



EMCON

603 East Diehl Road • Suite 123 • Naperville, Illinois 60563-1477 • (630) 505-9450 • Fax (630) 505-9454

July 26, 1999

Project: 84068-063.009

Mr. Stephen G. Buda, P.E.
Chief, Hazardous Waste Permits
Michigan Department of Environmental Quality
Waste Management Division
John A. Hannah Building
P.O. Box 30241
Lansing, Michigan 48909-7741

Re: Closure Certification Report for Nodular Iron Oil House RCRA Hazardous Waste Storage Area at General Motors' Saginaw Metal Casting Operations, Saginaw, Michigan

Dear Mr. Buda:

Enclosed please find the Closure Certification Report for the Nodular Iron Oil House RCRA Hazardous Waste Storage Area at the General Motors Saginaw Metal Casting Operations Plant in Saginaw, Michigan.

If you have any questions or comments, or would like any additional information, please contact our office.

Sincerely,

EMCON

William K. Steinmann, CPG
Senior Project Manager

James J. McGuigan, P.E., CHMM
Site Restoration Department Manager

Attachment: Closure Certification Report for Nodular Iron Oil House RCRA Hazardous Waste Storage Area

cc: Mirtha Capiro, U.S.EPA
Ed Haapala, MDEQ Bay City District
Cheryl Hiatt, GM Remediation Team
Jean Caufield, GM Remediation Team
Tony Thrubis, GM Legal Staff
Dr. Lisa Williams, U.S. DOI, Fish and Wildlife



CLOSURE CERTIFICATION REPORT

**Nodular Iron Oil House RCRA Hazardous Waste Storage Area
Former Nodular Iron Plant
(Saginaw Metal Casting Operations)
2100 Veterans Memorial Parkway
Saginaw, Michigan**

JULY 1999

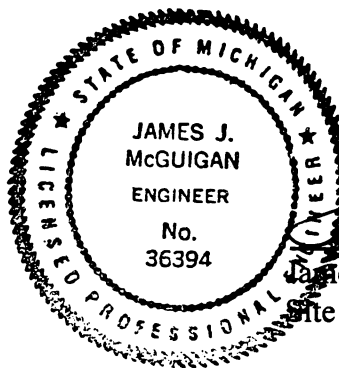
Prepared by:

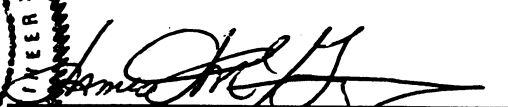
**EMCON
603 East Diehl Road, Suite 123
Naperville, Illinois**

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

CERTIFICATION OF CLOSURE

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete, and the closure activities for this unit have been conducted in substantial conformance with the approved closure plan. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”




James J. McGuigan, P.E., CHMM
Site Restoration Department Manager



Cheryl R. Hiatt
General Motors Corporation

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- Attachment I: RCRA Part A Permit Application (November 17, 1980)
- Attachment II: Closure Plan (May 19, 1981)
- Attachment III: Photographic Documentation of Closure Activities
- Attachment IV: Wastewater Characterization Analysis
- Attachment V: Waste Disposal Manifests

1 INTRODUCTION

1.1 Purpose

In accordance with Part 111 of the Michigan Natural Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended, and in compliance with the closure provisions of 40 CFR, Part 265, Subpart G, this report certifies the closure of a Resource Conservation and Recovery Act (RCRA) Storage Area, formerly located at General Motors Corporation's (GM) Nodular Iron Plant, 2100 Veterans Memorial Parkway, Saginaw, Michigan (now part of the Saginaw Metal Casting Operations - SMCO). The United States Environmental Protection Agency (U.S.EPA) Identification Number for SMCO is MID 041 793 340.

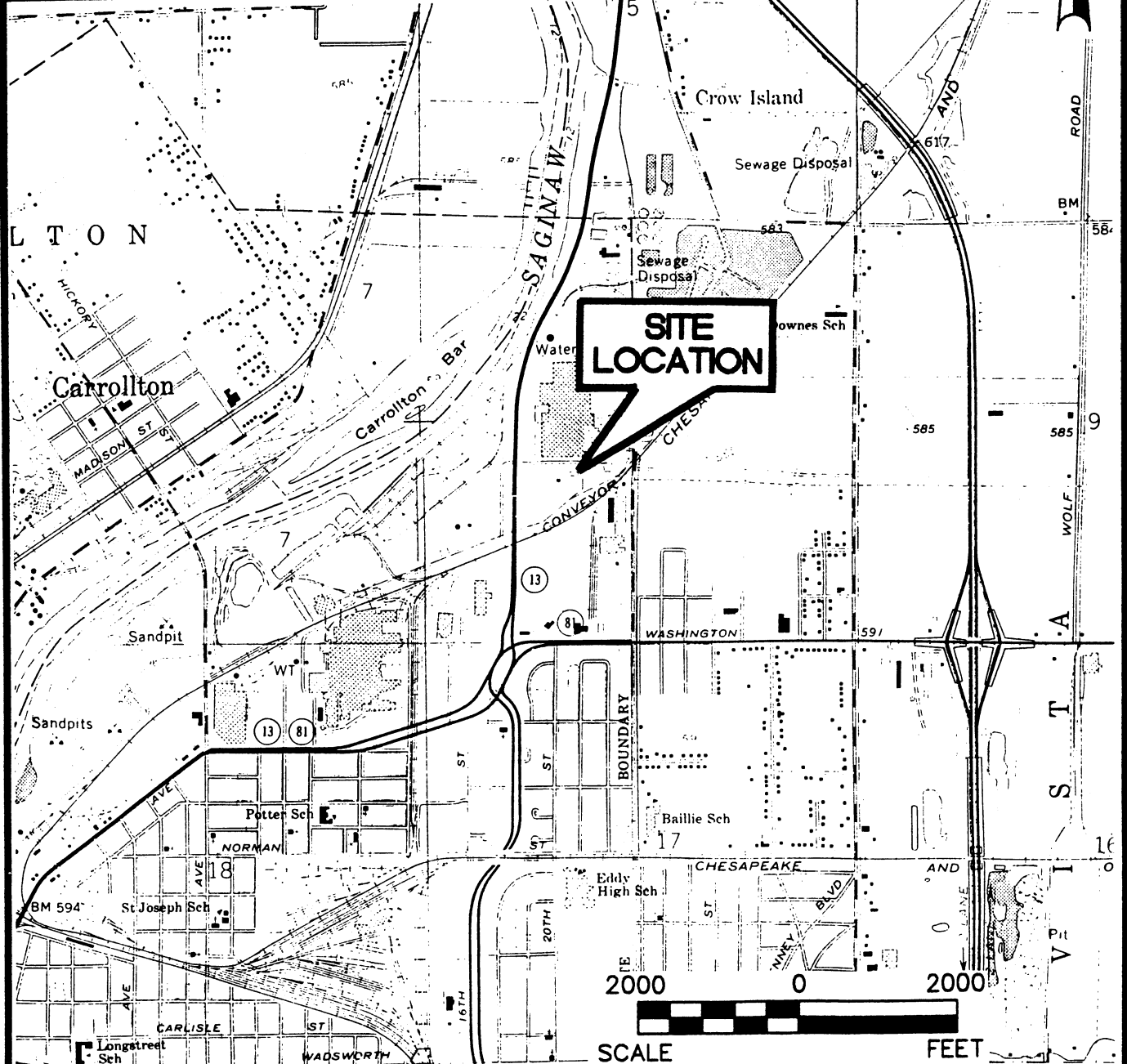
1.2 Background

The former storage unit was located at the former Nodular Iron Plant Oil House, 2100 Veterans Memorial Parkway, Saginaw, Michigan, within the NE 1/4 of the SW 1/4 of Section 8, Township 12 North, Range 5 East, Saginaw County, Michigan (refer to **Figure 1**).

According to the facility's RCRA Part A Permit Application (November 17, 1980), this unit consisted of a ten foot square storage pad (**Attachment I**). In actuality, the unit consisted of two,

SAGINAW, MICH.
N4322.5-W8352.5/7.5

1967
PHOTOREVISED 1973
AMS 4270 IV NW-SERIES V862



DATE 1/28/99
DWN AMC
APP BKS
REV _____
PROJECT NO.
84068-063.009

FIGURE 1
FORMER NODULAR IRON PLANT OIL HOUSE
SAGINAW, MICHIGAN

SITE LOCATION AND
TOPOGRAPHIC MAP

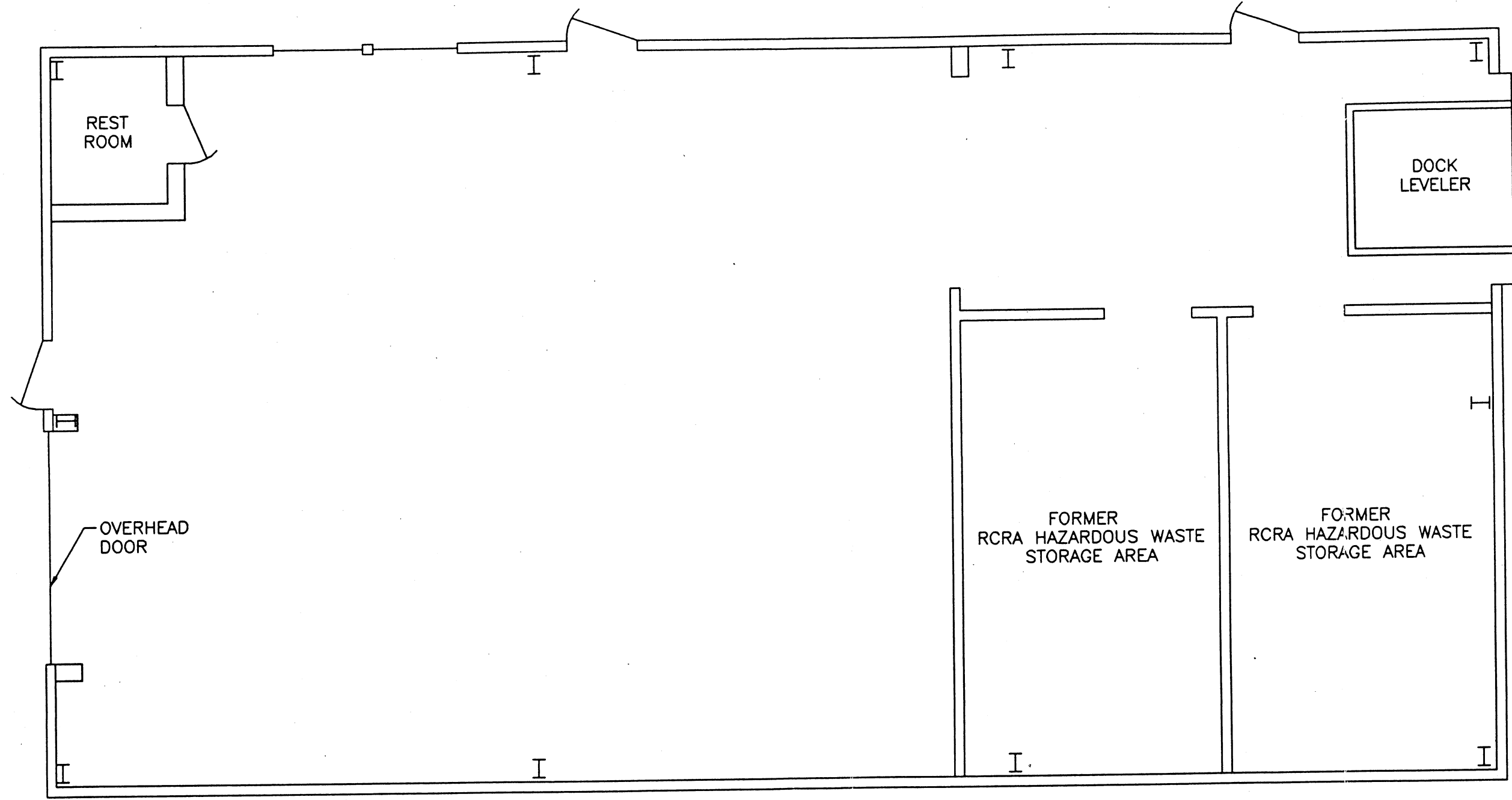
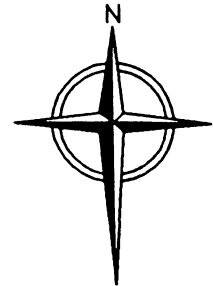
CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

approximately eleven feet by nineteen feet by fifteen feet high rooms complete with concrete and steel walls, a concrete floor, a ceiling and metal fire doors (refer to **Figure 2**).

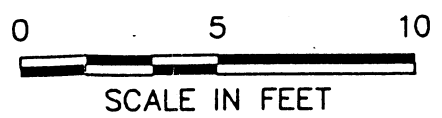
The use of the Oil House Storage Unit reportedly began at former Nodular Iron Plant start-up in 1966 and continued until just prior to plant closure in 1987. The Oil House Storage Unit was utilized to store hazardous waste materials staged in 55-gallon barrels until proper disposal. The main waste believed to have been stored on this pad was 1,1,1-trichloroethane (TCA) with lesser amounts of polychlorinated biphenyls (PCBs), chlorobenzene, waste petroleum naphtha, waste oils, and possibly trichloroethylene (TCE).

General Motors submitted a Closure Plan (dated May 19, 1981) to the U.S.EPA, for this storage area and others, pursuant to 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120 (**Attachment II**) on April 14, 1983. The Closure Plan was public noticed in the *Saginaw News* on May 5, 1983.

In an August 17, 1998, meeting between the Michigan Department of Environmental Quality - Waste Management Division (MDEQ-WMD), GM, and GM's consultant EMCON, it was agreed that GM could attain closure for this unit by implementing and adhering to the 1981 Closure Plan.



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DWN AMC
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PROJECT NO.
84068-063.009

FIGURE 2
SAGINAW METAL CASTING OPERATIONS
2100 VETERANS MEMORIAL PARKWAY
SAGINAW, MICHIGAN
FORMER NODULAR IRON PLANT
OIL HOUSE BUILDING LAYOUT

2 CLOSURE ACTIVITIES

On November 2, 1998, Clean Harbors Environmental Services, Inc. (Clean Harbors) of Chicago, Illinois mobilized to the Nodular Iron Oil House for the purpose of decontaminating/cleaning the RCRA Storage Area. A representative from EMCON was present at the site to direct and supervise the decontamination/cleaning activities. Photographic documentation of the closure activities is included in **Attachment III**).

2.1 Field Decontamination/Cleaning

On November 2, 1998, Mr. Steven M. Clayton, Staff Geologist, with the EMCON office in Northville, Michigan, supervised the decontamination of the Nodular Iron Plant Oil House RCRA Hazardous Waste Drum Storage Area located on the site of the Former Saginaw Nodular Iron Plant at 2100 Veterans Memorial Parkway, Saginaw, Michigan. The purpose of the decontamination event was to ensure the removal of any residual material on the walls and floor of the two-room storage facility located in the Nodular Iron Oil House in preparation for closure and demolition activities. Mr. Clayton met with Dave Longdon, foreman for Clean Harbors, and discussed the agenda for decontamination of the storage building. Mr. Longdon was assisted by two crew members, T. Waisley and E. Bogan.

The walls and floor of each room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors washed the walls and floor with the caustic scrub solution and extendible scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final step, the walls and floor of each room were steam cleaned. The rinse water from the steaming operations was also drawn off via vacuum pick-up and collected in the same two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs presented in **Attachment III**) the decontamination process and documented the cleaning operation of each room. The two 55-gallon drums were sealed, labeled, and placed near the entrance of the former Nodular Iron Plant Oil House. The decontamination process was completed following the 1981 Approved General Motors Closure Plan and the health and safety plan developed for the site¹. Yellow Tyvek suits, respiratory protection, nitrile gloves, safety glasses, and rubber boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

2.2 Wastewater Disposal

Clean Harbors collected representative samples from the two 55-gallon drums for waste characterization analysis (**Attachment IV**). On January 19, 1999, Clean Harbors removed the barrels from the site and transported the drums to Clean Harbors Services, Inc. in Chicago, Illinois for treatment and disposal. The waste manifest is included as **Attachment V**.

¹ Part VI of the Phase 1A RCRA Facility Investigation Workplan (June 1998, Revision 2).

3 SUMMARY AND CONCLUSIONS

On November 2, 1998, under the direction and supervision of EMCON, Clean Harbors Environmental Services, Inc. of Chicago, Illinois completed decontamination/cleaning activities at the Former Nodular Iron Plant Oil House RCRA Hazardous Waste Storage Area, located at 2100 Veterans Memorial Parkway, Saginaw, Michigan. These activities were completed in accordance with the Closure Plan which was previously approved by the Michigan Department of Environmental Quality - Waste Management Division.

The storage area consisted of two enclosed rooms within the Oil House Building (approximate dimensions of 11 feet by 19 feet by 15 feet high) that were utilized to store hazardous waste (1,1,1-TCA, PCBs, waste petroleum naphtha, chlorobenzene, waste oils, and possibly TCE). Decontamination/cleaning activities were completed on November 2, 1998.

Two, 55-gallon drums of wash rinse water were generated from the decontamination activities and were properly disposed by Clean Harbors. The Oil House Building was demolished in the spring of 1999 after completing decontamination and cleaning activities at the RCRA Hazardous Waste Storage Area.

Based on the above, GM and EMCON conclude that the closure activities have been successfully completed in conformance with the specifications in the approved Closure Plan. Therefore, GM respectfully requests that closure be granted for the former Nodular Iron Plant Oil House RCRA

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

Hazardous Waste Storage Area and that all financial assurance requirements be released for this former unit.

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

ATTACHMENT I

RCRA Part A Permit Application (November 17, 1980)

Part A Original
11/17/80

Please print or type in the unshaded areas only.
 (Fill-in areas are special for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158

FORM 1	EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION <i>Consolidated Permit Program</i> <small>(Read the "General Instructions" before starting.)</small>	I. EPA I.D. NUMBER F M I D O 4 1 7 9 3
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EPA I.D. NUMBER	PLEASE PLACE LABEL IN THIS SPACE
II. FACILITY NAME	
V. MAILING ADDRESS	
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS: If a preprinted label has been placed in the designated space, read the label carefully; if any of it is missing, through it and enter the correct information in the appropriate fill-in area below. If the preprinted data is absent, the appropriate fill-in area lists that should appear. Please provide proper fill-in areas below. Complete and correct, you need not submit any of these forms. You may answer "no" if the instructions for definitions of bold-faced terms and for the legal authority which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any question, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the instructions if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS
	YES	NO	FORM ATTACHED	
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		N.A.	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)

III. NAME OF FACILITY

1 GMC CHEVROLET SAGINAW CASTING & PARTS PL.

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title) B. PHONE (area code & no.)

2 CARTER, NORMAN CHF METALLURGIST 517 776 2572

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX B. CITY OR TOWN C. STATE D. ZIP CODE

3 2100 VETERANS MEMORIAL PARKWAY SAGINAW MI 48601

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER B. COUNTY NAME C. CITY OR TOWN D. STATE E. ZIP CODE F. COUNTY CODE

5 2100 VETERANS MEMORIAL PARKWAY SAGINAW SAGINAW MI 48601 00

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST				B. SECOND					
7	3	3	2	1	7	3	3	2	0
(specify) Grey Iron Foundry				(specify) Iron and Steel Foundries					
C. THIRD				D. FOURTH					
7	3	7	1	4	7	3	7	1	0
(specify) Motor Vehicle Parts & Accesories				(specify) Motor Vehicles & Equipment					

VIII. OPERATOR INFORMATION

A. NAME										B. Is the name of the owner?	
G M C C H E V R O L E T S A G I N A W C A S T I N G & P A R T S P L										<input checked="" type="checkbox"/> YES	
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other", specify.)										D. PHONE (area code & no)	
F - FEDERAL		M - PUBLIC (other than federal or state)		P (specify)		A		5 1 7		7 7 6 2 5	
S - STATE		O - OTHER (specify)									
P - PRIVATE											
E. STREET OR P.O. BOX											
2 1 0 0 V E T E R A N S M E M O R I A L P A R K W A Y											
F. CITY OR TOWN										G. STATE	
B S A G I N A W										M I	
										H. ZIP CODE	
										4 8 6 0 1	
										IX. INDIAN LAND	
										Is the facility located on Indian land?	
										<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)				D. PSD (Air Emissions from Proposed Sources)									
9	N	M	I	0	0	1	1	3	9	9	P	N	A
E. UIC (Underground Injection of Fluids)				E. OTHER (specify)									
9	U	N	A	(specify) State Air Pollution Permits - See Attachment									
C. RCRA (Hazardous Wastes)				E. OTHER (specify)									
9	N	A	(specify) City of Saginaw Sanitary Sewer (Parts & Cstg. Plts.)										

XI. MAP

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

XII. NATURE OF BUSINESS (provide a brief description)

The Chevrolet Metal Casting Plants in Saginaw produce grey and nodular iron castings used in the automotive industry. The specific process involves the melting of iron and steel scrap with coke, limestone, dolomite and fluorspar in water cooled cupolas to make molten metal. This is poured into green sand molds with or without cores for the manufacture of the above castings.

The Chevrolet Parts Plant Manufacturing and Machining Plant produces water pumps, oil pumps and flywheel ring gears as major components. Machining is performed on cast iron, aluminum and steel.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in this application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. OFFICIAL TITLE (type or print)		B. SIGNATURE		C. DATE SIGNED	
Vice President, General Motors Corp. General Manager, Chevrolet Motor Div.		<i>Rohit Sharma</i>		November 17,	

COMMENTS FOR OFFICIAL USE ONLY

C

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch.)

Form Approved OMB No. 158-S-

FORM 3 RCRA **EPA** U.S. ENVIRONMENTAL PROTECTION AGENCY
HAZARDOUS WASTE PERMIT APPLICATION
Consolidated Permits Program
(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER
FMID041793

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter EPA I.D. Number in Item I above.

A. FIRST APPLICATION (place an "X" below and provide the appropriate date)
 1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)
 2. NEW FACILITY (Complete item below)

FOR EXISTING FACILITIES. PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

YR.	MO.	DAY
8	19	09

YR.	MO.	DAY

FOR NEW FACILITIES. PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

B. REVISED APPLICATION (place an "X" below and complete item 1 above)
 1. FACILITY HAS INTERIM STATUS
 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES - CODES AND DESIGN CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes, describe the process (including its design capacity) in the space provided on the form (Item III-C).

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.
 2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:			Treatment:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY, LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY, LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR, METRIC TONS PER HOUR, GALLONS PER HOUR, LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS			
Disposal:			OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided: Item III-C.)	T04	GALLONS PER DAY, LITERS PER DAY
INJECTION WELL	D79	GALLONS OR LITERS			
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D81	ACRES OR HECTARES			
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET
LITERS	L	TONS PER HOUR	D	HECTARE-METER
CUBIC YARDS	L	METRIC TONS PER HOUR	W	ACRES
CUBIC METERS	Y	GALLONS PER HOUR	E	HECTARES
GALLONS PER DAY	U	LITERS PER HOUR	H	

EXAMPLE FOR COMPLETING ITEM III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

DUP

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY	
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)				1. AMOUNT	2. UNIT OF MEASURE (enter code)
X-1	S02	600	G		5			
X-2	T03	20	E		6			
1	S01	5775.0	G		7			
4	S03	70.0	Y		8			
3	T04	7000.0	U		9			

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

T04 - The Calcium Carbide Slag pile, accumulated daily, is soaked with water to decompose any unreacted calcium carbide.

IV. DESCRIPTION OF HAZARDOUS WASTES

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

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

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

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

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

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of processes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

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

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

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

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

F	M	I	D	0	4	1	7	9	3	3	4	0	T	R	C
															6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS

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

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)

LONGITUDE (degrees, minutes, & seconds)

4	3	2	7	0	0	N
01 - 02	03 - 04	05 - 06	07 - 08	09 - 10	11 - 12	

0	8	3	5	5	0	8	W
13 - 14	15 - 16	17 - 18	19 - 20	21 - 22	23 - 24	25 - 26	

VIII. FACILITY OWNER

- A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.
- B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER

2. PHONE NO. (area code)

3. STREET OR P.O. BOX

4. CITY OR TOWN

5. ST.

6. ZIP CODE

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)
 Robert D. Lund
 Vice President, General Motors Corp.
 General Manager, Chevrolet Motor Div.

B. SIGNATURE



C. DATE SIGNED

November 17, 1980

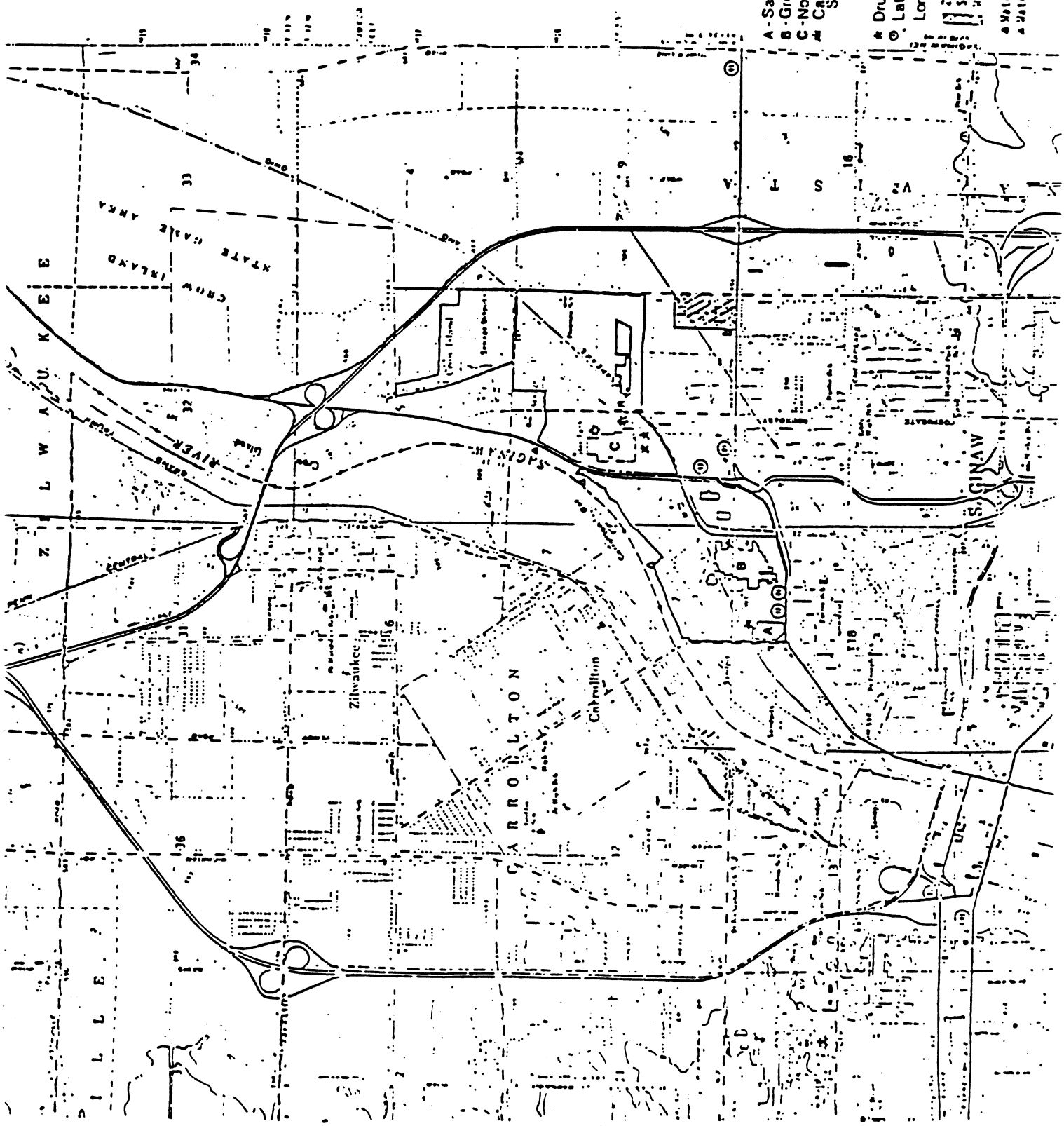
X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)

B. SIGNATURE

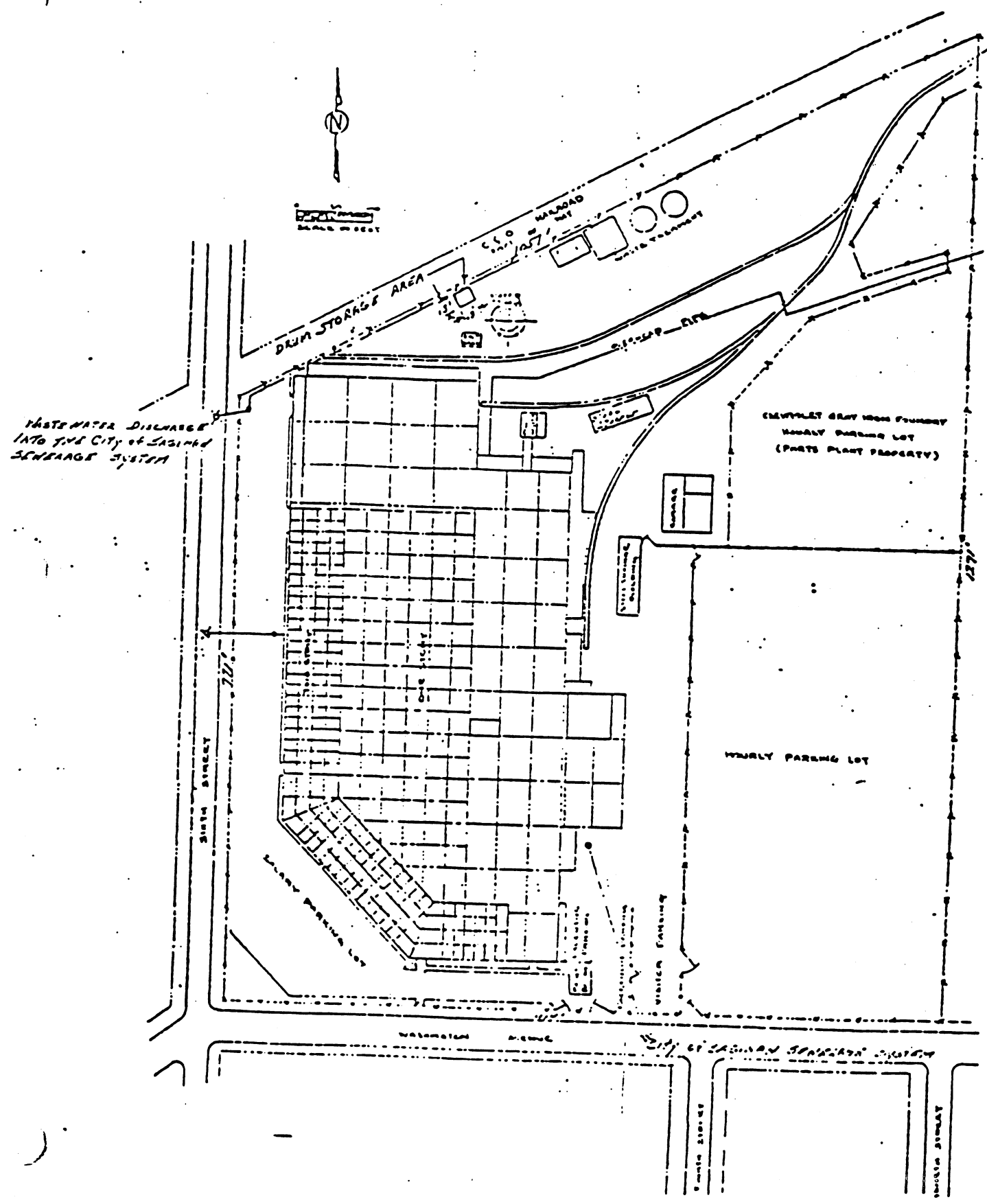
C. DATE SIGNED



Legend
 A - Saginaw Paris
 B - Grey Iron
 C - Nodular Iron
 * Calcium Carbide Slag Treatment

* Drum Storage
 O Lat - 43° 27' 05" N
 Long - 85° 55' 06" W
 26 Holes Supplied w/ Well Water
 Water Int. to 000
 Water ge 002

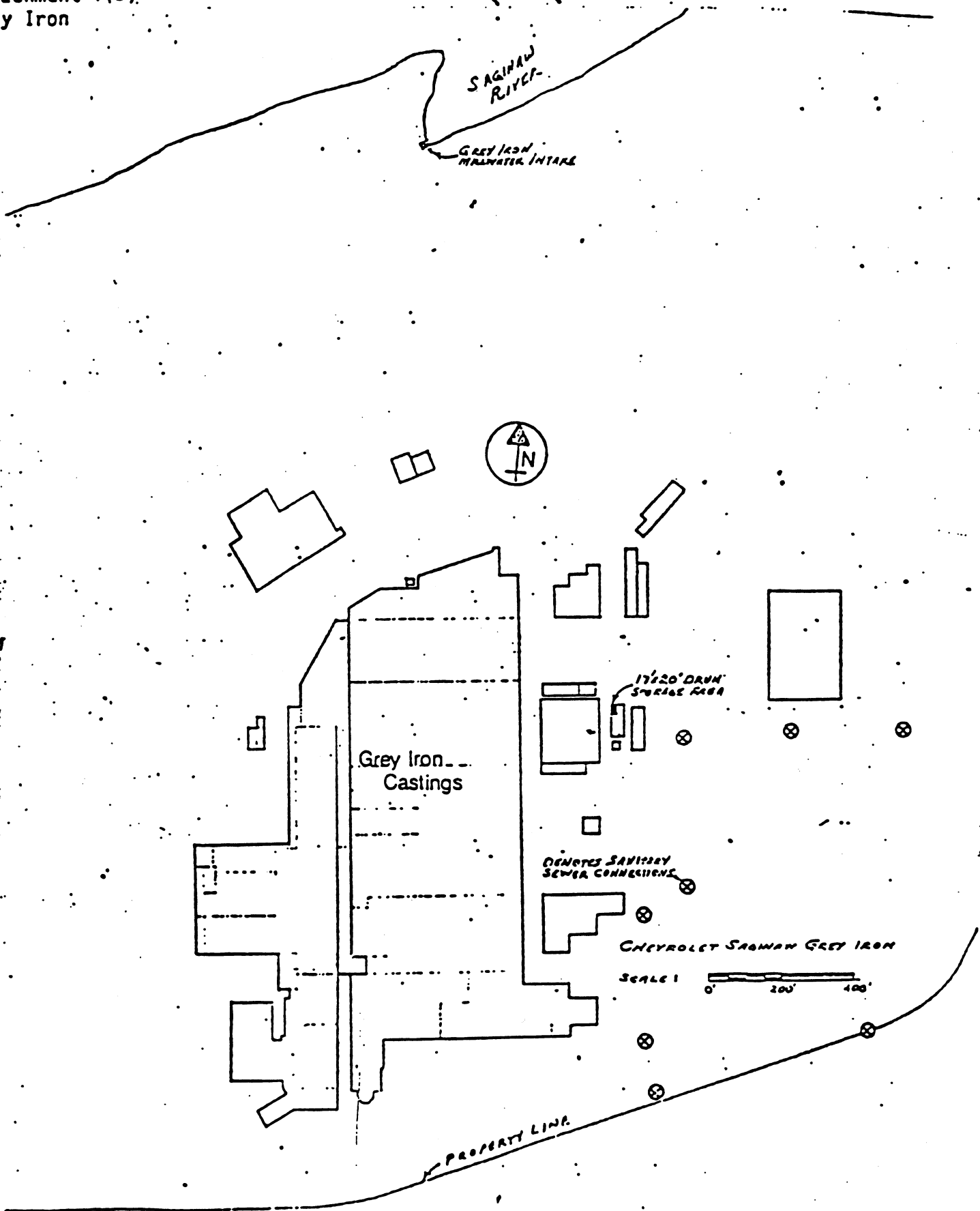
Attachment V(A)
Saginaw Parts



Continued from page 4.

FACILITY DRAWING (see page 4)

Attachment V(B)
Grey Iron



Grey Iron
Castings

17'20' DRUM
STORAGE AREA

DENOTES SANITARY
SEWER CONNECTIONS

CHEVROLET SAGINAW GREY IRON

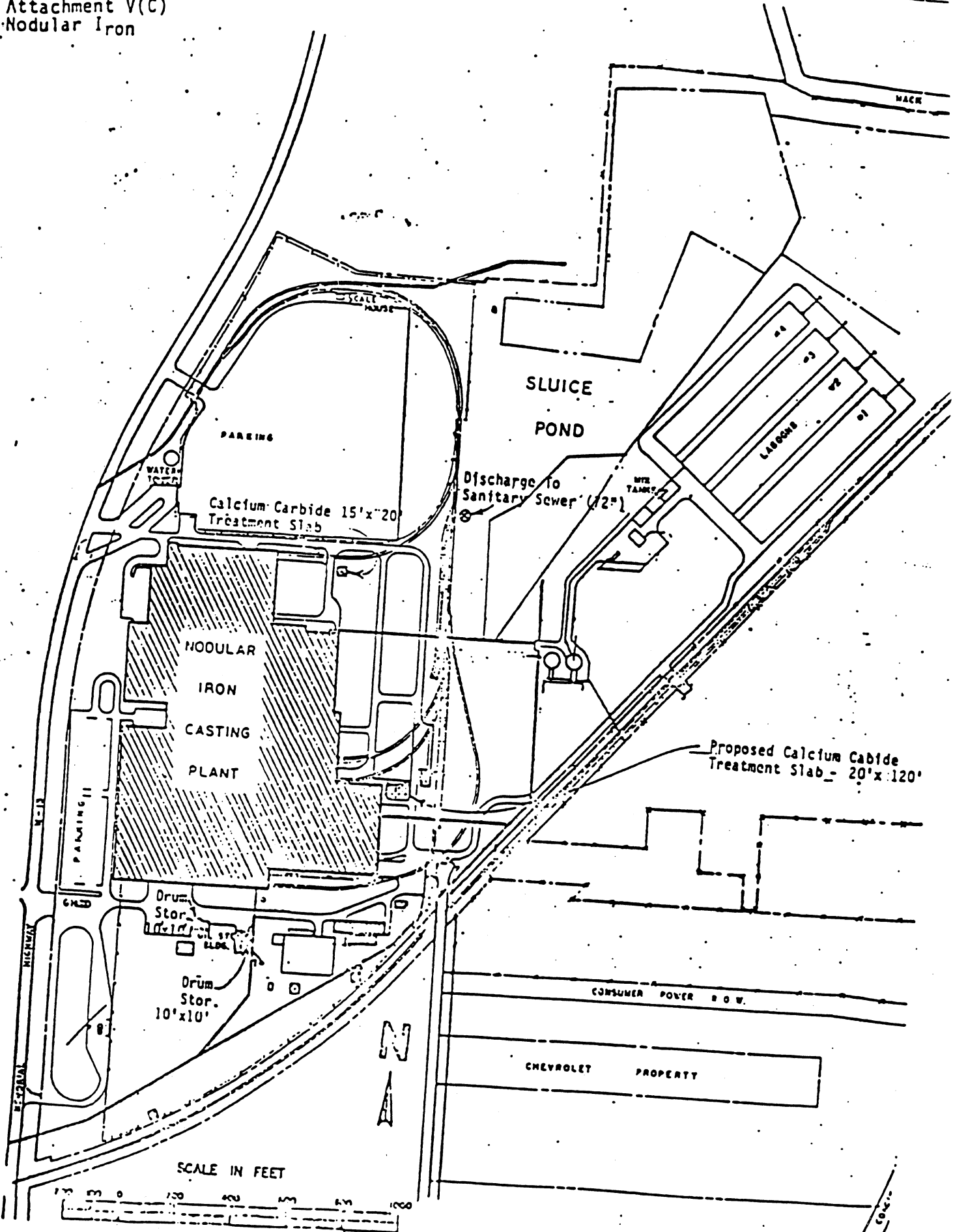
SCALE 1 0 200 400'

PROPERTY LINE

SAGINAW
RIVER

GREY IRON
RAW WATER INTAKE

Attachment V(C)
Nodular Iron





ACKNOWLEDGEMENT OF NOTIFICATION
OF HAZARDOUS WASTE ACTIVITY

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act (RCRA). Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER

<p>ILC-1793340</p> <p>2100 VETERANS EMERGENCY</p> <p>2100 VETERANS EMERGENCY</p> <p>2100 VETERANS EMERGENCY</p>
<p>2100 VETERANS EMERGENCY</p> <p>2100 VETERANS EMERGENCY</p>

INSTALLATION ADDRESS

Part A Revised
9/28/81

ISSUED FROM THE FRONT

IC CODES (3-digit, in order of priority)

A. FIRST		B. SECOND	
3 2 1 (specify)	Grey Iron Foundry	7 3 3 2 0 (specify)	Iron and Steel Foundries
C. THIRD		D. FOURTH	
7 1 4 (specify)	Motor Vehicle Parts & Accessories	7 3 7 1 0 (specify)	Motor Vehicles and Equipment

OPERATOR INFORMATION

A. NAME: **S.M.C. CHEVROLET SAGINAW CASTING & PARTS PLT**

B. Is the name listed in Item VIII-A also the owner? YES NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

FEDERAL M = PUBLIC (other than federal or state) P (specify)
 STATE S = STATE O = OTHER (specify)
 PRIVATE P = PRIVATE

D. PHONE (area code & no.)
 5 1 7 7 7 6 2 5 7 2

E. STREET OR P.O. BOX
1 0 0 VETERANS MEMORIAL PARKWAY

F. CITY OR TOWN: **SAGINAW**

G. STATE: **MI**

H. ZIP CODE: **4 8 6 0 1**

I. INDIAN LAND: Is the facility located on Indian lands? YES NO

EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Waters): **MI 0 0 1 1 3 9**

D. PSD (Air Emissions from Proposed Sources): **9 P N A**

B. UIC (Underground Injection of Fluids): **U N A**

E. OTHER (specify): (specify) State Air Pollution Permits - See Attachment

C. RCRA (Hazardous Wastes): **IR N A**

E. OTHER (specify): (specify) City of Saginaw Sanitary Sewer (Parts & Csta. Plts. Rest)

XI. MAP

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

XII. NATURE OF BUSINESS (provide a brief description)

The Chevrolet Metal Casting Plants in Saginaw produce grey and nodular iron castings used in the automotive industry. The specific process involves the melting of iron and steel scrap with coke, limestone, dolomite and fluorspar in water cooled cupolas to make molten iron. This is poured into green sand molds with or without cores for the manufacture of the above castings.

The Chevrolet Parts Plant Manufacturing and Machining Plant produces water pumps, oil pumps and flywheel ring gears as major components. Machining is performed on cast iron, aluminum and steel.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print): **Robert D. Lund, Vice Pres. - GMC Gen. Mgr. - Chevrolet Motor Div.**

B. SIGNATURE: *Robert D. Lund*

C. DATE SIGNED: **9-24-81**

COMMENTS FOR OFFICIAL USE ONLY

C

GMC CHEVROLET CASTINGS AND PARTS PLANT

AIR POLLUTION PERMIT RECORD

Parts Plant

Nodular Iron

Grey Iron

Grey Iron

273-74	56-68	89-71A	38-74B
101-76	68-6CA	126-71	350-80
434-77	68-68B	90-71A	361-74
708-78	68-68C	91-71A	349-80
954-78	68-68D	92-71	392-73
13-79	73-68	125-71	105-74
238-79	139-69	93-71A	35-78
101-80	140-69	411-77	37-78
	141-69	127-71	38-78
	42-70	235-79	39-78
	42-70A	95-71	24-75
	42-70B	36-78	225-79
	42-70C	307-74A	40-78
	292-72	8-76	41-78
	449-73	640-79	947-79
	158-73	240-76	42-78
	74-70	286-76	134-76
	58-73	812-77	43-78
	59-73	814-77	44-78
	74-70A	813-77	45-78
	129-74	216-73	46-78
	130-74	344-73	47-78
	131-74	393-73	400-75
	276-74	79-76	48-78
	129-76	501-79	49-78
	416-75	593-77	50-78
	366-76	253-74	101-79
	93-77	916-79	100-79
	405-77	811-77	23-74D
	262-78	918-78	23-74C
	437-78	234-80	23-74B
	1052-78	210-73	23-74A
	720-79	507-77	88-78
		18-80	302-73
		33-77	113-76
		451-80	303-73
		44-77	100-73
		35-77	101-73
		36-77	102-73
		224-79	103-73
		223-79	
		222-79	
		221-79	
		38-74A	

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

ATTACHMENT II

Closure Plan (May 19, 1981)

FEB. 14, 1994

CLOSURE PLAN
CHEVROLET METAL CASTINGS
GENERAL MOTORS CORPORATION

I. Introduction

Under the U.S. EPA Regulations, 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120, each facility which stores, treats, or disposes of hazardous wastes must have a closure plan on file. This closure plan has been prepared to cover the following facility:

- A. EPA I.D. Number: MID041793340
- B. Facility Name: General Motors Corporation
Chevrolet Saginaw Casting & Parts Plant
2100 Veterans Memorial Parkway
- C. This Plan Prepared by: David C. Ruhland, Project Engineer
May 18, 1981

Plan Revisions:

Mk.	Date	Revision	By

D. Facilities for Hazardous Waste:

<u>Location</u>	<u>Type</u>	<u>Materials Handled</u>
Parts Plant	Storage	Used Chlorathene VG, Paint Residues, & Thinners
Grey Iron	Storage	Used Chlorathene VG, Used caustic solution Paint Residues, & Thinners
Nodular Iron	Storage	Used Chlorathene VG Paint Residues, & Thinners
Nodular Iron	Treatment	Calcium Carbide Slag

RIN 768-94

FEB. 14, 1994 Maximum Waste Inventory - The following table shows the maximum quantity of wastes on hand at any one time:

Used 1,1,1, Trichlorethane	120 - 55 Gal. Drums
Paint Residue & Thinners	120 - 55 Gal. Drums
Caustic Solution	60 - 55 Gal. Drums
Calcium Carbide Slag	720 Tons

III. Schedule for Closing

This facility does not have a definite closure date. The following schedule is open-ended. It lists the time table for closure in terms of elapsed time subsequent to the time that EPA, or an EPA authorized state agency, has approved this Closure Plan (refer Section 265.112 c)

Day 1 - Plant termination of hazardous waste activity.

Day 10 - All paint residues, thinners, caustic solution and degreaser solvents removed from storage and shipped for disposal.

Day 20 - Storage areas washed with a detergent solution and rinsed with potable water. Detergent solution and rinse water will be collected, tested and if required will be disposed of in an approved landfill.

Day 28 - Contents of the calcium carbide slag treatment area will be treated to deactivate the unreacted calcium carbide. Treated material will be removed to disposal area.

Day 30 - Any used drums will be shipped for proper disposal/reclamation.

Day 35 - Closure should be complete.

Day 40 - Certification of closure by independent registered professional engineer.

IV. Decontamination of Facility & Equipment:

1. Pretreatment of Calcium Carbide Slag Treatment Area:

All Calcium Carbide slag will be treated to neutralize any unreacted materials prior to the removal of this facility. All neutralized material will be disposed of in approved areas. The treatment area will be rinsed thoroughly with potable water.

RIN 768-94

FEB. 14, 1994 Decontamination of 1,1,1, Trichlorethane Storage Area:

Once the area is cleared of all 55 gallon drums, the walls and floor of the storage facility will be washed with a 5% alkaline detergent solution. The solution will be drawn off via vacuum pick-up and stored in a bulk tank for disposal. As a final step, the walls and floor will be steam cleaned to ensure removal of the material.

3. Decontamination of Paint Residue & Thinner Storage Facilities:

Once the area is cleared of all 55 gallon drums, the walls and floor of the storage facility will be washed with a 5% alkaline detergent solution. The solution will be drawn off via vacuum pick-up and stored in a bulk tank for disposal. As a final step, the walls and floor will be steam cleaned to ensure removal of the material.

4. Decontamination of Caustic Solution Storage Areas:

Once the area is cleared of all 55 gallon drums, the walls and floor of the storage facility will be washed with a 5% alkaline detergent solution. The solution will be drawn off via vacuum pick-up and stored in a bulk tank for disposal. As a final step, the walls and floor will be steam cleaned to ensure removal of the material.

USEPA FCIA REQUEST

RIM. 70094 Estimates for Closure (To be updated annually on April 1st) (1981 \$'s)

FEB. 14, 1994 Prepared by: Doyle Hansen, General Supt. Plant Engineering

<u>Area</u>	<u>Total Cost</u>	
A. 1,1,1, Trichlorethane Storage		
1) NICP	\$4000	
2) GICP	4000	
3) Saginaw Parts	<u>1500</u>	
Total		\$9500
B. Paint Residue & Thinners Storage		
1) NICP	\$4000	
2) GICP	4000	
3) Saginaw Parts	<u>1500</u>	
Total		\$9500
C. Caustic Solution Storage		
1) GICP Only	\$6000	\$6000
D. Calcium Carbide Slag Treatment		
	\$4500	<u>\$4500</u>
Total		\$29,500

ATTACHMENT III

Photographic Documentation of Closure Activities

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

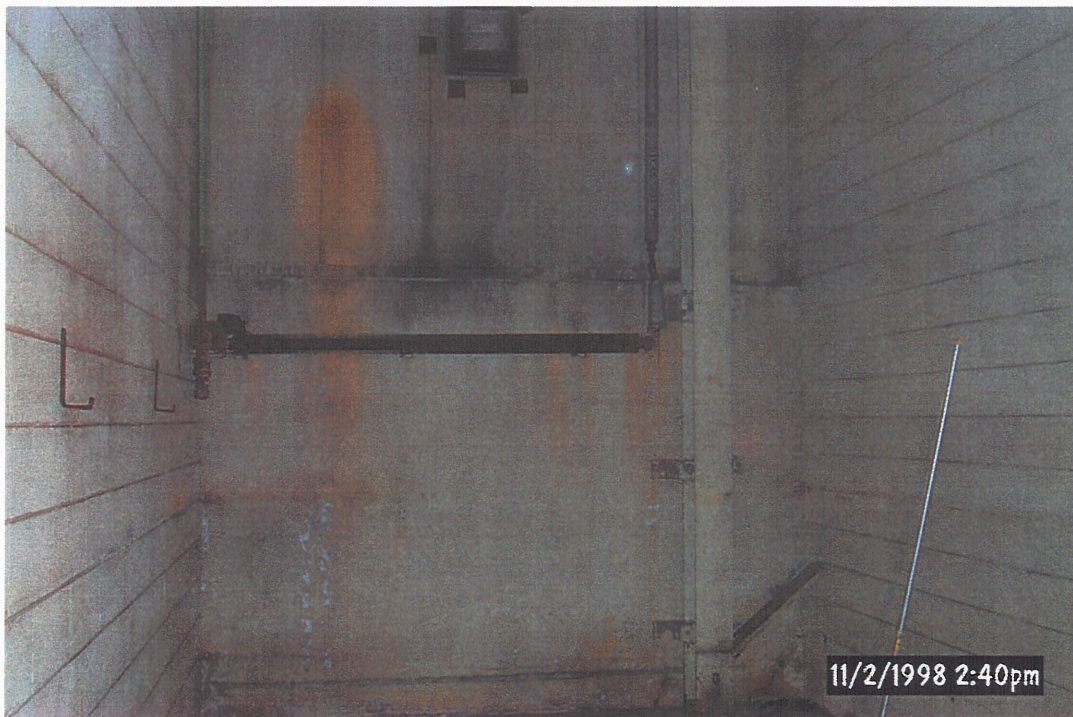


Nodular Iron Oil House, West Entrance (Prior to Cleaning Activities)

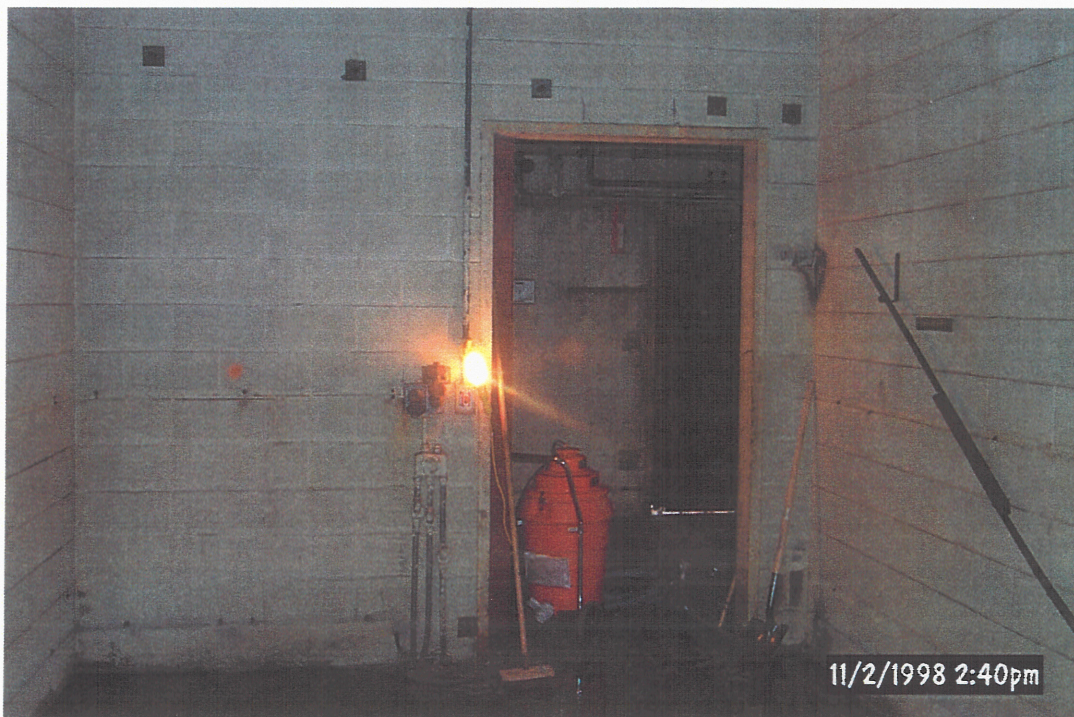


Nodular Iron Oil House, Viewing Southeast (Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

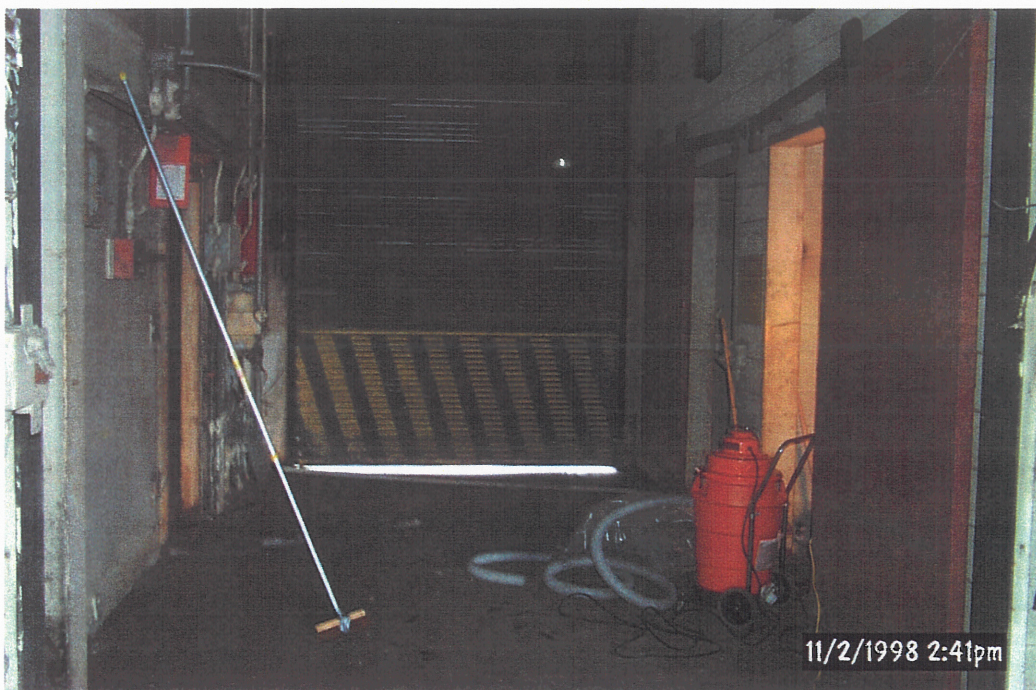


Nodular Iron Oil House, RCRA Storage Unit (Viewing South - Prior to Cleaning Activities)

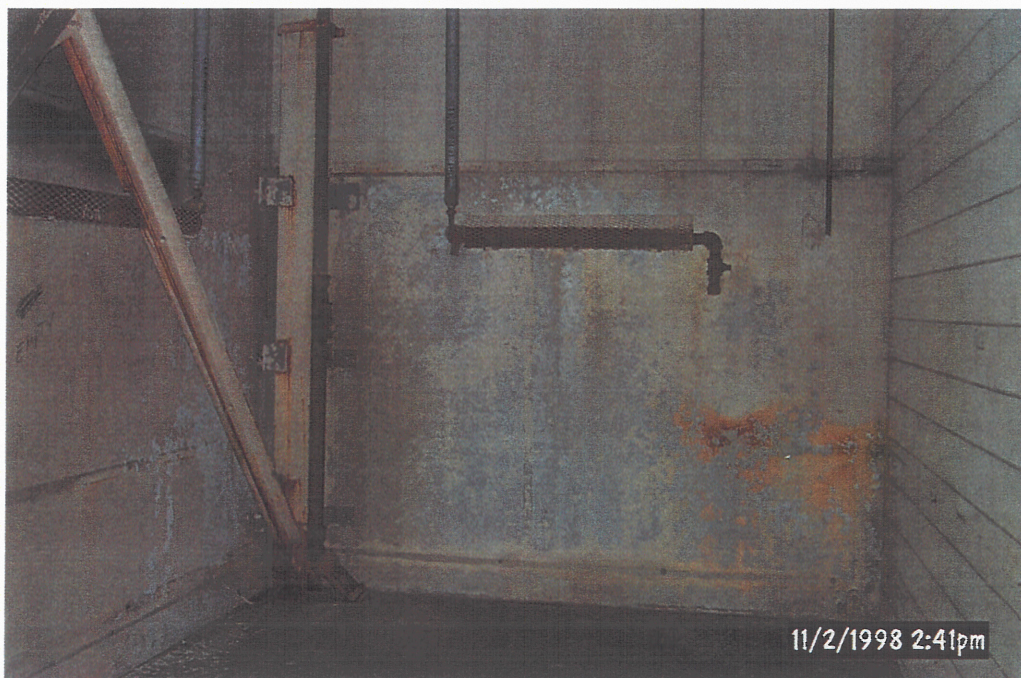


Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing North - Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

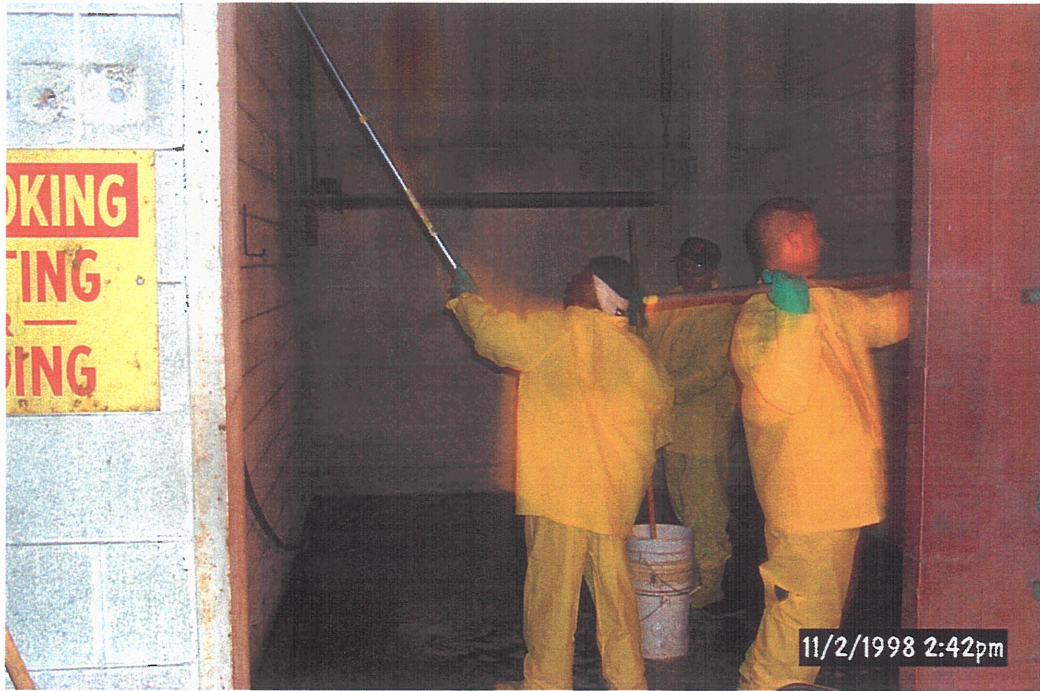


Inside Nodular Iron Oil House, Viewing East Outside of RCRA Storage Units (Prior to Cleaning Activities)

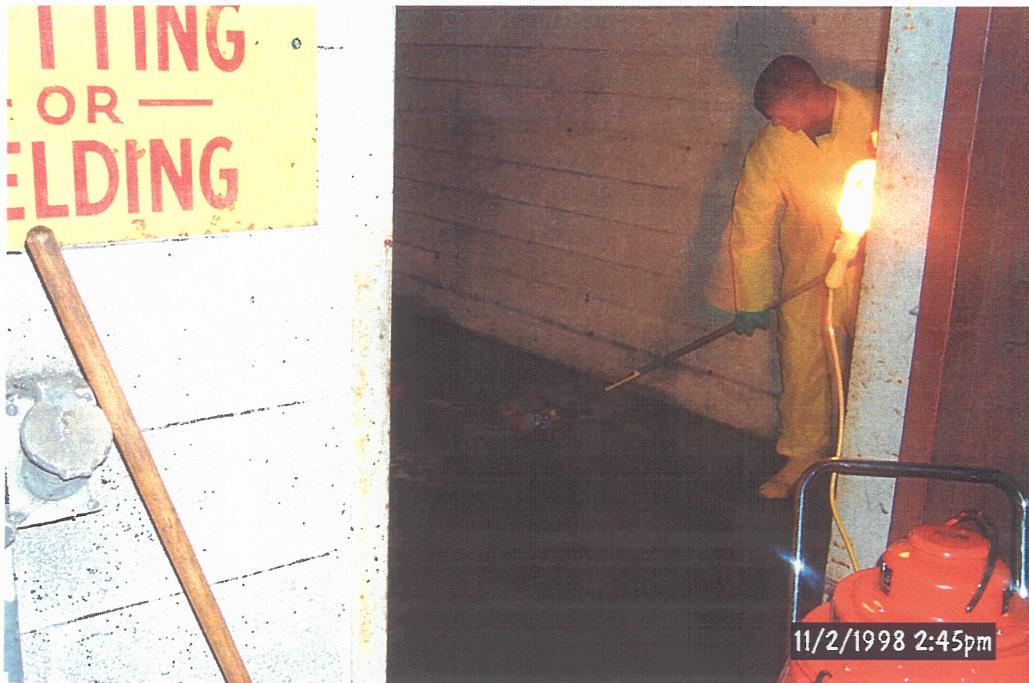


Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing South - Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, RCRA Storage Unit (Floor and Wall Scrubbing)



Nodular Iron Oil House, Vacuum Pick-Up of Wash Water

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, Outside of RCRA Storage Units (Viewing West)

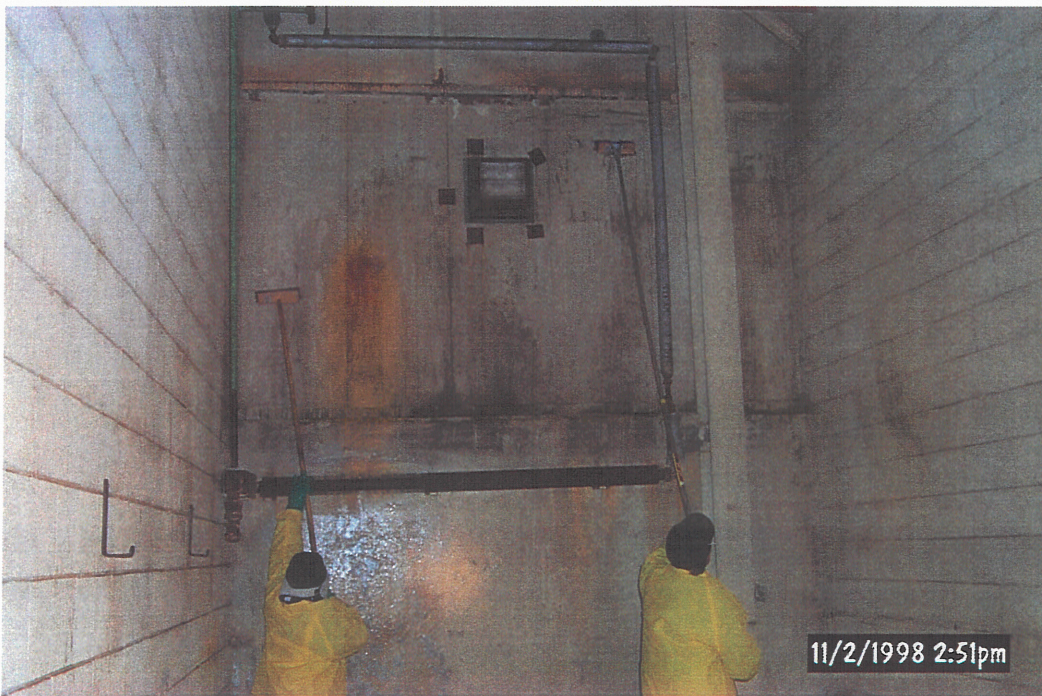


Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing North - Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, RCRA Storage Unit (Viewing South - Prior to Cleaning Activities)



Nodular Iron Oil House, RCRA Storage Unit Wall Scrubbing (Viewing South)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

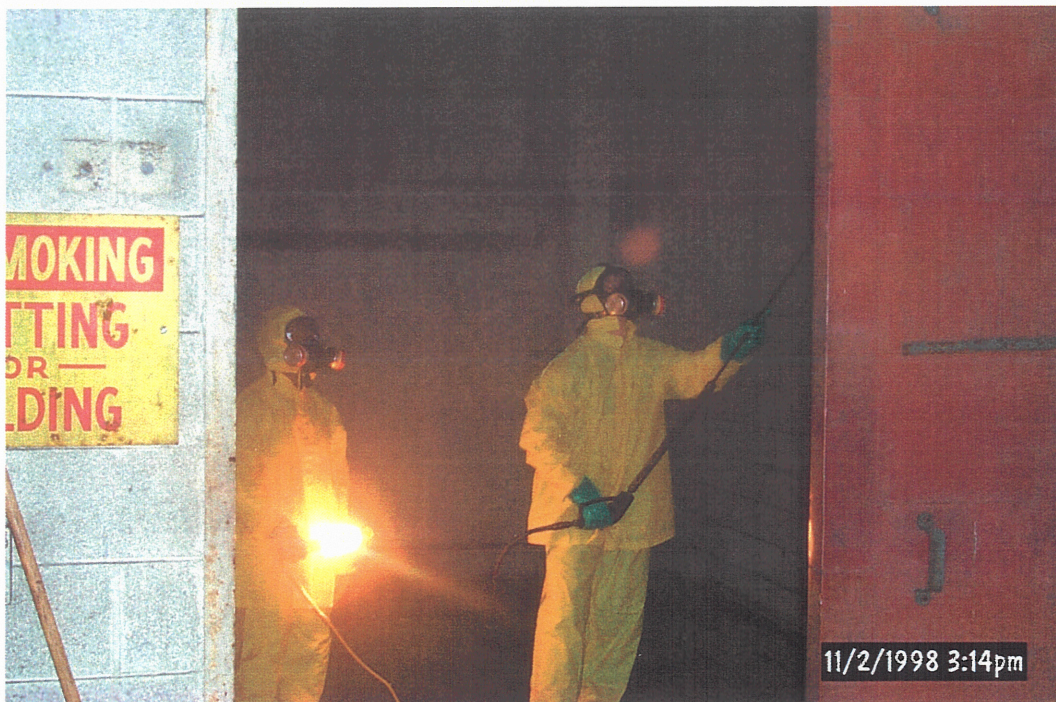


Nodular Iron Oil House, RCRA Storage Unit Wall Scrubbing (Viewing South)



Nodular Iron Oil House, RCRA Storage Unit Steam Cleaning After Scrubbing (Viewing South)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, Steam Cleaning RCRA Storage Unit (Viewing South)



Nodular Iron Oil House, RCRA Storage Unit After Steam Cleaning Activities (Viewing South)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

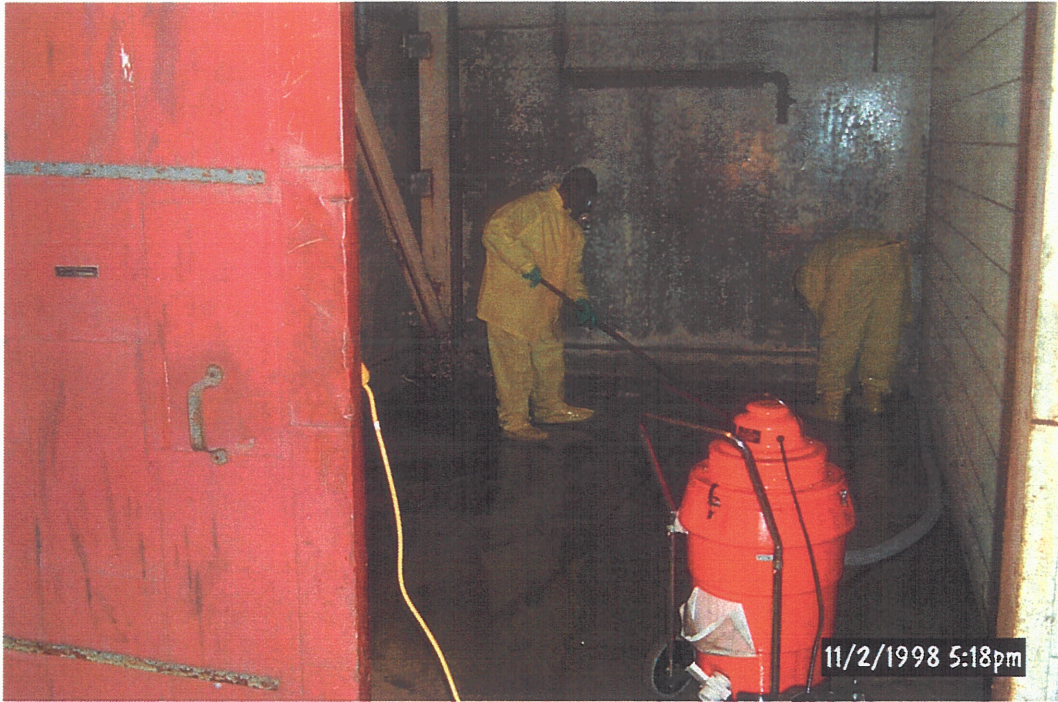


Nodular Iron Oil House, Vacuum Pick-Up of Wash Water After Steam Cleaning Activities (Viewing North)



Nodular Iron Oil House, Steam Cleaning RCRA Storage Unit (Viewing Southeast)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, Vacuum Pick-Up of Wash Water (Viewing South)



Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing North After Final Cleaning)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing South After Final Cleaning)

ATTACHMENT IV

Wastewater Characterization Analysis



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Date: November 16, 1998

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Project: EMCON/General Motors

Enclosed are the results from 1 water sample received at Great Lakes Analytical on November 9, 1998. The requested analyses are listed below:

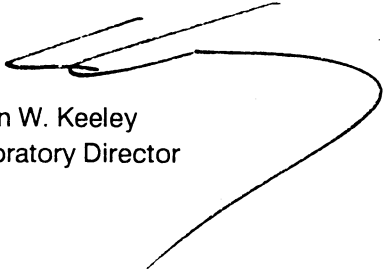
SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
8111831	Water: CH121333	11/3/98	TCLP RCRA Metals Flash Point, EPA ASTM D92-85 Reactive Cyanide, EPA 7.3.3 Reactive Sulfide, EPA 7.3.4 PCB, EPA 8082 TCLP VOC, EPA 8260 TCLP SVOC, EPA 8270 pH by EPA 9040

This report may not be reproduced, except in full, without the written approval of the laboratory.

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stony Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: TCLP Extract: CH121333 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Extracted: Nov 10, 1998 Analyzed: Nov 12, 1998 Reported: Nov 16, 1998
---	--	--

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	2.0	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	0.018
Lead.....	3015/7421	0.0015	0.014
Mercury.....	7470	0.0020	0.0081
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL



Kevin W. Keeley
Laboratory Director



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water
Analysis for: pH by EPA 9040
First Sample #: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 9, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS FOR: pH by EPA 9040

Sample Number	Sample Description	Sample Result pH units	Temperature °C
811-1831	CH121333	8.3	22

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <2>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water: CH121333
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 9, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS

Analyte	EPA Method	Sample Results
Flash Point, Closed Cup(F).....	ASTMD93-85	>200

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <3>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water:: CH121333
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 11, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Reactive Cyanide.....	7.3.3	0.010	N.D.
Reactive Sulfide.....	7.3.4	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL



Kevin W. Keeley
Laboratory Director

8111831.chs <4>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water: CH121333
Analysis Method: EPA 8082
Lab Number: 811-1831

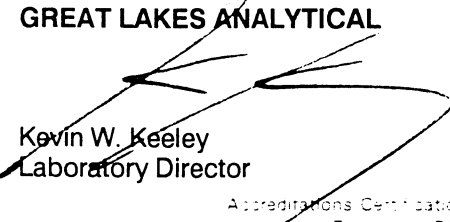
Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 10, 1998
Analyzed: Nov 10, 1998
Reported: Nov 16, 1998

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Detection Limit $\mu\text{g/L}$	Sample Results $\mu\text{g/L}$
PCB 1016.....	1.0	N.D.
PCB 1221.....	1.0	N.D.
PCB 1232.....	1.0	N.D.
PCB 1242.....	1.0	N.D.
PCB 1248.....	1.0	N.D.
PCB 1254.....	1.0	N.D.
PCB 1260.....	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <5>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Analysis Method: EPA 8260
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 13, 1998
Reported: Nov 16, 1998

TCLP VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
Benzene.....	0.40	N.D.
Carbon tetrachloride.....	0.40	N.D.
Chlorobenzene.....	0.40	N.D.
Chloroform.....	0.40	N.D.
1,2-Dichloroethane.....	0.40	N.D.
1,1-Dichloroethylene.....	0.40	N.D.
Methyl ethyl ketone.....	100	N.D.
Tetrachloroethylene.....	0.40	N.D.
Trichloroethylene.....	0.40	N.D.
Vinyl chloride.....	0.16	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <6>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stoney Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Analysis Method: EPA 8270
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 13, 1998
Analyzed: Nov 14, 1998
Reported: Nov 16, 1998

TCLP SEMI-VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
o-Cresol.....	20	N.D.
m-, p-Cresol.....	20	N.D.
Cresol.....	20	N.D.
1,4-Dichlorobenzene.....	0.75	N.D.
2,4-Dinitrotoluene.....	0.020	N.D.
Hexachlorobenzene.....	0.020	N.D.
Hexachloro-1,3-butadiene.....	0.050	N.D.
Hexachloroethane.....	0.30	N.D.
Nitrobenzene.....	0.20	N.D.
Pentachlorophenol.....	10	N.D.
Pyridine.....	0.50	N.D.
2,4,5-Trichlorophenol.....	40	N.D.
2,4,6-Trichlorophenol.....	0.20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keefe
Laboratory Director

8111831.chs <7>

ATTACHMENT V

Waste Disposal Manifests

5110

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM WASTE MANIFEST		1. Generator's US EPA ID No. <i>N/A</i>		2. Page 1 of 1		Information in the shaded areas is not required by Federal law, but is required by Illinois law.	
3. Generator's Name and Mailing Address <i>General Motors Corporation PO Box 5079 1629 N Washington Saginaw, MI 48605</i>				Location If Different			
4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* <i>1-800-645-8265</i>				A. Illinois Manifest Document Number <i>IL 7734497</i> FEE PAID IF APPLICABLE			
5. Transporter 1 Company Name <i>Clean Harbors Env. Services, Inc</i>				6. US EPA ID Number <i>MA0039322250</i>			
7. Transporter 2 Company Name				8. US EPA ID Number			
9. Designated Facility Name and Site Address <i>Clean Harbors Services, Inc. 11800 South Stony Island Ave. Chicago, Illinois 60617</i>				10. US EPA ID Number <i>ILD000608471</i>			
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers No. Type		13. Total Quantity	
a. <i>NON DOT Regulated material, NON DOT Hazardous, UN 002 PF 00, 17, 06</i>						14. Unit W/Vol <i>03160101051</i>	
b.						Waste No.	
c.						EPA HW Number <i>XX</i> Authorization Number	
d.						EPA HW Number <i>XX</i> Authorization Number	
J. Additional Description for Materials Listed Above <i>11a. CH121333</i>				K. Handling Codes for Wastes Listed Above in item #14			
15. Special Handling Instructions and Additional Information <i>2 55 GAL DRUMS. PLACED INTO 2-PAY OVERPACKS, WO# IL147635</i>							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name <i>Gilbert Jensen</i>				Signature <i>Gilbert Jensen</i>		Date <i>01/21/99</i>	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name <i>RICHARD W FELDER</i>				Signature <i>Richard W Felder</i>		Date <i>01/21/99</i>	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature		Date	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of materials materials covered by this manifest except as noted in item 19.						Date	
Printed/Typed Name <i>JEFFREY AREVALO</i>				Signature <i>Jeffrey Arevalo</i>		Date <i>01/22/99</i>	

GENERATOR

TRANSPORTER

FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$25,000 per day of violation. Falsification of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

Nodular Iron Plant Oil House

Pictures of RCRA Pad cleaning
November 2, 1998
Clean Harbors

j:\84068063\005\photos\

P0000362.jpg → P0000384.jpg

7/18/99

RCRA Report

& from Jean

- ✓ ① Cert. 1 sig. PE
1 sig. GM - NO NAME
- ② AH. I permit
NPDES excl. only - take out

- ✓ ③ 1-1 CFR 265 not 264
Subpart G (interim status
RCRA Storage Area)
MDVR Resource(s) placed

- ✓ ④ 3-1 3 IP 1st Sect.
O.T. House gone was demold after
clean-up

- ✓ ⑤ Substantial conformance
← delete

Need to respond to TM letter from EPA

Peter Booth

- ✓ - make A's
- cover letter to Steve Budda
- ✓ - Remove Draft & Privileged
- ✓ - 009 / RCRA



EMCON

603 East Diehl Road, Suite 123, Naperville, Illinois 60563-1477 • (630) 505-9450 • Fax (630) 505-9454

TRANSMITTAL

Project/Task No.: 84068-063.009

TO: Mr. Tony Thrubis, Esq. DATE: June 7, 1999
General Motors Corporation
GM Building
3044 West Grand Blvd.
Detroit, Michigan 48202

RE: Saginaw Metal Casting Operations

WE ARE SENDING:

QUANTITY	DESCRIPTION
<u>1</u>	<u>Draft Closure Certification Report, Nodular Iron Oil House RCRA Hazardous Waste Storage Area, Saginaw, MI</u>

For Your:

 USE
 APPROVAL
 X REVIEW/COMMENTS
 INFORMATION
 OTHER

Sent By:

 REGULAR MAIL
 X FEDERAL EXPRESS
 UPS
 COURIER
 OTHER

COMMENTS: The attached is submitted to your attention, pursuant to the request of Cheryl Hiatt.

CC: Cheryl Hiatt, GM Remediation Team (Letter Of Transmittal Only)
 Jean Caufield, GM Remediation Team

BY: William K. Steinmann, CPG

CLOSURE CERTIFICATION REPORT

D
Nodular Iron Oil House RCRA Hazardous Waste Storage Area
Former Nodular Iron Plant
(Saginaw Metal Casting Operations)
R 2100 Veterans Memorial Parkway
Saginaw, Michigan

A

JUNE 1999

F

T

Prepared by:

EMCON
603 East Diehl Road, Suite 123
Naperville, Illinois

CERTIFICATION OF CLOSURE

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete, and the closure activities for this unit have been conducted in substantial conformance with the approved closure plan. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

D

R

A

James J. McGuigan, P.E., CHMM
Site Restoration Department Manager

F

William K. Steinmann, CPG
Senior Project Manager

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2.1 Field Decontamination/Cleaning	2-1
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Figure 2: Former Nodular Iron Plant Oil House Building Layout.....	1-4

LIST OF ATTACHMENTS

- Attachment I: RCRA Part A Permit Application (November 17, 1980)
- Attachment II: Closure Plan (May 19, 1981)
- Attachment III: Photographic Documentation of Closure Activities
- Attachment IV: Wastewater Characterization Analysis
- Attachment V: Waste Disposal Manifests

1 INTRODUCTION

1.1 Purpose

In accordance with Part 111 of the Michigan Natural Resource and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended, and in compliance with the closure provisions of 40 CFR, Part 264, Subpart G, this report certifies the closure of a Resource Conservation and Recovery Act (RCRA) Storage Area, formerly located at General Motors Corporation's (GM) Nodular Iron Plant, 2100 Veterans Memorial Parkway, Saginaw, Michigan (now part of the Saginaw Metal Casting Operations - SMCO). The United States Environmental Protection Agency (U.S.EPA) Identification Number for SMCO is MID 041 793 340.

1.2 Background

The former storage unit was located at the former Nodular Iron Plant Oil House, 2100 Veterans Memorial Parkway, Saginaw, Michigan, within the NE 1/4 of the SW 1/4 of Section 8, Township 12 North, Range 5 East, Saginaw County, Michigan (refer to **Figure 1**).

According to the facility's RCRA Part A Permit Application (November 1, 1980), this unit consisted of a ten foot square storage pad (**Attachment I**). In actuality, the unit consisted of two,

Figure 1: Site Location and Topographic Map

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approximately eleven feet by nineteen feet by fifteen feet high rooms complete with concrete and steel walls, a concrete floor, a ceiling and metal fire doors (refer to **Figure 2**).

The use of the Oil House Storage Unit reportedly began at former Nodular Iron Plant start-up in 1966 and continued until just prior to plant closure in 1987. The Oil House Storage Unit was utilized to store hazardous waste materials staged in 55-gallon barrels until proper disposal. The main waste believed to have been stored on this pad was 1,1,1-trichloroethane (TCA) with lesser amounts of polychlorinated biphenyls (PCBs), chlorobenzene, waste petroleum naphtha, waste oils, and possibly trichloroethylene (TCE).

General Motors submitted a Closure Plan (dated May 19, 1981) to the U.S.EPA, for this storage area and others, pursuant to 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120 (**Attachment II**) on April 14, 1983. The Closure Plan was public noticed in the *Saginaw News* on May 5, 1983.

In an August 17, 1998, meeting between the Michigan Department of Environmental Quality - Waste Management Division (MDEQ-WMD), GM, and GM's consultant EMCON, it was agreed that GM could attain closure for this unit by implementing and adhering to the 1981 Closure Plan.

Figure 2: Former Nodular Iron Plant Oil House Building Layout

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2 CLOSURE ACTIVITIES

On November 2, 1998, Clean Harbors Environmental Services, Inc. (Clean Harbors) of Chicago, Illinois mobilized to the Nodular Iron Oil House for the purpose of decontaminating/cleaning the RCRA Storage Area. A representative from EMCON was present at the site to direct and supervise the decontamination/cleaning activities. Photographic documentation of the closure activities is included in Attachment III).

2.1 Field Decontamination/Cleaning

On November 2, 1998, Mr. Steven M. Clayton, Staff Geologist, with the EMCON office in Northville, Michigan, supervised the decontamination of the Nodular Iron Plant Oil House RCRA Hazardous Waste Drum Storage Area located on the site of the Former Saginaw Nodular Iron Plant at 2100 Veterans Memorial Parkway, Saginaw, Michigan. The purpose of the decontamination event was to ensure the removal of any residual material on the walls and floor of the two-room storage facility located in the Nodular Iron Oil House in preparation for closure and demolition activities. Mr. Clayton met with Dave Longdon, foreman for Clean Harbors, and discussed the agenda for decontamination of the storage building. Mr. Longdon was assisted by two crew members, T. Waisley and E. Bogan.

The walls and floor of each room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors washed the walls and floor with the caustic scrub solution and extendible scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final step, the walls and floor of each room were steam cleaned. The rinse water from the cleaning operations was also drawn off via vacuum pick-up and collected in the same two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs presented in **Attachment III**) the decontamination process and documented the cleaning operation of each room. The two 55-gallon drums were sealed, labeled, and placed near the entrance of the former Nodular Iron Plant Oil House. The decontamination process was completed following the 1981 Approved General Motors Closure Plan and the health and safety plan developed for the site¹. Yellow Tyvek suits, respiratory protection, nitrile gloves, safety glasses, and rubber boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

2.2 Wastewater Disposal

Clean Harbors collected representative samples from the two 55-gallon drums for waste characterization analysis (**Attachment IV**). On January 19, 1999, Clean Harbors removed the barrels from the site and transported the drums to Clean Harbors Services, Inc. in Chicago, Illinois for treatment and disposal. The waste manifest is included as **Attachment V**.

¹ Part VI of the Phase 1A RCRA Facility Investigation Workplan (June 1998, Revision 2).

3 SUMMARY AND CONCLUSIONS

On November 2, 1998, under the direction and supervision of EMCON, Clean Harbors Environmental Services, Inc. of Chicago, Illinois completed decontamination/cleaning activities at the Former Nodular Iron Plant Oil House RCRA Hazardous Waste Storage Area, located at 2100 Veterans Memorial Parkway, Saginaw, Michigan. These activities were completed in accordance with the Closure Plan which was previously approved by the Michigan Department of Environmental Quality Waste Management Division.

The storage area consisted of two enclosed rooms within the Oil House Building (approximate dimensions of 11 feet by 19 feet by 15 feet high) that were utilized to store hazardous waste (1,1,1-TCA, PCBs, waste petroleum naphthalene, chlorobenzene, waste oils, and possibly TCE). Decontamination/cleaning activities were completed on November 2, 1998.

Two, 55-gallon drums of wash rinse water were generated from the decontamination activities and were properly disposed by Clean Harbors. On going demolition activities at the Nodular Iron Plant site will result in the demolition of the Oil House Building in the spring of 1999.

Based on the above, GM and EMCON conclude that the closure activities have been successfully completed in substantial conformance with the specifications in the approved Closure Plan. Therefore, GM respectfully requests that closure be granted for the former Nodular Iron Plant Oil

House RCRA Hazardous Waste Storage Area and that all financial assurance requirements be released for this former unit.

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**NAO WORLDWIDE FACILITIES GROUP
REMEDATION TEAM
Mail Code 482-310-004
ARGO "A" - 10th Floor
485 W. Milwaukee
Detroit, MI 48202-3220**

Facsimile Cover Sheet

To: Bill Steinmann

Company:

Phone:

Fax:

From: Cliff Hatfield

Company: GM-WFG Remediation Team

Phone:

Fax: 313-556-0803 GM net 8-346-0803

Date: 5/13/99

**Pages including this
cover page:** 6

Comments:

Comments on Closure report

CLOSURE CERTIFICATION REPORT

D
Nodular Iron Oil House RCRA Hazardous Waste Storage Area
Former Nodular Iron Plant
R (Saginaw Metal Casting Operations)
2100 Veterans Memorial Parkway
Saginaw, Michigan

A

F


MARCH 1999

T

Prepared by:

EMCON
603 East Diehl Road, Suite 123
Naperville, Illinois

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

CERTIFICATION OF CLOSURE

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete, and the closure activities for this unit have been conducted in substantial conformance with the approved closure plan. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

James J. McGuigan, P.E., CHMM
Site Restoration Department Manager

William K. Steinmann, CPG
Senior Project Manager

Cheryl R. Hiatt
General Motors Project Coordinator

I don't think I need to be on here to submit all let me know if I do

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

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CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

approximately eleven feet by nineteen feet by fifteen feet high rooms complete with concrete and steel walls, a concrete floor, a ceiling and metal fire doors (refer to **Figure 2**).

The use of the Oil House Storage Unit reportedly began at former Nodular Iron Plant start-up in 1966 and continued until just prior to plant closure in 1987. The Oil House Storage Unit was utilized to store hazardous waste materials staged in 55-gallon barrels until proper disposal. The main waste believed to have been stored on this pad was 1,1,1-trichloroethane (TCA) with lesser amounts of polychlorinated biphenyls (PCBs), chlorobenzene, waste petroleum naphtha, waste oils, and possibly trichloroethylene (TCE).

General Motors submitted a Closure Plan (dated May 19, 1981) to the U.S.EPA, for this storage area and others, pursuant to 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120 (**Attachment II**) on April 14, 1983. The Closure Plan was public noticed in the *Saginaw News* on May 5, 1983.

In an August 17, 1998, meeting between the Michigan Department of Environmental Quality - Waste Management Division (MDEQ-WMD), GM, and GM's consultant EMCON, it was agreed that GM could attain closure for this unit by implementing and adhering to the 1981 Approved Closure Plan.

When was it approved?

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

2 CLOSURE ACTIVITIES

On November 2, 1998, Clean Harbors Environmental Services, Inc. (Clean Harbors) of Chicago, Illinois mobilized to the Nodular Iron Oil House for the purpose of decontaminating/cleaning the RCRA Storage Area. A representative from EMCON was present at the site to direct and supervise the decontamination/cleaning activities. Photographic documentation of the closure activities is included in Attachment III).

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On November 2, 1998, Mr. Steven M. Clayton, Staff Geologist, with the EMCON office in Northville, Michigan, supervised the decontamination of the Nodular Iron Plant Oil House RCRA Hazardous Waste Drum Storage Area located on the site of the Former Saginaw Nodular Iron Plant at 2100 Veterans Memorial Parkway, Saginaw, Michigan. The purpose of the decontamination event was to ensure the removal of any residual material on the walls and floor of the ^{two room} storage facility in preparation for closure and demolition activities. Mr. Clayton met with Dave Longdon, foreman for Clean Harbors, and discussed the agenda for decontamination of the storage building. Mr. Longdon was assisted by two crew members, T. Waisley and E. Bogan.

The primary function of the RCRA Hazardous Waste Drum Storage Area was the staging and preparation of 55-gallon drums of waste degreasing solvents and oils for proper off-site disposal.

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

The 55-gallon drums had been stored in two rooms within the Oil House building. The walls and floor of each room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors washed the walls and floor with the caustic scrub solution and extendible scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final step, the walls and floor of each room were steam cleaned. The rinse water from the steaming operations was also drawn off via vacuum pick-up and collected in the same two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs presented in Attachment III) the decontamination process and documented the cleaning operation of each room. The two 55-gallon drums were sealed, labeled, and placed near the entrance of the former Nodular Iron Plant Oil House. The decontamination process was completed following the 1981 Approved General Motors Closure Plan and the health and safety plan developed for the site¹. Yellow Tyvek suits, respiratory protection, nitrile gloves, safety glasses, and rubber boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

2.2 Wastewater Disposal

Clean Harbors collected representative samples from the two 55-gallon drums for waste characterization analysis (Attachment IV). On January 19, 1999, Clean Harbors removed the barrels from the site and transported the drums to Clean Harbors Services, Inc. in Chicago, Illinois for treatment and disposal. The waste manifest is included as Attachment V.

¹ Part VI of the Phase 1A RCRA Facility Investigation Workplan (June 1998, Revision 2).

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

2 CLOSURE ACTIVITIES

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The primary function of the RCRA Hazardous Waste Drum Storage Area was the staging and preparation of 55-gallon drums of waste degreasing solvents and oils for proper off-site disposal.



EMCON

603 East Diehl Road, Suite 123, Naperville, Illinois 60563-1477 • (630) 505-9450 • Fax (630) 505-9454

TRANSMITTAL

Project/Task No.: 84068-063.009

TO: Ms. Cheryl Hiatt DATE: March 24, 1999
General Motors Corporation
Remediation Team
Mail Code: 482-310-004
485 West Milwaukee Avenue
Detroit, Michigan 48202

RE: Nodular Iron RCRA Closure Report

WE ARE SENDING:

QUANTITY	DESCRIPTION
<u>1</u>	<u>Final Draft of Nodular Iron Oil House RCRA Hazardous Waste Storage Area Closure Report</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

For Your: USE
X APPROVAL
 REVIEW/COMMENTS
 INFORMATION
 OTHER

Sent By: REGULAR MAIL
X FEDERAL EXPRESS
 UPS
 COURIER
 OTHER

COMMENTS: _____

CC:

BY: William K. Steinmann, CPG

CLOSURE CERTIFICATION REPORT

D

**Nodular Iron Oil House RCRA Hazardous Waste Storage Area
Former Nodular Iron Plant**

R

**(Saginaw Metal Casting Operations)
2100 Veterans Memorial Parkway
Saginaw, Michigan**

A

MARCH 1999

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Prepared by:

**EMCON
603 East Diehl Road, Suite 123
Naperville, Illinois**

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

CERTIFICATION OF CLOSURE

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete, and the closure activities for this unit have been conducted in substantial conformance with the approved closure plan. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

James J. McGuigan, P.E., CHMM
Site Restoration Department Manager

William K. Steinmann, CPG
Senior Project Manager

Cheryl R. Hiatt
General Motors Project Coordinator

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LIST OF ATTACHMENTS

- Attachment I: RCRA Part A Permit Application (November 17, 1980)
- Attachment II: Closure Plan (May 19, 1981)
- Attachment III: Photographic Documentation of Closure Activities
- Attachment IV: Wastewater Characterization Analysis
- Attachment V: Waste Disposal Manifests

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1 INTRODUCTION

1.1 Purpose

D
In accordance with Part 111 of the Michigan Natural Resource and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended, and in compliance with the closure provisions of 40 CFR, Part 264, Subpart G, **R** this report certifies the closure of a Resource Conservation and Recovery Act (RCRA) Storage Area, formerly located at General Motors Corporation's (GM) Nodular Iron Plant, 2100 Veterans Memorial Parkway, Saginaw, Michigan (now part of the Saginaw Metal Casting Operations - SMCO). The United States Environmental Protection Agency (U.S.EPA) Identification Number for SMCO is MID 041 793 340. **A**

1.2 Background

F
The former storage unit was located at the former Nodular Iron Plant Oil House, 2100 Veterans Memorial Parkway, Saginaw, Michigan, within the NE 1/4 of the SW 1/4 of Section 8, Township 12 North, Range 5 East, Saginaw County, Michigan (refer to **Figure 1**).

T
According to the facility's RCRA Part A Permit Application (November 17, 1980), this unit consisted of a ten foot square storage pad (**Attachment I**). In actuality, the unit consisted of two,

Figure 1: Site Location and Topographic Map

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CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

approximately eleven feet by nineteen feet by fifteen feet high rooms complete with concrete and steel walls, a concrete floor, a ceiling and metal fire doors (refer to **Figure 2**).

The use of the Oil House Storage Unit reportedly began at former Nodular Iron Plant start-up in 1966 and continued until just prior to plant closure in 1987. The Oil House Storage Unit was utilized to store hazardous waste materials staged in 55-gallon barrels until proper disposal. The main waste believed to have been stored on this pad was 1,1,1-trichloroethane (TCA) with lesser amounts of polychlorinated biphenyls (PCBs), chlorobenzene, waste petroleum naphtha, waste oils, and possibly trichloroethylene (TCE).

General Motors submitted a Closure Plan (dated May 19, 1981) to the U.S.EPA, for this storage area and others, pursuant to 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120 (**Attachment II**) on April 14, 1983. The Closure Plan was public noticed in the *Saginaw News* on May 5, 1983.

In an August 17, 1998, meeting between the Michigan Department of Environmental Quality - Waste Management Division (MDEQ-WMD), GM, and GM's consultant EMCON, it was agreed that GM could attain closure for this unit by implementing and adhering to the 1981 Approved Closure Plan.

Figure 2: Oil House Building Layout

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2 CLOSURE ACTIVITIES

On November 2, 1998, Clean Harbors Environmental Services, Inc. (Clean Harbors) of Chicago, Illinois mobilized to the Nodular Iron Oil House for the purpose of decontaminating/cleaning the RCRA Storage Area. A representative from EMCON was present at the site to direct and supervise the decontamination/cleaning activities. Photographic documentation of the closure activities is included in Attachment III).

2.1 Field Decontamination/Cleaning

On November 2, 1998, Mr. Steven M. Clayton, Staff Geologist, with the EMCON office in Northville, Michigan, supervised the decontamination of the Nodular Iron Plant Oil House RCRA Hazardous Waste Drum Storage Area located on the site of the Former Saginaw Nodular Iron Plant at 2100 Veterans Memorial Parkway, Saginaw, Michigan. The purpose of the decontamination event was to ensure the removal of any residual material on the walls and floor of the storage facility in preparation for closure and demolition activities. Mr. Clayton met with Dave Longdon, foreman for Clean Harbors, and discussed the agenda for decontamination of the storage building. Mr. Longdon was assisted by two crew members, T. Waisley and E. Bogan.

The primary function of the RCRA Hazardous Waste Drum Storage Area was the staging and preparation of 55-gallon drums of waste degreasing solvents and oils for proper off-site disposal.

The 55-gallon drums had been stored in two rooms within the Oil House building. The walls and floor of each room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors washed the walls and floor with the caustic scrub solution and extendible scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final step, the walls and floor of each room were steam cleaned. The rinse water from the steaming operations was also drawn off via vacuum pick-up and collected in the same two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs presented in Attachment III) the decontamination process and documented the cleaning operation of each room. The two 55-gallon drums were sealed, labeled, and placed near the entrance of the former Nodular Iron Plant Oil House. The decontamination process was completed following the 1981 Approved General Motors Closure Plan and the health and safety plan developed for the site¹. Yellow Tyvek suits, respiratory protection, nitrile gloves, safety glasses, and rubber boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

2.2 Wastewater Disposal

Clean Harbors collected representative samples from the two 55-gallon drums for waste characterization analysis (Attachment IV). On January 19, 1999, Clean Harbors removed the barrels from the site and transported the drums to Clean Harbors Services, Inc. in Chicago, Illinois for treatment and disposal. The waste manifest is included as Attachment V.

¹ Part VI of the Phase 1A RCRA Facility Investigation Workplan (June 1998, Revision 2).

3 SUMMARY AND CONCLUSIONS

On November 2, 1998, under the direction and supervision of EMCON, Clean Harbors Environmental Services, Inc. of Chicago, Illinois completed decontamination/cleaning activities at the Former Nodular Iron Plant Oil House RCRA Hazardous Waste Storage Area, located at 2100 Veterans Memorial Parkway, Saginaw, Michigan. These activities were completed in accordance with the Closure Plan which was previously approved by the Michigan Department of Environmental Quality Waste Management Division.

The storage area consisted of two enclosed rooms within the Oil House Building (approximate dimensions of 11 feet by 19 feet by 15 feet high) that were utilized to store hazardous waste (1,1,1-TCA, PCBs, waste petroleum naphtha, chlorobenzene, waste oils, and possibly TCE). Decontamination/cleaning activities were completed on November 2, 1998.

Two, 55-gallon drums of wash rinse water were generated from the decontamination activities and were properly disposed by Clean Harbors. On going demolition activities at the Nodular Iron Plant site will result in the demolition of the Oil House Building in the spring of 1999.

Based on the above, GM and EMCON conclude that the closure activities have been successfully completed in substantial conformance with the specifications in the approved Closure Plan. Therefore, GM respectfully requests that closure be granted for the former Nodular Iron Plant Oil

House RCRA Hazardous Waste Storage Area and that all financial assurance requirements be released for this former unit.

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ATTACHMENT I

RCRA Part A Permit Application (November 17, 1980)

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Part A Original
11/17/80

Please print or type in the unshaded areas only
 (fill-in areas are shaded for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-A

FORM 1	EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION <i>Consolidated Permit Program</i> <small>(Read the "General Instructions" before starting.)</small>	I. EPA I.D. NUMBER
GENERAL			F M I D O 4 1 7 9 3

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been placed in the designated space. Review the information carefully; if any of it is incorrect, through it and enter the correct information in the appropriate fill-in area below. If the preprinted data is absent (if that should appear), please provide the proper fill-in area(s) below. If the information is complete and correct, you need not complete items I, III, V, and VI (except where indicated otherwise). Items I, III, V, and VI must be completed regardless. If no label has been provided, the instructions for detailed information and for the legal authority under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "no" to any question, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the table if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if you are excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X'			SPECIFIC QUESTIONS	YES
	YES	NO	FORM ATTACHED		
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		N.A.	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	

III. NAME OF FACILITY

1 SKIP GMC CHEVROLET SAGINAW CASTING & PARTS P.L.

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title) B. PHONE (area code & no.)

2 CARTER NORMAN CHF METALLURGIST 517 776 2572

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 2100 VETERANS MEMORIAL PARKWAY

B. CITY OR TOWN C. STATE D. ZIP CODE

4 SAGINAW MI 48601

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 2100 VETERANS MEMORIAL PARKWAY

B. COUNTY NAME

SAGINAW

C. CITY OR TOWN D. STATE E. ZIP CODE F. COUNTY CODE (if known)

6 SAGINAW MI 48601 073

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST				B. SECOND					
7	3	3	2	1	7	3	3	2	0
(specify) Grey Iron Foundry				(specify) Iron and Steel Foundries					
C. THIRD				D. FOURTH					
7	3	7	1	4	7	3	7	1	0
(specify) Motor Vehicle Parts & Accesories				(specify) Motor Vehicles & Equipment					

VIII. OPERATOR INFORMATION

A. NAME
 B GMC CHEVROLET SAGINAW CASTING & PARTS PL.
 B. Is the name of the owner? YES

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other", specify.)
 F - FEDERAL M - PUBLIC (other than federal or state)
 S - STATE O - OTHER (specify)
 P - PRIVATE P (specify)
 D. PHONE (area code & no.)
 A 5 1 7 7 7 6 2 5

E. STREET OR P.O. BOX
 2 1 0 0 VETERANS MEMORIAL PARKWAY

F. CITY OR TOWN G. STATE H. ZIP CODE IX. INDIAN LAND
 B SAGINAW MI 4 8 6 0 1
 Is the facility located on Indian lands? YES NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)				D. PSD (Air Emissions from Proposed Sources)									
9	N	M	I	0	0	1	1	3	9	9	P	N	A
B. UIC (Underground Injection of Fluids)				E. OTHER (specify)									
9	U	N	A	9						(specify) State Air Pollution Permits - See Attachment			
C. RCRA (Hazardous Wastes)				E. OTHER (specify)									
9		N	A	9				2	6	7	(specify) City of Saginaw Sanit. Sewer (Parts & Cstg. Plts.)		

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

XII. NATURE OF BUSINESS (provide a brief description)

The Chevrolet Metal Casting Plants in Saginaw produce grey and nodular iron castings used in the automotive industry. The specific process involves the melting of iron and steel scrap with coke, limestone, dolomite and fluorspar in water cooled cupolas to make molten iron. This is poured into green sand molds with or without cores for the manufacture of the above castings.

The Chevrolet Parts Plant Manufacturing and Machining Plant produces water pumps, oil pumps and flywheel ring gears as major components. Machining is performed on cast iron, aluminum and steel.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in this application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print) D. Lund President, General Motors Corp. General Manager, Chevrolet Motor Div.	B. SIGNATURE <i>D. Lund</i>	C. DATE SIGNED November 17, 1988
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COMMENTS FOR OFFICIAL USE ONLY

C. COMMENTS FOR OFFICIAL USE ONLY

Please print or type in the unshaded areas only
 (fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-51

FORM 3		U.S. ENVIRONMENTAL PROTECTION AGENCY HAZARDOUS WASTE PERMIT APPLICATION <i>Consolidated Permit Program</i> <small>(This information is required under Section 3005 of RCRA.)</small>	I. EPA I.D. NUMBER FMID041793
FOR OFFICIAL USE ONLY			

APPLICATION APPROVED	DATE RECEIVED <small>(yr., mo., & day)</small>	COMMENTS
11	12 13 14 15 16 17 18 19 20	

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your EPA I.D. Number in Item I above.

A. FIRST APPLICATION (place an "X" below and provide the appropriate data)

1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

2. NEW FACILITY (Complete item below)

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

C	YR.	MO.	DAY		YR.	MO.	DAY
8	19	09	--		71	72	73

B. REVISED APPLICATION (place an "X" below and complete item I above)

1. FACILITY HAS INTERIM STATUS

2. FACILITY HAS A RCRA PERMIT

III. PROCESSES - CODES AND DESIGN CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes, describe the process (including its design capacity) in the space provided on the form (Item III-C).

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

- AMOUNT - Enter the amount.
- UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:			Treatment:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS		T04	METRIC TONS PER HOUR
Disposal:			<i>OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)</i>		
INJECTION WELL	D79	GALLONS OR LITERS			
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D81	ACRES OR HECTARES			
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET
LITERS	L	TONS PER HOUR	D	HECTARE-METER
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES
GALLONS PER DAY	U	LITERS PER HOUR	H	

EXAMPLE FOR COMPLETING ITEM III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

DUP										
LINE NUMBER	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY	LINE NUMBER	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)					1. AMOUNT	2. UNIT OF MEASURE (enter code)	
X-1	S 0 2	600	G			5				
X-2	T 0 3	20	E			6				
1	S 0 1	5775.0	G			7				
2	S 0 3	70.0	Y			8				
3	T 0 4	7000.0	U			9				
4						10				

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"), FOR EACH PROCESS ENTERED HERE. INCLUDE DESIGN CAPACITY.

T04 - The Calcium Carbide Slag pile, accumulated daily, is soaked with water to decompose any unreacted calcium carbide.

IV. DESCRIPTION OF HAZARDOUS WASTES

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

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

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

<u>ENGLISH UNIT OF MEASURE</u>	<u>CODE</u>	<u>METRIC UNIT OF MEASURE</u>	<u>CODE</u>
POUNDS.....	P	KILOGRAMS.....	K
TONS.....	T	METRIC TONS.....	M

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

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

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

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

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

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

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

LINE NO.	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K054	900	P	T03D80	
X-2	D002	400	P	T03D80	
X-3	D001	100	P	T03D80	
X-4	D002				included with above

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80

EPA I.D. NUMBER (enter from page 1)										FOR OFFICIAL USE ONLY									
M I D 0 4 1 7 9 3 3 4 0										W									
										DUP									
										2 DUP									

DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES														
				1. PROCESS CODES (enter)						2. PROCESS DESCRIPTION (if a code is not entered in D(1))								
1	F 0 0 1	84,000	P	S	0	1												
2	D 0 0 1	13,100	P	S	0	1												
3	D 0 0 3	17,280	T	S	0	3	T	0	4									
4	D 0 0 1												Included with above					
5	D 0 0 2	19,200	P	S	0	1												
6																		
7																		
8																		
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25																		
26																		

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)														
F	M	I	D	0	4	1	7	9	3	3	4	0	TIME	6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS

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

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)						LONGITUDE (degrees, minutes, & seconds)								
4	3	2	7	0	0	N	0	8	3	5	5	0	8	W

VIII. FACILITY OWNER

A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER						2. PHONE NO. (area code & number)								
3. STREET OR P.O. BOX						4. CITY OR TOWN			5. ST.			6. ZIP CODE		

IX. OWNER CERTIFICATION

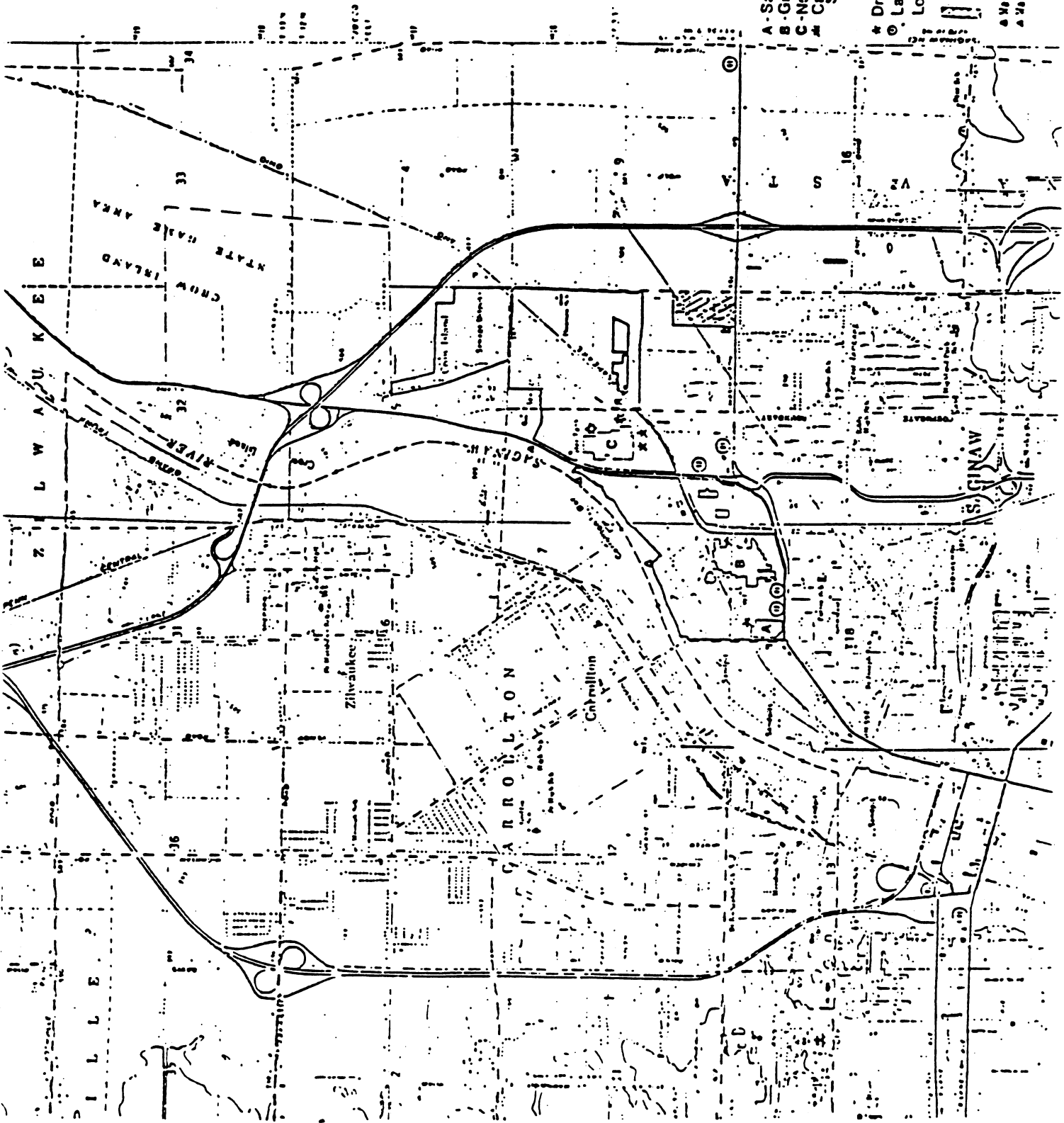
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type) Robert D. Lund Vice President, General Motors Corp General Manager, Chevrolet Motor Div		B. SIGNATURE 		C. DATE SIGNED November 17, 1980	
--	--	------------------	--	-------------------------------------	--

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

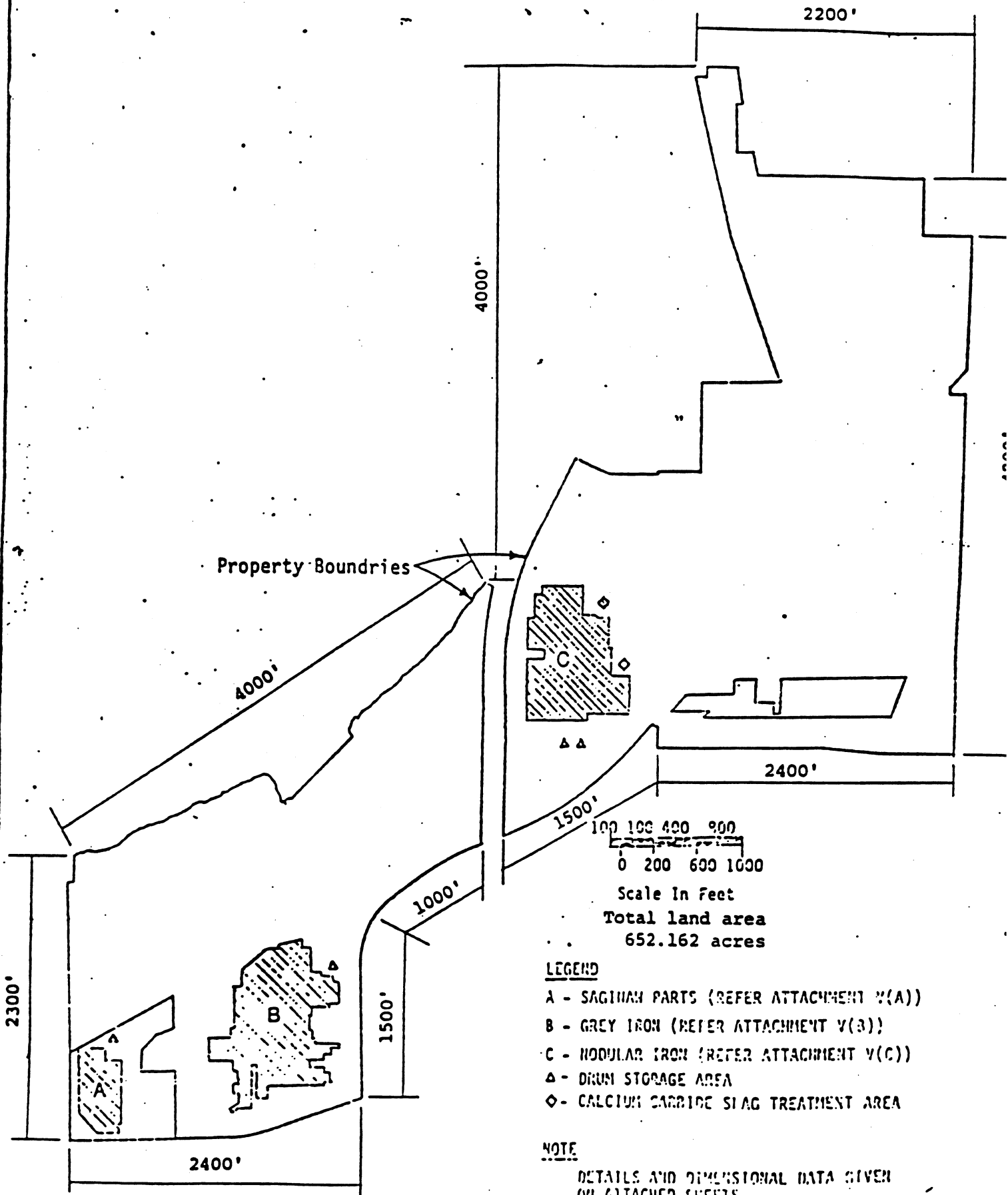
A. NAME (print or type)		B. SIGNATURE		C. DATE SIGNED	
-------------------------	--	--------------	--	----------------	--



- Legend
- A - Saginaw Parts
 - B - Grey Iron
 - C - Nodular Iron
 - D - Calcium Carbide Slag Treatment

★ Drum Storage
 ⊙ Lat. 43° 27' 00" N
 Long. 83° 55' 06" W
 26 Holes Supplied w/ Well Water
 Water Intake 000
 Water 9e 002

V. FACILITY DRAWING (see page 4)



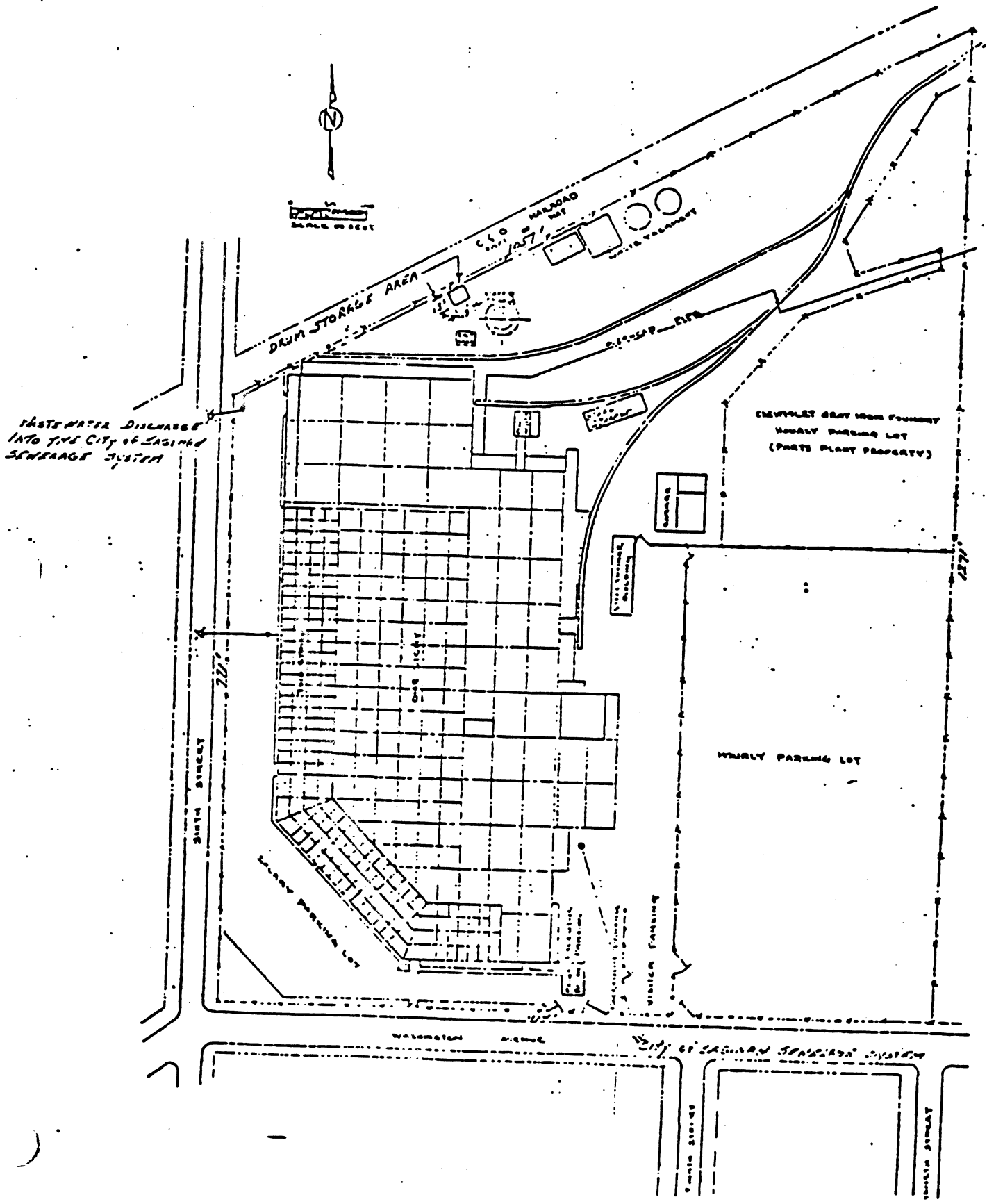
LEGEND

- A - SAGINAW PARTS (REFER ATTACHMENT V(A))
- B - GREY IRON (REFER ATTACHMENT V(B))
- C - MODULAR IRON (REFER ATTACHMENT V(C))
- △ - DRUM STORAGE AREA
- ◇ - CALCIUM CARBIDE SLAG TREATMENT AREA

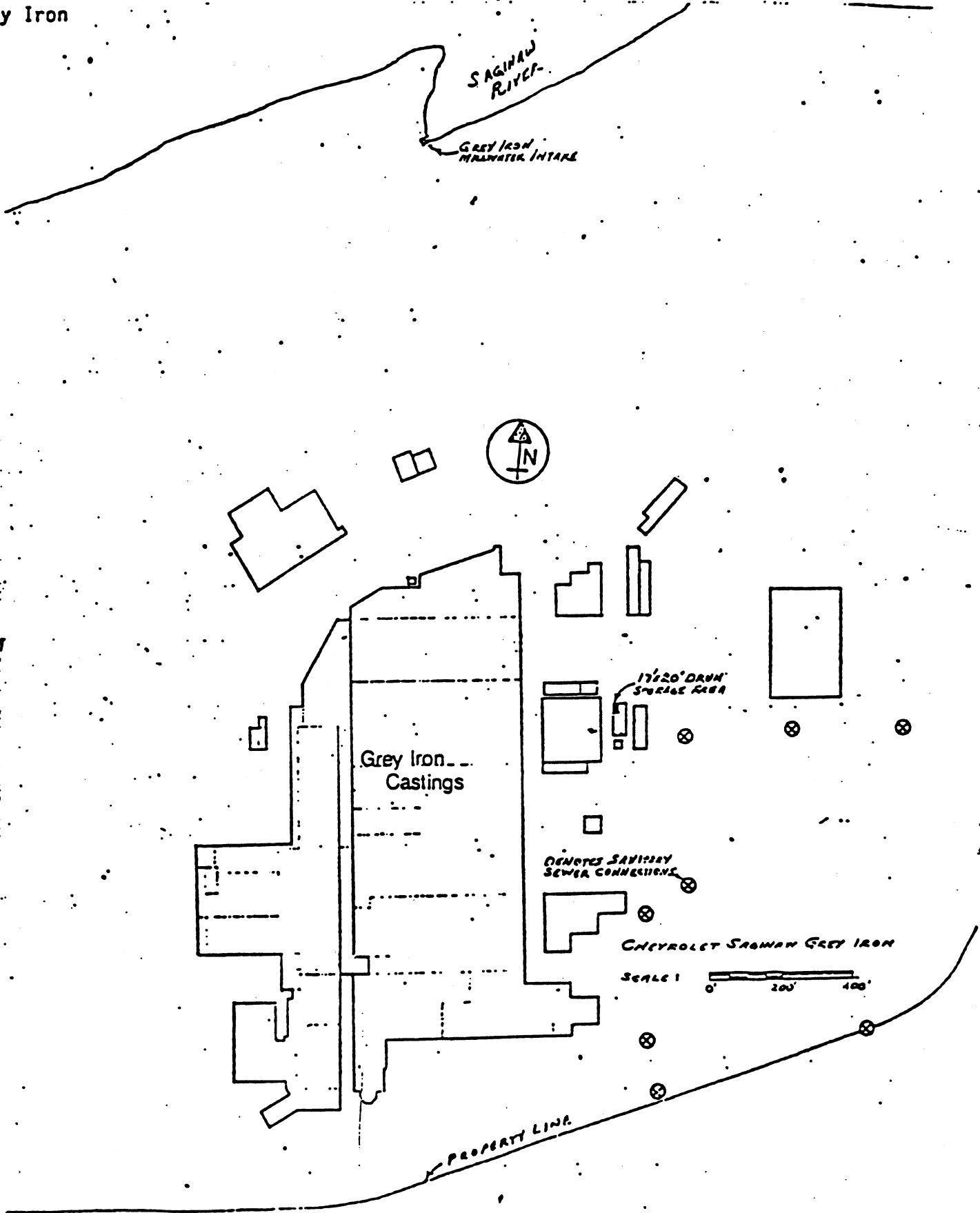
NOTE

DETAILS AND DIMENSIONAL DATA GIVEN ON ATTACHED SHEETS.

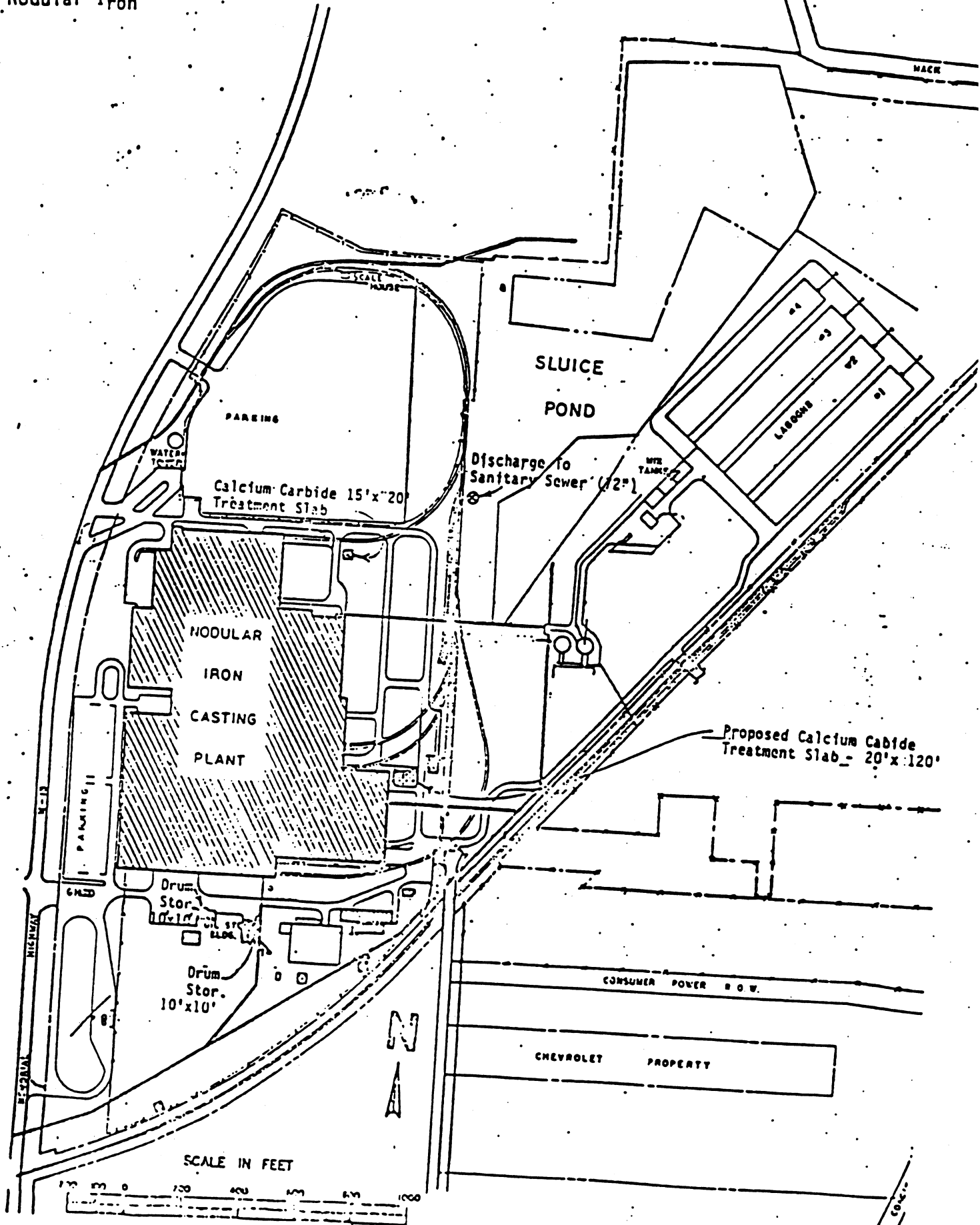
Attachment V(A)
Saginaw Parts



Attachment V(B)
Grey Iron



Attachment V(C)
Nodular Iron





ACKNOWLEDGEMENT OF NOTIFICATION
OF HAZARDOUS WASTE ACTIVITY

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act (RCRA). Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER

ILC-1793340

INSTALLATION ADDRESS

2100 VETERANS EMERGENCY PARKWAY
DALLAS, TEXAS 75201

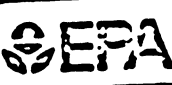
2100 VETERANS EMERGENCY PARKWAY
DALLAS, TEXAS 75201

Part A Revised
9/28/81

Please print or type in the unshaded areas only
If in-m or other are needed for this type, i.e. 12c.

7/1/79 (incl.)

Form Approved OMB No. 158-004

FORM 1 GENERAL	 EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION Consolidated Permit Program (Read the "General Instructions" before starting.)	I. EPA I.D. NUMBER	FMID041791
			GENERAL INSTRUCTIONS If a preprinted label has been on it in the designated space. Review it carefully; if any of it is in through it and enter the correct appropriate fill-in area below. A the preprinted data is absent (to left of the label space list the that should appear), please provide proper fill-in (in pencil) below. If complete and correct, you need items I, III, V, and VI (except must be completed regardless). Items II, IV, VII, VIII, and IX are not to be completed unless the instructions for detailed items and for the legal authority which this data is collected.	
II. POLLUTANT CHARACTERISTICS			PLEASE PLACE LABEL IN THIS SPACE	

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "no" to any question, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the table. If the supplemental form is attached, you need not submit any of these forms. You may answer "no" if you are excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS	YES
	YES	NO	FORM ATTACHED		
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)	X			B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		X	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		N.A.	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	

III. NAME OF FACILITY
1 **SKIP** GMC CHEVROLET SAGINAW CASTING & PARTS PLT

IV. FACILITY CONTACT
A. NAME & TITLE (last, first & title)
2 **CARTER NORMAN CHP METALLURGIST**
B. PHONE (area code & no.)
517 776 2572

V. FACILITY MAILING ADDRESS
A. STREET OR P.O. BOX
3 **2100 VETERANS MEMORIAL PARKWAY**
B. CITY OR TOWN
4 **SAGINAW**
C. STATE
MI
D. ZIP CODE
48601

RECEIVED
SEP 20 1979
Water Quality

VI. FACILITY LOCATION
A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER
5 **2100 VETERANS MEMORIAL PARKWAY**
B. COUNTY NAME
SAGINAW
C. CITY OR TOWN
6 **SAGINAW**
D. STATE
MI
E. ZIP CODE
48601
F. COUNTY CODE (if known)
073

INUED FROM THE FRONT

IC CODES (4-dgt. in order of priority)

A. FIRST		B. SECOND	
3 2 1	Grey Iron Foundry	7 3 3 2 0	Iron and Steel Foundries
C. THIRD		D. FOURTH	
7 1 4	Motor Vehicle Parts & Accessories	7 3 7 1 0	Motor Vehicles and Equipment

OPERATOR INFORMATION

A. NAME: **GMC CHEVROLET SAGINAW CASTING & PARTS PLT**

Is the name listed in Item VIII-A also the owner? YES NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: If "Other", specify.)

FEDERAL M = PUBLIC (other than federal or state) P (specify)
 STATE O = OTHER (specify)
 PRIVATE

D. PHONE (area code & no.)
 5 1 7 7 7 6 2 5 7 2

E. STREET OR P.O. BOX
1 0 0 V E T E R A N S M E M O R I A L P A R K W A Y

F. CITY OR TOWN: **S A G I N A W**

G. STATE: **M I**

H. ZIP CODE: **4 8 6 0 1**

IX. INDIAN LAND: Is the facility located on Indian lands? YES NO

EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)
 N H I 0 0 1 1 3 9

B. PSD (Air Emissions from Proposed Sources)
 9 P N A

C. UIC (Underground Injection of Fluids)
 U N A

D. OTHER (specify) (specify) State Air Pollution Permits - See Attachment

E. RCRA (Hazardous Wastes)
 I R N A

F. OTHER (specify) (specify) City of Saginaw Sanitary Sewer (Parts & Csta. Plts. Rest

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

XII. NATURE OF BUSINESS (provide a brief description)

The Chevrolet Metal Casting Plants in Saginaw produce grey and nodular iron castings used in the automotive industry. The specific process involves the melting of iron and steel scrap with coke, limestone, dolomite and fluorspar in water cooled cupolas to make molten iron. This is poured into green sand molds with or without cores for the manufacture of the above castings.

The Chevrolet Parts Plant Manufacturing and Machining Plant produces water pumps, oil pumps and flywheel ring gears as major components. Machining is performed on cast iron, aluminum and steel.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (Type or Print)
 Robert D. Lund, Vice Pres. - GMC
 Gen. Mgr. - Chevrolet Motor Div.

B. SIGNATURE
Robert D. Lund

C. DATE SIGNED
 9-24-81

COMMENTS FOR OFFICIAL USE ONLY

C

GMC CHEVROLET CASTINGS AND PARTS PLANT

AIR POLLUTION PERMIT RECORD

<u>Parts Plant</u>	<u>Nodular Iron</u>	<u>Grey Iron</u>	<u>Grey Iron</u>
273-74	56-68	89-71A	38-74B
101-76	68-68A	126-71	350-80
434-77	68-68B	90-71A	361-74
708-78	68-68C	91-71A	349-80
954-78	68-68D	92-71	392-73
13-79	73-68	125-71	105-74
238-79	139-69	93-71A	35-78
101-80	140-69	411-77	37-78
	141-69	127-71	38-78
	42-70	235-79	39-78
	42-70A	95-71	24-75
	42-70B	36-78	225-79
	42-70C	307-74A	40-78
	292-72	8-76	41-78
	449-73	640-79	947-79
	158-73	240-76	42-78
	74-70	286-76	134-76
	58-73	812-77	43-78
	59-73	814-77	44-78
	74-70A	813-77	45-78
	129-74	216-73	46-78
	130-74	344-73	47-78
	131-74	393-73	400-75
	276-74	79-76	48-78
	129-76	501-79	49-78
	416-75	593-77	50-78
	366-76	253-74	101-79
	93-77	916-79	100-79
	405-77	811-77	23-74D
	262-78	918-78	23-74C
	437-78	234-80	23-74B
	1052-78	210-73	23-74A
	720-79	507-77	88-78
		18-80	302-73
		33-77	113-76
		451-80	303-73
		44-77	100-73
		35-77	101-73
		36-77	102-73
		224-79	103-73
		223-79	
		222-79	
		221-79	
		38-74A	

EXISTING MANUFACTURING, COMMERCIAL, MINING AND AGRICULTURAL OPERATIONS
 Consolidation Permit Program

26
 EPA

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	1. MIN.	1. SEC.	1. DEG.	1. MIN.	1. SEC.	
	002	43	27	47	83	54	

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT & DESCRIPTION	4. LIST CODES FROM TABLE 20-1	
	A. OPERATION (list)	B. AVERAGE FLOW (include units)			
002	General process water from dust collection systems, cupola emission systems, slag quenchers and sand sluice systems.	51.6 million* gallons/day	Two Classifiers - Each 88817 gallon capacity Retention Time 5 Min Solids disposed of by sale to contractors for construction purposes.	1	U
			Two mix tanks, each 161568 gallons capacity. Water treated with Hercules 1123 Polymer (Flocculant) Retention time 9 Min.	1	G
			Four primary lagoons, each of 2,450,448 gallons capacity. Two in use at any one time Retention time 137 Min.	1	U
			One secondary lagoon of 72,705,600 gallons capacity. Retention time 34 Hours.	1	U

OFFICIAL USE ONLY (Effluent Guidelines Sub Categories)

CONTINUE

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?
 YES (complete the following table) NO (go to Section III)

1. OUTFALL NUMBER (list)	2. OPERATION(S) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW			
		a. DAYS PER WEEK (specify average)	b. MONTHS PER YEAR (specify average)	a. FLOW RATE (in mgd)		b. TOTAL VOLUME (specify with units)	
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY

III. MAXIMUM PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

YES (complete Item III-B) NO (go to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

YES (complete Item III-C) NO (go to Section IV)

C. If you answered "Yes" to Item III-B, list the quantity which represents an actual measurement of your maximum level of production, expressed in and units used in the applicable effluent guideline, and indicate the affected outfalls.

I. MAXIMUM QUANTITY			2. AFFECTED OUTFALL (list outfall)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of water treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, or loan conditions.

YES (complete the following table) NO (go to Item IV-B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FIN/PLANS/EST. COSTS
	a. no.	b. source of discharge		

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your planned schedules for construction. MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding - Complete one set of tables for each outfall - Annotate the outfall number in the space provided.
 NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Formaldehyde	Hot box foundry resin binders are formulated with small amounts of formaldehyde. The binders are mixed with sand and internally catalyzed with a mild acid and the application of heat to produce a polymerized resin that binds the sand grains in the core produced. Only losses or spills of virgin resin could contribute to presence in discharge.	Triethylamine	Cold box resin binder system is catalyzed with triethylamine gas to produce a polymerization reaction within the resin binder for the production of cores. Only losses or spills of virgin catalyst could contribute to presence in discharge.

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. Is any pollutant listed in Item V-C a substance or a component of a substance which you do or expect that you will over the next 5 years use or manufacture as an intermediate or final product or byproduct?

YES (list all such pollutants below)

NO (go to Item VI-B)

B. Are your operations such that your raw materials, processes, or products can reasonably be expected to vary so that your discharges of pollutants may during the next 5 years exceed two times the maximum values reported in Item V?

YES (complete Item VI-C below)

NO (go to Section VII)

C. If you answered "Yes" to Item VI-B, explain below and describe in detail the sources and expected levels of such pollutants which you anticipate will be discharged from each outfall over the next 5 years, to the best of your ability at this time. Continue on additional sheets if you need more space.

CONTINUED FROM THE FRONT

II. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been run in any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

YES (Identify the test(s) and describe their purposes below)

NO (go to Section VIII)

Performed by Michigan DNR both as static and flow through bio-assay for fish toxicity. Results showed no toxicity.

VIII CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

NO (go to Section IX)

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (Type or print)

Robert D. Lund, Vice Pres. - GMC Gen. Mgr.-Chevrolet Mtr. Div.

C. SIGNATURE

Robert D. Lund

B. PHONE NO. (area code & no.)

(313) 575-4619

D. DATE SIGNED

9-24-81

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

M I D 0 4 1 7 9 3 3 4 0

Form Approved OMB No. 168-R0173

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

OUTFALL NO
002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT		3. LONG TERM AVERAGE VALUE		4. NO. OF ANALYSES	3. UNITS (specify if metric)		5. INITIAL CONCENTRATION		6. NO. OF ANALYSES
	a. MAXIMUM DAILY VALUE (i) concentration	(j) mass	(i) concentration	(j) mass		8. CONCENTRATION	9. MASS	(i) concentration	(j) mass	
a. Biochemical Oxygen Demand (BOD ₅)	6	2582			1	mg/l	lbs/day	135	58096	1
b. Chemical Oxygen Demand (COD)	58	24959			1	mg/l	lbs/day	370	159227	1
c. Total Organic Carbon (TOC)	40	17214			1	mg/l	lbs/day	22	9468	1
d. Suspended Solids (TSS)	28	12050	15	6455	97	mg/l	lbs/day	31	13341	1
e. Ammonia (as N)	< 3	< 1291			1	VALUE	VALUE	< 1	< 430	1
f. pH	51.6*		31.9*		365	VALUE	VALUE	60.7**		
g. Temperature (Fahrenheit)	16	61	14	54	113	°C	°C	4		39
h. Temperature (Celsius)	28	57	25	13	127	°C	°C	20		59
i. BOD	7.16	8.60	7.61	8.32	97	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT (i) (j) (k)	2. MARK "X"		3. EFFLUENT		4. UNITS		5. INITIAL CONCENTRATION		6. NO. OF ANALYSES
	a. MAXIMUM DAILY VALUE (i) concentration	(j) mass	b. MAXIMUM 30 DAY VALUE (i) concentration	(j) mass	8. CONCENTRATION	9. MASS	(i) concentration	(j) mass	
a. Benthic Invertebrates (BI)									
b. Chloride, Total Residual	X								
c. Color	X								
d. Fecal Coliform	X								
e. Fluoride (169344081)	X	11.1	4777		12	mg/l	lbs/day	5	1
f. Nitrate-Nitrite (as N)	X	.85	366		1	mg/l	lbs/day	1.01	435

EPA I.D. NUMBER (copy from Item 1 of Form 1) **OUTFALL NUMBER**
H I D O 4 1 7 9 3 3 4 0 **002**

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C. If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and phenols. If you are not required to mark column 2-a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either column 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' (a) Toxic metals, cyanides, and phenols; (b) Secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions; (c) Absent	3. EFFLUENT		4. UNITS		5. II TABLE				
		MAXIMUM DAILY VALUE (a) mass concentration; (b) mass	MAXIMUM 30-DAY VALUE (a) mass concentration; (b) mass	CONCENTRATION (a) mass concentration; (b) mass	CONCENTRATION (a) mass concentration; (b) mass	CONCENTRATION (a) mass concentration; (b) mass	CONCENTRATION (a) mass concentration; (b) mass			
14. Arsenic, Total (1740-56-0)	X	.016	7			mg/l	lbs/day	.016	7	1
20. Cadmium, Total (7440-43-9)	X	ND @ .01				mg/l		ND @ .01		1
24. Chromium, Total (7440-47-3)	X	ND @ .05				mg/l		ND @ .05		1
25. Copper, Total (7440-50-9)	X	ND @ .02				mg/l		ND @ .02		1
74. Lead, Total (7439-97-0)	X	.058	25			mg/l	lbs/day	ND @ .005		1
81. Mercury, Total (7439-97-0)	X	ND @ .0004				mg/l		ND @ .0004		1
84. Nickel, Total (7429-01-0)	X	.05	22			mg/l	lbs/day	ND @ .04		1
74. Nickel, Total (7429-01-0)	X	.02	9			mg/l	lbs/day	ND @ .015	6	1
17. Selenium, Total (7448-22-4)	X	ND @ .01				mg/l		ND @ .01		1
17. Selenium, Total (7448-22-4)	X	ND @ .005				mg/l		ND @ .005		1
12. Silver, Total (7440-37-0)	X	7.5	3228			mg/l	lbs/day	ND @ .01		1
12. Silver, Total (7440-37-0)	X	.07	30	.03	13	mg/l	lbs/day	ND @ .02		1
15. Zinc, Total (7440-66-0)	X	.510	219	.082	35	mg/l	lbs/day	.008	3	1

EPA I.D. NUMBER (copy from Item 1 of Form 1) 007/ALL NUMBER
 M I D O 4 1 7 9 3 3 4 0 002

1. POLLUTANT AND CAS NUMBER (if available)	2. MAM 'M'		3. EFFLUENT		4. NO. OF ANAL. YRS	4. UNITS		5. NO. OF ANAL. YRS
	Acute	Chronic	(1) concentration	(2) mass		% CONCENTRATION	% MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)								
23V. Methylene Chloride (75-09-2)	X		ND @ 100		1	ppb		NDE100
23V. 1,1,2,2-Tetrachloroethane (197-34-8)	X		NDE100		1	ppb		NDE100
24V. Tetrachloroethylene (127-18-4)	X		NDE100		1	ppb		NDE100
25V. Toluene (108-88-3)	X		NDE100		1	ppb		NDE100
26V. 1,2-Trans-Dichloroethylene (70-5)	X		NDE100		1	ppb		NDE100
2. 1,1,1-Trichloroethane (111-55-6)	X		NDE100		1	ppb		NDE100
28V. 1,1,2-Trichloroethane (179-00-3)	X		NDE100		1	ppb		NDE100
23V. Trichloroethylene (199-01-8)	X		NDE100		1	ppb		NDE100
30V. Trichlorofluoromethane (135-98-4)	X		NDE100		1	ppb		NDE100
31V. Vinyl Chloride (75-01-4)	X		NDE100		1	ppb		NDE100
GC/MS FRACTION - ACID COMPOUNDS								
1A. 2-Chlorophenol (129-57-8)	X		NDE100		1	ppb		NDE100
2A. 2,4-Dichlorophenol (120-83-2)	X		NDE100		1	ppb		NDE100
2A. 2,4-Dimethylphenol (105-67-9)	X		NDE100		1	ppb		NDE100
4A. 4,6-Dinitro-Cresol (152-07-1)	X		NDE100		1	ppb		NDE100
5A. 2,4-Dinitrophenol (131-20-8)	X		NDE100		1	ppb		NDE100
6A. 2-Nitrophenol (88-73-8)	X		NDE100		1	ppb		NDE100
7A. 4-Nitrophenol (103-07-7)	X		NDE100		1	ppb		NDE100
8A. P-Chloro-M-Cresol (159-58-7)	X		NDE100		1	ppb		NDE100

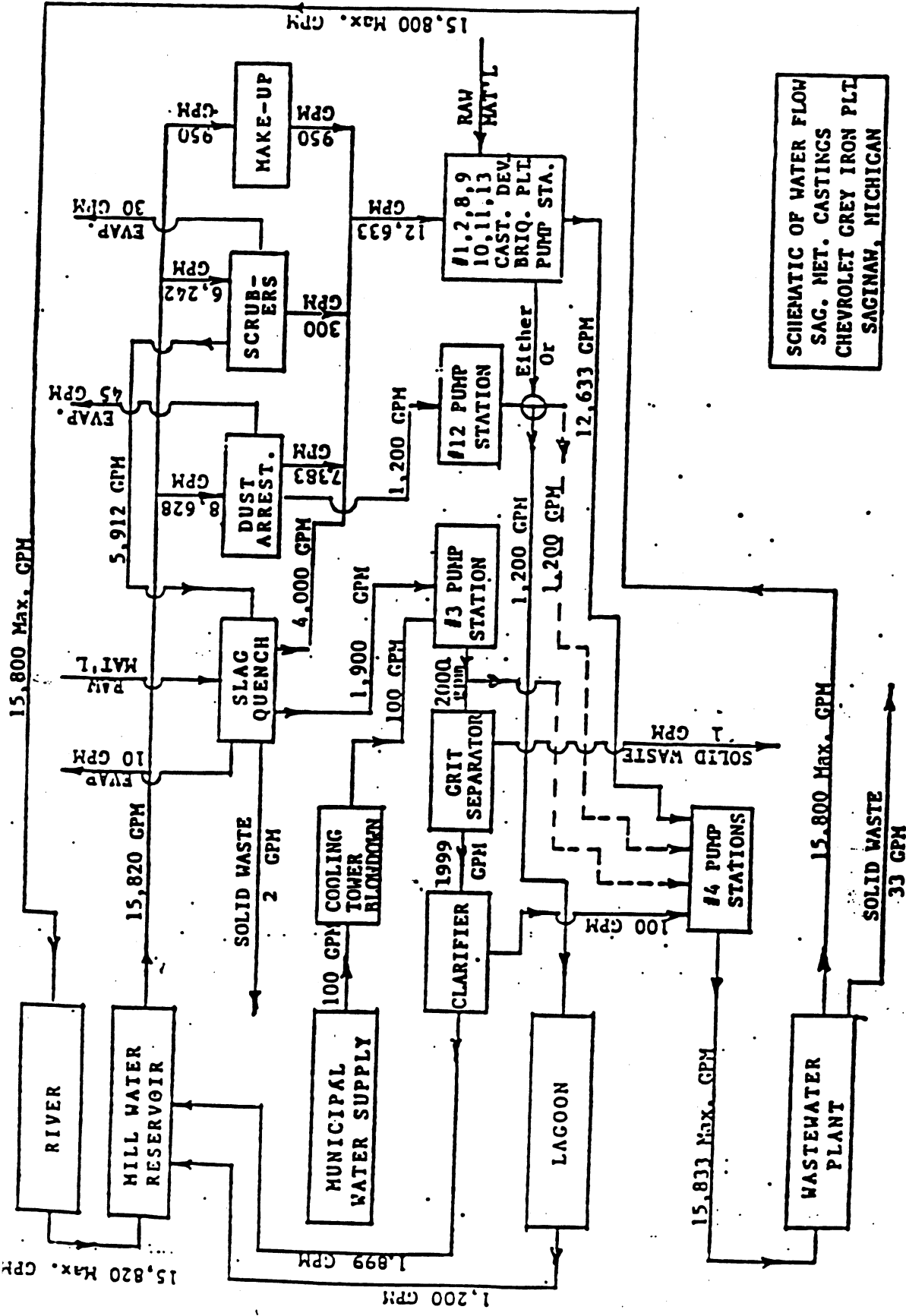
CONTINUED FROM PAGE V-4

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'R'		3. EFFLUENT				4. UNITS		5. ANALYSIS	
	A. DATE	B. TIME	C. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE		CONCENTRATION	BY MASS	IN NO. OF ANAL. YRS	IN NO. OF ANAL. YRS
			(a) concentration	(b) mass	(c) concentration	(d) mass				
15 Acetaminophene (143-32-9)	X		ND@100					1	ND@100	1
22 Acenaphthylene (152-36-8)	X		ND@100					1	ND@100	1
32 Anthracene (112-0-27)	X		ND@100					1	ND@100	1
43 Benidine (127-07-5)	X		ND@100					1	ND@100	1
55 Benzofuran (153-35-3)	X		ND@100					1	ND@100	1
72 3,4-Dinitrofluorene (125-52-2)	X		ND@100					1	ND@100	1
89 Benzofuran (153-35-3)	X		ND@100					1	ND@100	1
93 Benzofuran (153-35-3)	X		ND@100					1	ND@100	1
109 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
113 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
123 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
129 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
133 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
139 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
143 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
149 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
153 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
159 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
163 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
169 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
173 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
179 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
183 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
189 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
193 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
199 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
203 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
209 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1
213 1,2-Dichloroethane (107-06-2)	X		ND@100					1	ND@100	1

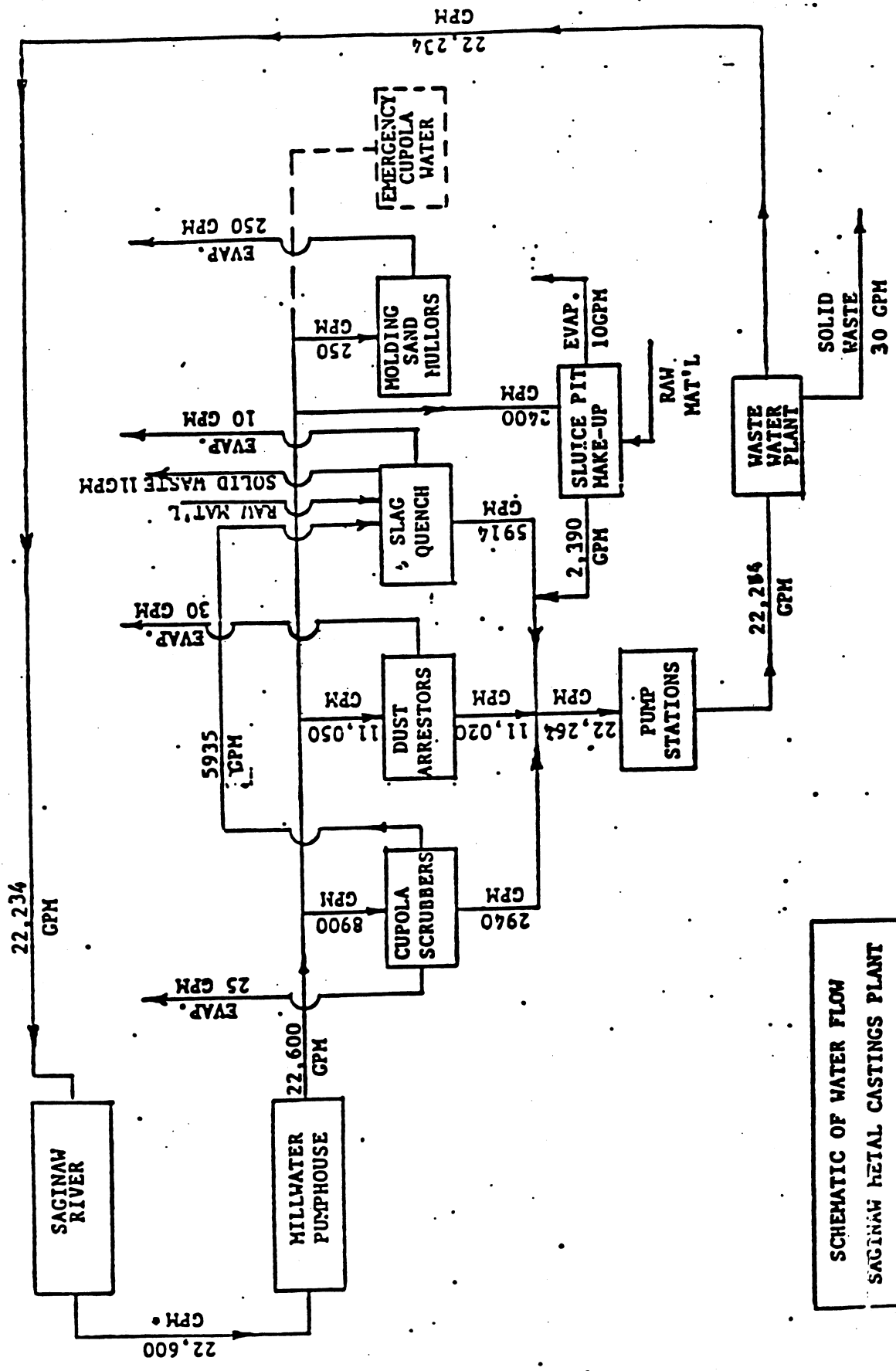
CONTINUE TO THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'	3. EFFLUENT		4. UNITS		5. IN. ARE. (if applicable)
		6. MAXIMUM DAILY VALUE (if available)	7. MAXIMUM 30 DAY VALUE (if available)	8. CONCENTRATION	9. MASS	
GCAS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)						
43B N-Nitro-2-naphthylamine (150-20-6)	X	ND0100				ND0100
44B Phenanthrene (125-01-9)	X	ND0100			ppb	ND0100
45B Pyrene (129-00-0)	X	ND0100			ppb	ND0100
46B 1,2,4-Trichlorobenzene (1120-52-1)	X	ND0100			ppb	ND0100
GCAS FRACTION - PESTICIDES						
1F Aldrin (1309-00-7)	X					
GCAC						
1G Dieldrin (1064-0)	X					
2P 4-BMC (119-85-7)	X					
4P 7-BMC (158-09-9)	X					
5P 8-BMC (1319-86-8)	X					
6P Chlordane (5774-9)	X					
7P 4'-DDT (15029-3)	X					
8P 4'-DDE (17255-9)	X					
9P 4'-DDD (17256-8)	X					
10P Dieldrin (57-1)	X					
11P G-Endosulfan (111529-7)	X					
12P 2-Endosulfan (111529-7)	X					
13P Endosulfan Sulfate (1123107-8)	X					
14P Endrin (17270-8)	X					
15P Endrin Aldehyde (1162183-4)	X					
16P Menthchlor (17644-8)	X					



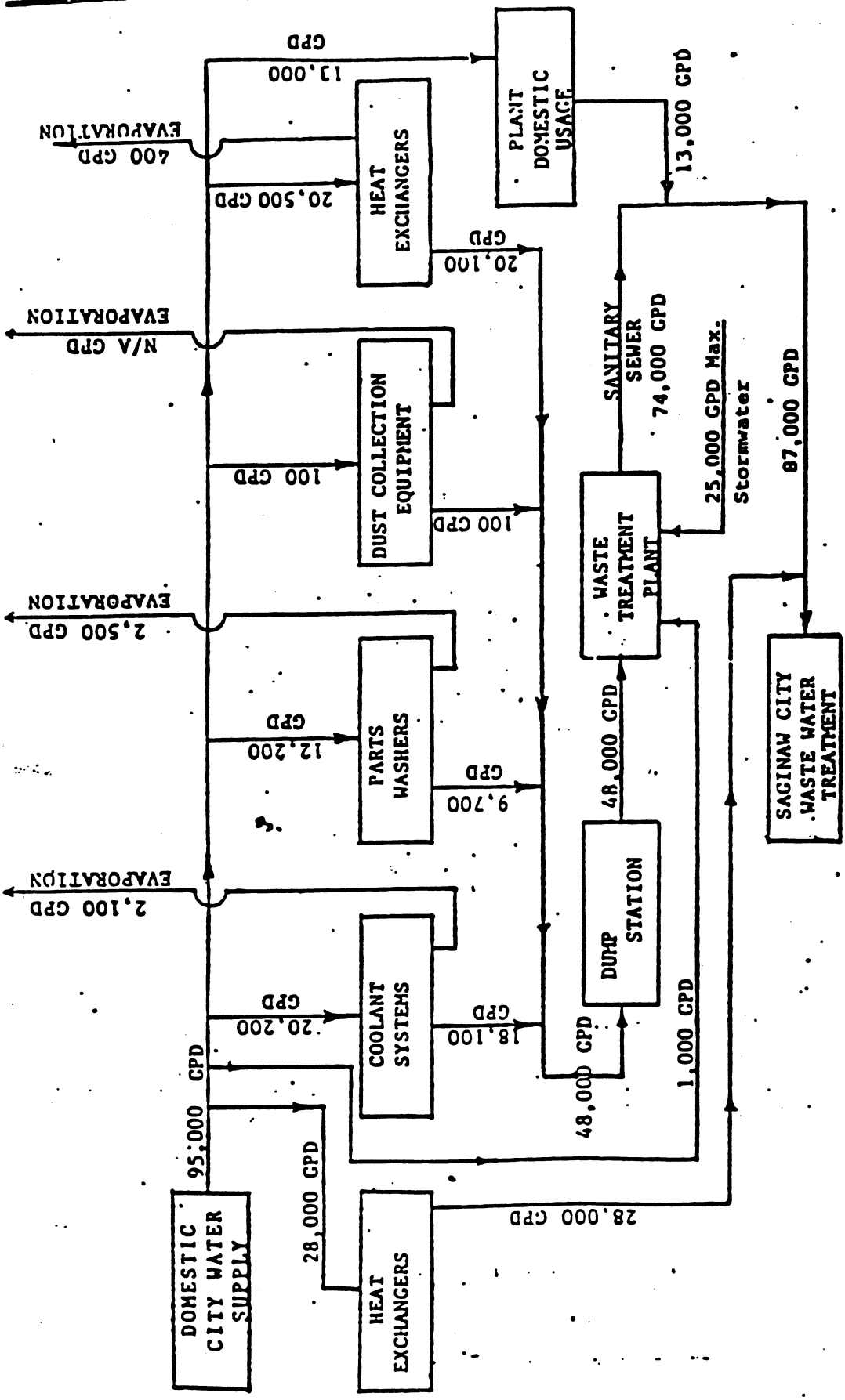
SCHEMATIC OF WATER FLOW
 SAG. NET. CASTINGS
 CHEVROLET GREY IRON PLT
 SAGINAW, MICHIGAN

Notes: GPM - Gallons Per Minute
 System handles no inflow of
 stormwater.



SCHEMATIC OF WATER FLOW
 SAGINAW METAL CASTINGS PLANT
 CHEVROLET NOULAR IRON
 SAGINAW, MICHIGAN

*Notes: 22,600 GPH represents the maximum pumping capacity under full production.
 System handles no stormwater flow
 GPH - Gallons Per Minute



SCHEMATIC OF WATER FLOW
 CHEVROLET MOTOR DIVISION
 GM - SAGINAW PARTS PLANT
 SAGINAW, MICHIGAN

Note: GPD - Gallons Per Day

D

ATTACHMENT II

Closure Plan (May 19, 1981)

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FEB. 14, 1994

CLOSURE PLAN
CHEVROLET METAL CASTINGS
GENERAL MOTORS CORPORATION

I. Introduction

Under the U.S. EPA Regulations, 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120, each facility which stores, treats, or disposes of hazardous wastes must have a closure plan on file. This closure plan has been prepared to cover the following facility:

- A. EPA I.D. Number: M1D041793340
- B. Facility Name: General Motors Corporation
Chevrolet Saginaw Casting & Parts Plant
2100 Veterans Memorial Parkway
- C. This Plan Prepared by: David C. Ruhland, Project Engineer
May 18, 1981

Plan Revisions:

Mk.	Date	Revision	By

D. Facilities for Hazardous Waste:

<u>Location</u>	<u>Type</u>	<u>Materials Handled</u>
Parts Plant	Storage	Used Chlorathene VG, Paint Residues, & Thinners
Grey Iron	Storage	Used Chlorathene VG, Used caustic solution Paint Residues, & Thinners
Nodular Iron	Storage	Used Chlorathene VG Paint Residues, & Thinners
Nodular Iron	Treatment	Calcium Carbide Slag

RIN 768-94

FEB. 14, 1994

Maximum Waste Inventory - The following table shows the maximum quantity of wastes on hand at any one time:

Used 1,1,1, Trichlorethane	120 - 55 Gal. Drums
Paint Residue & Thinners	120 - 55 Gal. Drums
Caustic Solution	60 - 55 Gal. Drums
Calcium Carbide Slag	720 Tons

III. Schedule for Closing

This facility does not have a definite closure date. The following schedule is open-ended. It lists the time table for closure in terms of elapsed time subsequent to the time that EPA, or an EPA authorized state agency, has approved this Closure Plan (refer Section 265.112 c)

Day 1 - Plant termination of hazardous waste activity.

Day 10 - All paint residues, thinners, caustic solution and degreaser solvents removed from storage and shipped for disposal.

Day 20 - Storage areas washed with a detergent solution and rinsed with potable water. Detergent solution and rinse water will be collected, tested and if required will be disposed of in an approved landfill.

Day 28 - Contents of the calcium carbide slag treatment area will be treated to deactivate the unreacted calcium carbide. Treated material will be removed to disposal area.

Day 30 - Any used drums will be shipped for proper disposal/ reclamation.

Day 35 - Closure should be complete.

Day 40 - Certification of closure by independent registered professional engineer.

IV. Decontamination of Facility & Equipment:

1. Pretreatment of Calcium Carbide Slag Treatment Area:

All Calcium Carbide slag will be treated to neutralize any unreacted materials prior to the removal of this facility. All neutralized material will be disposed of in approved areas. The treatment area will be rinsed thoroughly with potable water.

USEPA FOIA REQUEST

RIN 768-94

FEB. 14, 1994 Decontamination of 1,1,1, Trichlorethane Storage Area:

Once the area is cleared of all 55 gallon drums, the walls and floor of the storage facility will be washed with a 5% alkaline detergent solution. The solution will be drawn off via vacuum pick-up and stored in a bulk tank for disposal. As a final step, the walls and floor will be steam cleaned to ensure removal of the material.

3. Decontamination of Paint Residue & Thinner Storage Facilities:

Once the area is cleared of all 55 gallon drums, the walls and floor of the storage facility will be washed with a 5% alkaline detergent solution. The solution will be drawn off via vacuum pick-up and stored in a bulk tank for disposal. As a final step, the walls and floor will be steam cleaned to ensure removal of the material.

4. Decontamination of Caustic Solution Storage Areas:

Once the area is cleared of all 55 gallon drums, the walls and floor of the storage facility will be washed with a 5% alkaline detergent solution. The solution will be drawn off via vacuum pick-up and stored in a bulk tank for disposal. As a final step, the walls and floor will be steam cleaned to ensure removal of the material.

USEPA FOIA REQUEST

RIN. 79894 Cost Estimates for Closure (To be updated annually on April 1st) (1981 \$'s)

FEB. 14, 1994 Prepared by: Doyle Hansen, General Supt. Plant Engineering

<u>Area</u>	<u>Total Cost</u>	
A. 1,1,1, Trichlorethane Storage		
1) NICP	\$4000	
2) GICP	4000	
3) Saginaw Parts	<u>1500</u>	
Total		\$9500
E. Paint Residue & Thinners Storage		
1) NICP	\$4000	
2) GICP	4000	
3) Saginaw Parts	<u>1500</u>	
Total		\$9500
C. Caustic Solution Storage		
1) GICP Only	\$6000	\$6000
D. Calcium Carbide Slag Treatment		
	\$4500	<u>\$4500</u>
Total		\$29,500

D

ATTACHMENT III

Photographic Documentation of Closure Activities

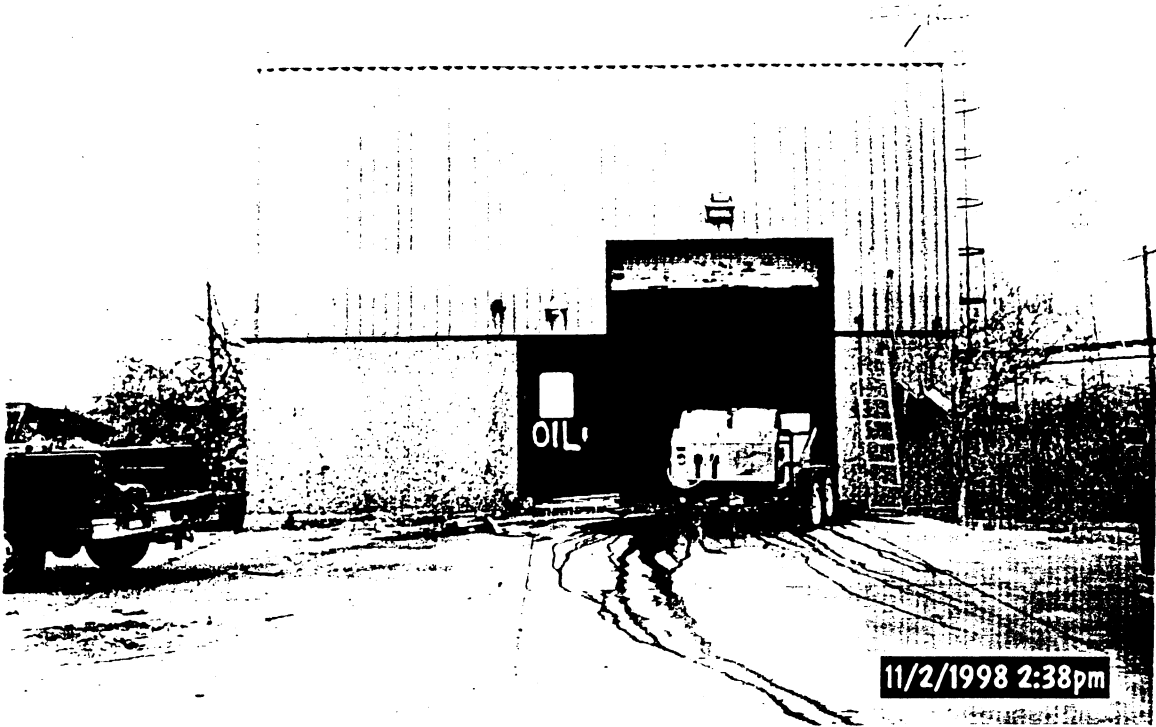
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CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

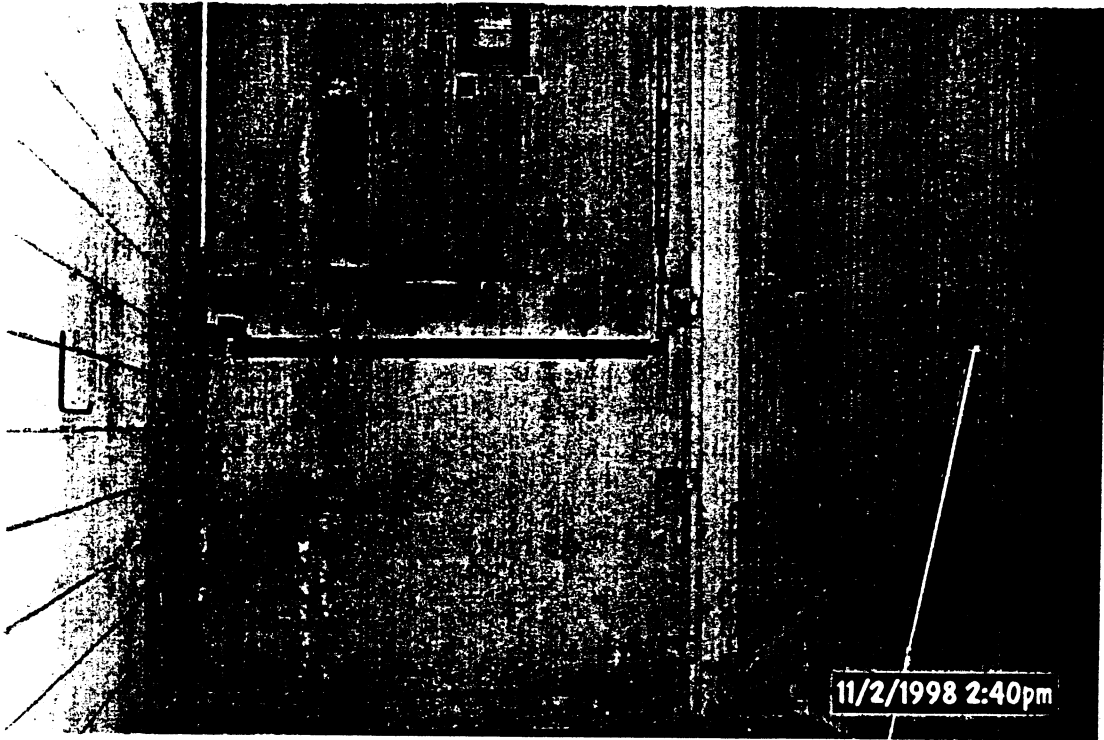


Nodular Iron Oil House, West Entrance (Prior to Cleaning Activities)



Nodular Iron Oil House, Viewing Southeast (Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

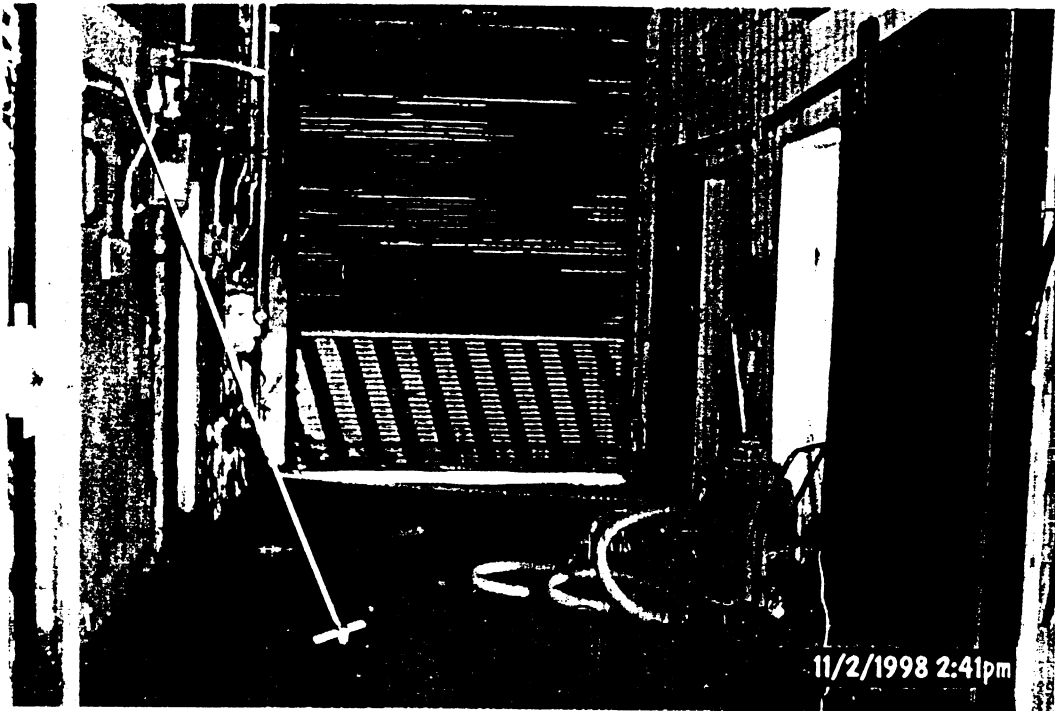


Nodular Iron Oil House, RCRA Storage Unit (Viewing South - Prior to Cleaning Activities)

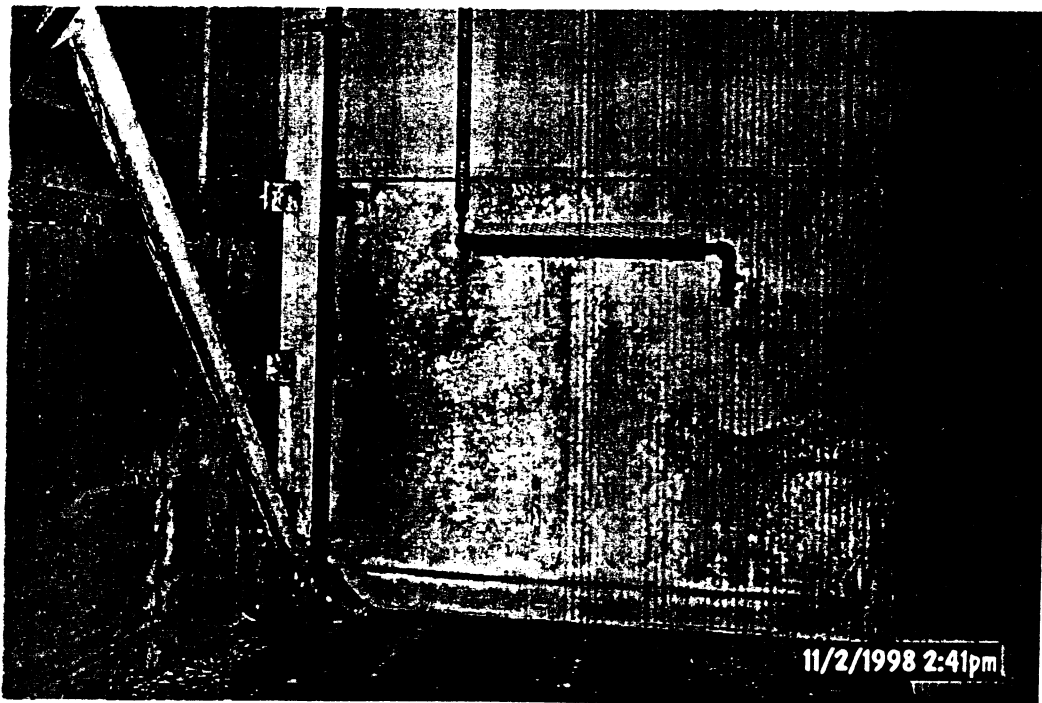


Nodular Iron Oil House. Inside RCRA Storage Unit (Viewing North - Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Inside Nodular Iron Oil House, Viewing East Outside of RCRA Storage Units (Prior to Cleaning Activities)

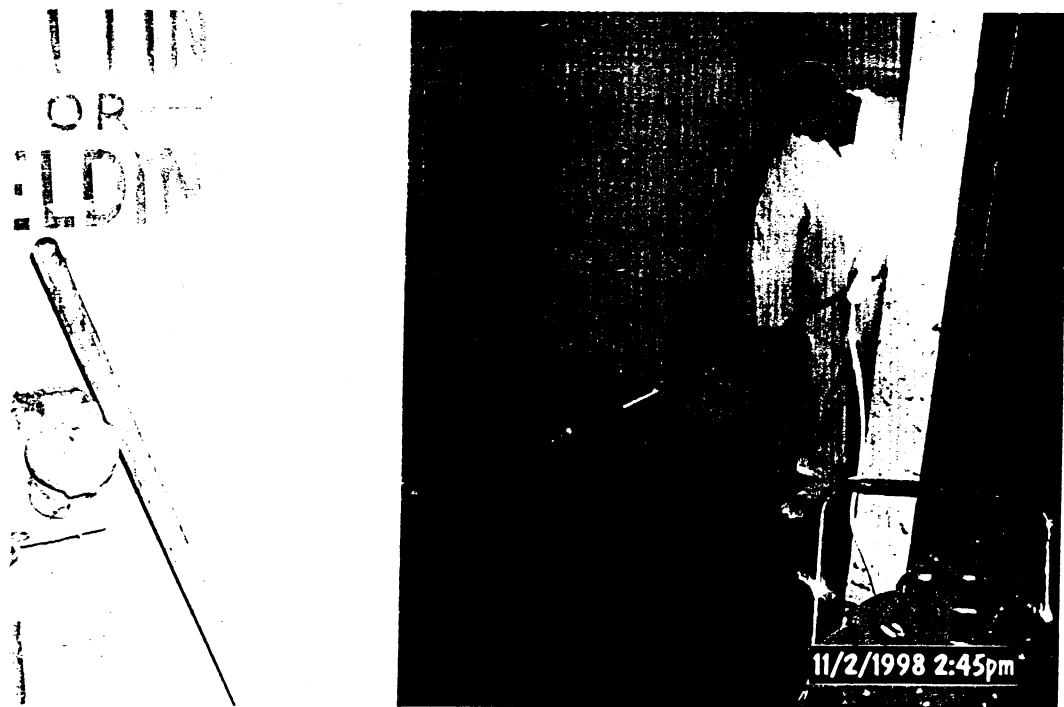


Nodular Iron Oil House. Inside RCRA Storage Unit (Viewing South - Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

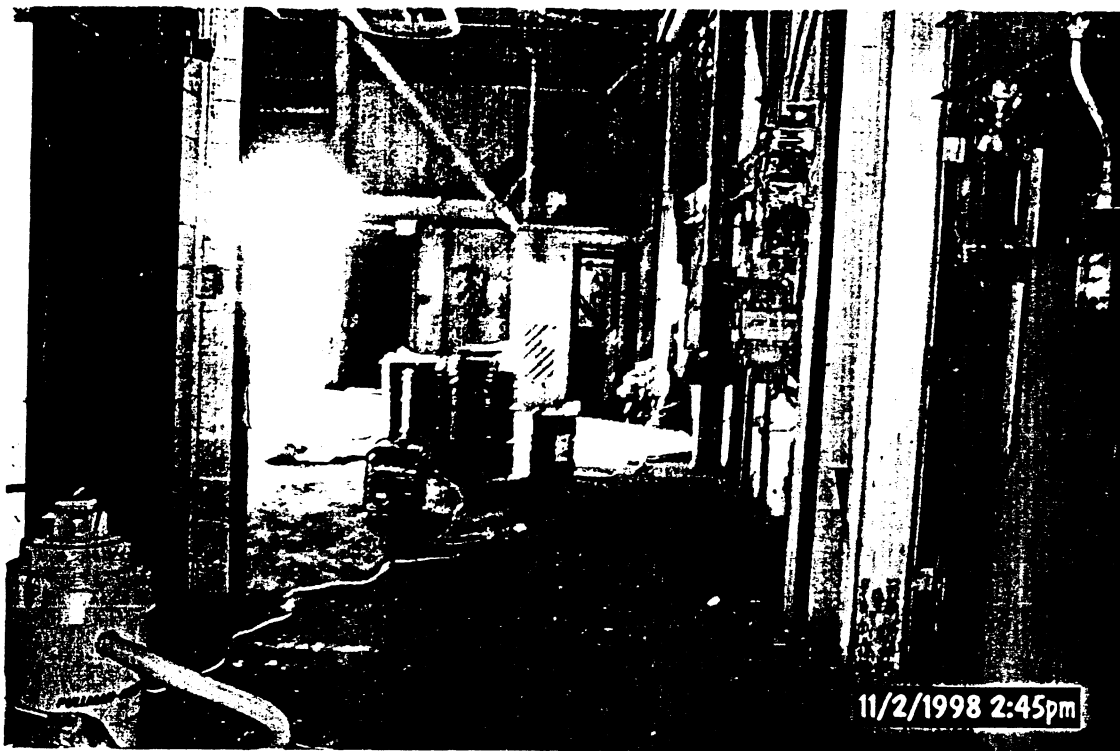


Nodular Iron Oil House, RCRA Storage Unit (Floor and Wall Scrubbing)

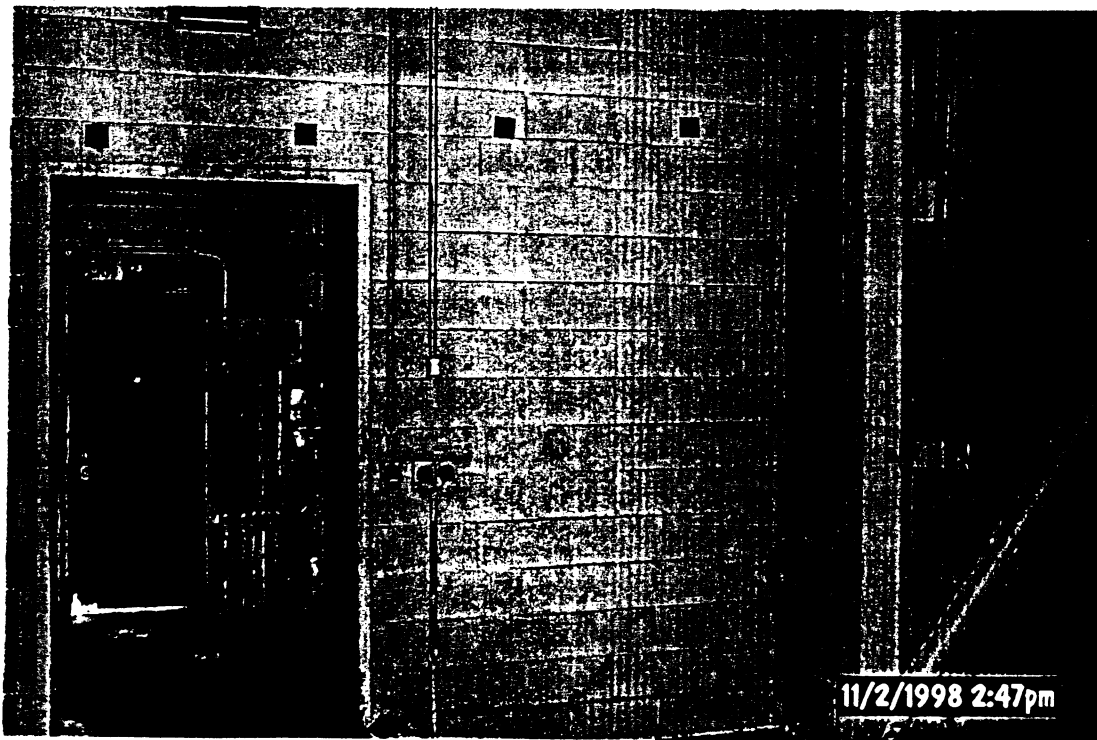


Nodular Iron Oil House, Vacuum Pick-Up of Wash Water

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

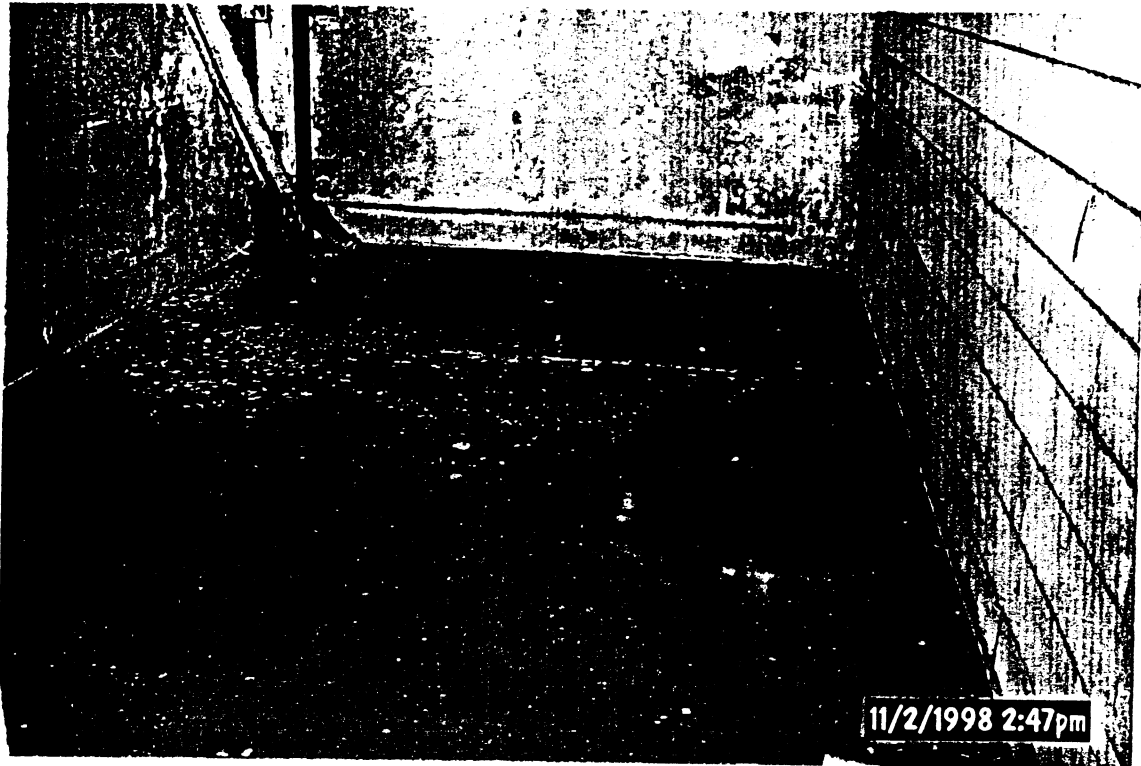


Nodular Iron Oil House, Outside of RCRA Storage Units (Viewing West)

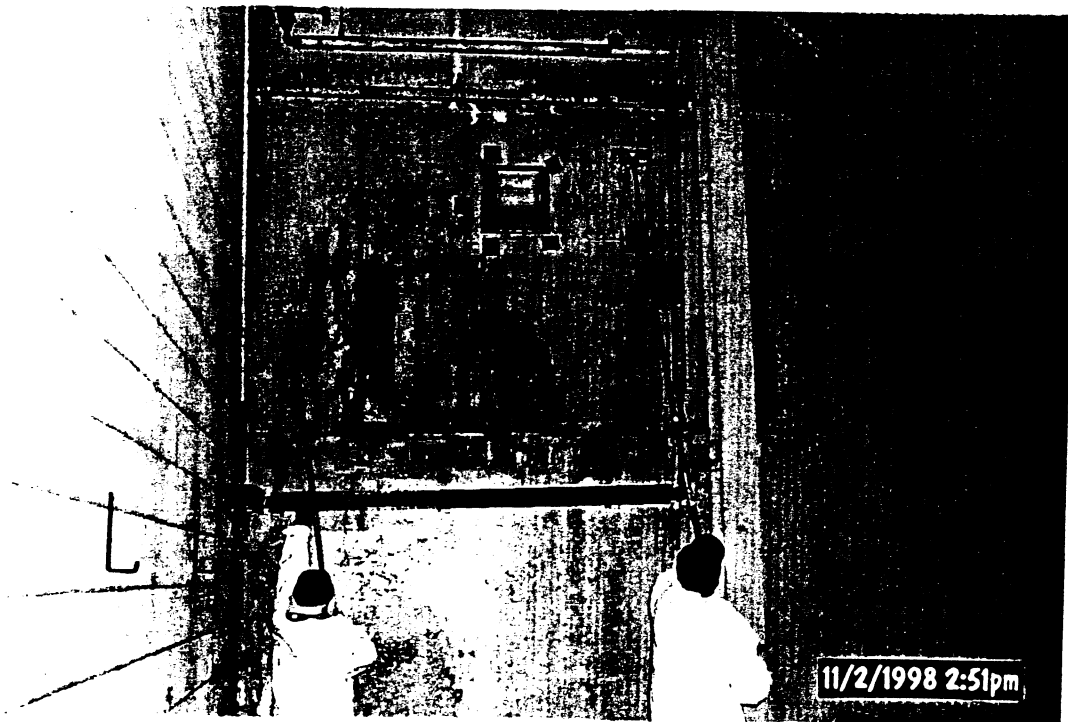


Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing North - Prior to Cleaning Activities)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

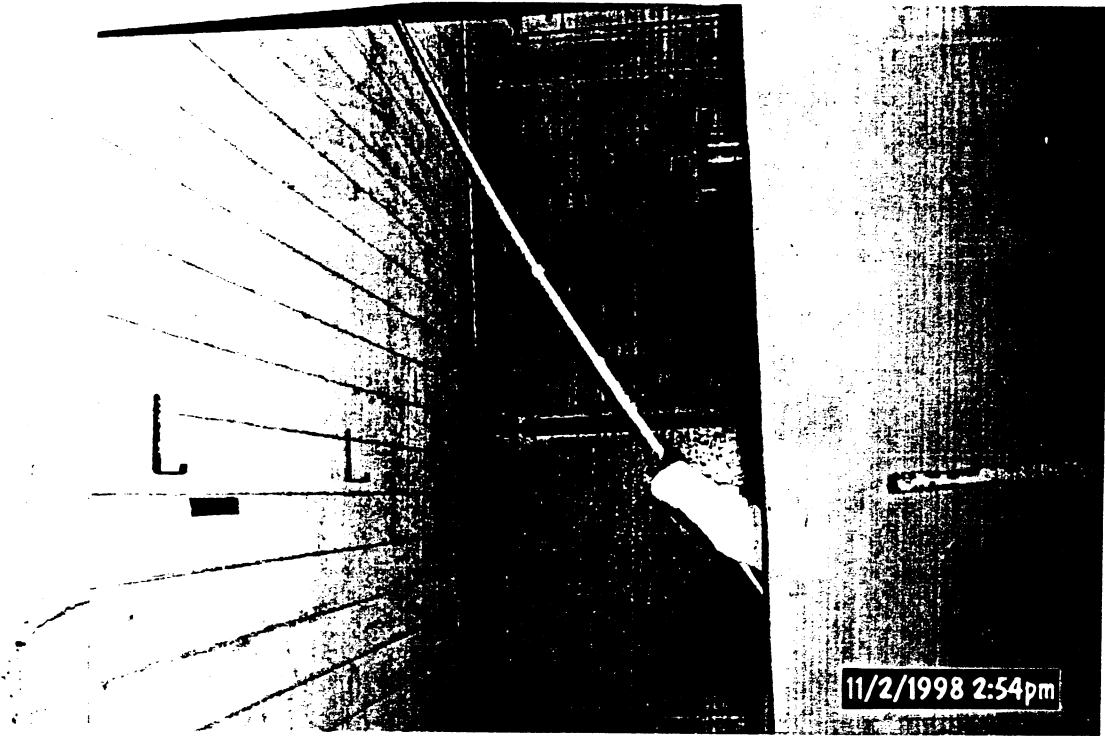


Nodular Iron Oil House, RCRA Storage Unit (Viewing South - Prior to Cleaning Activities)

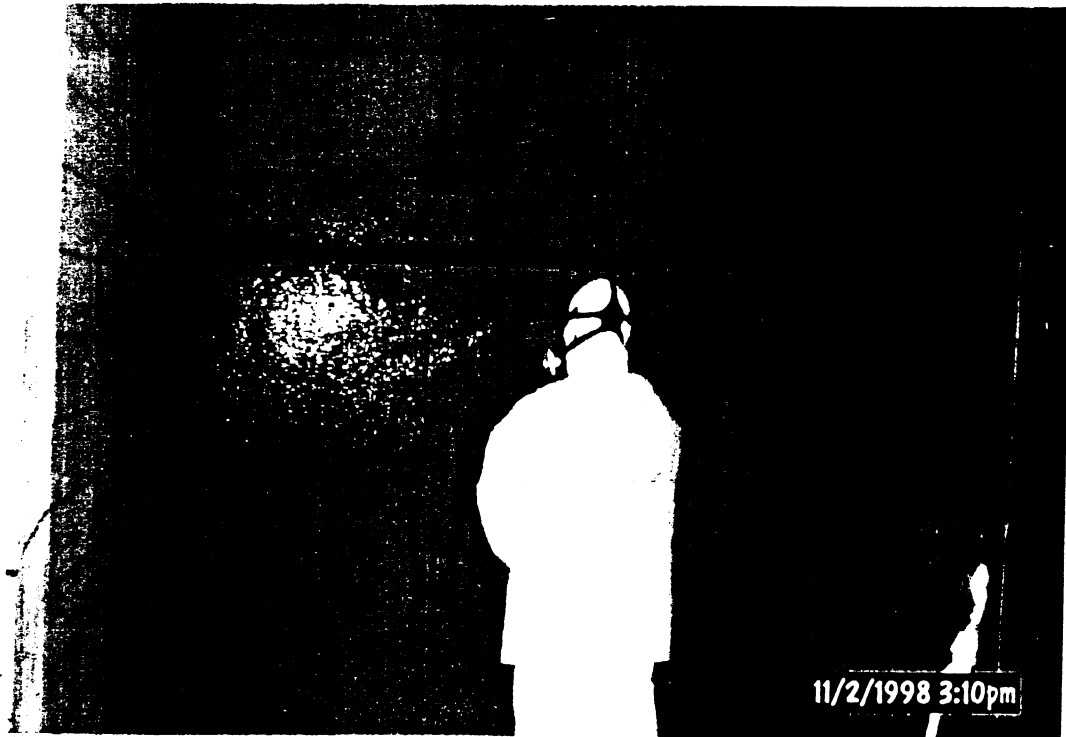


Nodular Iron Oil House, RCRA Storage Unit Wall Scrubbing (Viewing South)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

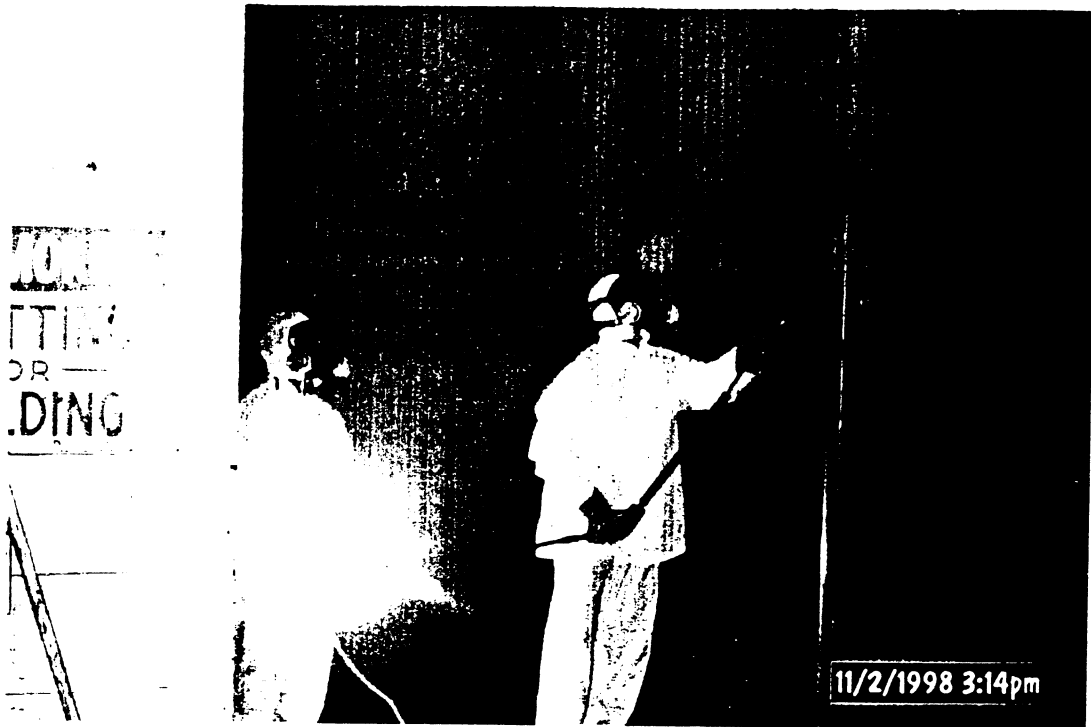


Nodular Iron Oil House, RCRA Storage Unit Wall Scrubbing (Viewing South)

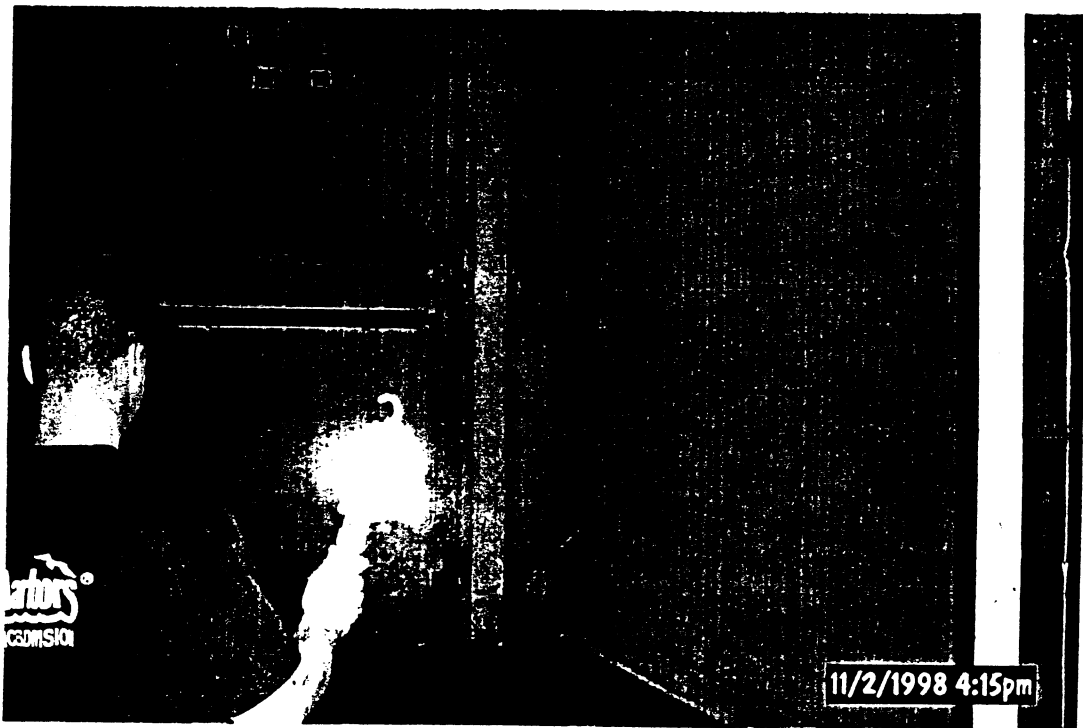


Nodular Iron Oil House, RCRA Storage Unit Steam Cleaning After Scrubbing (Viewing South)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area

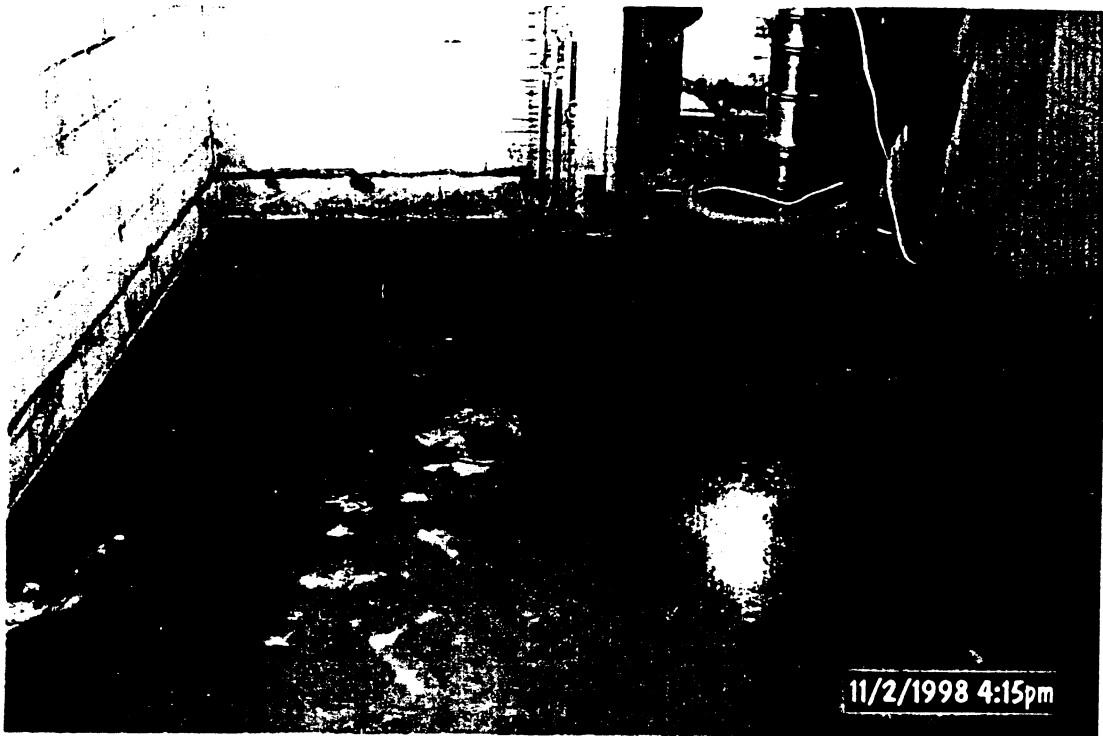


Nodular Iron Oil House, Steam Cleaning RCRA Storage Unit (Viewing South)



Nodular Iron Oil House, RCRA Storage Unit After Steam Cleaning Activities (Viewing South)

CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, Vacuum Pick-Up of Wash Water After Steam Cleaning Activities (Viewing North)



Nodular Iron Oil House, Steam Cleaning RCRA Storage Unit (Viewing Southeast)

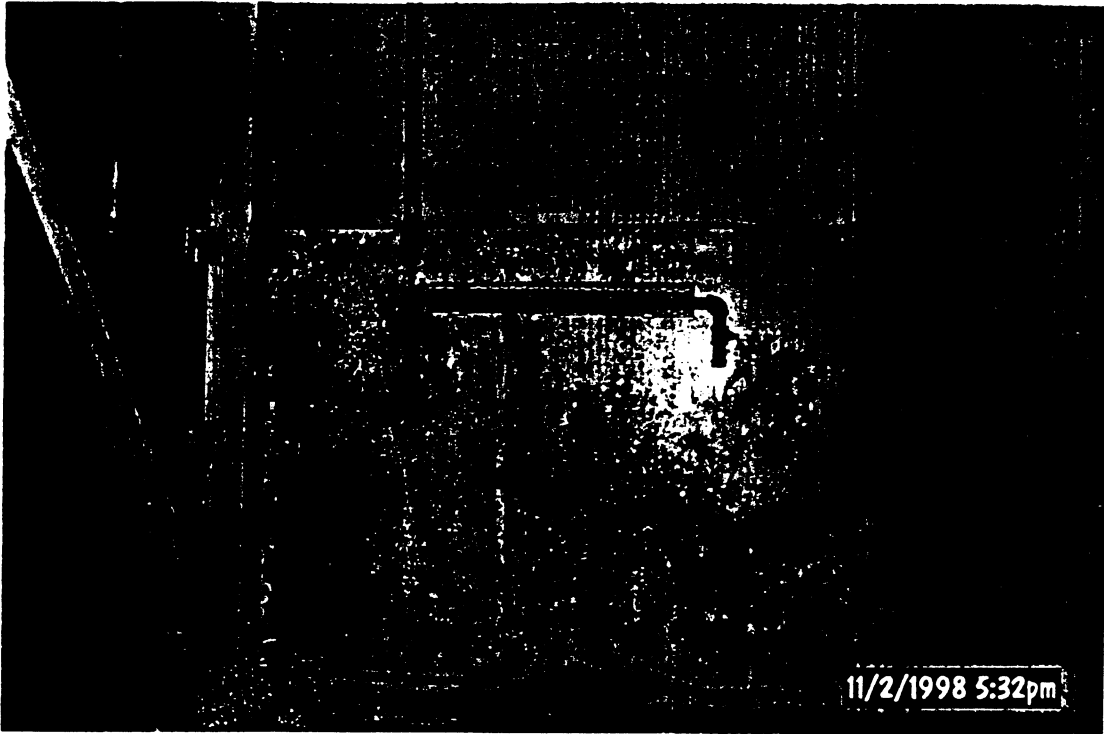
CLOSURE CERTIFICATION REPORT
Nodular Iron Oil House RCRA Hazardous Waste Storage Area



Nodular Iron Oil House, Vacuum Pick-Up of Wash Water (Viewing South)



Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing North After Final Cleaning)



Nodular Iron Oil House, Inside RCRA Storage Unit (Viewing South After Final Cleaning)

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ATTACHMENT IV

Wastewater Characterization Analysis

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Date: November 16, 1998

Clean Harbors
11800 S. Stoney Island Ave.
Chicago, IL 60617
Attention: John Behrens

Project: EMCON/General Motors

Enclosed are the results from 1 water sample received at Great Lakes Analytical on November 9, 1998. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
8111831	Water: CH121333	11/3/98	TCLP RCRA Metals Flash Point, EPA ASTMD92-85 Reactive Cyanide, EPA 7.3.3 Reactive Sulfide, EPA 7.3.4 PCB, EPA 8082 TCLP VOC, EPA 8260 TCLP SVOC, EPA 8270 pH by EPA 9040

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stoney Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water
Analysis for: pH by EPA 9040
First Sample #: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 9, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS FOR: pH by EPA 9040

Sample Number	Sample Description	Sample Result pH units	Temperature °C
811-1831	CH121333	8.3	22

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <2>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 10, 1998
Analyzed: Nov 12, 1998
Reported: Nov 16, 1998

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	2.0	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	0.018
Lead.....	3015/7421	0.0015	0.014
Mercury.....	7470	0.0020	0.0081
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <1>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water: CH121333
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 9, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS

Analyte	EPA Method	Sample Results
Flash Point, Closed Cup(F).....	ASTMD93-85	>200

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <3>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water:: CH121333
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 11, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Reactive Cyanide.....	7.3.3	0.010	N.D.
Reactive Sulfide.....	7.3.4	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <4>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water: CH121333
Analysis Method: EPA 8082
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 10, 1998
Analyzed: Nov 10, 1998
Reported: Nov 16, 1998

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Detection Limit $\mu\text{g/L}$	Sample Results $\mu\text{g/L}$
PCB 1016.....	1.0	N.D.
PCB 1221.....	1.0	N.D.
PCB 1232.....	1.0	N.D.
PCB 1242.....	1.0	N.D.
PCB 1248.....	1.0	N.D.
PCB 1254.....	1.0	N.D.
PCB 1260.....	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <5>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Analysis Method: EPA 8260
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 13, 1998
Reported: Nov 16, 1998

TCLP VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
Benzene.....	0.40	N.D.
Carbon tetrachloride.....	0.40	N.D.
Chlorobenzene.....	0.40	N.D.
Chloroform.....	0.40	N.D.
1,2-Dichloroethane.....	0.40	N.D.
1,1-Dichloroethylene.....	0.40	N.D.
Methyl ethyl ketone.....	100	N.D.
Tetrachloroethylene.....	0.40	N.D.
Trichloroethylene.....	0.40	N.D.
Vinyl chloride.....	0.16	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <6>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Analysis Method: EPA 8270
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 13, 1998
Analyzed: Nov 14, 1998
Reported: Nov 16, 1998

TCLP SEMI-VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
o-Cresol.....	20	N.D.
m-, p-Cresol.....	20	N.D.
Cresol.....	20	N.D.
1,4-Dichlorobenzene.....	0.75	N.D.
2,4-Dinitrotoluene.....	0.020	N.D.
Hexachlorobenzene.....	0.020	N.D.
Hexachloro-1,3-butadiene.....	0.050	N.D.
Hexachloroethane.....	0.30	N.D.
Nitrobenzene.....	0.20	N.D.
Pentachlorophenol.....	10	N.D.
Pyridine.....	0.50	N.D.
2,4,5-Trichlorophenol.....	40	N.D.
2,4,6-Trichlorophenol.....	0.20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <7>

D

ATTACHMENT V

Waste Disposal Manifests

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ATTACHMENT V
Waste Disposal Manifests

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PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM WASTE MANIFEST

1. Generator's US EPA ID No. N/A

Manifest Document No. 133957

2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address: General Motors Corporation, PO Box 5079, 1629 N Washington, Saginaw, MI 48605

Location If Different

A. Illinois Manifest Document Number: IL 7734497 FEE PAID IF APPLICABLE

4. 24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS: 1-800-645-8265

B. Illinois Generator's ID: 9260019999

5. Transporter 1 Company Name: Clean Harbors Env. Services, Inc. US EPA ID Number: MAD039322250

C. Illinois Transporter's ID: 7818491800

7. Transporter 2 Company Name: US EPA ID Number:

E. Illinois Transporter's ID: 1478

9. Designated Facility Name and Site Address: Clean Harbors Services, Inc., 11800 South Stony Island Ave., Chicago, Illinois 60617 US EPA ID Number: ILD000608471

G. Illinois Facility's ID: 03160010051

H. Facility's Phone: 773-646-6202

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers No. Type 13. Total Quantity 14. Unit W/Vol

Table with 4 rows (a-d) for waste description and handling codes. Row a: Non DOT Regulated material, Non DOT Hazardous, UN002, PF 00, 170, G. EPA HW Number: X-CLASS B. Authorization Number: XX.

J. Additional Description for Materials Listed Above: 11a. CH121333

K. Handling Codes for Wastes Listed Above in item #14

15. Special Handling Instructions and Additional Information: 2. 55 GAL DRUMS. PLACED INTO 2-PAY OVERPACKS, WO# IL147635

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Printed/Typed Name: Gilbert Jensen Signature: Gilbert Jensen Date: 01/21/99

17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name: RICHARD W FELDER Signature: Richard W Felder Date: 01/21/99

18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name: Signature: Date:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of materials covered by this manifest except as noted in item 19. Printed/Typed Name: JESSE BEVANO Signature: Jesse Bevano Date: 01/22/99

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$25,000 per day of violation. Falsification of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

In case of a spill call the Illinois Office of Emergency Response at 217/782-7000 and use material response card.

Facsimile Cover Sheet

To: Bill Steinmann
Company: _____
Phone: _____
Fax: _____

From: Cheryl Heath
Company: GM - WFG Remediation Team
Phone: 313 / 556-9032 (8-346)
Fax: 313 / 556-0803

Date: 2/11/98
Pages: 10

Message:

Bill - here are my comments on the Buda letter & closure report. I have also given a copy to Jean to review (especially letter) - Also look to add some more info on picture labels such as whether picture is before or after cleaning.

Thanks

Cheryl

1 INTRODUCTION

1.1 Purpose

D In accordance with Part 111 of the Michigan Natural Resource and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended, and in compliance with the closure provisions of 40 CFR, Part 264, Subpart **C**, this report certifies the closure of a Resource Conservation and Recovery Act (RCRA) Storage Area, formerly located at General Motors Corporation's (GM) Nodular Iron Plant, 2100 Veterans Memorial Parkway, Saginaw, Michigan (now part of the Saginaw Metal Casting Operations - **S**SMCO). The United States Environmental Protection Agency (U.S.EPA) Identification Number for SSMCO is MID 041 793 340.

1.2 Background

The former storage unit ^{was} ~~was~~ located at the former Nodular Iron Plant Oil House, 2100 Veterans Memorial Parkway, Saginaw, Michigan. ~~The unit can generally be located within the NE 1/4 of the SW 1/4 of Section 8, Township 12 North, Range 5 East, Saginaw County, Michigan (refer to Figure 1).~~

does it sometimes move around?

T According to the facility's RCRA Part A Permit Application (November 17, 1980), this unit consisted of a ten foot square storage pad (Attachment I). In actuality, the unit consisted of two,

approximately eleven feet by nineteen feet by fifteen feet high rooms complete with concrete and steel walls, a concrete floor, a ceiling and metal fire doors (refer to Figure 2).

The use of the Oil House Storage Unit reportedly began at former Nodular Iron Plant start-up in 1966 and continued until just prior to plant closure in 1987. The Oil House Storage Unit was utilized to store hazardous waste materials staged in 55-gallon barrels until proper disposal. The main waste believed to have been stored on this pad was 1,1,1-trichloroethane (TCA) with lesser amounts of polychlorinated biphenyls (PCBs), chlorobenzene, waste petroleum naphtha, waste oils, and possibly trichloroethylene (TCE).

General Motors submitted a Closure Plan (dated May 19, 1981) to the U.S.EPA, for this storage area and others, pursuant to 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120 (Attachment II) on April 14, 1983. The Closure Plan was public noticed in the *Saginaw News* on May 5, 1983.

~~We have been unable to locate closure documentation for this Storage Area. However,~~ in an August 17, 1998, meeting between the Michigan Department of Environmental Quality - Waste Management Division (MDEQ-WMD), GM, and GM's consultant EMCON, it was agreed that GM could attain closure for this unit by implementing and adhering to the 1981 Approved Closure Plan.

The 55-gallon drums ^{had been} were stored in two rooms within the Oil House building. The walls and floor of each room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors washed the walls and floor with the caustic scrub solution and extendible scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final

D step, the walls and floor of each room were steam cleaned. The rinse water from the steaming operations was also drawn off via vacuum pick-up and collected in the same two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs presented in Attachment III) the decontamination process and documented the cleaning operation of each room. The two 55-gallon drums were sealed, labeled, and placed near the entrance of the former Nodular Iron Plant Oil House. **R** The decontamination process was completed following the 1981 Approved General Motors Closure Plan and the health and safety plan developed for the site¹. Yellow Tyvek suits, nitrile gloves, safety glasses, and rubber boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

2.2 Wastewater Disposal

A Clean Harbors collected representative samples from the two 55-gallon drums for waste characterization analysis (Attachment IV). On January 19, 1999, Clean Harbors removed the barrels from the site and transported the drums to Clean Harbors Services, Inc. in Chicago, Illinois for treatment and disposal. The waste manifest is included as Attachment V. **F**

Any air monitoring during cleaning?

Looks like they used respirator protection as well

¹ Part VI of the Phase 1A RCRA Facility Investigation Workplan (June 1998, Revision 2).

House RCRA Hazardous Waste Storage Area and that all financial assurance requirements be released for this former unit.

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Did we
need to
sample
after to
certify
clean?
(I know not in
work plan)
Need better labels
on picture says
whether pre or
post cleaning



EMCON

603 East Diehl Road, Suite 123
Naperville, Illinois 60563-1477

PHONE: (630) 505-9450
FAX: (630) 505-9454

TELEFAX TRANSMITTAL

DATE: February 1, 1999 RE: Nodular Iron RCRA Closure
TO: Cheryl Hiatt
FAX #: (313) 556-0803
FROM: Bill Steinmann, EMCON - Naperville, IL

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us at the telephone number listed above.

COMMENTS:

Cheryl,

Here is a draft (text only) of the Closure Report for the former RCRA Storage Area at the Nodular Iron Oil House. The attachments will be dropped off at your office by Jim McGuigan today.

Please call with questions and comments.

NUMBER OF PAGES 12 (INCLUDING COVER SHEET)

CLOSURE CERTIFICATION REPORT

D

**Nodular Iron Oil House RCRA Hazardous Waste Storage Area
Former Nodular Iron Plant
(Saginaw Metal Casting Operations)
2100 Veterans Memorial Parkway
Saginaw, Michigan**

R

A

FEBRUARY 1999

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T

Prepared by:

**EMCON
603 East Diehl Road, Suite 123
Naperville, Illinois**

CERTIFICATION OF CLOSURE

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete, and the closure activities for this unit have been conducted in substantial conformance with the approved closure plan. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

D

R

A

James J. McGuigan, P.E., CHMM
Site Restoration Department Manager

F

William K. Steinmann, CPG
Senior Project Manager

T

Cheryl R. Hiatt
General Motors Project Manager

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2 CLOSURE ACTIVITIES	2-1
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Figure 2: Oil House Building Layout	1-4

LIST OF ATTACHMENTS

- Attachment I: RCRA Part A Permit Application (November 17, 1980)
- Attachment II: Closure Plan (May 19, 1981)
- Attachment III: Photographic Documentation of Closure Activities
- Attachment IV: Wastewater Characterization Analysis
- Attachment V: Waste Disposal Manifests

1 INTRODUCTION

1.1 Purpose

D
In accordance with Part 111 of the Michigan Natural Resource and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended, and in compliance with the closure provisions of 40 CFR, Part 264, Subpart G, **R** this report certifies the closure of a Resource Conservation and Recovery Act (RCRA) Storage Area, formerly located at General Motors Corporation's (GM) Nodular Iron Plant, 2100 Veterans Memorial Parkway, Saginaw, Michigan (now part of the Saginaw Metal Casting Operations - SMCO). The United States Environmental Protection Agency (U.S.EPA) Identification Number for SMCO is MID 041 793 340. **A**

1.2 Background

F
The former storage unit was located at the former Nodular Iron Plant Oil House, 2100 Veterans Memorial Parkway, Saginaw, Michigan. The unit can generally be located within the NE 1/4 of the SW 1/4 of Section 8, Township 12 North, Range 5 East, Saginaw County, Michigan (refer to **Figure 1**).

T
According to the facility's RCRA Part A Permit Application (November 17, 1980), this unit consisted of a ten foot square storage pad (**Attachment I**). In actuality, the unit consisted of two,

Figure 1: Site Location and Topographic Map

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approximately eleven feet by nineteen feet by fifteen feet high rooms complete with concrete and steel walls, a concrete floor, a ceiling and metal fire doors (refer to **Figure 2**).

The use of the Oil House Storage Unit reportedly began at former Nodular Iron Plant start-up in 1966 and continued until just prior to plant closure in 1987. The Oil House Storage Unit was utilized to store hazardous waste materials staged in 55-gallon barrels until proper disposal. The main waste believed to have been stored on this pad was 1,1,1-trichloroethane (TCA) with lesser amounts of polychlorinated biphenyls (PCBs), chlorobenzene, waste petroleum naphtha, waste oils, and possibly trichloroethylene (TCE).

General Motors submitted a Closure Plan (dated May 19, 1981) to the U.S.EPA, for this storage area and others, pursuant to 40 CFR, Part 265, Subpart G, Sections 265.110 through 265.120 (**Attachment II**) on April 14, 1983. The Closure Plan was public noticed in the *Saginaw News* on May 5, 1983.

We have been unable to locate closure documentation for this Storage Area. However, in an August 17, 1998, meeting between the Michigan Department of Environmental Quality - Waste Management Division (MDEQ-WMD), GM, and GM's consultant EMCON, it was agreed that GM could attain closure for this unit by implementing and adhering to the 1981 Approved Closure Plan.

Figure 2: Oil House Building Layout

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2 CLOSURE ACTIVITIES

On November 2, 1998, Clean Harbors Environmental Services, Inc. (Clean Harbors) of Chicago, Illinois mobilized to the Nodular Iron Oil House for the purpose of decontaminating/cleaning the RCRA Storage Area. A representative from EMCON was present at the site to direct and supervise the decontamination/cleaning activities. Photographic documentation of the closure activities is included in Attachment III).

2.1 Field Decontamination/Cleaning

On November 2, 1998, Mr. Steven M. Clayton, Staff Geologist, with the EMCON office in Northville, Michigan, supervised the decontamination of the Nodular Iron Plant Oil House RCRA Hazardous Waste Drum Storage Area located on the site of the Former Saginaw Nodular Iron Plant at 2100 Veterans Memorial Parkway, Saginaw, Michigan. The purpose of the decontamination event was to ensure the removal of any residual material on the walls and floor of the storage facility in preparation for closure and demolition activities. Mr. Clayton met with Dave Longdon, foreman for Clean Harbors, and discussed the agenda for decontamination of the storage building. Mr. Longdon was assisted by two crew members, T. Waisler and E. Bogan.

The primary function of the RCRA Hazardous Waste Drum Storage Area was the staging and preparation of 55-gallon drums of waste degreasing solvents and oils for proper off-site disposal.

The 55-gallon drums were stored in two rooms within the Oil House building. The walls and floor of each room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors washed the walls and floor with the caustic scrub solution and extendible scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final step, the walls and floor of each room were steam cleaned. The rinse water from the steaming operations was also drawn off via vacuum pick-up and collected in the same two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs presented in **Attachment III**) the decontamination process and documented the cleaning operation of each room. The two 55-gallon drums were sealed, labeled, and placed near the entrance of the former Nodular Iron Plant Oil House. The decontamination process was completed following the 1981 Approved General Motors Closure Plan and the health and safety plan developed for the site¹. Yellow Tyvek suits, nitrile gloves, safety glasses, and rubber boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

2.2 Wastewater Disposal

Clean Harbors collected representative samples from the two 55-gallon drums for waste characterization analysis (**Attachment IV**). On January 19, 1999, Clean Harbors removed the barrels from the site and transported the drums to Clean Harbors Services, Inc. in Chicago, Illinois for treatment and disposal. The waste manifest is included as **Attachment V**.

¹ Part VI of the Phase 1A RCRA Facility Investigation Workplan (June 1998, Revision 2).

3 SUMMARY AND CONCLUSIONS

On November 2, 1998, under the direction and supervision of EMCON, Clean Harbors Environmental Services, Inc. of Chicago, Illinois completed decontamination/cleaning activities at the Former Nodular Iron Plant Oil House RCRA Hazardous Waste Storage Area, located at 2100 Veterans Memorial Parkway, Saginaw, Michigan. These activities were completed in accordance with the Closure Plan which was previously approved by the Michigan Department of Environmental Quality - Waste Management Division.

The storage area consisted of two enclosed rooms within the Oil House Building (approximate dimensions of 11 feet by 19 feet by 15 feet high) that were utilized to store hazardous waste (1,1,1-TCA, PCBs, waste petroleum naphtha, chlorobenzene, waste oils, and possibly TCE). Decontamination/cleaning activities were completed on November 2, 1998.

Two, 55-gallon drums of wash rinse water were generated from the decontamination activities and were properly disposed by Clean Harbors. On going demolition activities at the Nodular Iron Plant site will result in the demolition of the Oil House Building in the spring of 1999.

Based on the above, GM and EMCON conclude that the closure activities have been successfully completed in substantial conformance with the specifications in the approved Closure Plan. Therefore, GM respectfully requests that closure be granted for the former Nodular Iron Plant Oil

House RCRA Hazardous Waste Storage Area and that all financial assurance requirements be released for this former unit.

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Steinmann, Bill

From: Clayton, Steven
Sent: Tuesday, January 12, 1999 2:06 PM
To: Steinmann, Bill
Subject: drum storage building memo

Here's a memo of the decon of the drum storage building



GMNI-DSB.DOC

MEMORANDUM

TO: Bill Steinmann

DATE: January 12, 1999

PROJECT: 84068-063.009

FROM: Steve Clayton

RE: Decontamination of Drum Storage Building

On November 2, 1998, Mr. Steven M. Clayton, Staff Geologist, with the EMCON office in Northville, Michigan, supervised the decontamination of the Drum Storage Building (also known as the oil storage building) located on-site of the Former Saginaw Nodular Iron Plant located at 2100 Veterans Memorial Parkway, Saginaw, Michigan. The purpose of this decontamination event was to ensure the removal of any residual material on the walls and floor of the storage facility. Mr. Clayton met with Dave Longdon, foreman for Clean Harbors, Chicago, Illinois and discussed the agenda for decontamination of the storage building. Mr. Longdon was assisted by two crew members, T. Waisley and E. Bogan.

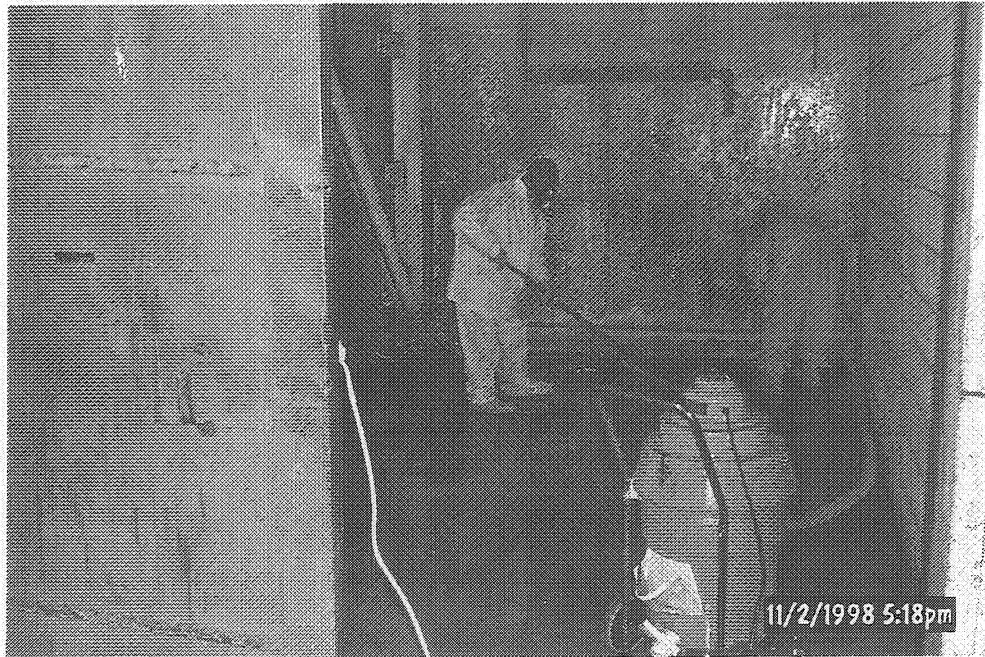
The primary function of the Drum Storage Building was the staging and preparation of 55-gallon drums of waste degreasing solvents and oils for proper off-site disposal. The degreasing solvent 1,1,1 Trichlorethane was stored in two rooms within the storage building. The walls and floor of each 15 x 15 x 20 room were scrubbed with a 5% alkaline caustic scrub solution. Clean Harbors filled one 5-gallon bucket with the caustic scrub solution and washed the walls and floor with extendable scrub brushes. The solution was drawn off via vacuum pick-up and containerized in two 55-gallon drums. As a final step, the walls and floor of each room were steam cleaned. The rinse water was also drawn off via vacuum pick-up and collected in the two 55-gallon drums. Mr. Clayton supervised and documented (via digital photographs) the decontamination process and approved each room upon completion. The two 55-gallon drums were sealed, labeled, and placed near the entrance to the Drum Storage Building.

The decontamination process was completed following the General Motors Closure Plan created for the Saginaw Nodular Iron Plant and the health and safety plan developed for the site. Yellow Tyvek suits, nitrile gloves, safety glasses, and chicken boots were worn by all three members of the Clean Harbors crew during the entire decontamination process.

colore pg 6







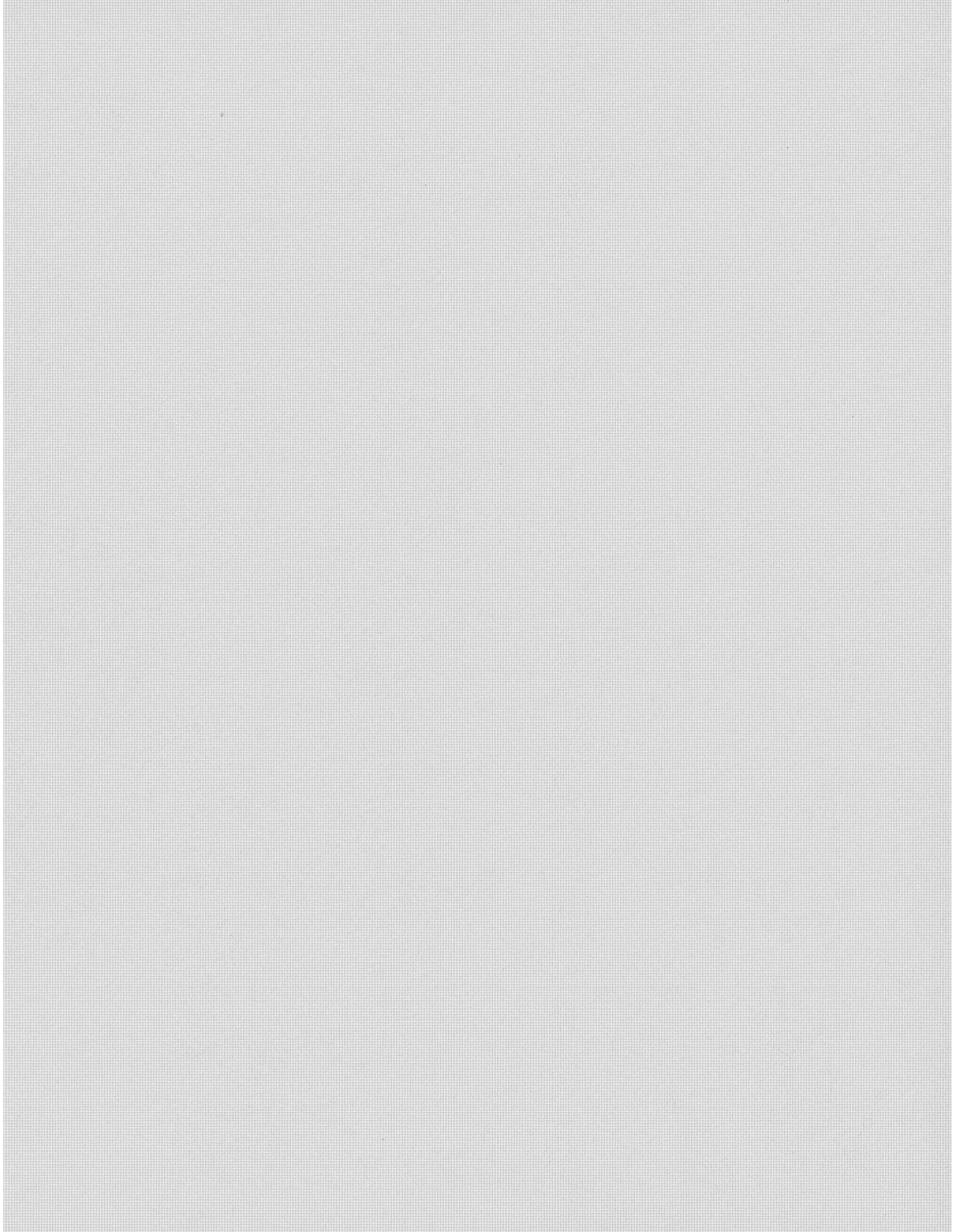


NO S
CU
WEL

11/2/1998 5:05pm









EMCON

603 East Diehl Road, Suite 123
Naperville, Illinois 60563-1477

PHONE: (630) 505-9450
FAX: (630) 505-9454

TELEFAX TRANSMITTAL

DATE: November 23, 1998 RE: GM Saginaw RCRA Pad Closure
TO: John Behrens
FAX #: (773) 646-0026
FROM: Bill Steinmann, EMCON - Naperville, IL

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us at the telephone number listed above.

COMMENTS:

Waste Material Profile Sheet, Profile Number CH121333

Please call with any questions.

NUMBER OF PAGES 4 (INCLUDING COVER SHEET)

*** ACTIVITY REPORT ***

TRANSMISSION OK

TX/RX NO.	1758
CONNECTION TEL	17736460026
CONNECTION ID	
START TIME	11/23 15:55
USAGE TIME	02'55
PAGES	4
RESULT	OK

SAGINAW METAL CASTINGS OPERATIONS

P.O. BOX 5073
1629 N. WASHINGTON
SAGINAW, MI 48605-5073

FAX COVER SHEET

TOTAL NO. OF PAGES INCLUDING COVER SHEET: 4

DATE: ~~11-20-98~~^{BUSY} 11-23-98

TO: BILL STEINMANN
EMCON

PHONE NO:
FAX NO.: 630-505-9454

FROM: LORI GANDY

PHONE NO:
FAX NO: 8-357-1652
(517) 757-1652

MANUFACTURING ENGINEERING

FOR-INTERNAL USE ONLY:

Normal Profile X-Profile
 One Time Waste Repeat Waste
 Fax X-Profiles only to 617-380-3581



WASTE MATERIAL PROFILE SHEET
 Profile Number **CH 121333**

A. GENERAL INFORMATION

X GENERATOR EPA ID # MID 041793340
 GENERATOR CODE (Assigned by Clean Harbors) _____ X GENERATOR NAME: GMPT - SAGINAW METAL CASTING OPERATIONS
 ADDRESS 1629 N. WASHINGTON AVE. X CITY SAGINAW X STATE MICHIGAN 48605
 GENERATOR TECHNICAL CONTACT: (Emcon - Bill Steinmann) PHONE: (630) 505-9450
 CUSTOMER CODE (Assigned by Clean Harbors) EMC002 CUST. MER NAME: Emcon
 ADDRESS PO Box 349014 CITY SACRAMENTO STATE CA ZIP 95834

B. WASTE DESCRIPTION

Common Name of Waste: Decontamination Wash Water
 Process Generating Waste: High Pressure, Hot Water Washing

Process Generating Waste:

(check one) If spill, origin of spilled material

- Unused chemical or product
- Lab Pack
- Spent halogenated solvents
- Spent non-halogenated solvents
- Wastewater treatment sludge from electroplating or etching operations
- Spent plating bath solutions or residues of plating, stripping and cleaning baths where cyanides are used in the process
- Wood preservation
- Inorganic pigment production
- Organic chemical production
- Inorganic chemical production
- Pesticide production
- Explosives production
- Petroleum refining
- Iron or steel production or finishing
- Primary copper production
- Primary lead production
- Primary zinc production
- Primary Aluminum production
- Ferro alloy production
- Secondary lead smelting
- Veterinary pharmaceutical production
- Ink formulation
- Coking
- Other Decontamination of - RCRA
- Unknown WASTE STORAGE AREA

Source of Waste:

(check one)

- Unused Product or Chemical
- Waste by-product from process
- Spill clean up
- Lab Pack
- Planned site remediation
- Other: _____

Other Process Information:

(check all that apply)

- Still bottoms
- Process scrap
- Process development
- Out of date product
- Spent solvent waste
- Treatment residues
- Filler cake
- Degreasing
- Exempt recyclable material
- Packaged consumer goods
- Off-spec chemical product
- Zinc, Al, or tin plating
- Anodizing
- Cleaning/stripping
- Wastewater treatment sludges
- Washwaters
- Pox liners

Other Process Information:

(check all that apply)

- Electroplating
- Conversion coating
- Carbon steel plating
- Printed circuit mfg.
- Cyanide process
- Heat treating
- Separator sludge
- Oven residue
- Catalyst waste
- Centrifuged solids
- Condensate
- Air, steam, or vacuum stripping
- Emission control dust
- Acid leaching
- Dipping operations
- Chemical manufacturing
- Carbon adsorption
- Incineration or thermal treatment
- Refining
- Drug mfg.
- Distillation
- Pesticide mfg.
- Reclamation
- Etching of metals
- Bag house dust

Profile Number CH 121333

C. PHYSICAL PROPERTIES (at 25°C or 77°F)

PHYSICAL STATE

- SOLID WITHOUT FREE LIQUID
- POWDER
- MONOLITHIC SOLID
- LIQUID WITH NO SOLIDS
- LIQUID/SOLID MIXTURE
- % FREE LIQUID 790%
- % SETTLED SOLID 25%
- % TOTAL SUSPENDED SOLID 25%
- GAS/AEROSOL

NUMBER OF PHASES/LAYERS

- 1 2 3
- % BY VOLUME (APPROX.)
- TOP MIDDLE BOTTOM

- CORROSIVE
- NONE OR MILD
- STRONG

- BOILING POINT (if liquid)**
- ≤ 100°F
- > 100°F

VISCOSITY (if liquid present)

- LOW (e.g. WATER)
- MEDIUM (e.g. MOTOR OIL)
- HIGH (e.g. MOLASSES)

COLOR

Tan/Brown
(Dirty Water)

MELTING POINT (for solids only)

- < 140°F
 - 140-200°F
 - > 200°F
- N/A

FLASH POINT

- < 73°F
- 75-100°F
- 101-140°F
- 141-200°F
- > 200°F

pH

- ≤ 2
- 2.1 - 6.9
- 7 (neutral)
- 7.1 - 12.4
- ≥ 12.5

SPECIFIC GRAVITY

- < 0.8 (e.g. Gasoline)
- 0.8-1.0 (e.g. Ethanol)
- 1.0 (e.g. Water)
- 1.0-1.2 (e.g. Antifreeze)
- > 1.2 (e.g. Methylene Chloride)

TOTAL ORGANIC CARBON (if liquid)

- ≤ 1%
- 1-9%
- ≥ 10%

BTU/LB

- < 2,000
- 2,000-5,000
- 5,000-10,000
- > 10,000

VAPOR PRESSURE (for liquids only) 23 to 24 mm Hg



Profile Number **CH 121333**

D. COMPOSITION (Must add up to at least 100%. Include inert materials and/or debris if applicable. Actual percent or range is acceptable.)

Component	Percent	Range	Other	Other	Other
Water	95	99%			
Dirt, Grit	2	5%			
Surfactant (alkaline/Phos)	2	5%			

Check if MSDS attached.

E. CONSTITUENTS - Attach any available analysis. Enter values or ranges where known. For TCLP values, BRL signifies below regulatory level. None, unknown, and present are also acceptable answers.

Are these values based on Knowledge or Testing?

INORGANIC

RCRA REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l	OTHER METALS	TOTAL	NON-METALS	WT%
D004 ARSENIC	5.0	AR BRL		ALUMINUM		SULFUR	
D005 BARIUM	100.0	ND/BRL		ANTIMONY		BROMINE	
D006 CADMIUM	1.0	ND/BRL		BERYLLIUM		CHLORINE	
D007 CHROMIUM	5.0	0.18		CALCIUM		FLUORINE	
D007 CHROMIUM CR+8				COPPER		IODINE	
D008 LEAD	5.0	0.14		MAGNESIUM			
D009 MERCURY	0.2	0.021		MOLYBDENUM			
D010 SELENIUM	1.0	ND/BRL		NICKEL		AMMONIA	
D011 SILVER	5.0	ND/BRL		POTASSIUM		REACTIVE SULFIDE	
				SILICON		CYANIDE-TOTAL	
				SODIUM		CYANIDE AMENABLE	
				THALLIUM		CYANIDE REACTIVE	
				TIN			
				VANADIUM			
				ZINC			

ORGANIC

VOLATILE COMPOUNDS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l	SEMI-VOLATILE COMPOUNDS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l
D018 BENZENE	0.5	BRL		D023 o-CRESOL	200.0	BRL	
D019 CARBON TETRACHLORIDE	0.5			D024 m-CRESOL	200.0		
D021 CHLOROBENZENE	100.0			D025 p-CRESOL	200.0		
D022 CHLOROFORM	5.0			D028 CRESOL (TOTAL)	200.0		
D028 1,2-DICHLOROETHANE	0.5			D027 1,4-DICHLOROENZENE	7.5		
D029 1,1-DICHLOROETHYLENE	0.7			D030 2,4-DINITROTOLUENE	0.13		
D035 METHYL ETHYL KETONE	200.0			D032 HEXACHLOROENZENE	0.13		
D039 TETRACHLOROETHYLENE	0.7			D033 HEXACHLOROBUTADIENE	0.5		
D040 TRICHLOROETHYLENE	0.5			D034 HEXACHLOROETHANE	3.0		
D043 VINYL CHLORIDE	0.2			D036 NITROBENZENE	2.0		
				D037 PENTACHLOROPHENOL	100.0		
				D038 PYRIDINE	5.0		
				D041 2,4,6-TRICHLOROPHENOL	600.0		
				D042 2,4,6-TRICHLOROPHENOL	2.0		

PESTICIDES AND HERBICIDES

PESTICIDES AND HERBICIDES	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l
D012 ENDRIN	0.02	BRL	
D013 LINDANE	0.4		
D014 METHOXYCHLOR	10.0		
D015 TOXAPHENE	0.5		
D016 2,4-D	10.0		
D017 2,4,5-TP (SILVEX)	1.0		
D020 CHLORDANE	0.03		
D031 HEPTACHLOR (AND ITS EPOXIDE)	0.008		

OTHER

PHENOL _____ PPM
 TOTAL PETROLEUM HYDROCARBONS (SOILS ONLY) _____ PPM
 PCB'S
 NONE
 < 50 PPM
 ≥ 50 PPM
 IF PCB'S ARE PRESENT
 < 50 PPM, IS THE WASTE
 REGULATED BY TSCA
 40 CFR 761?
 YES NO

OTHER HAZAROUS

YES	PESTICIDE	YES	SHOCK SENSITIVE	YES	DEA REGULATED SUBSTANCE	YES
WATER REACTIVE <input type="checkbox"/>	HERBICIDE <input type="checkbox"/>	EXPLOSIVE <input type="checkbox"/>	THERMALLY SENSITIVE <input type="checkbox"/>	OXIDIZER <input type="checkbox"/>		
RADIOACTIVE <input type="checkbox"/>	SPONTANEOUSLY <input type="checkbox"/>	IGNITES WITH AIR <input type="checkbox"/>	INFECTIOUS, PATHOGENIC, OR ETIOLOGICAL AGENT <input type="checkbox"/>	REDUCING AGENT <input type="checkbox"/>		
DIOXIN <input type="checkbox"/>			ASBESTOS <input type="checkbox"/>	NONE OF THE ABOVE <input type="checkbox"/>		
OSHA REGULATED CARCINOGENS <input type="checkbox"/>						

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED? YES NO (If yes, explain)



Profile Number CH 121333

F. REGULATORY STATUS

- USEPA HAZARDOUS WASTE? (IF Yes List codes)
- DO ANY GENERATOR STATE WASTE CODES APPLY? IF YES, LIST STATE CODES
- LIST ANY FEDERAL OR STATE WASTE CODES WHICH MAY VARY FROM SHIPMENT TO SHIPMENT:

WILL THE DECISION TO VARY THESE WASTE CODES BE BASED ON KNOWLEDGE OR TESTING (check one).
IF KNOWLEDGE, DESCRIBE BASIS OF KNOWLEDGE:

- IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
THIS WASTE IS A: WASTEWATER NON WASTEWATER PER USEPA DEFINITION IN 40 CFR 268.2.
- IF ANY WASTE CODES D001, D002, OR D012-D043 APPLY, ARE ANY UHC'S PRESENT ABOVE TREATMENT STANDARDS?
- DOES TREATMENT OF THIS WASTE GENERATE A P008 OR F019 SLUDGE?
- IS THIS WASTE SUBJECT TO CATEGORICAL PRETREATMENT DISCHARGE STANDARDS?
IF YES, SPECIFY POINT SOURCE CATEGORY LISTED IN 40 CFR PART 401.
- IS THIS WASTE REGULATED UNDER THE BENZENE NESHAP RULES? (IS THIS WASTE FROM A CHEMICAL MANUFACTURING, COKE BY-PRODUCT RECOVERY, OR PETROLEUM REFINERY PROCESS?)
- DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS \geq 500 PPM?
- DOES THIS WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE \geq .3KPA (.044 psia)?
- DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE GREATER THAN 77 KPa (11.2psia)?

G. D.O.T. INFORMATION: List all shipping names that may be used. Attach additional page if necessary.

D.O.T. SHIPPING NAME Abv Hazardous Non D.O.T. regulated Wash water DOT HAZARD CLASS: None

UN/NA: N/A PACKING GROUP (Circle 1) I II III HAZARD ZONE (Circle 1) A B C D
WILL THIS SHIPPING NAME VARY? Y N IF YES, WILL ASSIGNMENT OF PROPER SHIPPING NAME BE BASED ON KNOWLEDGE OR TESTING? (check one) IF KNOWLEDGE, DESCRIBE BASIS OF KNOWLEDGE:

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY: ONE TIME WEEKLY SEMI-MONTHLY MONTHLY QUARTERLY OTHER

BULK LIQUID

GALLONS/SHIPMENT, _____ GAL.
 _____ FROM TANKS; TANK SIZE _____ GAL.
 _____ FROM DRUMS
 VEHICLE TYPE:
 VAC TRUCK
 TANK TRUCK
 RAILROAD TANK CAR
 CHECK COMPATIBLE STORAGE MATERIALS:
 STEEL STAINLESS STEEL (316)
 RUBBER LINED FIBERGLASS LINED
 OTHER _____

BULK SOLD

_____ TONY/D PER SHIPMENT
 STORAGE CAPACITY _____ TONY/D
 VEHICLE TYPE:
 DUMP TRAILER
 ROLL OFF BOX
 INTERMODAL ROLLOFF BOX
 CUSCO/VACTOR
 OTHER _____

CONTAINERIZED

2 CONTAINERS/SHIPMENT
 STORAGE CAPACITY: _____ CONTAINERS
 CONTAINER TYPE:
 CUBIC YARD BOX
 PALLET
 TOTE TANK
 DRUM SIZE: 55 gal
 CONTAINER MATERIAL:
 STEEL
 FIBER
 PLASTIC
 OTHER _____

I. SAMPLE STATUS

REPRESENTATIVE SAMPLE HAS BEEN SUPPLIED: YES NO See Analysis SAMPLED BY _____ DATE SAMPLED _____

J. SPECIFIC DISPOSAL RESTRICTIONS OR REQUESTS: General motor restrictions apply (Gen 467)

SPECIAL WASTE HANDLING REQUIREMENTS: None

OTHER COMMENTS OR REQUESTS: Waste water treatment analysis pending

K. BIENNIAL/ANNUAL REPORTING INFORMATION

SIC CODE _____ SOURCE CODE _____ FORM CODE _____ ORIGIN CODE _____

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE Raymond A. Ilkka NAME (PRINT) Raymond A. Ilkka TITLE General Supervisor Environmental DATE 11-20-98

FOR CLEAN HARBORS USE ONLY
CHI REPRESENTATIVE COMPLETING PROFILE: John Behrens



603 East Diehl Road, Suite 123
Naperville, Illinois 60563-1477

PHONE: (630) 505-9450
FAX: (630) 505-9454

TELEFAX TRANSMITTAL

DATE: November 20, 1998 RE: RCRA Pad Waste Analysis
TO: Lori Gandy
FAX #: (517) 757-1652
FROM: Bill Steinmann, EMCON - Naperville, IL

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us at the telephone number listed above.

COMMENTS:

Lori,

The following waste profile/characterization is from decontamination water for the former RCRA Hazardous Waste Drum Storage Area at the former Nodular Iron Plant Oil House. Cleaning and Closure activities were completed by Clean Harbors Environmental Services, Inc. of Chicago, in accordance with the May 1981, MDNR-approved Closure Plan. We were given approval from the MDEQ-WMD to complete these activities at an August 17, 1998, meeting in Lansing.

Please fill out the blanks marked by an "x", have an authorized representative sign and date at the bottom of page 3, and return fax to me at 630/505-9454.

EMCON will be completing the Closure Certification Report in the near future for this storage pad. Please call me if you have any questions. Thanks!

NUMBER OF PAGES 4 (INCLUDING COVER SHEET)



EMCON

603 East Diehl Road, Suite 123
Naperville, Illinois 60563-1477

PHONE: (630) 505-9450

FAX: (630) 505-9454

TELEFAX TRANSMITTAL

DATE: November 20, 1998 RE: RCRA Pad Waste Analysis
TO: Lori Gandy
FAX #: (517) 757-1652
FROM: Bill Steinmann, EMCON - Naperville, IL

NOTE: Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this facsimile message is confidential information intended for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us at the telephone number listed above.

COMMENTS:

Analytical data, per your request.

NUMBER OF PAGES 10 (INCLUDING COVER SHEET)

FOR INTERNAL USE ONLY:

- Normal Profile X-Profile
 One Time Waste Repeat Waste
 Fax X-Profiles only to 617-380-3581



WASTE MATERIAL PROFILE SHEET
 Profile Number **CH121333**

A. GENERAL INFORMATION

X GENERATOR EPA ID # _____
 GENERATOR CODE (Assigned by Clean Harbors) _____ X GENERATOR NAME: _____
 X ADDRESS _____ X CITY _____ X STATE _____ X ZIP _____
 GENERATOR TECHNICAL CONTACT: (Emcon - Bill Steinmann) PHONE: (630) 505-9450
 CUSTOMER CODE (Assigned by Clean Harbors) EMC002 CUSTOMER NAME: Emcon
 ADDRESS PO Box 349014 CITY SACRAMENTO STATE CA ZIP 95834

B. WASTE DESCRIPTION

Common Name of Waste: Decontamination Wash Water
 Process Generating Waste: High Pressure, Hot Water Washing

Process Generating Waste:

(check one) If spill, origin of spilled material

- Unused chemical or product
- Lab Pack
- Spent halogenated solvents
- Spent non-halogenated solvents
- Wastewater treatment sludge from electroplating or etching operations
- Spent plating bath solutions or residues of plating, stripping and cleaning baths where cyanides are used in the process
- Wood preservation
- Inorganic pigment production
- Organic chemical production
- Inorganic chemical production
- Pesticide production
- Explosives production
- Petroleum refining
- Iron or steel production or finishing
- Primary copper production
- Primary lead production
- Primary zinc production
- Primary Aluminum production
- Ferro alloy production
- Secondary lead smelting
- Veterinary pharmaceutical production
- Ink formulation
- Coking
- Other Decontamination of a RCRA
- Unknown Waste Storage Area

Source of Waste:

(check one)

- Unused Product or Chemical
- Waste by-product from process
- Spill clean up
- Lab Pack
- Planned site remediation
- Other: _____

Other Process Information:

(check all that apply)

- Still bottoms
- Process scrap
- Process development
- Out of date product
- Spent solvent waste
- Treatment residues
- Filter cake
- Degreasing
- Exempt recyclable material
- Packaged consumer goods
- Off-spec chemical product
- Zinc, Al, or tin plating
- Anodizing
- Cleaning/stripping
- Wastewater treatment sludges
- Washwaters
- Pot liners

Other Process Information:

(check all that apply)

- Electroplating
- Conversion coating
- Carbon steel plating
- Printed circuit mfg.
- Cyanide process
- Heat treating
- Separator sludge
- Oven residue
- Catalyst waste
- Centrifuged solids
- Condensate
- Air, steam, or vacuum stripping
- Emission control dust
- Acid leaching
- Dipping operations
- Chemical manufacturing
- Carbon adsorption
- Incineration or thermal treatment
- Refining
- Drug mfg.
- Distillation
- Pesticide mfg.
- Reclamation
- Etching of metals
- Bag house dust

Profile Number CH 121333

C. PHYSICAL PROPERTIES (at 25°C or 77°F)

PHYSICAL STATE

- SOLID WITHOUT FREE LIQUID
- POWDER
- MONOLITHIC SOLID
- LIQUID WITH NO SOLIDS
- LIQUID/SOLID MIXTURE
 % FREE LIQUID 79090
 % SETTLED SOLID 590
 % TOTAL SUSPENDED SOLID 590
- GAS/AEROSOL

NUMBER OF PHASES/LAYERS

- 1 2 3
- % BY VOLUME (APPROX.)
 TOP _____ MIDDLE _____ BOTTOM _____

ODOR

- NONE OR MILD
- STRONG

BOILING POINT (if liquid)

- ≤ 100°F
- > 100°F

VISCOSITY (if liquid present)

- LOW (e.g. WATER)
- MEDIUM (e.g. MOTOR OIL)
- HIGH (e.g. MOLASSES)

COLOR

Tan/Brown
(Dirty Water)

MELTING POINT (for solids only)

- < 140°F
 - 140-200°F
 - > 200°F
- N/A

FLASH POINT

- < 73°F
- 73-100°F
- 101-140°F
- 141-200°F
- ≥ 200°F

pH

- ≤ 2
- 2.1 - 6.9
- 7 (neutral)
- 7.1 - 12.4
- ≥ 12.5

SPECIFIC GRAVITY

- < 0.8 (e.g. Gasoline)
- 0.8-1.0 (e.g. Ethanol)
- 1.0 (e.g. Water)
- 1.0-1.2 (e.g. Antifreeze)
- > 1.2 (e.g. Methylene Chloride)

TOTAL ORGANIC CARBON (if liquid)

- ≤ 1%
- 1-9%
- ≥ 10%

BTU/LB

- < 2,000
- 2,000-5,000
- 5,000-10,000
- > 10,000

VAPOR PRESSURE (for liquids only) 23 TO 24 mm Hg



Profile Number **CH 121333**

D. COMPOSITION (Must add up to at least 100%. Include inert materials and/or debris if applicable. Actual percent or range is acceptable.)

Water	95	-	99	%					
Dirt, Grit	2	-	5	%					
Surfactant (alkaline/Phosphate)	2	-	5	%					
				%					
				%					

Check if MSDS attached.

E. CONSTITUENTS — Attach any available analysis. Enter values or ranges where known. For TCLP values, BRL signifies below regulatory level. None, unknown, and present are also acceptable answers.

Are these values based on Knowledge or Testing?

INORGANIC

RCRA REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l	OTHER METALS	TOTAL	NON-METALS	WT%
D004 ARSENIC	5.0	ND/BRL		ALUMINUM		SULFUR	
D005 BARIUM	100.0	ND/BRL		ANTIMONY		BROMINE	
D006 CADMIUM	1.0	ND/BRL		BERYLLIUM		CHLORINE	
D007 CHROMIUM	5.0	.018		CALCIUM		FLUORINE	
D007 CHROMIUM CR+6				COPPER		IODINE	
D008 LEAD	5.0	.014		MAGNESIUM			
D009 MERCURY	0.2	ND/BRL		MOLYBDENUM			
D010 SELENIUM	1.0	ND/BRL		NICKEL		AMMONIA	
D011 SILVER	5.0	ND/BRL		POTASSIUM		REACTIVE SULFIDE	
				SILICON		CYANIDE-TOTAL	
				SODIUM		CYANIDE-AMENABLE	
				THALLIUM		CYANIDE REACTIVE	
				TIN			
				VANADIUM			
				ZINC			

ORGANIC

VOLATILE COMPOUNDS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l	SEMI-VOLATILE COMPOUNDS	REGULATORY LEVEL (mg/l)	TCLP	TOTAL
D018 BENZENE	0.5	BRL		D023 o-CRESOL	200.0	BRL	
D019 CARBON TETRACHLORIDE	0.5			D024 m-CRESOL	200.0		
D021 CHLOROGENZENE	100.0			D025 p-CRESOL	200.0		
D022 CHLOROFORM	6.0			D026 CRESOL (TOTAL)	200.0		
D028 1,2-DICHLOROETHANE	0.5			D027 1,4-DICHLOROGENZENE	7.5		
D029 1,1-DICHLOROETHYLENE	0.7			D030 2,4-DINITROTOLUENE	0.13		
D035 METHYL ETHYL KETONE	200.0			D032 HEXACHLOROGENZENE	0.13		
D039 TETRACHLOROETHYLENE	0.7			D033 HEXACHLOROBUTADIENE	0.5		
D040 TRICHLOROETHYLENE	0.5			D034 HEXACHLOROETHANE	3.0		
D043 VINYL CHLORIDE	0.2			D036 NITROGENZENE	2.0		
				D037 PENTACHLOROPHENOL	100.0		
				D038 PYRIDINE	5.0		
				D041 2,4,5-TRICHLOROPHENOL	400.0		
				D042 2,4,6-TRICHLOROPHENOL	2.0		

PESTICIDES AND HERBICIDES

PESTICIDES AND HERBICIDES	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL mg/l	OTHER	
D012 ENDRIN	0.02	BRL		PHENOL	PPM
D013 LINDANE	0.4			TOTAL PETROLEUM HYDROCARBONS (SOILS ONLY)	PPM
D014 METHOXYCHLOR	10.0			PCB'S	
D015 TOXAPHENE	0.5			<input checked="" type="checkbox"/> NONE	
D016 2,4-D	10.0			<input type="checkbox"/> < 50 PPM	HOC'S
D017 2,4,5-TP (SILVEX)	1.0			<input type="checkbox"/> ≥ 50 PPM	<input checked="" type="checkbox"/> NONE
D020 CHLORDANE	0.03			IF PCB'S ARE PRESENT	<input type="checkbox"/> < 1000 PPM
D031 HEPTACHLOR (AND ITS EPOXIDE)	0.008			<50 PPM, IS THE WASTE REGULATED BY TSCA	<input type="checkbox"/> ≥ 1000 PPM

OTHER HAZARDS	YES	PESTICIDE	YES	SHOCK SENSITIVE	YES	DEA REGULATED SUBSTANCE	YES
WATER REACTIVE	<input type="checkbox"/>	HERBICIDE	<input type="checkbox"/>	THERMALLY SENSITIVE	<input type="checkbox"/>	OXIDIZER	<input type="checkbox"/>
RADIOACTIVE	<input type="checkbox"/>	EXPLOSIVE	<input type="checkbox"/>	INFECTIOUS, PATHOGENIC, OR ETIOLOGICAL AGENT	<input type="checkbox"/>	REDUCING AGENT	<input type="checkbox"/>
DIOXIN	<input type="checkbox"/>	SPONTANEOUSLY IGNITES WITH AIR	<input type="checkbox"/>	ASBESTOS	<input type="checkbox"/>	NONE OF THE ABOVE	<input type="checkbox"/>
OSHA REGULATED CARCINOGENS	<input type="checkbox"/>						

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED? YES NO (If yes, explain)



Profile Number CH 121333

F. REGULATORY STATUS

- USEPA HAZARDOUS WASTE? (IF Yes List codes.) _____
- DO ANY GENERATOR STATE WASTE CODES APPLY? IF YES, LIST STATE CODES _____
- LIST ANY FEDERAL OR STATE WASTE CODES WHICH MAY VARY FROM SHIPMENT TO SHIPMENT: _____

WILL THE DECISION TO VARY THESE WASTE CODES BE BASED ON KNOWLEDGE OR TESTING (check one).
 IF KNOWLEDGE, DESCRIBE BASIS OF KNOWLEDGE: _____

- IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
 THIS WASTE IS A: WASTEWATER NON WASTEWATER PER USEPA DEFINITION IN 40 CFR 268.2.
- IF ANY WASTE CODES D001, D002, OR D012-D043 APPLY, ARE ANY UHC'S PRESENT ABOVE TREATMENT STANDARDS?
- DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?
- IS THIS WASTE SUBJECT TO CATEGORICAL PRETREATMENT DISCHARGE STANDARDS?
 IF YES, SPECIFY POINT SOURCE CATEGORY LISTED IN 40 CFR PART 401. _____
- IS THIS WASTE REGULATED UNDER THE BENZENE NESHAP RULES? (IS THIS WASTE FROM A CHEMICAL MANUFACTURING, COKE BY-PRODUCT RECOVERY, OR PETROLEUM REFINERY PROCESS?)
- DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS ≥ 500 PPM?
- DOES THIS WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE ≥ .3KPA (.044 psia)?
- DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE GREATER THAN 77 KPa (11.2psia)?

G. D.O.T. INFORMATION: List all shipping names that may be used. Attach additional page if necessary.

D.O.T. SHIPPING NAME Not Hazardous Non D.O.T. regulated Wash Water

DOT HAZARD CLASS: None

UN/NA # N/A PACKING GROUP (Circle 1) I II III HAZARD ZONE (Circle 1) A B C D
 WILL THIS SHIPPING NAME VARY? Y N IF YES, WILL ASSIGNMENT OF PROPER SHIPPING NAME BE BASED ON KNOWLEDGE OR TESTING? (check one) IF KNOWLEDGE, DESCRIBE BASIS OF KNOWLEDGE: _____

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY: ONE TIME WEEKLY SEMI-MONTHLY MONTHLY QUARTERLY OTHER _____

BULK LIQUID

GALLONS/SHIPMENT. _____ GAL.
 FROM TANKS: TANK SIZE _____ GAL.
 FROM DRUMS
 VEHICLE TYPE:
 VAC TRUCK
 TANK TRUCK
 RAILROAD TANK CAR
 CHECK COMPATIBLE STORAGE MATERIALS:
 STEEL STAINLESS STEEL (316)
 RUBBER LINED FIBERGLASS LINED
 OTHER _____

BULK SOLD

_____ TON/YD PER SHIPMENT
 STORAGE CAPACITY _____ TON/YD
 VEHICLE TYPE:
 DUMP TRAILER
 ROLL OFF BOX
 INTERMODAL ROLLOFF BOX
 CUSCO/VACTOR
 OTHER _____

CONTAINERIZED

2 CONTAINERS/SHIPMENT
 STORAGE CAPACITY: _____ CONTAINERS
 CONTAINER TYPE:
 CUBIC YARD BOX
 PALLET
 TOTE TANK
 DRUM SIZE: 55 gal
 CONTAINER MATERIAL:
 STEEL
 FIBER
 PLASTIC
 OTHER _____

I. SAMPLE STATUS

REPRESENTATIVE SAMPLE HAS BEEN SUPPLIED. YES NO See Analysis SAMPLED BY _____ DATE SAMPLED _____

J. SPECIFIC DISPOSAL RESTRICTIONS OR REQUESTS: General Motors restrictions apply (Gen 467)

SPECIAL WASTE HANDLING REQUIREMENTS: None

OTHER COMMENTS OR REQUESTS: Waste water treatment analysis pending

K. BIENNIAL/ANNUAL REPORTING INFORMATION.

SIC CODE _____ SOURCE CODE _____ FORM CODE _____ ORIGIN CODE _____

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE _____ NAME (PRINT) _____ TITLE _____ DATE _____

FOR CLEAN HARBORS USE ONLY

CHI REPRESENTATIVE COMPLETING PROFILE: John Behrens

11800 S. Stony Island Avenue - Chicago, Illinois 60617

FAX

Transmittal Memo

Date: 11/18/98
Number of pages including cover sheet: 13

To:

Mr. Bill Steinmann
Emcon

Phone: 630 505-9450

Fax phone: 630 505-9454

CC:

From:

Jennifer Halle

Field Service Representative

Phone: 773-646-5111

Fax phone: 773-646-6391

REMARKS:

Urgent

For your review

Reply ASAP

Please comment

Bill,

Sorry for the delay. I decided to wait for the analysis to come in. I need the bottom of Page #3 to be signed by the generator. #60, I need the "x'd" items at the top of Page #1 to be filled out.

Thanks
JH



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glatabs.com
(847) 808-7766 FAX (847) 808-7772

Date: November 16, 1998

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Project: EMCON/General Motors

Enclosed are the results from 1 water sample received at Great Lakes Analytical on November 9, 1998. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
8111831	Water: CH121333	11/3/98	TCLP RCRA Metals Flash Point, EPA ASTMD92-85 Reactive Cyanide, EPA 7.3.3 Reactive Sulfide, EPA 7.3.4 PCB, EPA 8082 TCLP VOC, EPA 8260 TCLP SVOC, EPA 8270 pH by EPA 9040

This report may not be reproduced, except in full, without the written approval of the laboratory.

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <1>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stoney Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: TCLP Extract: CH121333 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Extracted: Nov 10, 1998 Analyzed: Nov 12, 1998 Reported: Nov 16, 1998
--	--	--

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	2.0	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	0.018
Lead.....	3015/7421	0.0015	0.014
Mercury.....	7470	0.0020	0.0081
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <1>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stony Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: Water Analysis for: pH by EPA 9040 First Sample #: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Analyzed: Nov 9, 1998 Reported: Nov 16, 1998
---	---	--

LABORATORY ANALYSIS FOR: pH by EPA 9040

Sample Number	Sample Description	Sample Result pH units	Temperature °C
811-1831	CH121333	8.3	22

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <2>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stony Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: Water: CH121333 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Analyzed: Nov 9, 1998 Reported: Nov 16, 1998
---	---	--

LABORATORY ANALYSIS

Analyte	EPA Method	Sample Results
Flash Point, Closed Cup(F).....	ASTMD93-85	>200

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <3>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stony Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: Water:: CH121333 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Analyzed: Nov 11, 1998 Reported: Nov 16, 1998
---	--	---

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Reactive Cyanide.....	7.3.3	0.010	N.D.
Reactive Sulfide.....	7.3.4	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <4>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stony Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: Water: CH121333 Analysis Method: EPA 8082 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Extracted: Nov 10, 1998 Analyzed: Nov 10, 1998 Reported: Nov 16, 1998
---	--	--

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Detection Limit µg/L	Sample Results µg/L
PCB 1016.....	1.0	N.D.
PCB 1221.....	1.0	N.D.
PCB 1232.....	1.0	N.D.
PCB 1242.....	1.0	N.D.
PCB 1248.....	1.0	N.D.
PCB 1254.....	1.0	N.D.
PCB 1260.....	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <5>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stony Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: TCLP Extract: CH121333 Analysis Method: EPA 8260 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Analyzed: Nov 13, 1998 Reported: Nov 16, 1998
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TCLP VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
Benzene.....	0.40	N.D.
Carbon tetrachloride.....	0.40	N.D.
Chlorobenzene.....	0.40	N.D.
Chloroform.....	0.40	N.D.
1,2-Dichloroethane.....	0.40	N.D.
1,1-Dichloroethylene.....	0.40	N.D.
Methyl ethyl ketone.....	100	N.D.
Tetrachloroethylene.....	0.40	N.D.
Trichloroethylene.....	0.40	N.D.
Vinyl chloride.....	0.16	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <6>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors 11800 S. Stoney Island Ave. Chicago, IL 60617 Attention: John Behrens	Client Project ID: EMCON/General Motors Sample Descript: TCLP Extract: CH121333 Analysis Method: EPA 8270 Lab Number: 811-1831	Sampled: Nov 3, 1998 Received: Nov 9, 1998 Extracted: Nov 13, 1998 Analyzed: Nov 14, 1998 Reported: Nov 16, 1998
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TCLP SEMI-VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
o-Cresol.....	20	N.D.
m-, p-Cresol.....	20	N.D.
Cresol.....	20	N.D.
1,4-Dichlorobenzene.....	0.75	N.D.
2,4-Dinitrotoluene.....	0.020	N.D.
Hexachlorobenzene.....	0.020	N.D.
Hexachloro-1,3-butadiene.....	0.050	N.D.
Hexachloroethane.....	0.30	N.D.
Nitrobenzene.....	0.20	N.D.
Pentachlorophenol.....	10	N.D.
Pyridine.....	0.50	N.D.
2,4,5-Trichlorophenol.....	40	N.D.
2,4,6-Trichlorophenol.....	0.20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <7>



PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

510

UNIFORM WASTE MANIFEST		1. Generator's US EPA ID No. <i>N/A</i>		Manifest Document No. <i>133457</i>		2. Page 1 of 1		Information in the shaded areas is not required by Federal law, but is required by Illinois law.			
3. Generator's Name and Mailing Address <i>General Motors Corporation PO Box 5079 1629 N Washington Saginaw, MI 48605</i>				Location If Different		A. Illinois Manifest Document Number <i>IL 7734497</i> FEE PAID IF APPLICABLE					
4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* <i>1-800-645-8265</i>				6. US EPA ID Number		B. Illinois Generator's ID# <i>9260019999</i>					
5. Transporter 1 Company Name <i>Clean Harbors Env. Services, Inc</i>				7. Transporter 2 Company Name		C. Illinois Transporter's ID#					
6. US EPA ID Number <i>MAD039322250</i>				8. US EPA ID Number		D. <i>7818491800</i> Transporter's Phone					
7. Transporter 2 Company Name				8. US EPA ID Number		E. Illinois Transporter's ID# <i>1478</i> Transporter's Phone					
9. Designated Facility Name and Site Address <i>Clean Harbors Services, Inc. 11800 South Stony Island Ave. Chicago, Illinois 60617</i>				10. US EPA ID Number <i>ILD000608471</i>		G. Illinois Facility's ID# <i>03160101051</i> Facility's Phone <i>(773) 646-6202</i>					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit W/Vol	
a. <i>NON D.O.T Regulated material, NON DOT Hazardous, none</i>						No. <i>002 DF</i>		Type <i>00, 17, 06</i>		Waste No.	
b.										EPA HW Number <i>EXCLUDED</i>	
c.										Authorization Number	
d.										EPA HW Number <i>XX</i>	
J. Additional Description for Materials Listed Above <i>11a. CH121333</i>						K. Handling Codes for Wastes Listed Above in Item #14					
15. Special Handling Instructions and Additional Information <i>2. 55 GAL DRUMS. PLACED INTO 2-PAY OVERPACKS, WO# IL147635</i>											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.											
Printed/Typed Name <i>Gilbert Jensen</i>						Signature <i>Gilbert Jensen</i>			Date <i>01/21/99</i>		
17. Transporter 1 Acknowledgement of Receipt of Materials						Signature <i>Richard W. Peppers</i>			Date <i>01/21/99</i>		
18. Transporter 2 Acknowledgement of Receipt of Materials						Signature			Date		
19. Discrepancy Indication Space											
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.										Date	
Printed/Typed Name <i>Jesse Arsenault</i>						Signature <i>Jesse Arsenault</i>			Date <i>01/22/99</i>		

GENERATOR TRANSPORTER FACILITY

IN CASE OF A SPILL CALL THE ILLINOIS OFFICE OF EMERGENCY RESPONSE

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$25,000 per day of violation. Falsification of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

Date: November 16, 1998

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Project: EMCON/General Motors

Enclosed are the results from 1 water sample received at Great Lakes Analytical on November 9, 1998. The requested analyses are listed below:

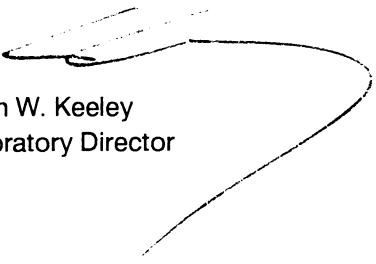
SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
8111831	Water: CH121333	11/3/98	TCLP RCRA Metals Flash Point, EPA ASTMD92-85 Reactive Cyanide, EPA 7.3.3 Reactive Sulfide, EPA 7.3.4 PCB, EPA 8082 TCLP VOC, EPA 8260 TCLP SVOC, EPA 8270 pH by EPA 9040

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Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL



Kevin W. Keeley
Laboratory Director



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Lab Number: 811-1831

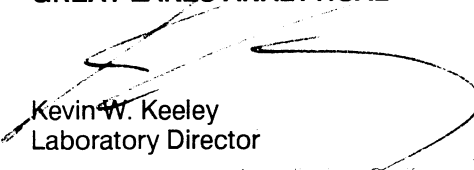
Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 10, 1998
Analyzed: Nov 12, 1998
Reported: Nov 16, 1998

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Results mg/L (ppm)
Arsenic.....	3015/7060	0.050	N.D.
Barium.....	3015/6010	2.0	N.D.
Cadmium.....	3015/6010	0.010	N.D.
Chromium.....	3015/6010	0.010	0.018
Lead.....	3015/7421	0.0015	0.014
Mercury.....	7470	0.0020	0.0081
Selenium.....	3015/7740	0.010	N.D.
Silver.....	3015/6010	0.050	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <1>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens


Client Project ID: EMCON/General Motors
Sample Descript: Water
Analysis for: pH by EPA 9040
First Sample #: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 9, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS FOR: pH by EPA 9040

Sample Number	Sample Description	Sample Result pH units	Temperature °C
811-1831	CH121333	8.3	22

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <2>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water: CH121333
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 9, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS

Analyte	EPA Method	Sample Results
Flash Point, Closed Cup(F).....	ASTMD93-85	>200

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <3>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water:: CH121333
Lab Number: 811-1831

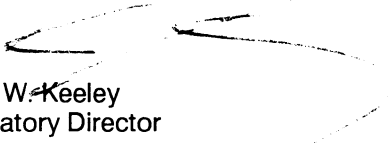
Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 11, 1998
Reported: Nov 16, 1998

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L	Sample Results mg/L
Reactive Cyanide.....	7.3.3	0.010	N.D.
Reactive Sulfide.....	7.3.4	6.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL


Kevin W. Keeley
Laboratory Director

8111831.chs <4>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: Water: CH121333
Analysis Method: EPA 8082
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 10, 1998
Analyzed: Nov 10, 1998
Reported: Nov 16, 1998

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Detection Limit $\mu\text{g/L}$	Sample Results $\mu\text{g/L}$
PCB 1016.....	1.0	N.D.
PCB 1221.....	1.0	N.D.
PCB 1232.....	1.0	N.D.
PCB 1242.....	1.0	N.D.
PCB 1248.....	1.0	N.D.
PCB 1254.....	1.0	N.D.
PCB 1260.....	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <5>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Analysis Method: EPA 8260
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Analyzed: Nov 13, 1998
Reported: Nov 16, 1998

TCLP VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
Benzene.....	0.40	N.D.
Carbon tetrachloride.....	0.40	N.D.
Chlorobenzene.....	0.40	N.D.
Chloroform.....	0.40	N.D.
1,2-Dichloroethane.....	0.40	N.D.
1,1-Dichloroethylene.....	0.40	N.D.
Methyl ethyl ketone.....	100	N.D.
Tetrachloroethylene.....	0.40	N.D.
Trichloroethylene.....	0.40	N.D.
Vinyl chloride.....	0.16	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <6>



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Clean Harbors
11800 S. Stony Island Ave.
Chicago, IL 60617
Attention: John Behrens

Client Project ID: EMCON/General Motors
Sample Descript: TCLP Extract: CH121333
Analysis Method: EPA 8270
Lab Number: 811-1831

Sampled: Nov 3, 1998
Received: Nov 9, 1998
Extracted: Nov 13, 1998
Analyzed: Nov 14, 1998
Reported: Nov 16, 1998

TCLP SEMI-VOLATILES

Analyte	Detection Limit mg/L	Sample Results mg/L
o-Cresol.....	20	N.D.
m-, p-Cresol.....	20	N.D.
Cresol.....	20	N.D.
1,4-Dichlorobenzene.....	0.75	N.D.
2,4-Dinitrotoluene.....	0.020	N.D.
Hexachlorobenzene.....	0.020	N.D.
Hexachloro-1,3-butadiene.....	0.050	N.D.
Hexachloroethane.....	0.30	N.D.
Nitrobenzene.....	0.20	N.D.
Pentachlorophenol.....	10	N.D.
Pyridine.....	0.50	N.D.
2,4,5-Trichlorophenol.....	40	N.D.
2,4,6-Trichlorophenol.....	0.20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

8111831.chs <7>

