 - W		Bldg 31 - E		Bldg 31 - N			
Sample Depth (feet BGS)	-		-		-		-			
Date Collected	7/31/96		7/24/96		7/24/96		7/24/96			
Date Extracted	8/06/96		7/26/96		7/26/96		7/26/96			
Date Analyzed	8/09/96		7/28/96		7/28/96		7/28/96			
Collection Method*	GP		Bailer		Bailer		Bailer			
Analytical Method No.	200.8		200.8		200.8		200.8			
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	ND	3	ND	3	ND	3	ND	3		

LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

Glycols										
Sample ID	31-8		Bldg 31 - W		Bldg 31 - E		Bldg 31 - N			
Sample Depth (feet BGS)	-		-		-		-			
Date Collected	07/31/96		7/24/96		7/24/96		7/24/96			
Date Extracted	08/06/96		7/26/96		7/26/96		7/26/96			
Date Analyzed	08/09/96		7/29/96		7/29/96		7/29/96			
Collection Method*	GP		Bailer		Bailer		Bailer			
Analytical Method No.	624/8260M		624/8260M		624/8260M		624/8260M			
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Ethylene Glycol	ND	500	ND	500	ND	500	ND	500		
☐ Propylene Glycol	ND	500	ND	500	ND	500	ND	500		
☐										
☐										
☐										
☐										
☐										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 31-8		Bldg 31 - W		Bldg 31 - E		Bldg 31 - N			
Sample Depth (feet BGS)	-		-		-		-			
Date Collected	7/31/96		7/24/96		7/24/96		7/24/96			
Date Extracted	8/06/96		7/26/96		7/26/96		7/26/96			
Date Analyzed	8/09/96		7/28/96		7/28/96		7/28/96			
Collection Method*	GP		Bailer		Bailer		Bailer			
Analytical Method No.	601		601		601		601			
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	10	ND	1	ND	1	ND	1		
☐ 1,1-Dichloroethane	ND	10	ND	1	ND	1	ND	1		
☐ 1,2-Dichloroethane	ND	10	ND	1	ND	1	ND	1		
☐ 1,1-Dichloroethylene	ND	10	ND	1	ND	1	ND	1		
☐ cis-1,2-Dichloroethylene	ND	10	ND	1	ND	1	ND	1		
☐ trans-1,2- Dichloroethylene	ND	10	ND	1	ND	1	ND	1		

(Continued Page 4 of 4)
LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS (Cont.)										
☐ Tetrachloroethylene	ND	10	ND	1	ND	1	ND	1		
☐ Trichloroethylene	ND	10	ND	1	ND	1	ND	1		
☐ 1,1,2-Trichloroethane	ND	10	ND	1	ND	1	ND	1		
☐ Vinyl Chloride	ND	10	ND	1	ND	1	ND	1		
OTHER *(Specify)*										
Sample ID	Bldg 31- 8									
Sample Depth (feet BGS)	-									
Date Collected	7/31/96									
Date Extracted	8/06/96									
Date Analyzed	8/09/96									
Collection Method*	GP									
Analytical Method No.	601									
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Diethyl phthalate	30	10								
☐ 4,6-Dinitro-2-methylphenol	10	10								
☐ Di-n-butyl phthalate	ND	10								
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										

LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	MW-1		MW-2		MW-3		MW-4S		MW-4D	
Sample Depth (feet BGS)										
Date Collected	06/10/97		06/10/97		06/10/97		06/10/97		06/10/97	
Date Extracted										
Date Analyzed	06/13/97		06/13/97		06/13/97		06/13/97		06/13/97	
Collection Method*	Bailer		Bailer		Bailer		Bailer		Bailer	
Analytical Method No.	8260		8260		8260		8260		8260	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	120	50	8	1	300	100	ND	1	251	5
☐ Toluene	35,400	50	8	1	121,000	100	11	1	32	5
☐ Ethylbenzene	5860	50	10	1	15,200	100	2	1	127	5
☐ Total Xylenes	21,240	50	18	1	55,700	100	6	1	323	5
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	MW-1		MW-2		MW-3		MW-4S		MW-4D	
Sample Depth (feet BGS)										
Date Collected	06/10/97		06/10/97		06/10/97		06/10/97		06/10/97	
Date Extracted	06/17/97		06/17/97		06/17/97		06/17/97		06/17/97	
Date Analyzed	06/18/97		06/18/97		06/18/97		06/18/97		06/18/97	
Collection Method*	Bailer		Bailer		Bailer		Bailer		Bailer	
Analytical Method No.	8270		8270		8270		8270		8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Acenaphthylene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Anthracene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Benzo(a)anthracene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Benzo(a)pyrene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Benzo(b)fluoranthene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Benzo(g,h,i)perylene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Benzo(k)fluoranthene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Chrysene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Dibenzo(a,h)anthracene	ND	5	ND	5	ND	5	ND	5	ND	5

(Continued Page 2 of 4)
LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	MW-1		MW-2		MW-3		MW-4S		MW-4D	
Sample Depth (feet BGS)										
Date Collected	06/10/97		06/10/97		06/10/97		06/10/97		06/10/97	
Date Extracted	06/17/97		06/17/97		06/17/97		06/17/97		06/17/97	
Date Analyzed	06/18/97		06/18/97		06/18/97		06/18/97		06/18/97	
Collection Method*	Bailer		Bailer		Bailer		Bailer		Bailer	
Analytical Method No.	8270		8270		8270		8270		8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Fluoranthene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Fluorene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Indeno(1,2,3- cd)pyrene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Naphthalene	13	5	ND	5	43	5	ND	5	12	5
☐ 2-Methylnaphthalene	ND	5	ND	5	16	5	ND	5	35	5
☐ Phenanthrene	ND	5	ND	5	ND	5	ND	5	ND	5
☐ Pyrene	ND	5	ND	5	ND	5	ND	5	ND	5
METALS - FILTERED										
Sample ID	MW-1		MW-2		MW-3		MW-4S		MW-4D	
Sample Depth (feet BGS)										
Date Collected	06/10/97		06/10/97		06/10/97		06/10/97		06/10/97	
Date Extracted	06/16/97		06/16/97		06/16/97		06/16/97		06/16/97	
Date Analyzed	06/16/97		06/16/97		06/16/97		06/16/97		06/16/97	
Collection Method*	Bailer		Bailer		Bailer		Bailer		Bailer	
Analytical Method No.	200.8		200.8		200.8		200.8		200.8	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	ND	3	ND	3	ND	3	ND	3	ND	3

(Continued Page 3 of 4)
LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

PCBs										
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
☐										
☐										
☐										
☐										
☐										
☐										
☐										
HALOGENATED HYDROCARBONS										
Sample ID	MW-1		MW-2		MW-3		MW-4S		MW-4D	
Sample Depth (feet BGS)										
Date Collected	06/10/97		06/10/97		06/10/97		06/10/97		06/10/97	
Date Extracted	06/13/97		06/13/97		06/13/97		06/13/97		06/13/97	
Date Analyzed	06/13/97		06/13/97		06/13/97		06/13/97		06/13/97	
Collection Method*	Bailer		Bailer		Bailer		Bailer		Bailer	
Analytical Method No.	601		601		601		601		601	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	50	ND	1	ND	1	ND	1	ND	5
☐ 1,1-Dichloroethane	ND	50	ND	1	ND	1	ND	1	ND	5
☐ 1,2-Dichloroethane	ND	50	ND	1	ND	1	ND	1	ND	5
☐ 1,1-Dichloroethylene	ND	50	ND	1	ND	1	ND	1	ND	5
☐ cis-1,2-Dichloroethylene	ND	50	ND	1	ND	1	ND	1	ND	5
☐ trans-1,2- Dichloroethylene	ND	50	ND	1	ND	1	ND	1	ND	5

(Continued Page 4 of 4)
LABORATORY RESULTS GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS (Cont.)										
☐ Tetrachloroethylene	ND	50	ND	1	ND	1	ND	1	ND	5
☐ Trichloroethylene	ND	50	ND	1	ND	1	ND	1	ND	5
☐ 1,1,2-Trichloroethane	ND	50	ND	1	ND	1	ND	1	ND	5
☐ Vinyl Chloride	ND	50	ND	1	ND	1	ND	1	ND	5
OTHER *(Specify)*										
Sample ID	MW-1		MW-2		MW-3		MW-4S		MW-4D	
Sample Depth (feet BGS)										
Date Collected	06/10/97		06/10/97		06/10/97		06/10/97		06/10/97	
Date Extracted	06/13/97		06/13/97		06/13/97		06/13/97		06/13/97	
Date Analyzed	06/13/97		06/13/97		06/13/97		06/13/97		06/13/97	
Collection Method*	Bailer		Bailer		Bailer		Bailer		Bailer	
Analytical Method No.	601		601		601		601		601	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Dichlorodifluormethane	ND	50	ND	1	ND	1	148	1	178	5
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										

ATTACHMENT 8

BUILDING 31/HAMILTON AVENUE TANK FARM
SUMMARY REPORT (Continued)

TIER I RBSL/TIER II OR TIER III SSTL
COMPARISON TABLE FOR GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

☑ **Residential** ☐ **Commercial** ☑ **Industrial**

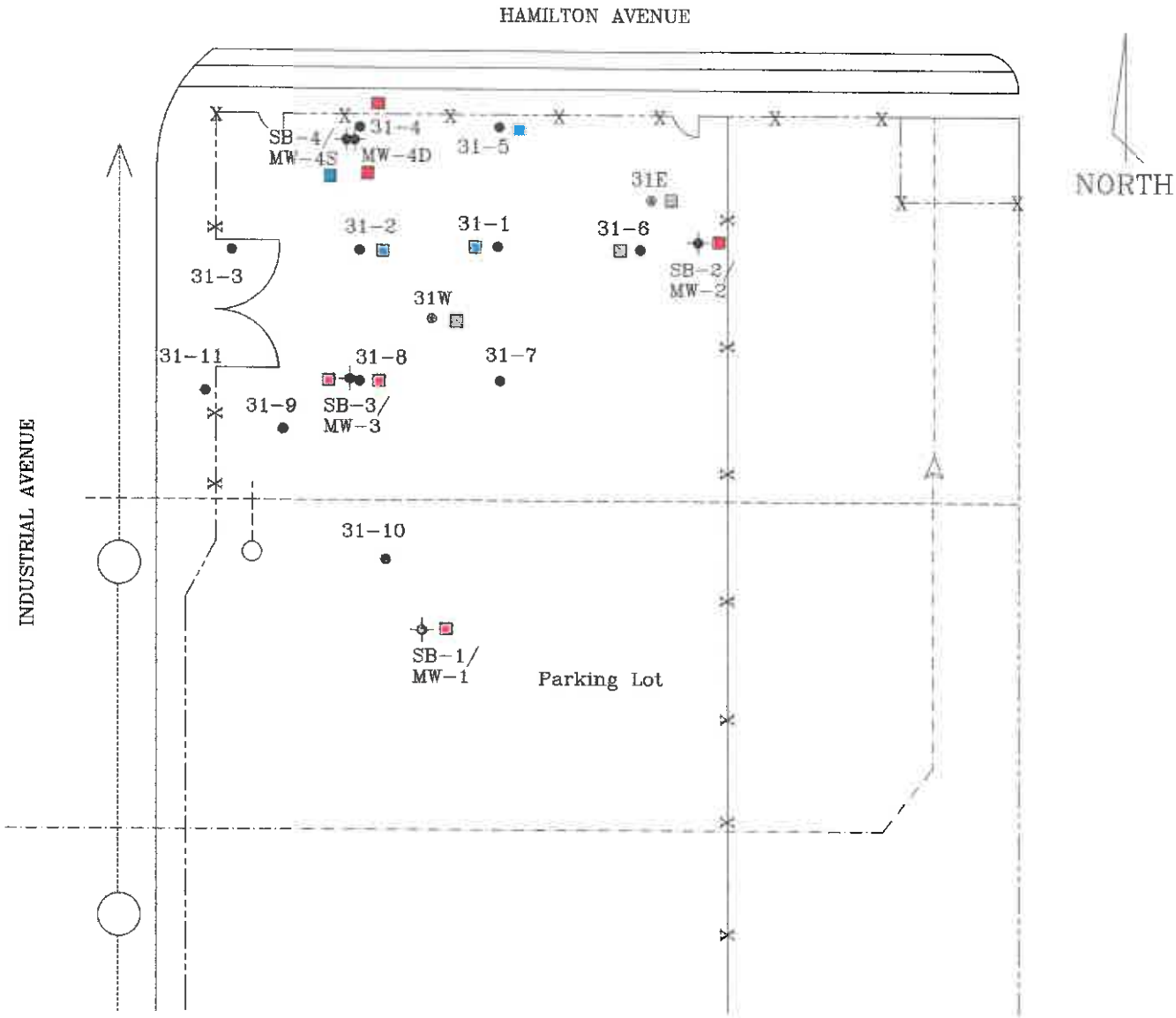
Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/l)	Applicable Criterion (ug/l)			
				Tier I Residential Health-Based Drinking Water	Tier I Industrial Health-Based Drinking Water	Tier I Groundwater Surface Water Interface	Tier I Direct Contact
VOLATILES							
☐ Benzene	Bldg 31-8	07/31/96	600	5	5	53	9300
☐ Toluene	Bldg 31-8	07/31/96	149,000	790	790	110	>526,000
☐ Ethylbenzene	MW-3	06/10/97	15,200	74	74	31	>169,000
☐ Total Xylenes	Bldg 31-8	07/31/96	57,600	280	280	59	>186,000
☐ MTBE			NA				
POLYNUCLEAR AROMATICS (PNAs)							
☐ Acenaphthene			ND	1300	3800	3.8	>4240
☐ Acenaphthylene			ND	26	75	Not Available	ID
☐ Anthracene			ND	7300	21,000	110,000	>43
☐ Benzo(a)anthracene			ND	1.2	4.8	.31	4
☐ Benzo(a)pyrene			ND	.2	.2	.31	.24
☐ Benzo(b)fluoranthene			ND	1.2	4.8	.31	2
☐ Benzo(g,h,i)perylene			ND	26	75	Not Available	ID
☐ Benzo(k)fluoranthene			ND	12	48	.31	20
☐ Chrysene			ND	120	480	.31	400
☐ Dibenzo-(a,h)anthracene			ND	.12	.48	.31	.11
☐ Fluoranthene			ND	880	2500	370	>206
☐ Fluorene			ND	880	2500	14,000	>1980
☐ Indeno(1,2,3-cd)pyrene			ND	1.2	4.8	.31	>0.022
☐ Naphthalene	Bldg 31-8	07/31/96	50	260	750	34	>31,000
☐ Phenanthrene			ND	26	75	Not Available	>1000
☐ Pyrene			ND	550	1600	11,000	>135
☐ 2-Methylnaphthalene	MW-4D	06/10/97	35	260	750	59	>110,000

Shading indicates concentration exceeds one or more Tier I RBSL
"ID" = Insufficient Data

ATTACHMENT NO. 19
TIER I RBSL/TIER II OR TIER III SSTL
COMPARISON TABLE FOR GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS (BLDG 31/TANKS 081/31T - 91 & 132/31 -133/31)
FACILITY NUMBER: 0-002763

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/l)	Applicable Criterion (ug/l)			
				Tier I Residential Health-Based Drinking Water	Tier I Industrial Health-Based Drinking Water	Tier I Groundwater Surface Water Interface	Tier I Direct Contact
METALS - FILTERED							
☐ Cadmium			NA				
☐ Chromium III			NA				
☐ Chromium VI			NA				
☐ Total Lead			ND	4	4	140,000	Not Available
PCBs - Not Analyzed							
HALOGENATED HYDROCARBONS							
☐ Carbon Tetrachloride			ND	5	5	21	1600
☐ 1,1-Dichloroethane			ND	880	2500	Not Available	2,100,000
☐ 1,2-Dichloroethane			ND	5	5	560	11,000
☐ 1,1-Dichloroethylene			ND	7	7	32	9900
☐ cis-1,2-Dichloroethylene			ND	70	70	Not Available	170,000
☐ trans-1,2-Dichloroethylene			ND	100	100	300	200,000
☐ Tetrachloroethylene			ND	5	5	22	5000
☐ 1,1,2-Trichloroethane			ND	5	5	65	9600
OTHER *							
☐ Ethlyene Glycol			ND	15,000	42,000	68,000	210,000,000
☐ Propylene Glycol			ND	150,000	420,000	190,000	ID
☐ Di-n-butyl phthalate	Bldg 31-6	07/31/96	20	880	2500	12,000	87,000
☐ Diethyl phthalate	Bldg 31-8	07/31/96	30	5500	16,000	120,000	>1,080,000
☐ 4,6-Dinitro-2-methylphenol	Bldg 31-8	07/31/96	10	2.6	7.3	.59	ID

ATTACHMENT 9



Not Sampled

Not Detected

Elevated levels below Tier I Industrial Health-based Drinking Water to RBSLs

Elevated levels above Tier I Industrial Health-based Drinking Water to RBSLs

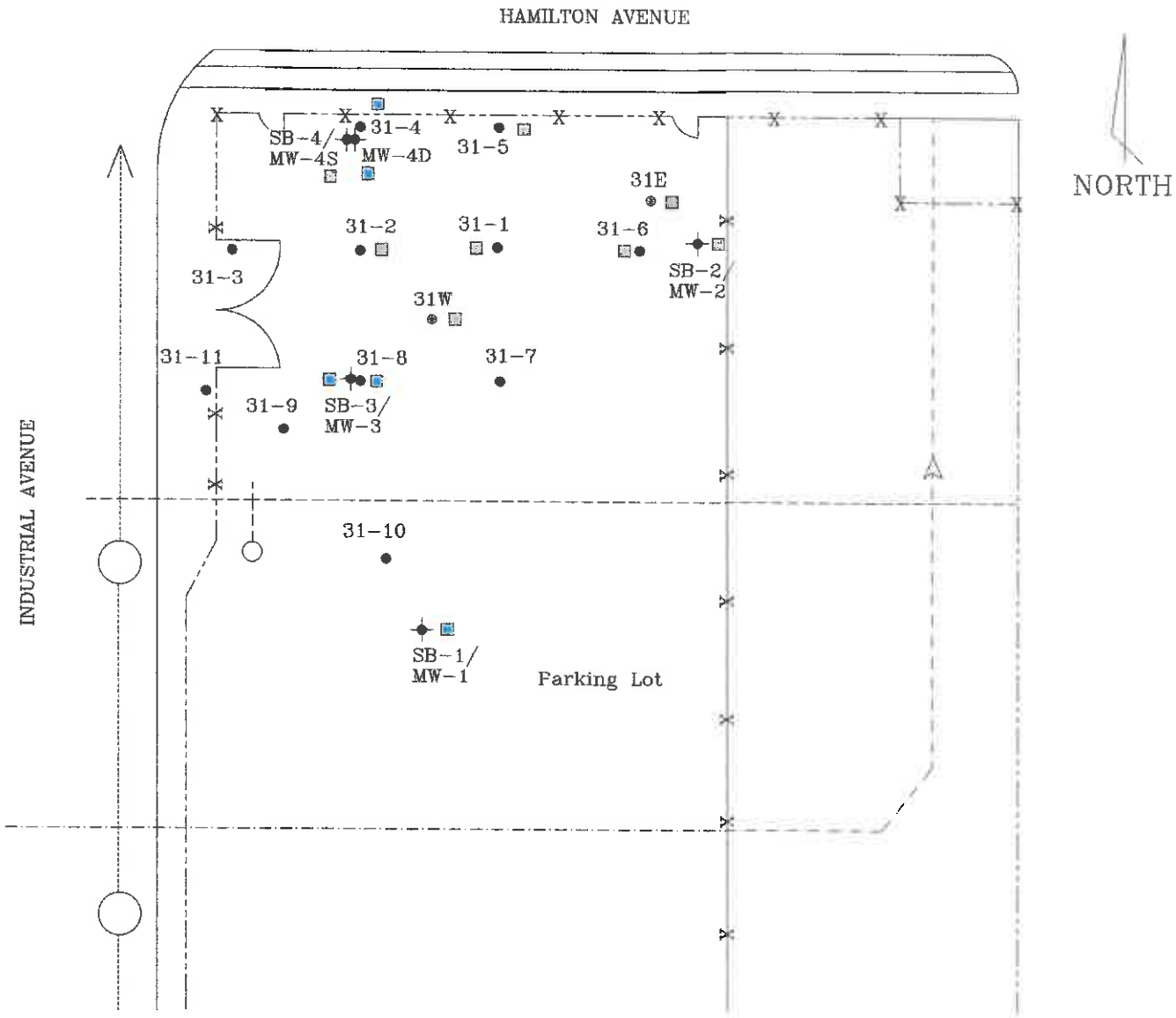
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: BTEX
BUILDING 31
TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9A
	PROJECT NUMBER: F174



- Not Sampled
- Not Detected
- Elevated levels below Tier I Industrial Health-based Drinking Water to RBSLs
- Elevated levels above Tier I Industrial Health-based Drinking Water to RBSLs

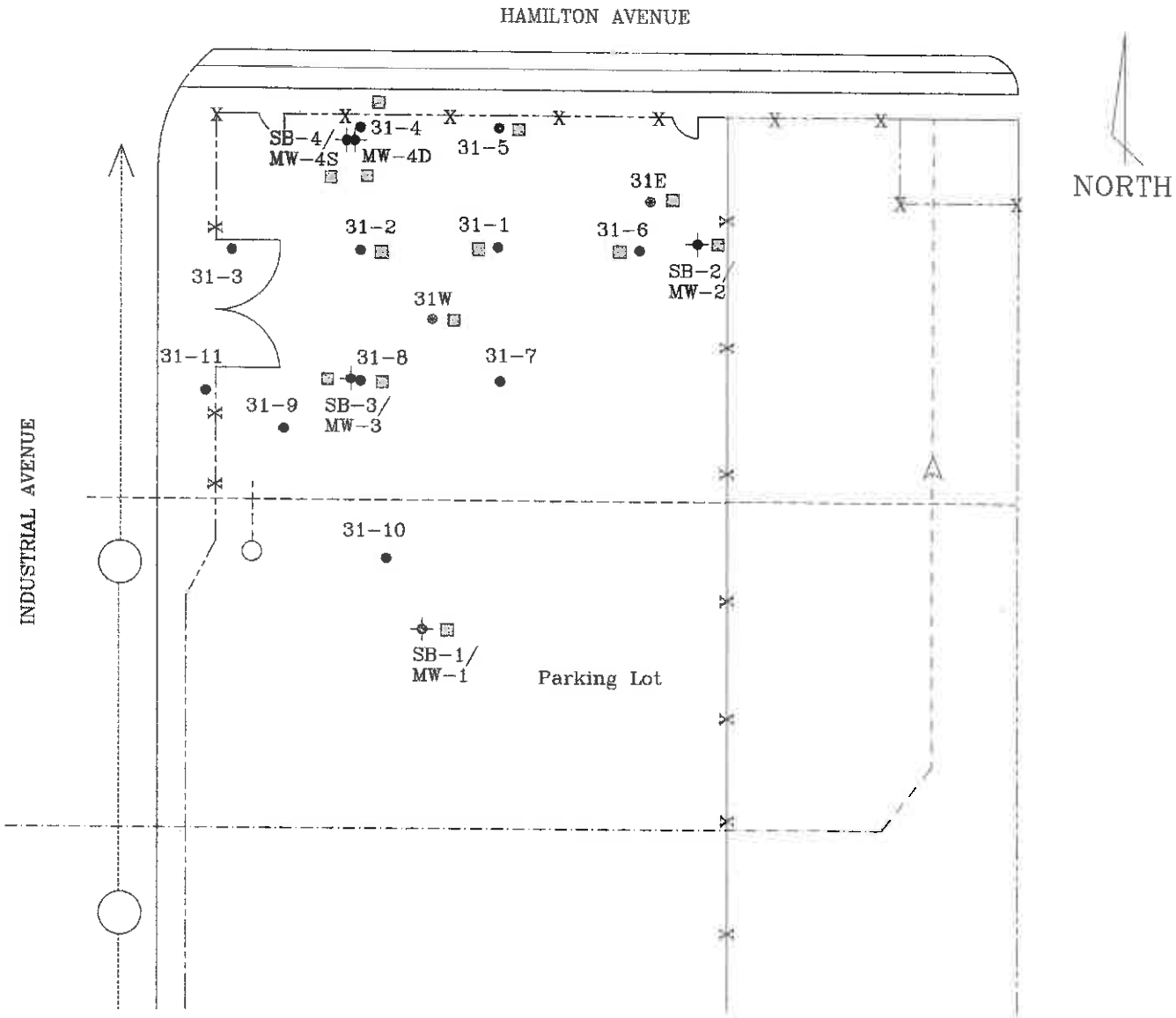
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: PNAHs
BUILDING 31
TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9B
	PROJECT NUMBER: F174



- Not Sampled
- Not Detected
- Elevated levels below Tier I Industrial Health-based Drinking Water to RBSLs
- Elevated levels above Tier I Industrial Health-based Drinking Water to RBSLs

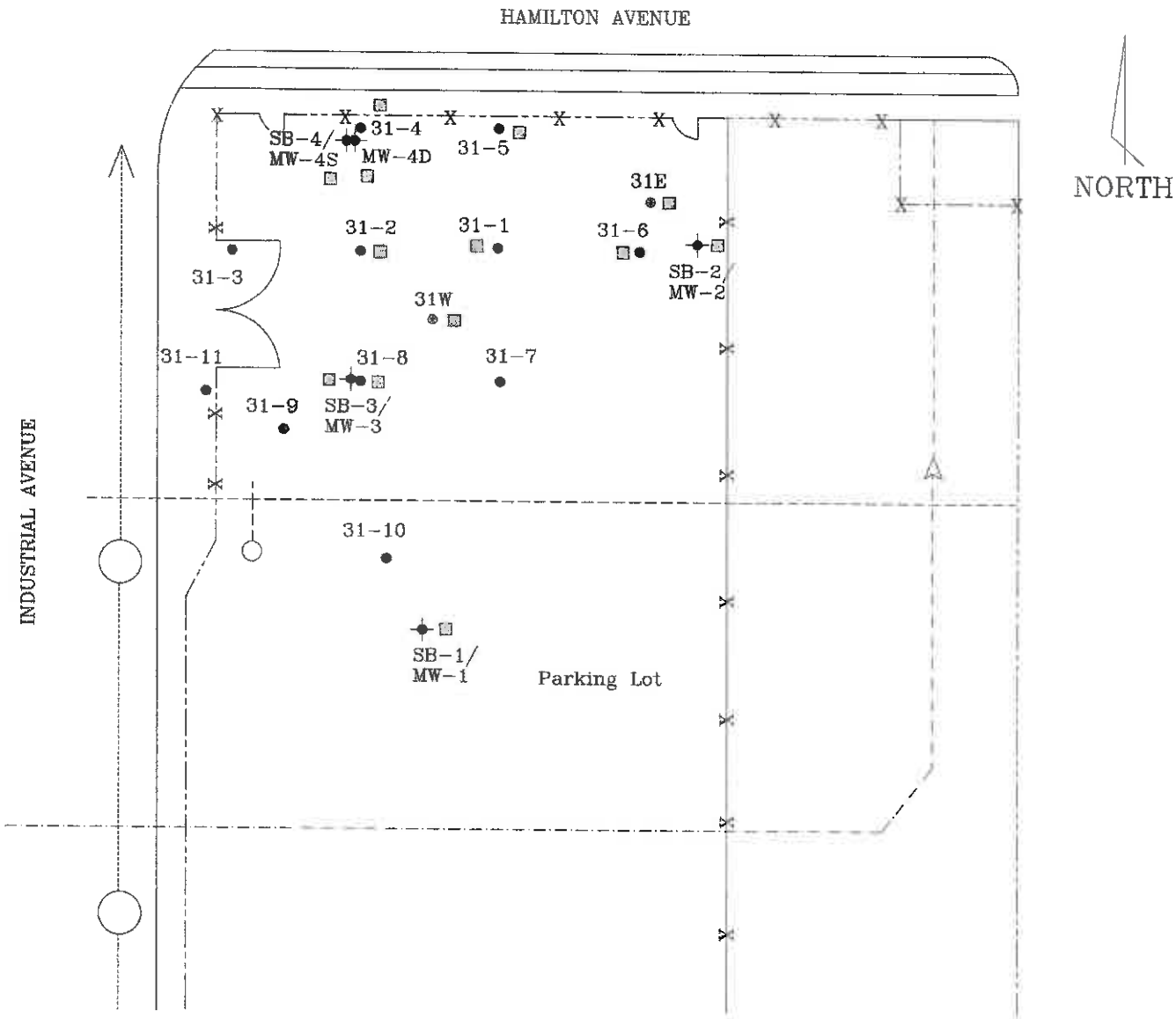
LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: HALOGENATED HYDROCARBONS, BUILDING 31 TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9C
	PROJECT NUMBER: F174



□ Not Sampled

■ Not Detected

■ Elevated levels below Tier I Industrial Health-based Drinking Water to RBSLs

■ Elevated levels above Tier I Industrial Health-based Drinking Water to RBSLs

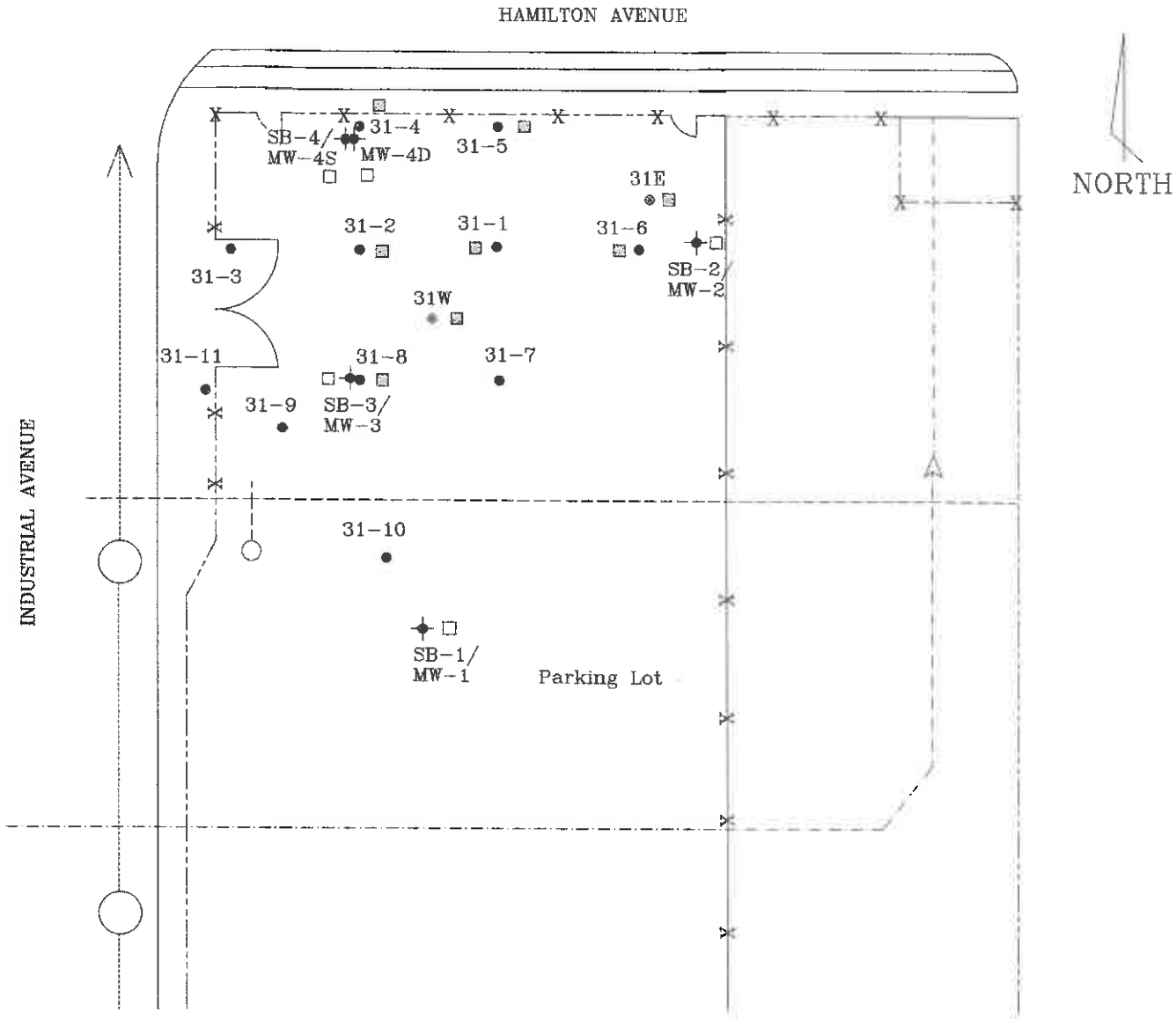
LEGEND:

- ✦ Monitoring Well Locations
- ● Geoprobe Sample Locations
- ---- Fire Protection Line
- ····· Storm Sewer Line
- —·—·— 4" Process Waste
- —x— Fence

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: LEAD
BUILDING 31
TANKS 081/31T - 091/31T

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9D
	PROJECT NUMBER: F174



□ Not Sampled

■ Not Detected

■ Elevated levels below Tier I Industrial Health-based Drinking Water to RBSLs

■ Elevated levels above Tier I Industrial Health-based Drinking Water to RBSLs

LEGEND:

- ✦ Monitoring Well Locations
- ● Geoprobe Sample Locations
- ---- Fire Protection Line
- ····· Storm Sewer Line
- —·—·— 4" Process Waste
- —✳— Fence

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: GLYCOL, BUILDING 31 TANKS 081/31T - 091/31T	
DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9E
	PROJECT NUMBER: F174

ATTACHMENT 10

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	SB-1/MW-1	Project Name:	GM - BUILDING 31
Date:	6/4/97	Project No.:	F329
Contractor:	GEEI	Location:	
Prepared By:	ALK	Twp/Range/Sec.:	
Time Started:	8:30	Depth Drilled:	27'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Norm
		Helper:	Ash

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Water Level Data

Date	SWL Elevation
6/10/97	8.40'

WELL SPECIFICATIONS

Well Casing Cover:

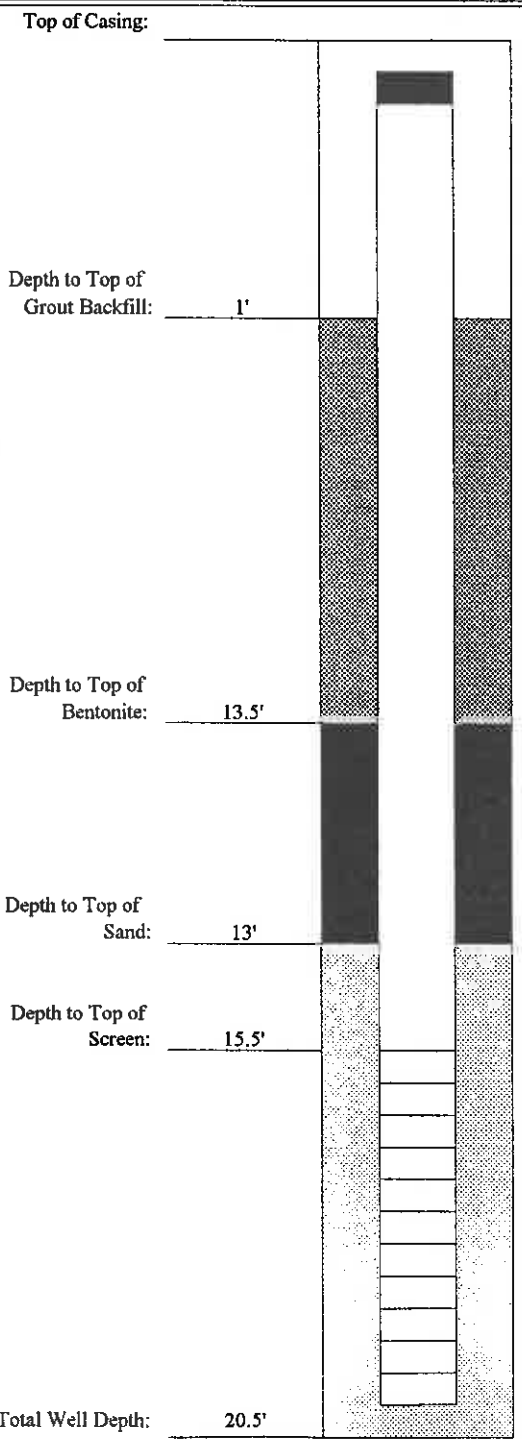
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	20.5'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen:

Diamater:	2"
Length:	5'
Slotsize:	0.01
Material:	PVC
Well Screen Interval:	15.5'-20.5'
Filter Pack:	Sand



SOIL PROFILE

0 - 9" Concrete
9" - 3' Silty Sand
3 - 21.5' Silty Clay
21.5 - 22' Sand
22 - 25' Silty Clay
25 - 26.5 Sand
26.5 - 27 Silty Sand

Groundwater Encountered at 18'

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	SB-2/MW-2	Project Name:	GM - BUILDING 31
Date:	6/4/97	Project No.:	F329
Contractor:	GEEI	Location:	
Prepared By:	ALK	Twp/Range/Sec.:	
Time Started:	11:45	Depth Drilled:	19'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Norm
		Helper:	Ash

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Water Level Data

Date	SWL Elevation
6/10/97	6.95

WELL SPECIFICATIONS

Well Casing Cover:

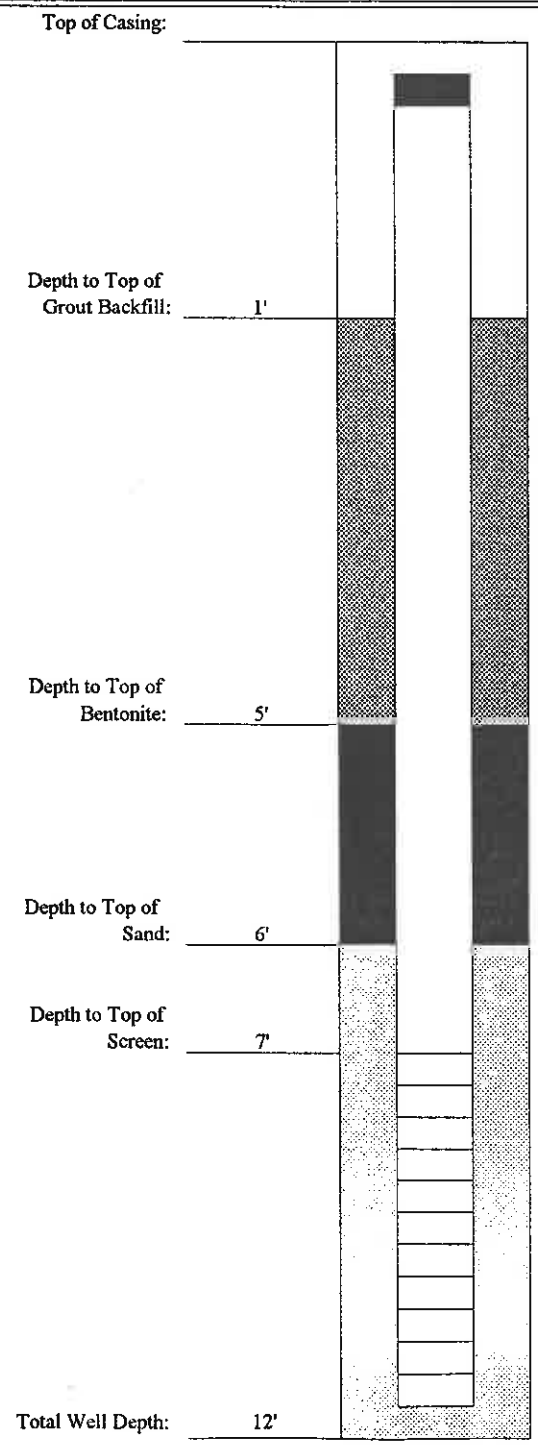
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	12'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen:

Diamater:	2"
Length:	5'
Slotsize:	0.01
Material:	PVC
Well Screen Interval:	7'-12'
Filter Pack:	Sand



SOIL PROFILE

0 - 8" Concrete
8" - 8.5' Sand
8.5 - 19' Silty Clay

Groundwater Encountered at 8'

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	SB-3/MW-3	Project Name:	GM - BUILDING 31
Date:	6/4/97	Project No.:	F329
Contractor:	GEEI	Location:	
Prepared By:	ALK	Twp/Range/Sec.:	
Time Started:	16:15	Depth Drilled:	21'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Norm
		Helper:	Ash

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Water Level Data

Date	SWL Elevation
6/10/97	7.17

WELL SPECIFICATIONS

Well Casing Cover:

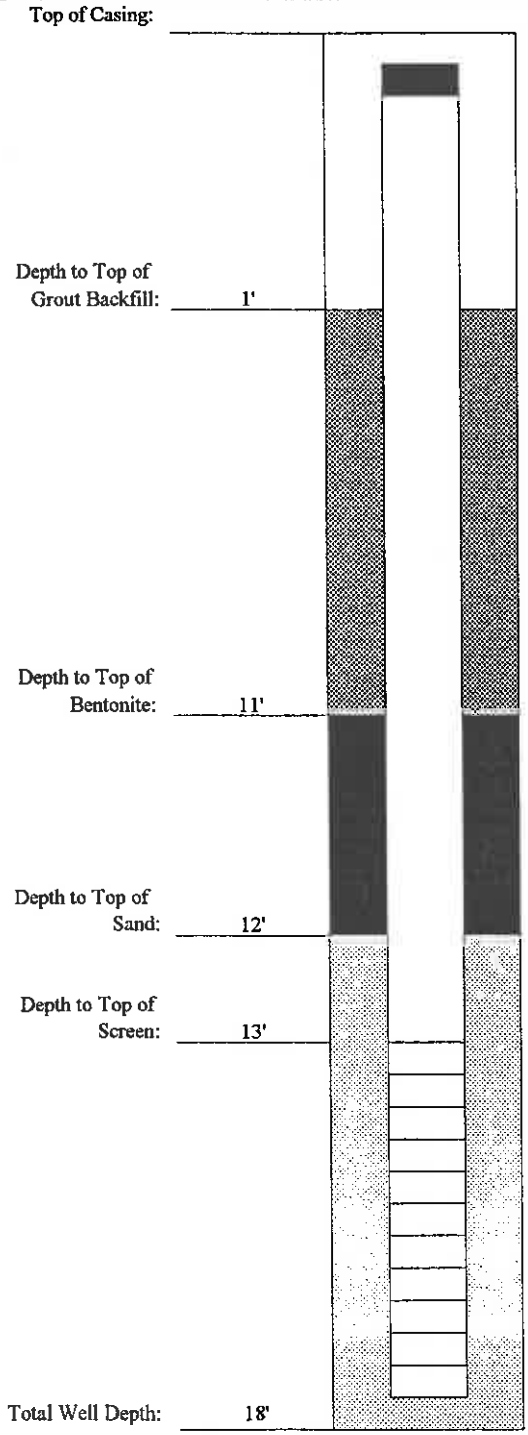
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	18'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen:

Diamater:	2"
Length:	5'
Slotsize:	0.01
Material:	PVC
Well Screen Interval:	13'-18'
Filter Pack:	Sand



SOIL PROFILE

0 - 10" Asphalt
10" - 3.5' Sand
3.5 - 13' Silty Clay
13 - 14.5 Sand
14.5 - 15 Silty Clay
15 - 16.5 Sand
16.5 - 21' Silty Clay

Groundwater Encountered at 15.5'

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	SB-4/MW-4S	Project Name:	GM - BUILDING 31
Date:	6/5/97	Project No.:	F329
Contractor:	GEEI	Location:	
Prepared By:	ALK	Twp/Range/Sec.:	
Time Started:	8:20	Depth Drilled:	21'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Norm
		Helper:	Ash

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Water Level Data

Date	SWL Elevation
6/10/97	6.08

WELL SPECIFICATIONS

Well Casing Cover:

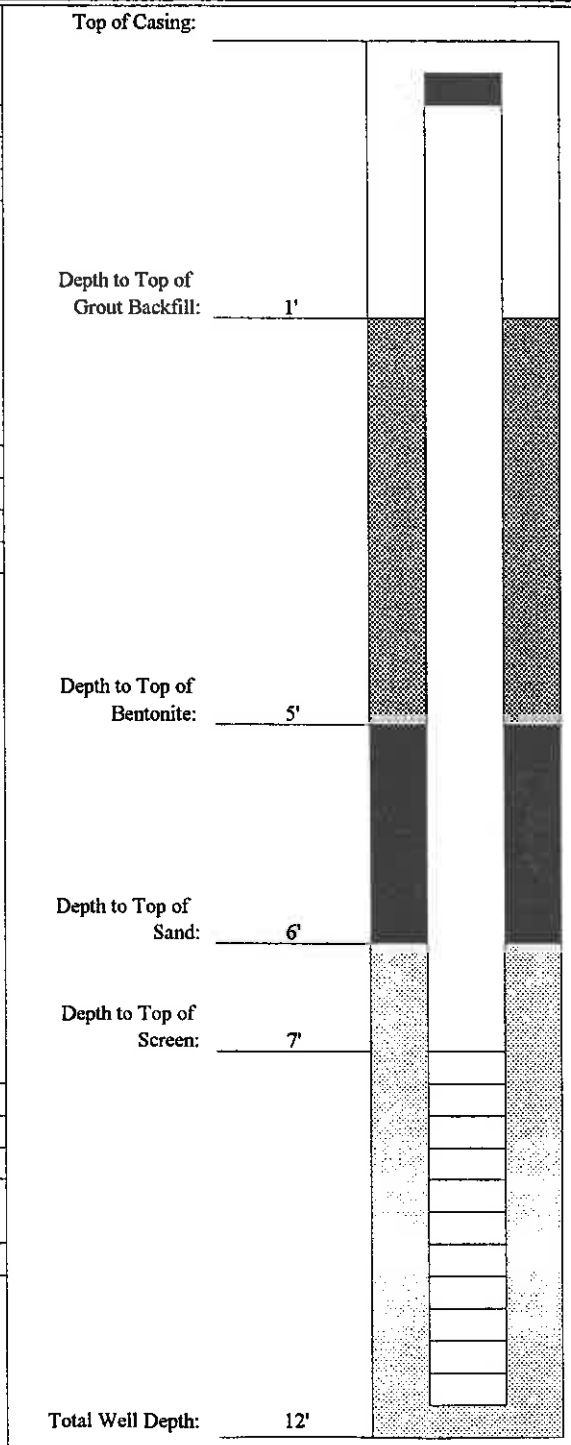
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	12'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen:

Diamater:	2"
Length:	5'
Slotsize:	0.01
Material:	PVC
Well Screen Interval:	7'-12'
Filter Pack:	Sand



SOIL PROFILE

0 - 10" Asphalt
10" - 3.5' Sand
3.5 - 21' Silty Clay

Groundwater Encountered at 8'

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	SB-4/MW-4D	Project Name:	GM - BUILDING 31
Date:	6/5/97	Project No.:	F329
Contractor:	GEEI	Location:	
Prepared By:	ALK	Twp/Range/Sec.:	
Time Started:	9:40	Depth Drilled:	21'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Norm
		Helper:	Ash

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Water Level Data

Date	SWL Elevation
6/10/97	6.09

WELL SPECIFICATIONS

Well Casing Cover:

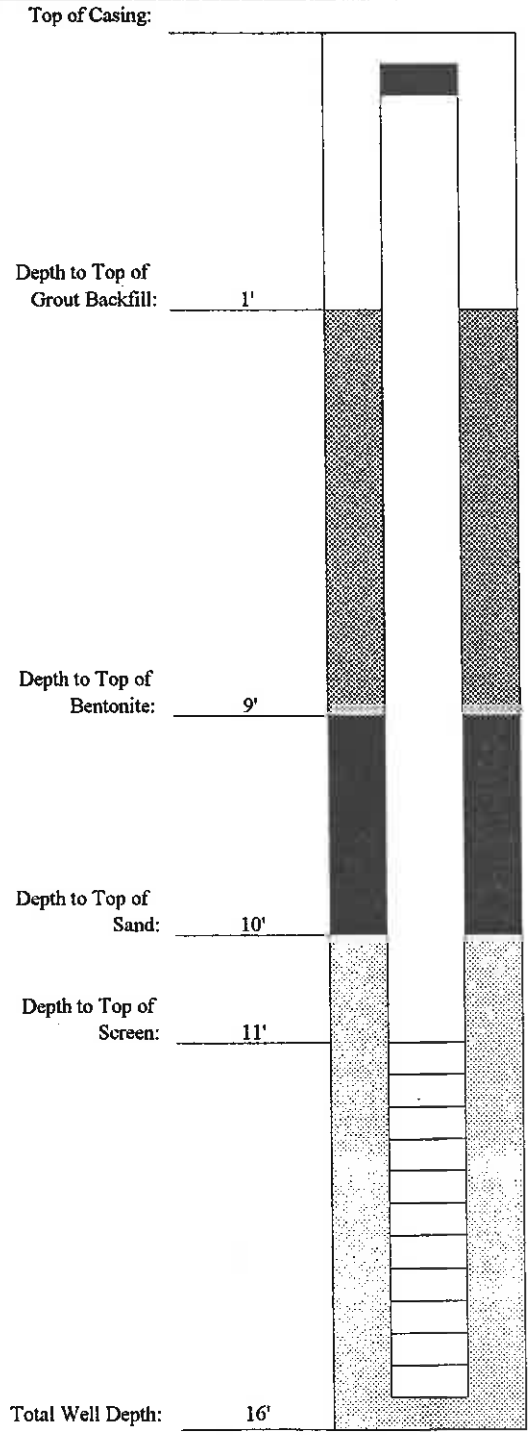
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	16'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen:

Diamater:	2"
Length:	5'
Slotsize:	0.01
Material:	PVC
Well Screen Interval:	11'-16'
Filter Pack:	Sand

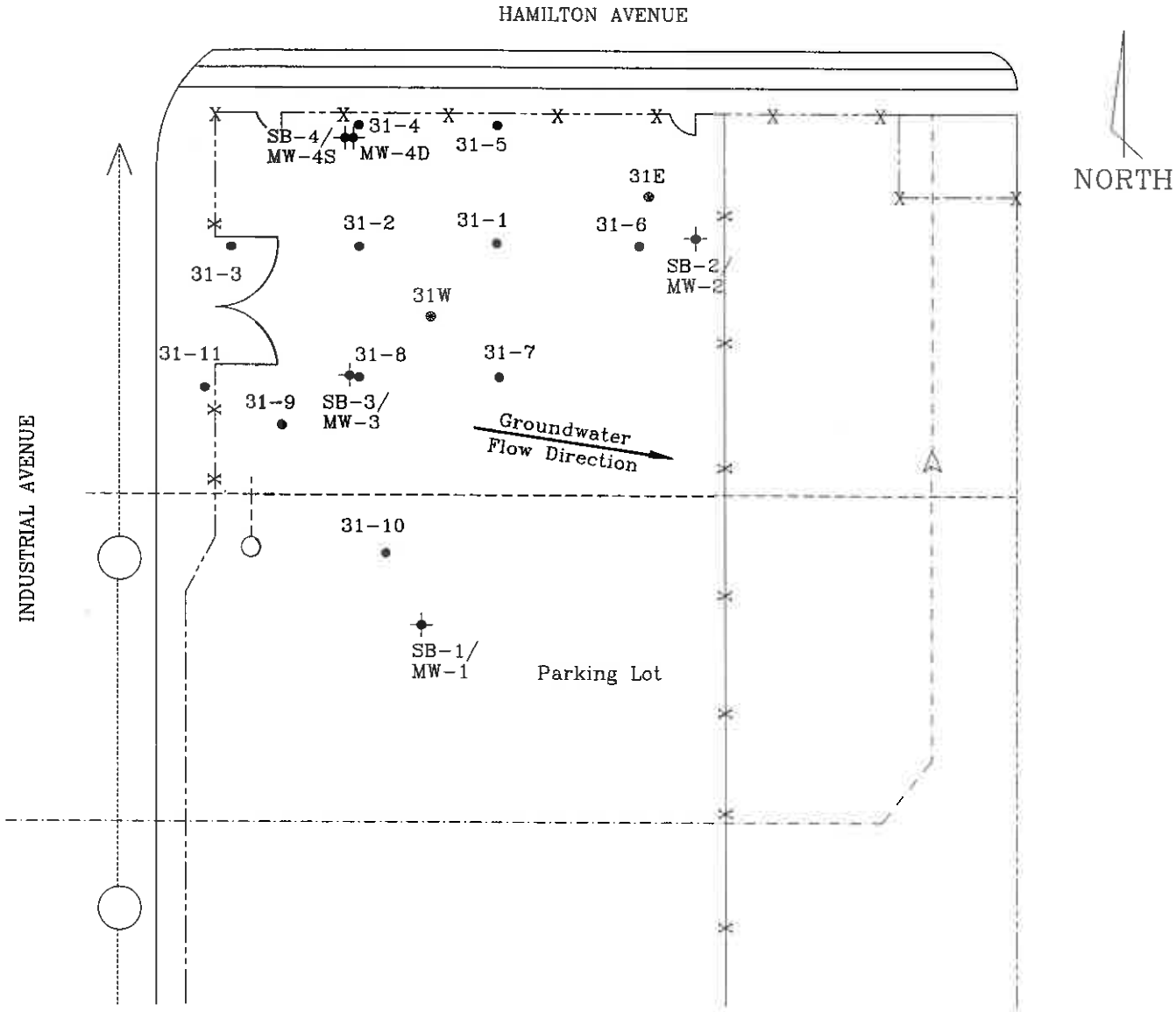


SOIL PROFILE

0 - 10" Asphalt
10" - 3.5' Sand
3.5 - 21' Silty Clay

Groundwater Encountered at 8'

ATTACHMENT 11



LEGEND:

- Monitoring Well Locations
- Geoprobe Sample Locations
- Fire Protection Line
- Storm Sewer Line
- 4" Process Waste
- Fence

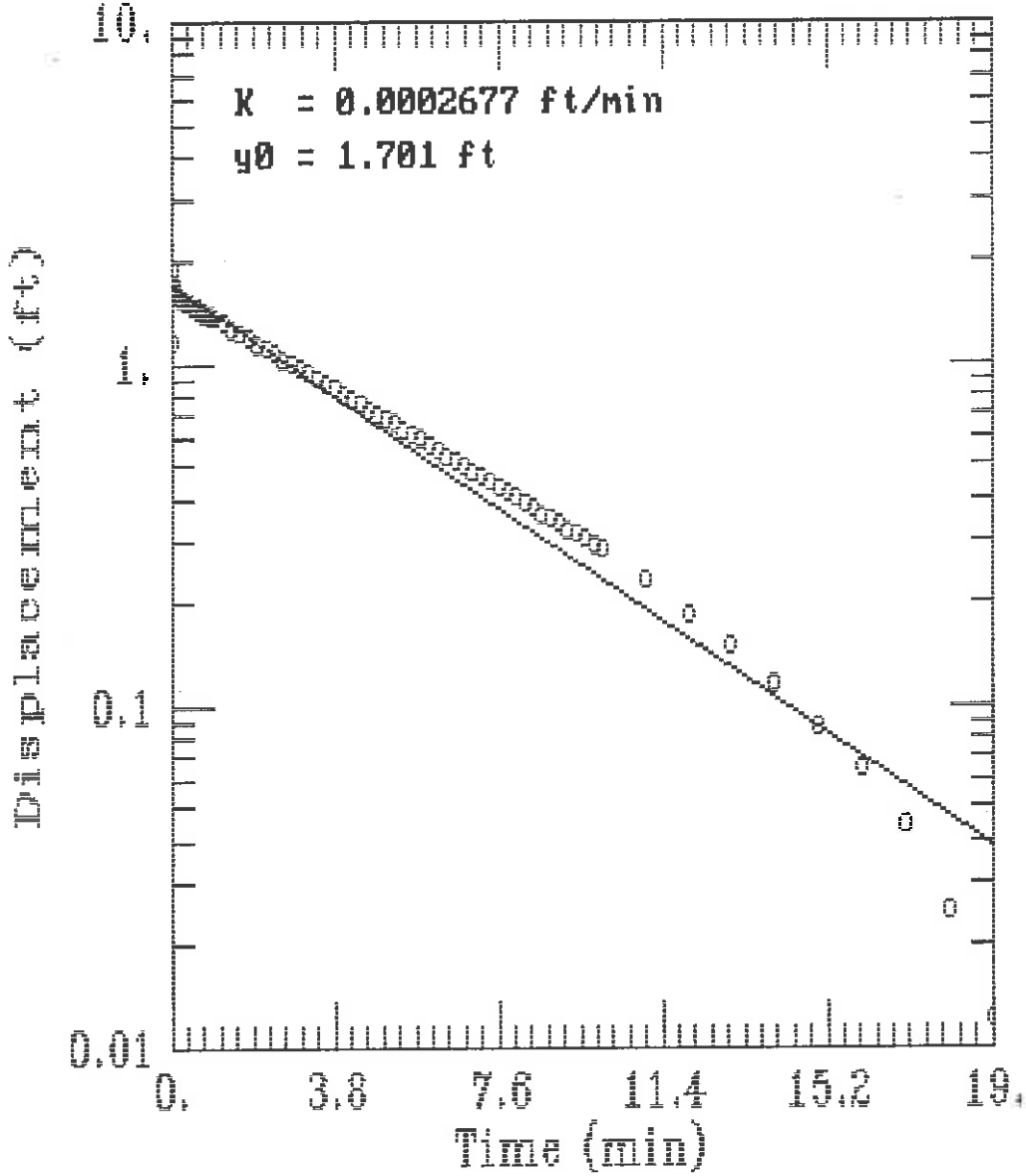
GM-CLCD NORTH

TITLE: GROUNDWATER FLOW DIRECTION MAP
BUILDING 31
FLINT, MICHIGAN

DATE: 8/13/96	SCALE: 1"=40'
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 11
	PROJECT NUMBER: F174

ATTACHMENT 12

BUILDING 31 - MW4D

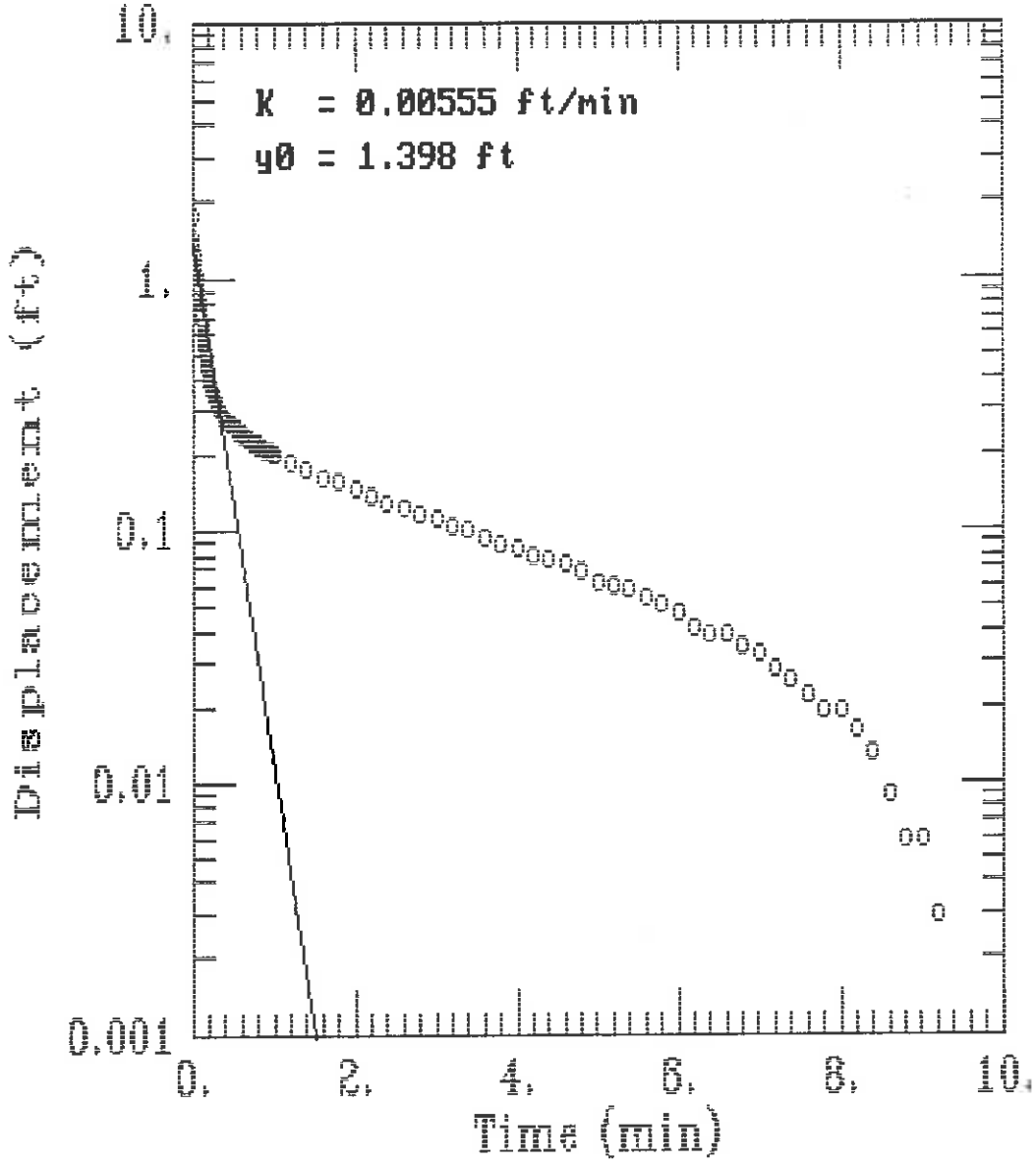


AQTESOLV

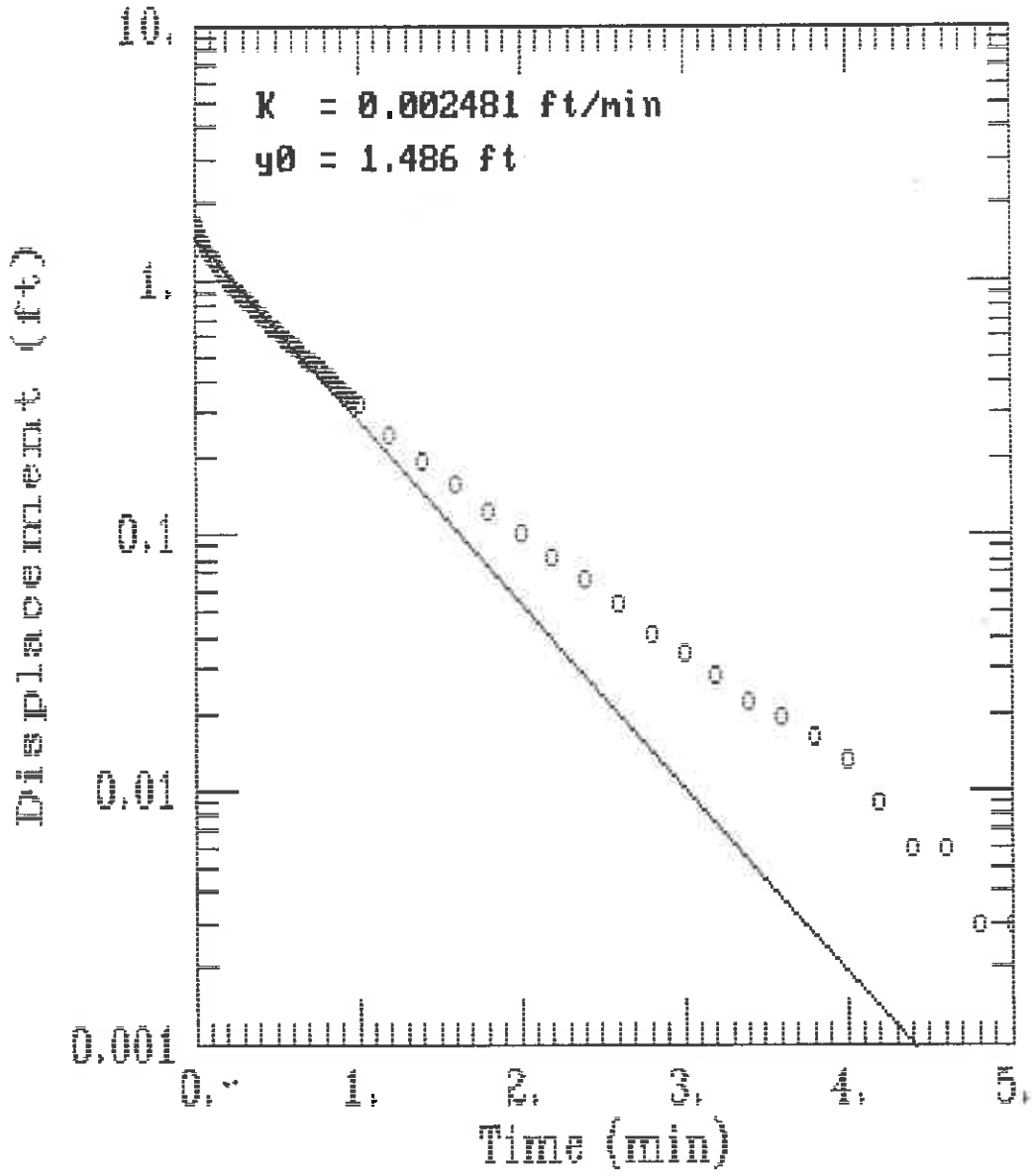
GERAGHTY & MILLER, INC.

Modeling Group

BUILDING 31 - MW4S



BUILDING 31 - MW1



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group