C. Black

20 NORTH WACKER DRIVE, SUITE 1260, CHICAGO, IL 60606

TECHLAW INC.

PHONE: (312) 578-8900
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RZ2.R05704.01.ID.115

September 22, 2000

Mr. Thomas Manning
Work Assignment Manager
U.S. EPA Region 5, DW-8J
77 W. Jackson Boulevard
Chicago, IL 60604

Reference: EPA Contract No. 68-W-99-017; EPA Work Assignment No. R05704: Multi-Site Technical Document Review; Rouge Steel Corporation and Ford Motor Company; Dearborn, MI; Rouge Steel Company response to the June 16, 2000 Information Request, Preliminary Assessment/Visual Site Inspection Reports; Task 04 Deliverable

Dear Mr. Manning:

Please find enclosed the September 2, 2000 Rouge Steel Company response to the June 16, 2000 Information Request prepared by TechLaw for the Preliminary Assessment/Visual Site Inspection (PA/VSI) Reports for both the Rouge Steel Company and the Ford Motor Company facilities in Dearborn, Michigan. As per clarification from Mr. Chris Black, TechLaw reviewed the response and incorporated only information vital to report conclusions as both a cost and time saving measure. Please note that less vital information (such as dates of unit operation, unit dimensions, etc.) which would not alter report conclusions was not incorporated. In addition, two copies of the repose have been included for distribution to MDEQ by Mr. Chris Black.

Please feel free to contact me at (312) 345-8938 once you have reviewed this deliverable or if you have any questions.

Sincerely,

for John Koehnen

John Koehnen
TechLaw Regional Manager

cc: F. Norling, EPA Region 5 RPO (w/out att)
C. Black, EPA Region 5
Chicago Central Files
G.Phillips, EPA Region 5
B. Jordan/Central Files
M. Powers

ROUGE STEEL COMPANY

3001 Miller Road
P.O. Box 1699
Dearborn, Michigan 48121-1699
September 2, 2000

Mr. John Koehoen
Regional Manager
TechLaw, Incorporated
20 North Wacker Drive
Suite 1260
Chicago, IL 60606

Subject: Rouge Steel Company Information Request for U.S. EPA Preliminary Site Assessment/Visual Site Inspection Report

Dear Mr. Koehoen:

The following information is provided in response to your facsimile message of June 16, 2000 and follow-up discussion with Ann Anderson and Shannon Ridley of your office on July 5, 2000. Paragraphs in this response are numbered to respond to the corresponding paragraph in your letter.

1. Ladle Refining Facility (LRF) Vacuum Degassing System. Molten steel in a ladle is delivered to the Continuous Caster building by mobile carrier, where it is processed and converted to solid slabs. Not all steel is vacuum degassed. If it is to be vacuum degassed, the ladle is moved to the Vacuum Degassing station by crane. The molten metal is then subjected to vacuum in the ladle to remove entrained gasses. Following degassing, the ladle is moved by crane to Ladle Refining station No. 1 (LRF-1). If it is not to be vacuum degassed, the ladle is moved directly to either Ladle Refining station 1 or 2. At the LRF, material additions are made to adjust the chemistry and reduce impurities in the metal. If necessary, the metal is adjusted to the correct temperature for casting, using electric arc heating. The ladle is then moved to the casting machine, where the molten metal is directed through the casing apparatus, where indirect and spray cooling with water are used to form a solid slab of steel.

2. Was Electric Arc Furnace (EAF) Slag taken to the current Basic Oxygen (BOF) Furnace Slag Pit? Confirming discussions on the subject, EAF Slag was taken to the BOF Slag pit.

3. Has the 12A Lagoon ever been dredged? The lagoon was reported dredged in 1985, and 2500 cubic yards removed. No other information has been found regarding dredging of this lagoon.

4. Explain the function of the Sluice Pits (located east of the Caster building). The Sluice Pits, which are not visible at the mapped location, appear to have been a part of the Specialty foundry. This was not historically a part of Steel Operations and we have been unable to locate information on their use.

5. Verify what Blast Furnace Waste Water Treatment units were observed and not observed during the VSI and explain the current and historical flow of water through the units. The "B" and "C" Furnace Thickeners are located close to the respective furnaces and were not observed during the VSI. They are smaller than the clarifiers and thickener which were observed. The splitter box is adjacent to the two clarifiers and was identified to those present by Mr. Newransky. The thickeners are sometimes also referred to as clarifiers; the count of six referenced in the letter apparently includes the "A" Furnace Thickener, which is located near the "A" Furnace. Since "A" Furnace is no longer in service, the "A" Thickener is no longer used as a thickener. It is used to accumulate condensate from the Blast Furnace Gas lines. That condensate is then pumped to the clarifiers and recycled.

   The Dorr Thickener is the large thickener next to the clarifiers and was observed during the visit. The Vacuum Filter (filter press) was the filter observed in operation inside the building. The three deep bed filters are the domed pressure filters observed in the same room as the Vacuum Filter. The Raw Waste Sump and the Wet Well are below-grade sumps which are located directly underneath the catwalk between the Splitter Box and the two clarifiers.

   The recycle water flows from the blast furnace gas washers to the small thickeners and then to the clarifiers. From the clarifiers, the clear water flows to the cooling towers and then is returned to the gas washers. Clarified blowdown is filtered and treated and discharged through internal outfall 04B1 and final outfall 004B. Available records indicate that prior to the installation of the present system in the late 70's, mill water was supplied to the gas washers and flowed from there to the small thickeners, then discharged through outfalls. "A" and "B" furnace thickeners discharged clarified effluent through outfall 006. "C" Furnace Thickener discharged clarified effluent to outfall 04A. Sludge was dewatered and either recycled or hauled to landfill.

6. Analytical results for filter cake material. Analytical results for the filter cakes from the Blast Furnace Wastewater Treatment Plant, Continuous Caster Water Recycle System, and Vacuum Degasser Water Recycle System are provided in Attachment A.

7. Characterization of the coke oven gas line drip water. Analytical results are provided in Attachment B.

8. Coke Plant units brought on line. The North Quench tower, 300 gallon "Hazardous Waste" tank and Coke Oven Refractory refuse pile were installed or commenced use after 1937, but we have not found information sufficient to date the installation of those listed units. Note that we have not found any information that indicates that the 300 gallon tank ever held RCRA characteristic or listed Hazardous Waste.

9. (Not present in letter)

10. Blast Furnace Slag Pit. The present Blast Furnace Slag Pit commenced operation some time in 1990. The prior location was 2700 feet north of Road 4, due north of the blast furnaces.

11. BOF units brought on line in 1964. Our comments are as follows:

- Flue Dust Catcher. This unit, also called the "Drop Out Box" is believed to have been installed in 1964, along with the other major BOF equipment.

- Lime Dust Hopper. The baghouse air permit indicates it was installed in 1990.

- Desulfurization (D/S) Hopper. The baghouse air permit indicates it was installed in 1980.

- Coarse and Fine Dust Hoppers. These are believed to have been installed in 1964.

- Kish Hoppers. The baghouse air permit indicates installation in 1980.

- BOF 55-gallon Drum Pickup area. This area for lubricant drums has been in existence for at least 5 years, but we did not find information on the commencement of use.

12. Continuous Slab Caster Units installed in the 1980's. Our comments are as follows:
    - The Vacuum Degasser Recycling system, Ladle Refining Facility and the Vacuum Degasser System Baghouse were installed with the original caster in 1989.

    - The Ladle Refining Facility No. 2 was installed in 1995.

    - 12A Lagoon was in existence prior to the installation of the original caster.

    - Caster 55-gallon Drum Pickup area. This area for lubricant drums has been in existence for at least 5 years, but we did not find information on the commencement of use.

13. Cold Mill Units installed in the 1960's. The Tandem Mill Sump Oil Tank predates the 1960 installation. Our investigation indicates that the remaining listed equipment was added in the 60's.

14. Slab Mill units discontinued. All of these units were discontinued in October 1996:
    - Slab Mill Scale Pit
    - Scarfer Grit Scale pit
    - Soaking Pit Scale ("Soak Pit Debris")

15. Dates of beginning operation:
    - <90 day Hazardous/Non-hazardous Waste Storage area - Approximately1994
    - HiLo Waste Oil Tank. This tank is reported as used for product storage in the 1960's, and converted to storage of waste oil in the mid 70's.

16. Confirm that the listed units are constructed of steel and provide the dimensions. Listed units' dimensions and material of construction are provided in Attachment C.

15. Dimensions of the 12-A lagoon: The lagoon has a triangular shape with the approximate dimensions of 310 feet by 110 feet. We have been unable to locate information on its depth.

16. Materials being stockpiled in piles for use at Waste Oxides Reclamation Facility (WORF) are listed below:
    Ore pellet fines
    Coke fines
    Blast Furnace Flue Dust
    Scale
    Analyses are provided in Attachment D.

Additionally, our response to the questions and comments from the July 5, 2000 telephone conversation with Ann Anderson and Shannon Ridley of your company are as follows:

17. Slab Mill shutdown occurred in 1996 as reported in paragraph 14 above. Scale has been temporarily stored in the area immediately adjacent to the slab mill scale pits since the beginning of operations, and some scale has been stored there since shutdown. Analytical for the scale is found in Attachment E.

18. Caster Scale. Caster scale is used in the WORF.

19. Blast Furnace WasteWater Treatment Plant
    I indicated generation of the filter cake is about 150 tons per day.
    The approximate dimensions of the debris pile near this area (1988 SWMU #1) was about 100 feet by 100 feet.

20. The Blast Furnace Slag pit is located at the south end of the Ore and Coke Storage Area.

21. Kish-containing dust (from the Reladle baghouse) is hauled to the current debris pile.

22. The Baghouse for the Vacuum Degasser and LRF-1 is located at the northeast corner of the Caster building.

23. The temporary asbestos storage area is located on the paved area on the East Side of the Rouge Operations Warehouse.

24. Foundry Furnaces. There was a foundry along the West Side of Miller Road, immediately south of Road 4. This area has been cleared some years ago, and most is now paved. I have not found drawings indicating where furnaces were located.

25. The report for the 1991 spill incident is provided in Attachment F

26. The report on closure of UST at Substation 12B is provided in Attachment G

27. Dimensions of the coal tar tanks and adjacent smaller tanks and materials of construction. This information is provided in Attachment C.

28. AC Still bottoms Lagoon discharge. I have a verbal report that the liquid was used as make up for flushing water for the coke ovens. I have not been able to determine if this material was ever discharged to the Detroit sanitary sewer.

29. Drum storage area near Waste Oxide. We have not been able to find this sign. It would have been associated with skull breaking operations, as opposed to the current Waste Oxide operations. I have not been able to determine if there was any actual storage at that location, or if it was for product or empty drums.

30. Is there a temper mill at the #4 Pickle line? There is a two-roll stand called the "Temper Mill" in the #4 Pickle Line, between the welder and the first tub. It is used to make minor changes to the shape of the steel strip cross section before it enters the pickling bath. Unlike a standard four-roll temper mill, it uses no rolling solution for lubrication, only water spray.

31. Is the sewer line to the Burbank Outfall steel? No, a drawing indicates it is high strength vitrified clay pipe.

32. Is the sewer line to Schaefer Road Waste Water Treatment Plant steel? No, I have not found a description on drawings, but reports indicate that it is concrete, which would make it reinforced concrete pipe.

Please contact me if you have further questions on this information.

Very truly yours,

D. S. Windeler

D. S. Windeler, Manager
Environmental Engineering

Attachments

ATTACHMENT A

Analytical Data for Blast Furnace Water Treatment Filter Cake, Continuous Caster Water Treatment filter Cake and Vacuum Degasser Filter Cake

Martin Environmental Inc.
"The Peak of Quality"

12610 Newburgh Road
Livonia, Michigan 48150
(734)591-1855, Fax (734)591-3331

ANALYTICAL REPORT

November 30, 1999

Rouge Steel
3001 Miller Rd.
Dearborn, MI 48121

MEI Report Number: 6415
MEI Sample Number: 19978

Project Name: n/a
Project Number: n/a

Date Submitted: 11/17/99
Purchase Order: n/a

Sample Description: Blast Furnace Filter Cake
Collection Date: 11/17/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
10 M R METALS by TCLP						
Arsenic	ND	ppm	0.100	7060	11/23/99	ADC
Barium	ND	ppm	20.00	7080	11/23/99	ADC
Cadmium	ND	ppm	0.100	7130	11/23/99	ADC
Chromium	ND	ppm	1.00	7190	11/23/99	ADC
Copper	ND	ppm	2.50	7210	11/23/99	ADC
Lead	ND	ppm	1.00	7420	11/23/99	ADC
Mercury	ND	ppm	0.200	7470	11/23/99	ADC
Selenium	ND	ppm	0.500	7740	11/23/99	ADC
Silver	ND	ppm	0.500	7760	11/23/99	ADC
Zinc	11	ppm	2.00	7950	11/23/99	ADC
RCRA CHARACTERISTICS ANALYSIS						
Ignitibility	>140	Deg. F	n/a	1010	11/29/99	DTM
Corrositivity pH Units	9.8	S. U.	n/a	9045	11/22/99	DTM
As Cyanide	ND	mg/L	5.0	9010	11/29/99	DTM
As Sulfide	ND	mg/L	5.0	9030	11/29/99	DTM
TCLP SEMI - VOLATILES FRACTION						
Hexachlorobenzene	ND	mg/L	0.10	8270	11/29/99	JDM
2,4-Dinitrotoluene	ND	mg/L	0.10	8270	11/29/99	JDM
Hexachlorobutadiene	ND	mg/L	0.10	8270	11/29/99	JDM
Nitrobenzene	ND	mg/L	0.10	8270	11/29/99	JDM
2,4,6-Trichlorophenol	ND	mg/L	0.10	8270	11/29/99	JDM
Hexachloroethane	ND	mg/L	0.10	8270	11/29/99	JDM
Pyridine	ND	mg/L	0.10	8270	11/29/99	JDM
Pentachlorophenol	ND	mg/L	0.10	8270	11/29/99	JDM
o-Cresol	ND	mg/L	0.10	8270	11/29/99	JDM
m-Cresol	ND	mg/L	0.10	8270	11/29/99	JDM
p-Cresol	ND	mg/L	0.10	8270	11/29/99	JDM
2,4,5-Trichlorophenol	ND	mg/L	0.10	8270	11/29/99	JDM

Martin Environmental Inc.
"The Peak of Quality"

12610 Newburgh Road
Livonia, Michigan 48150
(734)591-1855, Fax (734)591-3331

ANALYTICAL REPORT

November 30, 1999

Rouge Steel
3001 Miller Rd.
Dearborn, MI 48121

MEI Report Number: 6415
MEI Sample Number: 19978

Project Name: n/a
Project Number: n/a

Date Submitted: 11/17/99
Purchase Order: n/a

Sample Description: Blast Furnace Filter Cake
Collection Date: 11/17/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
T VOLATILE FRACTION						
Vinyl chloride	ND	mg/L	0.025	8240	11/29/99	JDM
Benzene	ND	mg/L	0.025	8240	11/29/99	JDM
Carbon tetrachloride	ND	mg/L	0.025	8240	11/29/99	JDM
1,2-Dichloroethane	ND	mg/L	0.025	8240	11/29/99	JDM
Trichloroethylene	ND	mg/L	0.025	8240	11/29/99	JDM
1,1-Dichloroethylene	ND	mg/L	0.025	8240	11/29/99	JDM
Tetrachloroethylene	ND	mg/L	0.025	8240	11/29/99	JDM
Chloroform	ND	mg/L	0.025	8240	11/29/99	JDM
1,4-Dichlorobenzene	ND	mg/L	0.025	8240	11/29/99	JDM
Chlorobenzene	ND	mg/L	0.025	8240	11/29/99	JDM
Methyl ethyl ketone	ND	mg/L	0.025	8240	11/29/99	JDM
TCLP Pesticides						
Chlordane	ND	ppm	0.040	8080	11/29/99	LMC
Endrin	ND	ppm	0.004	8080	11/29/99	LMC
Heptachlor	ND	ppm	0.004	8080	11/29/99	LMC
Heptachlor epoxide	ND	ppm	0.004	8080	11/29/99	LMC
Lindane	ND	ppm	0.004	8080	11/29/99	LMC
Methoxychlor	ND	ppm	0.004	8080	11/29/99	LMC
Toxaphene	ND	ppm	0.040	8080	11/29/99	LMC
TCLP Herbicides						
2,4-D	ND	ppm	0.05	8150	11/29/99	DWS
2,4,5-TP	ND	ppm	0.05	8150	11/29/99	DWS

Reviewed By: _____

CHESTER LabNet - Pittsburgh
3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: CASTER FILTER CAKE 7A
Log Number: 96-0004588
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/10
WET CHEM						
WET CHEMISTRY						
pH	7.2	Units	N/A	9045	jeb	04/11
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/11

CHESTER LabNet - Pittsburgh
3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004588
Log Number: 96-0004589
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/10
Extract pH, Nonvolatiles	5.54	Units	N/A	9040	rkm	04/10
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/10
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/10
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.24	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	<.005	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	0.015	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.037	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	11	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	0.015	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	<.02	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	0.32	mg/L	0.01	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: CASTER FILTER CAKE 7B
Log Number: 96-0004590
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rka	04/10
WET CHEM						
WET CHEMISTRY						
pH	7.3	Units	N/A	9045	jeb	04/11
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/11

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3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004590
Log Number: 96-0004591
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/10
Extract pH, Nonvolatiles	6.25	Units	N/A	9040	rkm	04/10
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/10
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/10
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.14	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	<.005	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.019	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	7.1	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	0.011	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	<.02	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	0.10	mg/L	0.01	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: CASTER FILTER CAKE 7C
Log Number: 96-0004592
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/10
WET CHEM						
WET CHEMISTRY						
pH	7.3	Units	N/A	9045	jeb	04/11
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/11

CHESTER LabNet - Pittsburgh
3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004592
Log Number: 96-0004593
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/10
Extract pH, Nonvolatiles	5.88	Units	N/A	9040	rkm	04/10
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/11
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/10
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.19	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	<.005	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.058	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	12	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	0.017	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	<.02	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	0.42	mg/L	0.01	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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3000 Tech Center Drive
Monroeville, PA 15146-9998
(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: CASTER FILTER CAKE 7D
Log Number: 96-0004594
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/10
WET CHEM						
WET CHEMISTRY						
pH	7.2	Units	N/A	9045	jeb	04/11
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/11

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004594
Log Number: 96-0004595
Date Collected: 04/04/96
Time Collected: 13:30
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/10
Extract pH, Nonvolatiles	5.93	Units	N/A	9040	rkm	04/10
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/10
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/10
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.19	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	<.005	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.058	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	8.1	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	0.016	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	<.02	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	0.15	mg/L	0.01	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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Martin Environmental Inc.
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ANALYTICAL REPORT

March 23, 1999

Environmental Chemical Enterprises
200 Riverfront Dr., Suite 2404
Detroit, MI 48226

MEI Report Number: 5561A
MEI Sample Number: 017160

Project Name: Rouge Steel
Project Number: n/a

Date Submitted: 03/16/99
Purchase Order: n/a

Sample Description: Caster Filter cake
Collection Date: 03/15/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
Table 101 Inorganic- SPLP						
Arsenic	ND	mg/L	0.5	7060	03/23/99	DKM
Barium	ND	mg/L	10.0	7080	03/23/99	DKM
Cadmium	ND	mg/L	0.1	7130	03/23/99	DKM
Chromium	ND	mg/L	0.5	7190	03/23/99	DKM
Copper	ND	mg/L	10.0	7210	03/23/99	DKM
Lead	ND	mg/L	0.5	7420	03/23/99	DKM
Manganese	ND	mg/L	0.5	7460	03/23/99	DKM
Mercury (inorganic)	ND	mg/L	0.02	7470	03/23/99	DKM
Nickel (soluable salt)	ND	mg/L	1.0	7520	03/23/99	DKM
Selenium	ND	mg/L	0.1	7740	03/23/99	DKM
Silver	ND	mg/L	0.5	7760	03/23/99	DKM
Zinc	ND	mg/L	50.0	7950	03/23/99	DKM
Table 102 Halogenated Volatile Organics - SPLP						
Benzyl chloride	ND	mg/L	0.002	624	03/22/99	JDM
Bromodichloromethane	ND	mg/L	0.003	624	03/22/99	JDM
Bromoform	ND	mg/L	0.04	624	03/22/99	JDM
Bromomethane	ND	mg/L	0.1	624	03/22/99	JDM
Carbon tetrachloride	ND	mg/L	0.05	624	03/22/99	JDM
Chlorobenzene	ND	mg/L	10.0	624	03/22/99	JDM
Chloroethane	ND	mg/L	0.09	624	03/22/99	JDM
Chloroform	ND	mg/L	0.6	624	03/22/99	JDM
Chloromethane	ND	mg/L	0.03	624	03/22/99	JDM
Dibromochloromethane	ND	mg/L	0.004	624	03/22/99	JDM
Dibromomethane	ND	mg/L	0.7	624	03/22/99	JDM
1,2-Dichlorobenzene	ND	mg/L	6.0	624	03/22/99	JDM
1,3-Dichlorobenzene	ND	mg/L	6.0	624	03/22/99	JDM
1,4-Dichlorobenzene	ND	mg/L	0.75	624	03/22/99	JDM
Dichlorodifluoromethane	ND	mg/L	10.0	624	03/22/99	JDM
1,1-Dichloroethane	ND	mg/L	7.0	624	03/22/99	JDM
1,2-Dichloroethane	ND	mg/L	0.05	624	03/22/99	JDM
1,1-Dichloroethene	ND	mg/L	0.07	624	03/22/99	JDM
cis-1,2-Dichloroethene	ND	mg/L	0.7	624	03/22/99	JDM
trans-1,2-Dichloroethene	ND	mp/L	1.0	624	03/22/99	JDM
1,2-Dichloropropane	ND	mg/L	0.005	624	03/22/99	JDM

ANALYTICAL REPORT

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Martin Environmental Inc.
The Peak of Quality

March 23, 1999

Environmental Chemical Enterprises
200 Riverfront Dr., Suite 2404
Detroit, MI 48226

MEI Report Number: 5561A
MEI Sample Number: 017160

Project Name: Rouge Steel
Project Number: n/a

Date Submitted: 03/16/99
Purchase Order: n/a

Sample Description: Caster filter cake
Collection Date: 03/15/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
1,3-Dichloropropene	ND	mg/L	0.002	624	03/22/99	JDM
Methylene chloride	ND	mg/L	0.05	624	03/22/99	JDM
1,1,2,2-Tetrachloroethane	ND	mg/L	0.01	624	03/22/99	JDM
1,1,2,2-Tetrachloroethane	ND	mg/L	0.002	624	03/22/99	JDM
Tetrachloroethylene	ND	mg/L	0.07	624	03/22/99	JDM
1,1-1-Trichloroethane	ND	mg/L	2.0	624	03/22/99	JDM
1, -Trichloroethane	ND	mg/L	0.006	624	03/22/99	JDM
Trichloroethylene	ND	mg/L	0.05	624	03/22/99	JDM
chloroflorometh ane	ND	mg/L	20.0	624	03/22/99	JDM
1,2,3-Trichloropropane	ND	mg/L	0.4	624	03/22/99	JDM
Vinyl chloride	ND	mp/L	0.02	624	03/22/99	JDM
Table 103 non-Halogenated Volatile Organics - SPLP						
Diethyl ether	ND	mg/L	10.0	624	03/22/99	JDM
Methyl ethyl ketone (2-butanone)	ND	mg/L	10.0	624	03/22/99	JDM
Methyl isobutyl ketone	ND	mg/L	4.0	624	03/22/99	JDM
Table 104 Aromatic Volatile Organics - SPLP						
Benzene	ND	mg/L	0.05	624	03/22/99	JDM
1,2-Dichlorobenzene	ND	mg/L	6.0	624	03/22/99	JDM
1,3-Dichlorobenzene	ND	mg/L	6.0	624	03/22/99	JDM
1,4-Dichlorobenzene	ND	mg/L	0.75	624	03/22/99	JDM
Ethylbenzene	ND	mg/L	0.7	624	03/22/99	JDM
Toluene	ND	mg/L	8.0	624	03/22/99	JDM
Total Xylene isomers	ND	mg/L	3.0	624	03/22/99	JDM
o-Xylene	ND	mg/L	3.0	624	03/22/99	JDM
m-Xylene	ND	mg/L	3.0	624	03/22/99	JDM
p-Xylene	ND	mg/L	3.0	624	03/22/99	JDM
Table 105 Phenolic Compounds - SPLP						
4-Chlorophenol	ND	mg/L	0.4	625	03/23/99	JDM
o-Cresol (2-methylphenol)	ND	mg/L	20.0	625	03/23/99	JDM
m-Cresol (3-methylphenol)	ND	mg/L	20.0	625	03/23/99	JDM
p-Cresol (4-methylphenol)	ND	mg/L	20.0	625	03/23/99	JDM
Cresol	ND	mg/L	20.0	625	03/23/99	JDM
2, ichlorophenol	ND	mg/L	0.2	625	03/23/99	JDM

ANALYTICAL REPORT

March 23, 1999

Environmental Chemical Enterprises

MEI Report Number: 5561A

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Martin Environmental Inc.
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200 Riverfront Dr., Suite 2404
Detroit, MI 48226

MEI Sample Number: 017160

Project Name: Rouge Steel
Project Number: n/a

Date Submitted: 03/16/99
Purchase Order: n/a

Sample Description: Caster filter cake
Collection Date: 03/15/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
2,4-Dimethylphenol	ND	mg/L	4.0	625	03/23/99	JDM
2,5-Dimethylhenol	ND	mg/L	0.04	625	03/23/99	JDM
2-Methyl-4,6-dinitrophenol	ND	mg/L	0.03	625	03/23/99	JDM
Pentachlorphenol	ND	mg/L	10.0	625	03/23/99	JDM
Phenol	ND	mg/L	40.0	625	03/23/99	JDM
2,4,5-Trichlorophenol	ND	mg/L	40.0	625	03/23/99	JDM
2,4,6-Trichlorophenol	ND	mg/L	0.2	625	03/23/99	JDM
RCRA CHARACTERISTICS ANALYSIS						
Ignitibility	>140	Deg. F	n/a	1010	03/17/99	DTM
Corrositivity pH Units	4.2	S. U.	n/a	9045	03/17/99	DTM
Cyanide	<5.0	mg/L	5.0	9010	03/18/99	DTM
As Sulfide	<5.0	mg/L	5.0	9030	03/18/99	DTM
SPLP SEMI - VOLATILES FRACTION						
Hexachlorobenzene	ND	mg/L	0.10	8270	03/23/99	JDM
2,4-Dinitrotoluene	ND	mg/L	0.10	8270	03/23/99	JDM
Hexachlorobutadiene	ND	mg/L	0.10	8270	03/23/99	JDM
Nitrobenzene	ND	mg/L	0.10	8270	03/23/99	JDM
2,4,6-Trichlorophenol	ND	mg/L	0.10	8270	03/23/99	JDM
Hexachloroethane	ND	mg/L	0.10	8270	03/23/99	JDM
Pyridine	ND	mg/L	0.10	8270	03/23/99	JDM
Pentachlorophenol	ND	mg/L	0.10	8270	03/23/99	JDM
o-Cresol	ND	mg/L	0.10	8270	03/23/99	JDM
m-Cresol	ND	mg/L	0.10	8270	03/23/99	JDM
p-Cresol	ND	mg/L	0.10	8270	03/23/99	JDM
2,4,5-Trichlorophenol	ND	mg/L	0.10	8270	03/23/99	JDM
SPLP Pesticides						
Chlordane	ND	ppm	0.040	8080	03/23/99	MH
Endrin	ND	ppm	0.004	8080	03/23/99	MH
Heptachlor	ND	ppm	0.004	8080	03/23/99	MH
Heptachlor epoxide	ND	ppm	0.004	8080	03/23/99	MH
Lindane	ND	ppm	0.004	8080	03/23/99	MH
Methoxychlor	ND	ppm	0.004	8080	03/23/99	MH
Toxaphene	ND	ppm	0.040	8080	03/23/99	MH

ANALYTICAL REPORT

M[illegible] 23, 1999

Environmental Chemical Enterprises
200 Riverfront Dr., Suite 2404
Detroit, MI 48226

MEI Report Number: 5561A
MEI Sample Number: 017160

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Livonia, Michigan 48150
(734)591-1855, Fax (734)591-3331

Martin Environmental Inc.
The Peak of Quality

Project Name: Rouge Steel
Project Number: n/a

Date Submitted: 03/16/99
Purchase Order: n/a

Sample Description: Caster filter cake
Collection Date: 03/15/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
Polychlorinated Biphenyls (PCB)						
Aroclor 1016	ND	ppm	0.033	8080	03/25/99	MH
Aroclor 1221	ND	ppm	0.033	8080	03/25/99	MH
Aroclor 1232	ND	ppm	0.033	8080	03/25/99	MH
Aroclor 1242	ND	ppm	0.033	8080	03/25/99	MH
Aroclor 1248	ND	ppm	0.033	8080	03/25/99	MH
Aroclor 1254	ND	ppm	0.033	8080	03/25/99	MH
Aroclor 1260	ND	ppm	0.033	8080	03/25/99	MH

Reviewed By: _____

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3000 Tech Center Drive
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(412) 825-9833

Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: DEGASSER SLUDGE 9A
Log Number: 96-0004604
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/11
WET CHEM						
WET CHEMISTRY						
pH	9.6	Units	N/A	9045	jeb	04/15
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/15

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004604
Log Number: 96-0004605
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/11
Extract pH, Nonvolatiles	7.68	Units	N/A	9040	rkm	04/11
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/11
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/11
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.36	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	0.20	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.098	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	44	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	0.27	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	180	mg/L	0.05	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: DEGASSER SLUDGE 9B
Log Number: 96-0004606
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/11
WET CHEM						
WET CHEMISTRY						
pH	9.2	Units	N/A	9045	jeb	04/15
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/15

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004606
Log Number: 96-0004607
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/11
Extract pH, Nonvolatiles	6.54	Units	N/A	9040	rkm	04/11
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/11
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/11
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.36	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	0.22	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.21	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	51	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	0.025	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	0.30	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	220	mg/L	0.05	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: DEGASSER SLUDGE 9C
Log Number: 96-0004608
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/11
WET CHEM						
WET CHEMISTRY						
pH	9.0	Units	N/A	9045	jeb	04/15
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/15

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004608
Log Number: 96-0004609
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/11
Extract pH, Nonvolatiles	6.46	Units	N/A	9040	rkm	04/11
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/11
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/11
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.41	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	0.36	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.12	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	72	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	0.54	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	350	mg/L	0.05	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: DEGASSER SLUDGE 9D
Log Number: 96-0004610
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
TCLP Extraction, Nonvolatiles	done	None	N/A	1311	rkm	04/11
WET CHEM						
WET CHEMISTRY						
pH	8.7	Units	N/A	9045	jeb	04/15
Phenol (4AAP), PHOH	<.5	mg/kg	0.5	9066	jrk	04/15

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Laboratory Analyses Report
For: Rouge Steel

Date of Report: 04/19/96

ANALYSES

Source: Tclp Nonvolatile Extraction of 96-0004610
Log Number: 96-0004611
Date Collected: 04/04/96
Time Collected: 14:00
Date Received: 04/05/96

Account No.: 98
Project No.: 9604061
Client No.: 3246-41
P.O. No.: 3246-41

	Conc.	Unit	Detection Limit	Procedure	Anl	Test Date
LEACHPREP						
TCLP NONVOL						
Extraction Fluid, Nonvolatiles	1	None	N/A	1311	rkm	04/11
Extract pH, Nonvolatiles	6.52	Units	N/A	9040	rkm	04/11
Initial Filtrate, Nonvolatiles	0	ml	N/A	1311	rkm	04/11
Weight Extracted, Nonvolatiles	100	Grams	N/A	1311	rkm	04/11
MET/ICP						
TCLP METALS						
TCLP Silver, Ag	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Arsenic, As	<.03	mg/L	0.03	6010	rtg	04/15
TCLP Barium, Ba	0.41	mg/L	0.01	6010	rtg	04/15
TCLP Cadmium, Cd	0.25	mg/L	0.005	6010	rtg	04/15
TCLP Chromium, Cr	<.01	mg/L	0.01	6010	rtg	04/15
TCLP Copper, Cu	0.18	mg/L	0.01	6010	rtg	04/15
TCLP Manganese, Mn	75	mg/L	0.01	6010	rtg	04/15
TCLP Nickel, Ni	0.021	mg/L	0.01	6010	rtg	04/15
TCLP Lead, Pb	0.38	mg/L	0.02	6010	rtg	04/15
TCLP Selenium, Se	<.04	mg/L	0.04	6010	rtg	04/15
TCLP Zinc, Zn	370	mg/L	0.1	6010	rtg	04/15
MET/MISC						
TCLP METALS						
TCLP Mercury, Hg	<.0002	mg/L	0.0002	7470	rkg	04/12

ATTACHMENT B

Analytical Data for Coke Oven Gas Drip Water Line

DRIP WATER

CENTRAL LABORATORY

INVESTIGATION REPORT

Number 602208

June 30, 1986

TO: D. O'Connor

SUBJECT: Water
Specification: Not Provided
Supplier: Rouge Steel Co.

Coke Oven Gas Line
Drip Water

OBJECT: Prepare and analyze the sample as per laboratory request.

CONCLUSION The sample meets E. P. Toxicity requirements for metals as per Michigan Act 64 of 1979.

TEST DATA:

Preparation of sample for E. P. Toxicity Test:

solid portion (0.1%)
aqueous portion (99.9%)
The sample was filtered through 0.45um filter paper and the filterate was used for E. P. Toxicity tests of metals.

E. P. Toxicity Tests	Concentration (mg/L)	Maximum allowable concentration, mg/L
Arsenic	0.2	5.0
Barium	0.2	100.0
Cadmium	<0.1	1.0
Chromium	<0.1	5.0
Lead	<0.1	5.0
Mercury	<0.1	0.2
Selenium	<0.1	1.0
Silver	<0.1	5.0
Zinc	0.2	500.0
Copper	3	100
Nickel	0.1	information

RCO 000159

CENTRAL LABORATORY

INVESTIGATION REPORT

Number 602208

Test Data (continued)

Tests	Results	[b]Specification
Cyanide, mg/L (EPA 600/4-79-020, M 335.1)	690	information
Sulfide, mg/L (EPA-600/4-79-020, M 376.2; 0.02 Sodium thiosulfate)	302	information
pH	7.8	>2 and <12.5

Method of Analysis for Metals: Inductively Coupled Plasma Emission Spectroscopy

"a" Michigan act 64 of 1979

"b" Specification for evaluating solid waste, EPA solid waste 846, 1982

by: Diago P Lopes

Diago P Lopes
Laboratory Specialist
Environmental Section
Chemistry Department

DPL/dpl

DRIP WATER

Encoded
Sampled: 1-28-85
CA O'Connor

RCRA ANALYSIS

MATERIAL

Coke Oven Gas Line Drip Water

PHYSICAL STATE

Clear Liquid - Lightly Colored

RCRA CHARACTERISTICS

IGNITABILITY

FLASHPOINT > 90°C

CORROSIVITY

pH 6.1

REACTIVITY (mg/l)

CYANIDE 720

SULFIDE 120

TOXICITY-EXTRACTION PROCEDURE (mg/l)

ARSENIC	0.003	**LEAD**	0.18
BARIUM	0.10	**MERCURY**	0.116
CADMIUM	< 0.02	**SELENIUM**	0.009
COPPER	0.04	**SILVER**	< 0.01
CHROMIUM	0.03	**ZINC**	< 0.02

DRIP WATER

CENTRAL LABORATORY
LABORATORY INVESTIGATION REPORT

Number 500013

TO: D. O'Connor April 2, 1985

SUBJECT: Water
Part Number: Not Provided
Specification: Not Provided
Supplier: Rouge Steel Company

OBJECT: Perform chemical and physical tests on the submitted sample for information.

SAMPLES RECEIVED: Sample was identified as "Coke oven gas line drip water".

TEST DATA:

	Results
Density, at 25.5°C (Paar Densitymeter)	0.996
Corrosivity pH (EPA-600/4-79-020, M150.1)	6.22
Reactivity Reaction with 1N Sodium hydroxide	No Violent Reaction
Reaction with 1N Hydrochloric acid	Sample can generate toxic gas (hydrogen cyanide)
Suspended solids, mg/L (EPA-600/4-79-020, M160.2)	14
Dissolved solids, mg/L (EPA-600/4-79-020, M160.1)	47
Cyanide, mg/L (EPA-600/4-79-020, M335.1)	36
Ammonia, mg/L (EPA-600/4-79-020-M350.2)	38

CENTRAL LABORATORY

LABORATORY INVESTIGATION REPORT

Number 500013

TEST DATA: (continued)

	Results
Phenol, mg/L (EPA-600/4-79-020, M420.1)	3.20
Cresols, mg/L (EPA-82, Solid Waste 846, Method 8040)	0.33
Benzene, mg/L (EPA-82, Solid Waste 846, M5030)	8
Naphthalene, mg/L (EPA 82, solid waste, M 8100)	0.4
Styrene, mg/L (EPA-82 Solid Waste 846, M8100)	< 0.1
Benzo (a) pyrene, mg/L (EPA-82, Solid Waste 846 - M8100-HPLC)	1

Concur: J. A. Galloway
J. A. Galloway, Supervisor
Environmental Section
Chemistry Department

by: Diego P. Lopes
D. P. Lopes

LPL/pp

RCO 000163

ATTACH NT C
CONSTRUCTION AND DIMENSION SUMMARY
ROUGE MANUFACTURING COMPLEX
DEARBORN, MICHIGAN

Item No.	*Description*	*Area of Site*	*Construction Material*	*Quantity*	*General Chamber Shape*	*Approximate Chamber Dimension*	*General Hopper Shape*	*Approximate Hopper Dimension*
1	Flue Dust Catcher	BOF	Steel	1	Rectangle	28' x 24' x 48' high	Pyramid	28' x 24' x 22' high
2	Lime Dust Hopper	BOF	Steel	1	Rectangle	7'6" x 8' x 20'	Pyramid	7'6" x 8' x 6'6"
3	Desulfurization (D/S) Hopper*	BOF	Steel	6	Rectangle	11'6" x 11'6" x 17'6"	Pyramid	11'6" x 11'6" x 9'
4	Coarse Dust Hopper	BOF	Steel	1	-	-	Pyramid	8'9" x 8'9" x 8' high
5	Fine Dust Hopper	BOF	Steel	1	-	-	Pyramid	26'6" x 34' x 25' high
5	EAF Baghouse*	EAF	Steel	14	Rectangle	34' x 19'3" x 25'	Pyramid	25' x 19'3" x 16'
6	EAF Shop Hopper (Silo)	EAF	Steel	1	Cylinder	18' high x 12' diameter	Cone	12'diameter x 8'
7	LRF 1 & Vac. Degasser Baghouse*	CC	Steel	6	Rectangle	10' x 3'6" x 25' high	Pyramid	12' x 18' x 12' high
8	LRF 2 Baghouse*	CC	Steel	1	Rectangle	22'-3" x 12' x 24' high	Pyramid	22'-3" x 12' x 12' high
10	Lamella Settler**	CC	Steel	1	Parallelogram	11' wide x 12' high x 16' long	Cone	11' diameter x 11'3"
11	Tandem Mill Sump Oil Tank	CM	NA		Rectangle	21.75' x 17'wide x 8'-10'6"deep		
12	Z-47 Waste Oil Tank (ASTs)	CM	Steel	2	Rectangle	7' long x 4'6"wide x 3'8" high	--	--
13	Hi-Lo Waste Oil Tank (AST)	HLMS	Steel	1	Cylinder	32' long x 10'6" diameter	--	--
14	Tar Tank (AST)	CP	Steel	1	Cylinder	22' high x 90' diameter	--	--
15	Tar Tank (AST)	CP	Steel	1	Cylinder	34' high x 50' diameter	--	--
16	Tar Tank (AST)	CP	Steel	1	Cylinder	34' high x 50' diameter	--	--
17	Light Oil Tank #1 (AST)	CP	Steel	1	Cylinder	30' high x 41'-3" diameter	--	--
18	Light Oil Tank #2 (AST)	CP	Steel	1	Cylinder	32' high x 35' diameter	--	--

NOTES

* = Baghouse and Hopper
** = with hopper
BOF = Basic Oxygen Furnace area
CC = Continuous Caster area
CM = Cold Mill area
CP = Coke Plant area
EAF = Electric Arc Furnace area
HLMS = HiLo Maintenance area

ATTACHMENT D

Analytical Data for Ore, Coke, Blast Furnace Flue Dust, and Scale

12610 Newburgh Road
Livonia, Michigan 48150
(734)591-1855, Fax (734)591-3331

Martin Environmental Inc.
"The Peak of Quality"

ANALYTICAL REPORT

February 25, 2000

MEI Report Number: 6729
MEI Sample Number: 21134

Dearborn, MI 48121

Date Submitted: 02/17/00
Purchase Order: n/a

Sample Description: Tilden Ore

Collection Date: 02/15/00

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
10 MDNR METALS by SPLP						
Arsenic	ND	ppm	0.100	7060	02/25/00	SAM
Barium	ND	ppm	20.0	7080	02/25/00	SAM
Cadmium	ND	ppm	0.100	7130	02/25/00	SAM
Chromium	ND	ppm	2.00	7190	02/25/00	SAM
Copper	ND	ppm	2.50	7210	02/25/00	SAM
Lead	ND	ppm	1.00	7420	02/25/00	SAM
Mercury	ND	ppm	0.050	7470	02/25/00	SAM
Selenium	ND	ppm	0.500	7740	02/25/00	SAM
Silver	ND	ppm	0.500	7760	02/25/00	SAM
Zinc	ND	ppm	2.00	7950	02/25/00	SAM

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Martin Environmental Inc.
The Peak of Quality

ANALYTICAL REPORT

February 25, 2000

MEI Report Number: 6729
MEI Sample Number: 21134A

Dearborn, MI 48121

Date Submitted: 02/17/00
Purchase Order: n/a

Sample Description: Wabash (Walbash Ore)

Collection Date: 02/15/00

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
10 MDNR METALS by SPLP						
Arsenic	ND	ppm	0.100	7060	02/25/00	SAM
Barium	ND	ppm	20.0	7080	02/25/00	SAM
Cadmium	ND	ppm	0.100	7130	02/25/00	SAM
Chromium	ND	ppm	2.00	7190	02/25/00	SAM
Copper	ND	ppm	2.50	7210	02/25/00	SAM
Lead	ND	ppm	1.00	7420	02/25/00	SAM
Mercury	ND	ppm	0.050	7470	02/25/00	SAM
Selenium	ND	ppm	0.500	7740	02/25/00	SAM
Silver	ND	ppm	0.500	7760	02/25/00	SAM
Zinc	ND	ppm	2.00	7950	02/25/00	SAM

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Martin Environmental Inc.
"The Peak of Quality"

ANALYTICAL REPORT

February 25, 2000

MEI Report Number: 6729
MEI Sample Number: 21135

Dearborn, MI 48121

Date Submitted: 02/17/00
Purchase Order: n/a

Sample Description: Coke

Collection Date: 02/15/00

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
10 MDNR METALS by SPLP						
Arsenic	ND	ppm	0.100	7060	02/20/00	SAM
Barium	ND	ppm	20.0	7080	02/20/00	SAM
Cadmium	ND	ppm	0.100	7130	02/20/00	SAM
Chromium	ND	ppm	2.00	7190	02/20/00	SAM
Copper	ND	ppm	2.50	7210	02/20/00	SAM
Lead	ND	ppm	1.00	7420	02/20/00	SAM
Mercury	ND	ppm	0.050	7470	02/20/00	SAM
Selenium	ND	ppm	0.500	7740	02/20/00	SAM
Silver	ND	ppm	0.500	7760	02/20/00	SAM
Zinc	ND	ppm	2.00	7950	02/20/00	SAM

Martin Environmental Inc.
"The Peak of Quality"

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ANALYTICAL REPORT

November 30, 1999

Rouge Steel
3001 Miller Rd.
Dearborn, MI 48121

MEI Report Number: 6415
MEI Sample Number: 19977

Project Name: n/a
Project Number: n/a

Date Submitted: 11/17/99
Purchase Order: n/a

Sample Description: Blast Furnace Dust
Collection Date: 11/17/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
10 [illegible]NR METALS by TCLP						
Ars[illegible]ic	ND	ppm	0.100	7060	11/23/99	ADC
Barium	ND	ppm	20.00	7080	11/23/99	ADC
Cadmium	ND	ppm	0.100	7130	11/23/99	ADC
Chromium	ND	ppm	1.00	7190	11/23/99	ADC
Copper	ND	ppm	2.50	7210	11/23/99	ADC
Lead	ND	ppm	1.00	7420	11/23/99	ADC
Mercury	ND	ppm	0.200	7470	11/23/99	ADC
Selenium	ND	ppm	0.500	7740	11/23/99	ADC
Silver	ND	ppm	0.500	7760	11/23/99	ADC
Zinc	4.4	ppm	2.00	7950	11/23/99	ADC
RCRA CHARACTERISTICS ANALYSIS						
Ignitibility	>140	Deg. F	n/a	1010	11/29/99	DTM
Corrositivity pH Units	10.2	S. U.	n/a	9045	11/22/99	DTM
As Cyanide	ND	mg/L	5.0	9010	11/29/99	DTM
As Sulfide	ND	mg/L	5.0	9030	11/29/99	DTM
TCLP SEMI - VOLATILES FRACTION						
Hexachlorobenzene	ND	mg/L	0.10	8270	11/29/99	JDM
2,4-Dinitrotoluene	ND	mg/L	0.10	8270	11/29/99	JDM
Hexachlorobutadiene	ND	mg/L	0.10	8270	11/29/99	JDM
Nitrobenzene	ND	mg/L	0.10	8270	11/29/99	JDM
2,4,6-Trichlorophenol	ND	mg/L	0.10	8270	11/29/99	JDM
Hexachloroethane	ND	mg/L	0.10	8270	11/29/99	JDM
Pyridine	ND	mg/L	0.10	8270	11/29/99	JDM
Pentachlorophenol	ND	mg/L	0.10	8270	11/29/99	JDM
o-Cresol	ND	mg/L	0.10	8270	11/29/99	JDM
m-[illegible] sol	ND	mg/L	0.10	8270	11/29/99	JDM
p-[illegible]sol	ND	mg/L	0.10	8270	11/29/99	JDM
2,4,5-Trichlorophenol	ND	mg/L	0.10	8270	11/29/99	JDM

Martin Environmental Inc.
"The Peak of Quality"

12610 Newburgh Road
Livonia, Michigan 48150
(734)591-1855, Fax (734)591-3331

ANALYTICAL REPORT

November 30, 1999

Rouge Steel
3001 Miller Rd.
Dearborn, MI 48121

MEI Report Number: 6415
MEI Sample Number: 19977

Project Name: n/a
Project Number: n/a

Date Submitted: 11/17/99
Purchase Order: n/a

Sample Description: Blast Furnace Dust
Collection Date: 11/17/99

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
1 ? VOLATILE FRACTION						
Vinyl chloride	ND	mg/L	0.025	8240	11/29/99	JDM
Benzene	ND	mg/L	0.025	8240	11/29/99	JDM
Carbon tetrachloride	ND	mg/L	0.025	8240	11/29/99	JDM
1,2-Dichloroethane	ND	mg/L	0.025	8240	11/29/99	JDM
Trichloroethylene	ND	mg/L	0.025	8240	11/29/99	JDM
1,1-Dichloroethylene	ND	mg/L	0.025	8240	11/29/99	JDM
Tetrachloroethylene	ND	mg/L	0.025	8240	11/29/99	JDM
Chloroform	ND	mg/L	0.025	8240	11/29/99	JDM
1,4-Dichlorobenzene	ND	mg/L	0.025	8240	11/29/99	JDM
Chlorobenzene	ND	mg/L	0.025	8240	11/29/99	JDM
Methyl ethyl ketone	ND	mg/L	0.025	8240	11/29/99	JDM
TCLP Pesticides						
Chlordane	ND	ppm	0.040	8080	11/29/99	LMC
Endrin	ND	ppm	0.004	8080	11/29/99	LMC
Heptachlor	ND	ppm	0.004	8080	11/29/99	LMC
Heptachlor epoxide	ND	ppm	0.004	8080	11/29/99	LMC
Lindane	ND	ppm	0.004	8080	11/29/99	LMC
Methoxychlor	ND	ppm	0.004	8080	11/29/99	LMC
Toxaphene	ND	ppm	0.040	8080	11/29/99	LMC
TCLP Herbicides						
2,4-D	ND	ppm	0.05	8150	11/29/99	DWS
2,4,5-TP	ND	ppm	0.05	8150	11/29/99	DWS

Reviewed By: _____

12610 Newburgh Road
Livonia, Michigan 48150
(734)591-1855, Fax (734)591-3331

Martin Environmental Inc.
The Peak of Quality

ANALYTICAL REPORT

February 25, 2000

MEI Report Number: 6729
MEI Sample Number: 21132

Dearborn, MI 48121

Date Submitted: 02/17/00
Purchase Order: n/a

Sample Description: North Hot Strip Mill Scale

Collection Date: 02/15/00

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
10 MDNR METALS by TCLP						
Arsenic	ND	ppm	0.100	7060	02/20/00	SAM
Barium	ND	ppm	20.0	7080	02/20/00	SAM
Cadmium	ND	ppm	0.100	7130	02/20/00	SAM
Chromium	ND	ppm	2.00	7190	02/20/00	SAM
Copper	ND	ppm	2.50	7210	02/20/00	SAM
Lead	ND	ppm	1.00	7420	02/20/00	SAM
Mercury	ND	ppm	0.050	7470	02/20/00	SAM
Selenium	ND	ppm	0.500	7740	02/20/00	SAM
Silver	ND	ppm	0.500	7760	02/20/00	SAM
Zinc	ND	ppm	2.00	7950	02/20/00	SAM
10 MDNR METALS by SPLP						
Arsenic	ND	ppm	0.100	7060	02/20/00	SAM
Barium	ND	ppm	20.0	7080	02/20/00	SAM
Cadmium	ND	ppm	0.100	7130	02/20/00	SAM
Chromium	ND	ppm	2.00	7190	02/20/00	SAM
Copper	ND	ppm	2.50	7210	02/20/00	SAM
Lead	ND	ppm	1.00	7420	02/20/00	SAM
Mercury	ND	ppm	0.050	7470	02/20/00	SAM
Selenium	ND	ppm	0.500	7740	02/20/00	SAM
Silver	ND	ppm	0.500	7760	02/20/00	SAM
Zinc	ND	ppm	2.00	7950	02/20/00	SAM
RCRA CHARACTERISTICS ANALYSIS						
Ignitibility	ND	Deg. F	140° F	1010	02/23/00	JDM
Corrositivity pH Units	9.8	S. U.	n/a	9040B	02/17/00	DTM
Reactivity As Cyanide	ND	mg/kg	5.0	9010	02/17/00	DTM
Reactivity As Sulfide	ND	mg/kg	5.0	9030	02/17/00	DTM
TCLP SEMI - VOLATILES FRACTION						
Hexachlorobenzene	ND	mg/L	0.10	8270	02/21/00	JDM
2,4-Dinitrotoluene	ND	mg/L	0.10	8270	02/21/00	JDM
Hexachlorobutadiene	ND	mg/L	0.10	8270	02/21/00	JDM
Nitrobenzene	ND	mg/L	0.10	8270	02/21/00	JDM

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Martin Environmental Inc.
"The Peak of Quality"

ANALYTICAL REPORT

February 25, 2000

MEI Report Number: 6729
MEI Sample Number: 21132

Dearborn, MI 48121

Date Submitted: 02/17/00
Purchase Order: n/a
Sample Description: North Hot Strip Mill Scale
Collection Date: 02/15/00

Parameters	Results	Units	MDL	Method	Analysis Date	Analyst
2,4,6-Trichlorophenol	ND	mg/L	0.10	8270	02/21/00	JDM
Hexachloroethane	ND	mg/L	0.10	8270	02/21/00	JDM
Pyridine	ND	mg/L	0.10	8270	02/21/00	JDM
Pentachlorophenol	ND	mg/L	0.10	8270	02/21/00	JDM
o-Cresol	ND	mg/L	0.10	8270	02/21/00	JDM
m-Cresol	ND	mg/L	0.10	8270	02/21/00	JDM
p-Cresol	ND	mg/L	0.10	8270	02/21/00	JDM
2,4,5-Trichlorophenol	ND	mg/L	0.10	8270	02/21/00	JDM
TCLP VOLATILE FRACTION						
Vinyl chloride	ND	mg/L	0.025	8240	02/21/00	JDM
Benzene	ND	mg/L	0.025	8240	02/21/00	JDM
Carbon tetrachloride	ND	mg/L	0.025	8240	02/21/00	JDM
1,2-Dichloroethane	ND	mg/L	0.025	8240	02/21/00	JDM
Trichloroethylene	ND	mg/L	0.025	8240	02/21/00	JDM
1,1-Dichloroethylene	ND	mg/L	0.025	8240	02/21/00	JDM
Tetrachloroethylene	ND	mg/L	0.025	8240	02/21/00	JDM
Chloroform	ND	mg/L	0.025	8240	02/21/00	JDM
1,4-Dichlorobenzene	ND	mg/L	0.025	8240	02/21/00	JDM
Chlorobenzene	ND	mg/L	0.025	8240	02/21/00	JDM
Methyl ethyl ketone	ND	mg/L	0.025	8240	02/21/00	JDM

Reviewed By: _____

ATTACHMENT E

Slab Mill Scale Data (Hot Strip Mill Brick ScaleAnalysis)

CLIMAX RESEARCH SERVICES
39205 COUNTRY CLUB DRIVE ■ FARMINGTON HILLS, MI 48331
(810) 489-0720 ■ FACSIMILE (810) 489-8997

REPORT NUMBER: M17285A

Report To	Bill To	
ATTN: A R (DICK) SCHAEDEL ROUGE STEEL COMPANY 3001 MILLER ROAD PO BOX 1699 DEARBORN, MI 48121-1699	ATTN: ACCOUNTS PAYABLE ROUGE STEEL COMPANY CONTROLLER'S OFFICE-4501 PO BOX 1639 DEARBORN, MI 48121-1639	Received: 04/15/97 Started: 04/16/97 Completed: 04/23/97 Invoiced: 04/23/97 Terms: NET 30 Sales Rep: BDP

 P.O. Number: 96-509357

- DETERMINATION OF MOISTURE, OIL, AND PERFORMANCE OF SIEVE ANALYSIS AND CHEMICAL ANALYSIS OF SAMPLE NUMBER 97-016A: "HSM [HOT STRIP MILL] BRICK SCALE - 04/07/97"
- BULK DENSITY DETERMINATION ADDED PER TELECON 04/22/97

CRS SAMPLE ID:-1 CUSTOMER ID: 97-016A
DESCRIPTION: ONE (1) SAMPLE - ≈ 1/2" x DOWN
DATE: 04/07/97
SUBMITTED AS: UNIDENTIFIED HSM [HOT STRIP MILL] BRICK SCALE

METHOD	DESCRIPTION
214M	ASTM B214-92 - STANDARD TEST METHOD FOR SIEVE ANALYSIS OF GRANULAR METAL POWDERS --- MODIFIED
AD1	AAS (ATOMIC ABSORPTION SPECTROPHOTOMETRY) AFTER REMOVAL OF MOISTURE AND OIL FROM SAMPLE SUBMITTED
AFD1	AAS (ATOMIC ABSORPTION SPECTROPHOTOMETRY) AFTER FUSION AFTER REMOVAL OF MOISTURE AND OIL FROM SAMPLE SUBMITTED
CUST	TESTING PERFORMED PER INSTRUCTIONS FROM CUSTOMER
G	GRAVIMETRIC
GD1	GRAVIMETRIC AFTER REMOVAL OF MOISTURE AND OIL FROM SAMPLE
GD2	GRAVIMETRIC AFTER REMOVAL OF MOISTURE FROM SAMPLE SUBMITTED
GFD1	GRAVIMETRIC AFTER FUSION AFTER REMOVAL OF MOISTURE AND OIL FROM SAMPLE SUBMITTED
ID1	ICAPES (INDUCTIVELY COUPLED ARGON PLASMA EMISSION SPECTROMETRY) AFTER REMOVAL OF MOISTURE AND OIL FROM SAMPLE SUBMITTED
LD1	COMBUSTOMETRIC AFTER REMOVAL OF MOISTURE AND OIL FROM SAMPLE SUBMITTED
XG	EXTRACTION GRAVIMETRIC

WORK REQUESTED:
1) PERFORM MOISTURE DETERMINATION ON SAMPLE SUBMITTED;
2) PERFORM OIL EXTRACTION ON DRIED SAMPLE PREPARED;
3) DIVIDE DRY, OIL-FREE SAMPLE PREPARED INTO TWO (2) PARTS:
   A) ON ONE (1) PART PERFORM C, S, P, Si, Mn, Cr, Ni, Mo, Al, Cu, Pb, Mg, TOTAL Fe, METALLIC Fe, Zn, Ca, Cl, K, AND Na DETERMINATIONS; AND
   B) ON REMAINING PART PERFORM "SIEVE ANALYSIS" (ASTM E11/US STANDARD SERIES MESH DESIGNATIONS/MESH DESIGNATION
3) PERFORM BULK DENSITY DETERMINATION ON DRIED SAMPLE PER TELECON REQUEST 04/22/97

---AS-RECEIVED BASIS

TEST	SAMPLE "1"	METHOD
Moisture	2.0 %	G

---DRIED BASIS

TEST	SAMPLE "1"	METHOD
Oil	0.14 %	XG

Continued on Next Page

CLIMAX RESEARCH SERVICES is Accredited by the American Association for Laboratory Accreditation in the Chemical and Mechanical fields of Testing as listed in the current A2LA Directory of Accredited Laboratories.

Thank You by George T. Eldis
Dr. G. T. Eldis, Laboratory Manager

CLIMAX RESEARCH SERVICES
39205 COUNTRY CLUB DRIVE ■ FARMINGTON HILLS, MI 48331
(810) 489-0720 ■ FACSIMILE (810) 489-8997

REPORT NUMBER: M17285A

REPORT TO:
ATTN: A R (DICK) SCHAEDEL
ROUGE STEEL COMPANY
3001 MILLER ROAD
PO BOX 1699
DEARBORN, MI 48121-1699

BILL TO:
ATTN: ACCOUNTS PAYABLE
ROUGE STEEL COMPANY
CONTROLLER'S OFFICE-4501
PO BOX 1639
DEARBORN, MI 48121-1639

Received: 04/15/9
Started: 04/16/9
Completed: 04/23/9
Invoiced: 04/23/9
Terms: NET 30
Sales Rep: BDP

P.O. Number: 96-509357

---SIEVE ANALYSIS (DRY, OIL-FREE BASIS)

NOTES: 1) COLUMN BELOW LABELED "MESH" REPRESENTS THE ASTM E11 MESH DESIGNATION OF THE SCREENS USED IN TESTING; AND
2) COLUMN BELOW LABELED "RESULT" LISTS THE RESULTS OBTAINED FOR EACH FRACTION LISTED AT THE BEGINNING OF THE LINE IN PERCENT BY WEIGHT

Sieve Analysis, Sample "1", Method - 214M:

Mesh		%	Mesh		%
	+3/8	8.5	-40	+80	7.1
-3/8	+1/4	11.6	-80	+100	0.9
-1/4	+4	13.9	-100	+140	0.9
-4	+8	26.9	-140	+200	0.6
-8	+20	21.1	-200	+325	0.4
-20	+40	7.7	-325		0.4

- THE RO-TAP SIEVE SHAKER MODEL B AND SIEVES USED IN THIS TEST DO NOT ALLOW THE TEST TO BE COMPLETED IN ONE STEP DUE TO THE HEIGHT OF THE SIEVE STACK
- THE TEST WAS COMPLETED IN TWO STEPS:
  - THE FIRST STEP USED SIEVES 3/8" THOUGH 40 MESH;
  - IN THE SECOND STEP THE -40 MESH MATERIAL OBTAINED FROM THE FIRST STEP WAS TESTED USING THE 80 THROUGH 325 MESH SIEVES

---CHEMICAL DETERMINATIONS (DRY, OIL-FREE BASIS)

TEST	SAMPLE "1"	METHOD
C	0.03 %	LD1
S	0.006 %	LD1
P	0.009 %	ID1
Si	0.05 %	GFD1
Mn	0.28 %	ID1
Cr	0.02 %	ID1
Ni	<0.01 %	ID1
Mo	<0.01 %	ID1
Al	0.07 %	AFD1
Cu	0.01 %	ID1
Pb	<0.01 %	ID1
Mg	<0.01 %	AD1
Zn	<0.01 %	ID1
Na	<0.01 %	AD1
K	<0.01 %	AD1
Ca	0.06 %	ID1
Cl	<0.01 %	GD1
Fe (Total)	75.0 %	CUST
Fe (Metallic)	<0.5 %	CUST
Recovery (%)	<0.5 %	CUST

---BULK DENSITY DETERMINATION (DRIED BASIS)

Comments, Sample "1", Method - GD2 :
The Bulk Density on the dried sample is 189. lbs./ft3

CLIMAX RESEARCH SERVICES is Accredited by the American Association for Laboratory Accreditation in the Chemical and Mechanical fields of Testing as listed in the current A2LA Directory of Accredited Laboratories.

A2LA ACCREDITED

Thank You by George T. Eldis

Dr. G. T. Eldis, Laboratory Manager

ATTACHMENT F

August 15, 1991 Followup Report for 1991 Acid Incident

ROUGE STEEL COMPANY

3001 Miller Road
P. O. Box 1699
Dearborn, Michigan 48121-1699

August 15, 1991

Mr. R. E. Schrameck, Supervisor
SWQD Michigan DNR
38980 7 Mile Rd.
Livonia, Michigan 48152

Subject: Hydrochloric Acid Release
NPDES Permit No. MI0043524, Outfall 001A

Dear Mr. Schrameck:

In accordance with our letter dated July 26, 1991, on the subject release, we are submitting for your review the following documents:

The revised operating procedure at the Schaefer Road Waste Water Treatment Plant. Implemented August 1, 1991. See Attachment A.

The revised spill response notification procedures. See Attachment B.

The preliminary plan for containment at the pickle lines. See Attachment C.

Upon completion of your review we request that a meeting be set up, at your convenience, to discuss your comments on the attached preliminary plan for containment.

If you should have any questions or require additional information regarding the above please contact me at (313) 845-3217 or the Environmental Engineering Department at (313) 323-1260.

Very truly yours,

L. N. Keeney, Manager
Engineering Department

attachments

cc: P. Zugger

ATTACHMENT A

MANAGEMENT & ENVIRONMENTAL
REPORTING PROCEDURES FOR SRWWTP OIL RECLAIM TECHNICIANS

Procedure I:

In the event that an equipment failure in the process at the SRWWTP is causing or may cause a potential problem such that the effluent quality at Outfall 001A could be detrimentally affected, the SRWWTP Oil Reclaim Technician shall notify:

1. His/her management personnel.

	Work	Residence	Beeper
E. Sikina -	32673	1 (313) 229-9845	
T. Barstow-	32673	676-4643	829-1922
E. Jordan -	32673	933-5048	829-1936

2. Environmental Engineering

Rouge Office Bldg. No. - 31260

Beeper No. - 599-1806

3. Then make every effort to correct or compensate for the failure in the process including, if needed, contacting the maintenance department at the Slab Mill, Hot Strip Mill, Sub-4, or J-9 Shops---whichever applies to the situation.

Procedure II:

In the event that the quality of the influent to the SRWWTP is considerably changed or different from normal, such as "yellow", "red", or other discoloration of the water, or excessive oil, the SRWWTP Oil Reclaim Technician shall notify the source of the influent:

1. Pickle line

Operations	- 55784 or 59299
Maintenance	- 54527
W. Winland, Mgr.	- 25040

2. Hot Strip Mill

Operations	- 41736 or 41737
Maintenance	- 41290 or 47818 (mechanical)
	- 51661 of 41291 (electrical)

3. Slab Mill

Operations	- 32673 or 31907
Maintenance	- 38557

When contact is made with the source, be certain to record the full name of the individual contacted, the time of contact, and the reason for the contact in the Daily Log Journal.

If the initial condition seemingly gets worse during a 3-hour period, or has not improved after three hours, then contact the source again.

In either case, after the second contact has been made, contact the following and inform them of the situation:

1. His\her management personnel

	Work	Residence	Beeper
E. Sikina -	32673	1 (313) 229-9845	
T. Barstow-	32673	676-4643	829-1922
E. Jordan -	32673	933-5048	829-1936

2. Environmental Engineering

Rouge Office Bldg. No. - 31260
Beeper No. - 599-1806

J. Bozick
L. Potvin
G. Waggoner

Note:

In all cases, if you cannot reasonably identify the source, i.e., excessive oil (Hot Strip Mill), or yellow/red water (Pickle Line)....., then contact Environmental Engineering immediately.

Also, if you have any doubts in your mind in regard to making a call to Environmental Engineering, then make the call and let them make an evaluation. What might be insignificant to you may be very significant to them in dealing with other departments and outside agencies. In addition, anytime you contact Rouge Steel Environmental Engineering be sure to contact someone from your management personnel.

T. R. Barstow
General Supervisor
Slab Mill/SRWWTP

Rev. July 25, 1991

ATTACHMENT B

SECTION III: SPILL NOTIFICATION PROCEDURES

Rouge Steel Personnel

Plant personnel are instructed to immediately contact the Environmental Engineering Department Representative (EER) in the event of a spill incident. The Environmental Engineering Department maintains an EER on call 24 hours per day, 365 days per year.

During normal work hours the EER can be reached at:

Environmental Engineering Department
Rouge Steel Company
3001 Miller Road
Dearborn, Michigan 48121
(313) 323-1260

After normal work hours the EER can be reached using a radio pager system with the following procedure:

- On a push button phone call (313) 599-1806.
- After the ringing stops, listen for a tone.
- After the tone stops, enter the telephone number of the caller (all seven digits), or where the caller can be reached.
- Push the pound sign (#).
- Hang up, then wait for the EER to call back on the number entered above.
- If access to a push button phone is not available, call Plant Security at (313) 322-3211 or (313) 322-7690 and ask them to page the EER, then wait for a return call. Be sure to give plant Security the phone number of the caller.

The EER has been assigned the responsibility of coordinating responses to environmental incidents such as chemical spills. As part of his duties he will make all notification to the required outside agencies.

Outside Agencies

In the event of an incident which presents a serious hazard to property or public health and safety, the EER will notify the following municipal agencies, as appropriate:

Dearborn Fire Department
Telephone: 943-2218
Dearborn Police Department
Telephone: 943-2240

Minor medical problems would be handled by the on-site facility:

Rouge Medical Facility
Telephone: 323-0045

In the event of a significant incident involving personal injury, the emergency facilities of Oakwood Hospital would be used:

Oakwood Hospital
18101 Oakwood, near Southfield
Dearborn, MI 48124
Emergency Department: 593-7440

Other than the above mentioned notifications to the local public safety agencies, it is the responsibility of the EER to notify the appropriate governmental agencies. The information to be reported includes, but is not limited to the following:

a. The reporting individuals name, and telephone Number where he can be reached.
b. Location and type of spill.
c. Amount and types of materials involved.
d. Hazard to the environment.

The various agencies which would be notified, as appropriate, include the following:

Primary Contacts

1. U. S. Coast Guard - EPA
National Response Center
Washington, D.C.
(800) 424-8802

2. State of Michigan
Department of Natural Resources
Pollution Emergency Alert System (PEAS)
(800) 292-4706

Alternate Contacts

1. U.S. Coast Guard
   Captain of the Port - Detroit
   Marine Safety Office
   McNamara Office Building
   Detroit, MI 48226
   (313) 226-7777

2. U.S. Environmental Protection Agency, Region V
   Michigan-Ohio District Office
   9311 Groh Road
   Grosse Ile, MI 48138
   (313) 676-6500

3. Michigan Department of Natural Resources
   Detroit Area District
   38980 7 Mile Road
   Livonia MI 48152
   (313) 953-0241

In the event that undesirable materials have been, or are likely to be, discharged into a publicly owned treatment works (POTW), the following agencies are also to be notified:

Detroit Water and Sewage Department
224-4775
or 833-4077

Dearborn Water Department
943-2306

Per H.K we are adding a list of materials with fed. R.Q's & State RQs.

ATTACHMENT C

August 15, 1991

PRELIMINARY PLAN FOR
PICKLE LINE CONTAINMENT

Design Criteria:
- maximum tank section capacity (#4 PL) = 22,400 gallons
- 150% containment capacity requirement > 36,000 gal

Convert the existing pit at column 44 (South Neutralizing Tank Pit) to serve as containment sump.

- removal of existing sump tank will provide a total sump capacity of approximately 44,800 gallons.
- existing floor trench under #1 and #3 Pickle Lines currently drain to this sump. The floor slope and trench flow capacity will be evaluated to assure compliance with containment regulations.
- #4 Pickle Line floor, along with the floor and walls of the sump, may need additional preparation to comply with all containment regulations.
- existing floor drains under #4 Pickle Line would need to be plugged or the drain openings raised above the highest liquid level of the spill.
- a new trench would need to be cut from the low point of #4 Pickle Line floor to the S. Neut. pit sump to allow for above-ground flow of any spillage to this sump.
- #1PL, #3PL, and #4PL floor drainage, all scrubber discharge, and #1PL and #3PL Rinse Tank discharge will flow into this sump. A drain pipe, sized to handle the additional flow requirements, will be installed at an elevation in the sump which will provide an operating capacity of 22,400 gallons, half of the sump's 44,800 gallon capacity.
- installed in this pipe will be an automatic valve which will remain open during normal operation, allowing gravity overflow of neutralized discharge material into the sewer, as long as a detection system shows acceptable discharge material in the sump. Upon sensing unacceptable material, the detector will close the automatic drain line valve, alarm, and alert operators to take appropriate action.
- Sump pumps, controlled by level sensors, will activate to prohibit sump overflow when this drain valve is closed, pumping the unacceptable material to the existing 25,000 gallon holding tank (Waste Pickle Liquor Tank) located at Column 36 to be subsequently pumped to the tank farm for disposal.
- an acid-resistant slotted plate could be placed over the pit and an exhaust duct run from the existing fume collection system to evacuate fumes generated by any standing acid, minimizing fume egress to other areas.

August 15, 1991

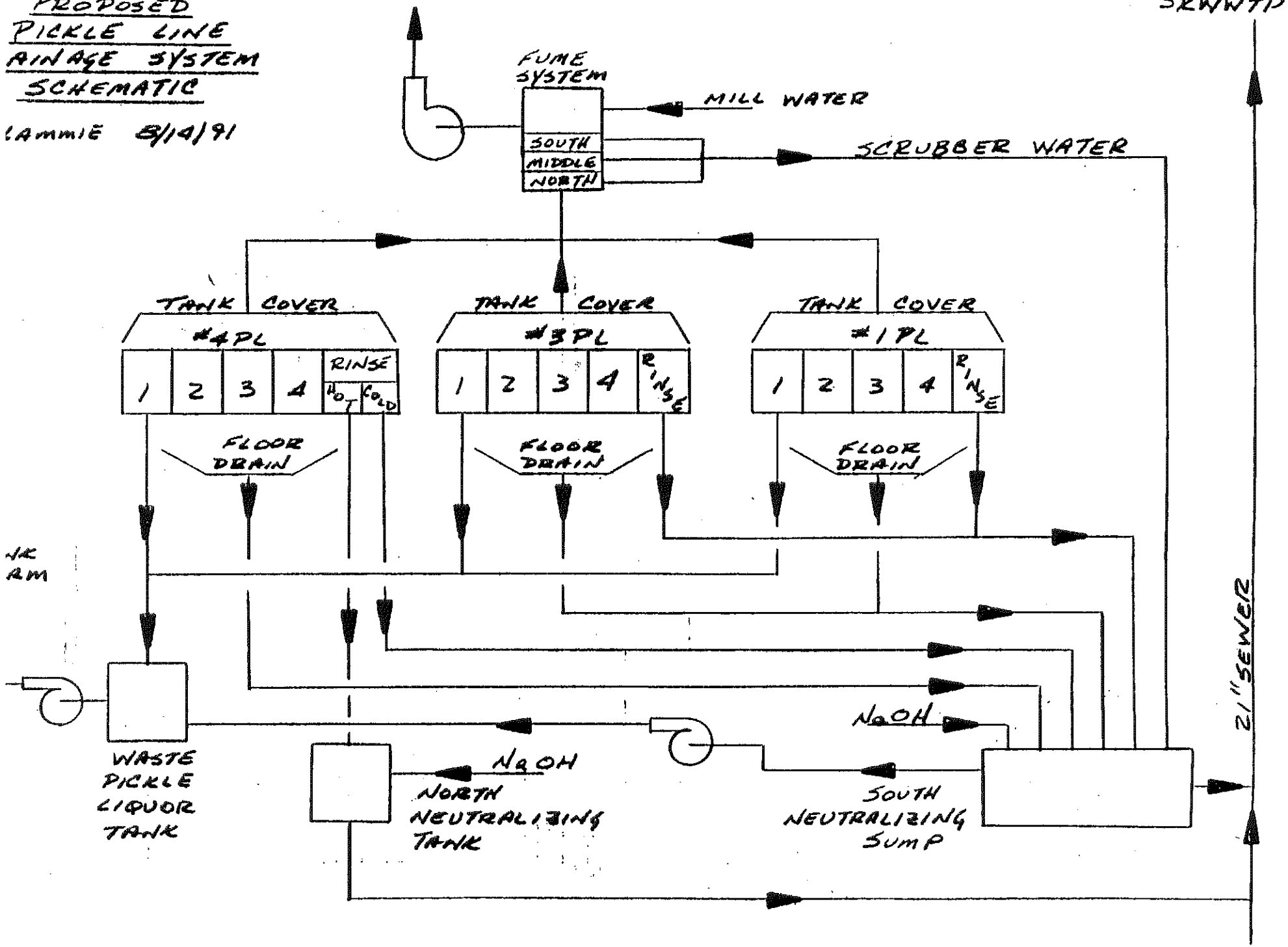
CAPACITY DATA SHEET
FOR PICKLE LINE TANKS

	Capacity
#1 Pickle Line	
Acid Tank Section #1	12,490 gallons
Acid Tank Section #2	12,490 gallons
Acid Tank Section #3	12,490 gallons
Acid Tank Section #4	12,490 gallons
Cold Water Rinse Tank	2,250 gallons
Hot Water Rinse Tank	5,610 gallons
#3 Pickle Line	
Acid Tank Section #1	12,490 gallons
Acid Tank Section #2	12,490 gallons
Acid Tank Section #3	12,490 gallons
Acid Tank Section #4	12,490 gallons
Cold Water Rinse Tank	2,250 gallons
Hot Water Rinse Tank	5,610 gallons
#4 Pickle Line	
Acid Tank Section #1	22,400 gallons
Acid Tank Section #2	22,400 gallons
Acid Tank Section #3	22,400 gallons
Acid Tank Section #4	22,400 gallons
Cold Water Rinse Tank	3,200 gallons
Hot Water Rinse Tank	5,910 gallons

PRELIMINARY

PROPOSED
PICKLE LINE
AINAGE SYSTEM
SCHEMATIC

LAMMIE 8/14/91



ATTACHMENT G

Closure Report for 12B Underground Storage Tank

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

RUSSELL J. HARDING, Director

REPLY TO:

UNDERGROUND STORAGE TANK DIVISION
SE MICHIGAN DISTRICT OFFICE
38980 SEVEN MILE ROAD
LIVONIA, MI 48152

February 26, 1996

Received
2/28/96

Mr. Jim Earl
Rouge Steel Company
3001 Miller Road
Dearborn, MI 48121

Dear Mr. Earl:

SUBJECT: Closure Report Date: January 19, 1996
Confirmed Release Date(s): October 21, 1995
Confirmed Release #: C-1145-95
Location of Tank(s): Rouge Steel Complex
3001 Miller Road, Power Substation 12 B, Dearborn, Wayne County
Facility ID #: 17232

In accordance with Section 21312a(2) of Part 213 Leaking Underground Storage Tanks (LUST) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, (Act 451) the Underground Storage Tank Division (USTD) of the Department of Environmental Quality (DEQ) acknowledges receipt of your closure report. This closure report was submitted on your behalf for the above referenced site by ABB Environmental Services, Qualified Underground Storage Tank Consultant (QC), in accordance with Section 21312a(1) of Part 213.

The closure report submitted by the QC concludes that corrective action at the site has resulted in unrestricted residential use of the site based on a Tier I evaluation..

Please note that when contaminated soil and/or groundwater as a result of a release of a regulated substance remains on site consistent with site closure requirements, the owner/operator shall not remove soil and/or groundwater, or allow soil and/or groundwater to be removed from the site to an off-site location without properly characterizing the soils and/or groundwater to determine that the soils and/or groundwater can be lawfully relocated without posing a threat to the public health safety, or welfare, or the environment. The determination shall consider whether the soil and/or groundwater is subject to regulations under Part 111 of Act 451.

Under Section 21315 (1) of Act 451, the USTD may audit the results of the investigation and corrective actions undertaken to confirm the results and conclusions indicated by the QC within six months of receipt of the closure report. If the audit confirms that corrective action has been

conducted in compliance with Part 213 and that the cleanup criteria have been met, you will be provided with a letter describing the audit and its results. If the audit does not confirm that corrective action is complete, additional information and/or corrective action may be required as set forth in Section 21315(3) of Act 451.

If you have any questions regarding this matter please feel free to contact me at the number listed below.

Sincerely,

Jeanne Schlaufman

Jeanne Schlaufman
Environmental Quality Analyst
Underground Storage Tank Division
313-953-1527

cc: Mr. Garret Bondy, ABB Environmental Services
Sedgwick James of Michigan, Inc.
Mr. Mohammad Yusaf, DEQ
Mr. Valerie Burgess-Byrd, DEQ
Mr. Thomas Kohl, DEQ

ABB

January 19, 1996

Ms. Jean Schlaufman
Michigan Department of Environmental Quality
Underground Storage Tank Division
Livonia District Office
38980 Seven Mile Road
Livonia, MI 48152

Subject: Submittal of Leaking Underground Storage Tank Closure Report
Rouge Steel Company, Facility ID #17232, Release #C-1145-95

Dear Ms. Schlaufman:

Enclosed please find the above-referenced closure report. If you have questions or need additional information, please feel free to call me.

Sincerely.

ABB ENVIRONMENTAL SERVICES OF MICHIGAN, INC.

Garret E. Bondy, P.E.
Senior Project Manager

Enclosure

ABB Environmental Services of Michigan, Inc.

39255 Country Club Drive B-25
Farmington Hills, Michigan 48331-3490

Telephone (810) 489-8040
Fax (810) 489-8048

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

DEQ

LEAKING UNDERGROUND STORAGE TANK CLOSURE REPORT

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

FACILITY NAME: Rouge Steel Co.	FACILITY ID NUMBER: 17232
ADDRESS: 3001 Miller Rd. Dearborn, MI COUNTY: Wayne	MERA SITE ID NUMBER: N/A
DATE(S) RELEASE DISCOVERED: 10/21/95	CONFIRMED RELEASE NUMBER(S): C-1145-95
O/O NAME: Rouge Steel Co.	MUSTFA CLAIM NUMBER: n/a
O/O ADDRESS: 3001 Miller Rd. Dearborn, MI 48121	
CONTACT PERSON: Jim Earl	PHONE NUMBER: 313-323-1261

ANSWER ALL QUESTIONS, (DO NOT LEAVE BLANKS):

1. Has the UST been emptied? X Yes ___ No (If no, explain why):
2. Free product present: a. Currently? ___ YES X NO If YES, total gallons recovered since last report:
   b. Previously? ___ YES X NO If YES, total gallons recovered to date:
3. Have vapors been identified in any confined spaces (basement, sewers)? ___ YES X NO
4. State the number of homes where drinking water is or was affected as a result of a release from this facility: 0
5. Estimated distance and direction from point of release to nearest:
   a. Private well: NONE b. Municipal well: NONE c. Surface water/wetland: 1500 feet Rouge River
6. Since last report: a. cubic yards of soil remediated: 0 b. gallons of groundwater remediated: 0
7. Totals to date: a. cubic yards of soil remediated: 0 b. gallons of groundwater remediated: 0
8. Michigan RBCA Site Classification (1-4): 4

CERTIFICATION OF REPORT COMPLETION

, the undersigned CP, hereby attest to the best of my knowledge and belief that the statements in this document and all attachments are true, accurate and complete. I certify that it was submitted to the USTD on January 19, 1996.
(date submitted-Required)

Michael O'Hearn 1-19-96
CP Original Signature - Required Date

Garret Bondy
PRINT QC Project Manager's Name

Michael O'Hearn
PRINT CP's Name

ABB Environmental Services
CONSULTANT

39255 Country Club Dr. B-25
ADDRESS Farmington Hills, MI 48331

810-489-8040
TELEPHONE NO.

810-489-8048
FAX NO.

CERTIFICATION OF CLOSURE

1. Type of RBCA Evaluation: X Tier 1 ___ Tier 2 ___ Tier 3
2. Closure report based on which type of land use?: X Residential ___ Commercial III ___ Commercial IV ___ Industrial
3. Institutional Controls: X None ___ Notice of Corrective Action ___ Restrictive Covenant

I certify under penalty of law that corrective actions associated with the above referenced release at this facility were completed in accordance with Part 213, Act 451, P.A. 1994 as amended, and current departmental guidance and procedures available at this time.

I further certify 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 directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Michael O'Hearn 1-19-96
CP Signature - Required Date

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

EQP 3843 (REV. 10/95)

UNDERGROUND STORAGE TANK DIVISION OFFICES AND LOCATIONS

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

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

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

TABLE OF CONTENTS

SECTION		TITLE	PAGE
		COVER SHEET	
		FACILITY AND OWNER OR OPERATOR INFORMATION	
		SITE QUESTIONS	
		REPORT CERTIFICATION	
		MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - USTD DISTRICT OFFICES AND CONTACTS	2 of 19
		TABLE OF CONTENTS	3 of 19
		LIST OF ATTACHMENTS	4 of 19
1.0		**PROJECT CHRONOLOGY**	5 of 19
2.0		**DE MINIMIS CLASSIFICATION**	5 of 19
3.0		**SUMMARY OF CORRECTIVE ACTION ACTIVITIES PERFORMED**	5 of 19
	3.1	RELEASE REPORTING	5 of 19
	3.2	IMMEDIATE RESPONSE ACTION IMPLEMENTATION	6 of 19
	3.3	FREE PRODUCT DISCOVERY AND REMOVAL	6 of 19
	3.4	SITE ASSESSMENT ACTIVITIES	6 of 19
	3.5	SITE CLASSIFICATION	7 of 19
	3.6	TIERED EVALUATIONS AND CLEANUP GOALS	8 of 19
	3.7	PUBLIC NOTICE	9 of 19
	3.8	NOTICE OF CORRECTIVE ACTION, DECLARATION OF RESTRICTIVE COVENANT, AND OTHER RESTRICTIVE MECHANISMS	10 of 19
	3.9	PERMITS	13 of 19
	3.10	CORRECTIVE ACTIONS	13 of 19
	3.11	PERFORMANCE MONITORING	13 of 19
4.0		**CLOSURE VERIFICATION SAMPLING**	14 of 19
	4.1	VERIFICATION OF SOIL REMEDIATION	14 of 19
	4.2	VERIFICATION OF GROUNDWATER REMEDIATION	16 of 19
	4.3	VERIFICATION OF REMEDIATION FOR OTHER MEDIA	18 of 19

LIST OF ATTACHMENTS

(Include as Required and Check Box if Attached)

Attachments 1 - 6, 9 and 12 are to be submitted if applicable.

Attachments 7,8, 10, 11, 13 and 14 are found in the back of this document and should be completed and submitted when necessary to certify closure.

ATTACHMENT NUMBER		DESCRIPTION
1	☐	Schematic Drawing of the Remedial System
2	☐	Public Notification Document(s)
3	☐	Permission of Property Owner to File a Notice of Corrective Action
4	☐	Permission of Property Owner to File a Notice of Restrictive Covenant
5	☒	Site Map Showing the Extent of the Former Soil Contamination and the Soil Verification Sampling Locations
6	☐	Excavation Drawing Showing Soil Verification Sampling Locations
7	☒	Data Table Showing All Soil Verification Sampling Results (Laboratory)
8	☒	Comparison Table for Soil Verification
9	☒	Site Map Showing the Extent of the Former Groundwater Contamination and the Groundwater Verification Sampling Locations
10	☒	Data Table Showing All Groundwater Verification Sampling Results (Laboratory)
11	☒	Comparison Table for Groundwater Verification
12	☐	Site Map Showing the Extent of the Former Other Media Contamination and the Other MediaVerification Sampling Locations
13	☐	Data Table Showing All Other Media Verification Sampling Results (Laboratory)
14	☐	Comparison Table for Other Media Verification

1.0 PROJECT CHRONOLOGY

A. Date Confirmed Release Discovered:	10 / 21 / 95
B. Date Confirmed Release Report Submitted:	10 / 22 / 95
C. Date Initial Assessment Report Submitted:	NA / /
D. Other Milestone Date *(Specify:* Soil Sampling *):*	12 / 16 / 95
E. Other Milestone Date *(Specify:* Soil and Water Sampling *):*	12 / 27 / 95
F. Date Final Assessment Report Submitted:	NA / /
G. Other Milestone Date *(Specify:* _____ *):*	NA / /
H. Date Closure Report Submitted:	01 / 19 / 96

2.0 DE MINIMIS CLASSIFICATION

A. Was this a *de minimis* spill as defined in Section 324.21302(e)? ☒ Yes ☐ No

NOTE: If "Yes", complete questions "B" and "C" below and only the following remaining sections of this Closure Report: 3.1, 3.2, 3.6, 4.1, and the Cover Sheet Certification.

B. Volume of soil remediated or disposed to date: 0 yds^3

C. Disposal facility name(s) and location(s): NA

3.0 SUMMARY OF CORRECTIVE ACTION ACTIVITIES PERFORMED

Summarize the overall program and the primary components of the corrective action performed at the facility by addressing each project phase identified below ***that was relevant to this site and its remediation. Include a schematic drawing of the remedial system (Attachment No. 1).*** *Attach additional sheets, if necessary.*

3.1 RELEASE REPORTING

A. List the source(s) of the release and the location(s) where contamination was first discovered: Release occurred at manway opening when work crew removed manway cover for inspection. Liquid from inside the tank flowed out of the opening and into the overflow encasement.

3.2 IMMEDIATE RESPONSE ACTION IMPLEMENTATION

A. Date Began: 10 / 21 / 95

B. Date Completed: 10 / 28 / 95

C. List the initial response actions performed (*excluding free product removal*): Release was reported on 10/22/95. Product was removed from the manway encasement before it could enter the surrounding soil. After emptying the tank on 10/28/95, a worker was lowered inside to complete a tank inspection and to plug all tank-related piping. Cover was then replaced and secured.

3.3 FREE PRODUCT DISCOVERY AND REMOVAL

A. Was free product discovered? ☐ Yes ☐ No

If "No", skip to Section 3.4; if "Yes", complete questions "B" through "G"

B. Date Free Product Discovered: ____/____/____
C. Date Free Product Reported to USTD: ____/____/____
D. Date Free Product Removal Began: ____/____/____
E. Date Free Product Removal Completed: ____/____/____
F. Briefly describe the approach used to remove or recover the free product: _____

_____
_____
_____
_____
_____
_____
_____

G. Total Quantity of Free Product Recovered: _____ gallons

3.4 SITE ASSESSMENT ACTIVITIES

A. Date Initial Assessment Began: ____/____/____
B. Date Initial Assessment Completed: ____/____/____
C. Check the environmental media sampled and analyzed during this phase of investigation: (*Check all that apply*)

☐ Soil ☐ Air ☐ Sediments ☐ Other *Specify)*:
☐ Groundwater ☐ Surface Water ☐ Biota _____

D. Briefly describe the sampling and analysis performed during the initial assessment phase for each medium checked above: _____

_____
_____
_____
_____

E. Date Final Assessment Began: ____/____/____
F. Date Final Assessment Completed: ____/____/____
G. Check the environmental media sampled and analyzed during this phase of investigation: (*Check all that apply*)

☐ Soil ☐ Air ☐ Sediments ☐ Other
☐ Groundwater ☐ Surface Water ☐ Biota *(Specify)*: _____

3.4 SITE ASSESSMENT ACTIVITIES (Continued)

H. Briefly describe the additional sampling and analysis performed during the final assessment phase for each medium checked above: _____

_____
_____
_____
_____
_____

I. Briefly describe and explain any differences between the Work Plan submitted with the Initial Assessment Report and the site characterization work performed: _____

_____
_____
_____
_____
_____

3.5 SITE CLASSIFICATION

A. Date of Initial Classification: ____/____/____

B. Initial Classification Level:

☐ Class 1 ☐ Class 2 ☐ Class 3 ☐ Class 4

C. Date of Most Recent Reclassification *(if any)*: ____/____/____

D. Most Recent Reclassification Level:

☐ Class 1 ☐ Class 2 ☐ Class 3 ☐ Class 4

E. Briefly describe the justification for any reclassifications: _____

_____
_____
_____

3.6 TIERED EVALUATIONS AND CLEANUP GOALS

A. What levels of evaluation were performed for this site?
(*Check all that apply*)

☒ Tier I ☐ Tier II ☐ Tier III

B. If a Tier II or Tier III evaluation was performed, describe the most significant alternate assumptions, models, or site-specific information used in place of the default assumptions, models, or model parameters: N/A

_____
_____
_____
_____
_____

3.6 TIERED EVALUATIONS AND CLEANUP GOALS (Continued)

C. What was the ultimate basis for the cleanup goals established for this facility? *(Check only those that apply)*

	ON-SITE			OFF-SITE		
	Soil	Groundwater	Other Media	Soil	Groundwater	Other Media
RESIDENTIAL	☒Tier I ☐Tier II ☐Tier III	☒Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III
COMMERCIAL III	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III
COMMERCIAL IV	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III
INDUSTRIAL	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier I ☐Tier II ☐Tier III	☐Tier II ☐Tier III

NOTE: If the site meets the Tier I criteria without any corrective action and the release was *de minimus*, complete Sections 4.1, 4.2 and the Cover Sheet Certification

3.7 PUBLIC NOTICE

If implementation of the corrective action plan will result in anything other than unrestricted land use or unlimited resource use, notice must be provided to the public directly impacted by the release and the planned corrective action.

A. Will implementation of the corrective action plan result in any restrictions to land use or limitations on resource use?

☐ Yes ☐ No

If "No", skip to Section 3.9; if "Yes", continue with question "B" below.

B. Describe all land use or resource use limitations associated with the implemented corrective action: _____

C. Was USTD guidance used to establish the form and content of the Public Notice ? *(See Attachment No. 20 to the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks".)*

☐ Yes ☐ No

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

3.7 PUBLIC NOTICE (Continued)

E. Attach a copy of the public notification document(s) used to provide the required public notice. *(Include as Attachment No. 2.)*

F. Identify the individuals or segments of the public that were provided notice of the proposed land use restrictions or limitations to be placed on resource use: _____

_____

_____

_____

G. Describe the mechanism(s) by which the directly impacted public was notified: _____

_____

_____

_____

3.8 NOTICE OF CORRECTIVE ACTION, DECLARATION OF RESTRICTIVE COVENANT, AND OTHER RESTRICTIVE MECHANISMS

If the corrective action depends on the use of institutional controls or other land use restrictions, a Notice of Corrective Action (for corrective actions based on Tier I clean-up criteria with institutional controls or land use restrictions) or a Declaration of Restrictive Covenant (for corrective actions based on Tier II or III clean-up criteria with institutional controls or land use restrictions) must be recorded with the Register of Deeds for the County in which the site is located.

A. Does the corrective action depend on the use of institutional controls or other land use or resource use restrictions? ☐ Yes ☐ No

If "No", skip to Section 3.9; if "Yes", continue with question "B" below.

B. Was a Notice of Corrective Action as defined in Section 324.21310a(1) required as part of the corrective action? ☐ Yes ☐ No

If "No", skip to question "P"; if "Yes", continue with question "C" below.

C. Was USTD guidance used to establish the form and content of the notice? *(See Attachment No. 20 to the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks").* ☐ Yes ☐ No

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

_____

_____

_____

_____

_____

3.8 NOTICE OF CORRECTIVE ACTION, DECLARATION OF RESTRICTIVE COVENANT, AND OTHER RESTRICTIVE MECHANISMS (Continued)

E. Date the Notice of Corrective Action was submitted to the USTD for approval: ____/____/____

F. Date of USTD approval of the Notice of Corrective Action: ____/____/____

G. Was the Notice of Corrective Action recorded with the Register of Deeds for the County in which the site is located? ☐ Yes ☐ No

H. If "No", provide an explanation; **then skip to question "P":** _____

If "Yes", provide the following:

I. Date Recorded: ____/____/____

J. County Where Site is Located: _____

K. Register of Deeds Contact Name: _____

L. Register of Deeds Telephone No.: _____

M. Person Filing: _____

N. Is the person filing the property owner? ☐ Yes ☐ No

O. If "No", attach a copy of the written permission for the filing from the property owner. *(Include as Attachment No. 3.)*

P. Was a Restrictive Covenant as defined in Section 324.21310a(2) required as part of the Corrective Action? ☐ Yes ☐ No

If "No", skip to question "II"; if "Yes", continue with question "Q" below.

Q. Was USTD guidance used to establish the form and content of the Declaration of Restrictive Covenant? *(See Attachment No. 20 to the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks".)* ☐ Yes ☐ No

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

S. Date the Declaration of Restrictive Covenant was submitted to the USTD: ____/____/____

T. Date of USTD approval of the Declaration of Restrictive Covenant: ____/____/____

3.8 NOTICE OF CORRECTIVE ACTION, DECLARATION OF RESTRICTIVE COVENANT, AND OTHER RESTRICTIVE MECHANISMS (Continued)

U. Was the Declaration of Restrictive Covenant recorded with the Register of Deeds for the County in which the site is located? ☐ Yes ☐ No

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

_____

_____

_____

_____

If "Yes", provide the following:

W. Date Recorded: ____/____/____

X. County Where Site is Located: _____

Y. Register of Deeds Contact Name: _____

Z. Register of Deeds Telephone Number: _____

AA. Person Filing: _____

BB. Is the person filing the property owner? ☐ Yes ☐ No

CC. If "No", attach a copy of the written permission for the filing from the property owner. *(Include as Attachment No. 4.)*

Does the restrictive covenant include:

DD. Provisions that the restrictions run with the land? ☐ Yes ☐ No

EE. Provisions that restrictions are binding on the owner's successors, assigns, and lessees? ☐ Yes ☐ No

FF. Provisions that restrictions are binding until the USTD determines that the regulated substances no longer present an unacceptable risk? ☐ Yes ☐ No

GG. A survey and description of the property addressed by the corrective action plan? ☐ Yes ☐ No

HH. The scope of any land use or resource use restrictions? ☐ Yes ☐ No

II. Was an alternate mechanism to restrict exposure to regulated substances as defined in Section 324.21310a(3) associated with the Corrective Action? ☐ Yes ☐ No

If "No", skip to Section 3.9; if "Yes", continue with question "JJ" below.

JJ. Describe the alternate restrictive mechanism(s) associated with the corrective action. *(Check all that apply):*

☐ Ordinance prohibiting certain activities to control exposures to regulated substances. *(Specify the prohibited activity):* _____

_____

_____

_____

3.8 NOTICE OF CORRECTIVE ACTION, DECLARATION OF RESTRICTIVE COVENANT, AND OTHER RESTRICTIVE MECHANISMS (Continued)

☐ Other mechanism. *(Describe)*: _____

_____

_____

_____

KK. Date other restrictive mechanism(s) was submitted to USTD for approval: _____/_____/_____

LL. Date of USTD approval of the alternative restrictive mechanism: _____/_____/_____

3.9 PERMITS

A. List all discharge permits required for the corrective action:

Type of Permit	Permit No.	Application Date	Approval Date

3.10 CORRECTIVE ACTIONS

A. Description of activities performed: _____

_____

_____

_____

_____

B. Was the corrective action implemented as outlined in the Corrective Action Plan section of the Final Assessment Report? ☐ Yes ☐ No

C. If "No", summarize the changes and provide justification for why these changes were necessary. *(Attach additional sheets, if necessary)*: _____

_____

_____

_____

_____

3.11 PERFORMANCE MONITORING

A. Date Performance Monitoring Began: ____/____/____
B. Date Performance Monitoring Completed: ____/____/____
C. Describe the types of monitoring activities performed, and the media and parameters monitored:

_____
_____
_____

4.0 CLOSURE VERIFICATION SAMPLING

A. Date Corrective Action Plan Implemented: ____/____/____
B. Date Corrective Actions Completed: ____/____/____

4.1 VERIFICATION OF SOIL REMEDIATION

A. Was the MDEQ guidance document "Verification of Soil Remediation Guidance Document" (Attachment No. 25 of the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks") used to prepare the soil verification sampling plan?

☐ Yes ☒ No

B. If "No", provide an explanation: The tank is located under a concrete basement floor, situated against a wall on the west side and building footings on the south end. The east side is adjacent to high voltage electrical equipment. Also, the tank is being abandoned in place and no excavation will occur. Therefore, samples were not collected using the VSR protocols.

C. If "Yes", under what category did the site fall? ☐ "Small Site" ☐ "Medium or Large Site"

D. Describe the soil verification sampling strategy applied at the site by providing the following. *(Attach additional sheets, as necessary)*:

- Scaled site map (Attachment No. 5) which identifies the former extent of the soil contamination, and the soil verification sampling locations relative to existing site features. *(Multiple chemical contaminants and multiple sample depths should be addressed on the minimum number of site maps needed to convey the information with clarity and legibility).*

- For a corrective action involving excavation, a scaled drawing(s) (Attachment No. 6) showing the floor and walls of the excavation and the associated sampling locations. The drawing should also depict the subsurface stratigraphy, soil types, fractures, discolored soil locations, and adjoining conduits or potential migration pathways, as appropriate.

E. Describe how the number of samples collected for soil verification purposes was established: Potential locations were extremely limited due to building foundations and electrical equipment located in the basement. Two samples (SB-2 & SB-3A) collected within 10 feet of the western edge of the tank on the other side of the basement wall, corresponding to the mid- and bottom-depths of the tank (the tank is situated against the wall). Core 3 & 4 were collected through the basement floor from the mid-depth of the tank. No samples were collected from the south end due to building foundations and high-powered electric lines running within the basement floor. See Attachment Nos. 5A-9A and 5B-9B.

4.1 VERIFICATION OF SOIL REMEDIATION (Continued)

F. List the analytical parameters used to verify the soil remediation: PCBs (method 8080), TPH-DRO (method 8015 M) and PNAs (method 8270).

G. Were all soil verification samples analyzed, preserved, and handled in accordance with the USTD guidance document entitled "Guidance for Parameters, Analytical Methods, Sample Handling, Quality Control, and Cleanup Limits for Petroleum Hydrocarbon Releases" (Attachment No. 12 of the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks")? ☒ Yes ☐ No

H. If "No", provide an explanation for any differences: _____

I. Attach data tables presenting the analytical results of all on-site and off-site soil verification sampling performed in the attached Laboratory Results table format (Attachment No. 7). Include all pertinent sample results submitted previously with the Initial Assessment Report or Final Assessment Report. *(NOTE: The USTD may request copies of the laboratory data sheets, chain of custody forms, and all available QA/QC information relating to these verification samples.)*

J. Attach a Comparison Table for Soil Verification (Attachment No. 8) to demonstrate that the established target cleanup levels have been attained in accordance with the applicable MDEQ/USTD closure guidance.

K. Total volume of soil remediated or disposed to date: 0 yds^3

L. Disposal facility name(s) and location(s): N/A

4.2 VERIFICATION OF GROUNDWATER REMEDIATION

A. Was the USTD "Groundwater and Soil Closure Guidance" (Attachment No. 26 of the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks") used to prepare the groundwater verification sampling plan? ☐ Yes ☒ No

4.2 VERIFICATION OF GROUNDWATER REMEDIATION (Continued)

B. If "No", provide an explanation: The groundwater samples collected from around the tank came back clean; therefore, no groundwater remediation was completed.

Describe the groundwater verification sampling strategy applied at the site by answering questions "C" through "G". *(Attach additional sheets, as necessary):*

C. Attach a scaled site map (Attachment No. 9) that identifies the former extent of the groundwater contamination and the groundwater verification sampling locations relative to existing site features. *(Multiple chemical contaminants and multiple aquifer/sample depths should be addressed on the minimum number of site maps needed to convey the information with clarity and legibility.)*

D. Describe how the sampling frequency and duration of sampling used for groundwater verification purposes was established: Samples were collected from the two locations where water was encountered under the basement floor. No water was encountered in the two borings located west of the tank.

E. List the analytical parameters used to verify the groundwater remediation, and the justification for their selection: PCBs (method 8080), TPH-DRO (method 8015 M) and PNAs (method 8270).

F. Were all groundwater verification samples analyzed, preserved, and handled in accordance with the USTD guidance document entitled "Guidance for Parameters, Analytical Methods, Sample Handling, Quality Control, and Cleanup Limits for Petroleum Hydrocarbon Releases" (Attachment No. 12 of the "Guidance Document for Risk-based Corrective Action at Leaking Underground Storage Tanks")? ☒ Yes ☐ No

G. If "No", provide an explanation for any differences:

H. Attach data tables presenting the analytical results of all on-site and off-site groundwater verification sampling performed in the attached Laboratory Results table format (Attachment No. 10). Include applicable sample results submitted previously with the Initial Assessment Report or Final Assessment Report. *(NOTE: The USTD may request copies of laboratory data sheets, chain of custody forms, and all available QA/QC information relating to these verification samples.)*

I. Attach a Comparison Table for Groundwater Verification (Attachment No. 11) to demonstrate that the established target cleanup levels have been attained in accordance with the applicable MDEQ /USTD closure guidance.

4.2 VERIFICATION OF GROUNDWATER REMEDIATION (Continued)

For corrective actions involving the operation of a groundwater treatment system, answer questions "J" through "N". Otherwise, skip to question "O".

J. Were the target cleanup levels met for six consecutive months *(minimum of two quarterly samplings)* with the treatment system operating? ☐ Yes ☐ No

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

L. Were the sample results from all wells used for verification at or below the target cleanup levels for a full year (*minimum of four quarterly samplings*) after the remedial system was turned off? ☐ Yes ☐ No

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

For corrective actions where no groundwater remediation was required, answer questions "O" through "P". Otherwise, skip to Section 4.3.

N. Total volume of groundwater remediated to date: _____ gallons

O. Were the target cleanup levels met for at least one sampling event? ☒ Yes ☐ No

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

4.3 VERIFICATION OF REMEDIATION FOR OTHER MEDIA

A. Was the corrective action for this site implemented for any media other than soil or groundwater? ☐ Yes ☐ No

4.3 VERIFICATION OF REMEDIATION FOR OTHER MEDIA (Continued)

If "Yes", continue with questions "B" through "J" answering each question in the series for each of the other environmental media remediated. If "No", complete the Cover Sheet Certification and quit.

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

☐ Air ☐ Sediments ☐ Other *(Specify)*:
☐ Surface Water ☐ Biota _____

Describe the verification sampling strategy applied at the site by providing the following information pertaining to each of the other media remediated. *(Attach additional sheets, as necessary.)*

C. Provide a scaled site or area map (Attachment No. 12) which identifies the former extent of the contamination in each of these other media and the verification sampling locations relative to existing site features and boundaries. *(Multiple chemical contaminants should be addressed on the minimum number of site or area maps needed to convey the information with clarity and legibility.)*

D. Describe how the sampling frequency and duration of sampling used for verification purposes in each of these other media was established: _____

E. List the analytical parameters used to verify the specified remediation in each of these other media, and the justification for their selection: _____

F. Were all verification samples associated with each of these other media analyzed, preserved, and handled in accordance with the USTD guidance document entitled "Guidance for Parameters, Analytical Methods, Sample Handling, Quality Control, and Cleanup Limits for Petroleum Hydrocarbon Releases" (Attachment No. 12 of the "Guidance Document for Risk-Based Corrective Action at Leaking Underground Storage Tanks" to the maximum extent possible)? ☐ Yes ☐ No

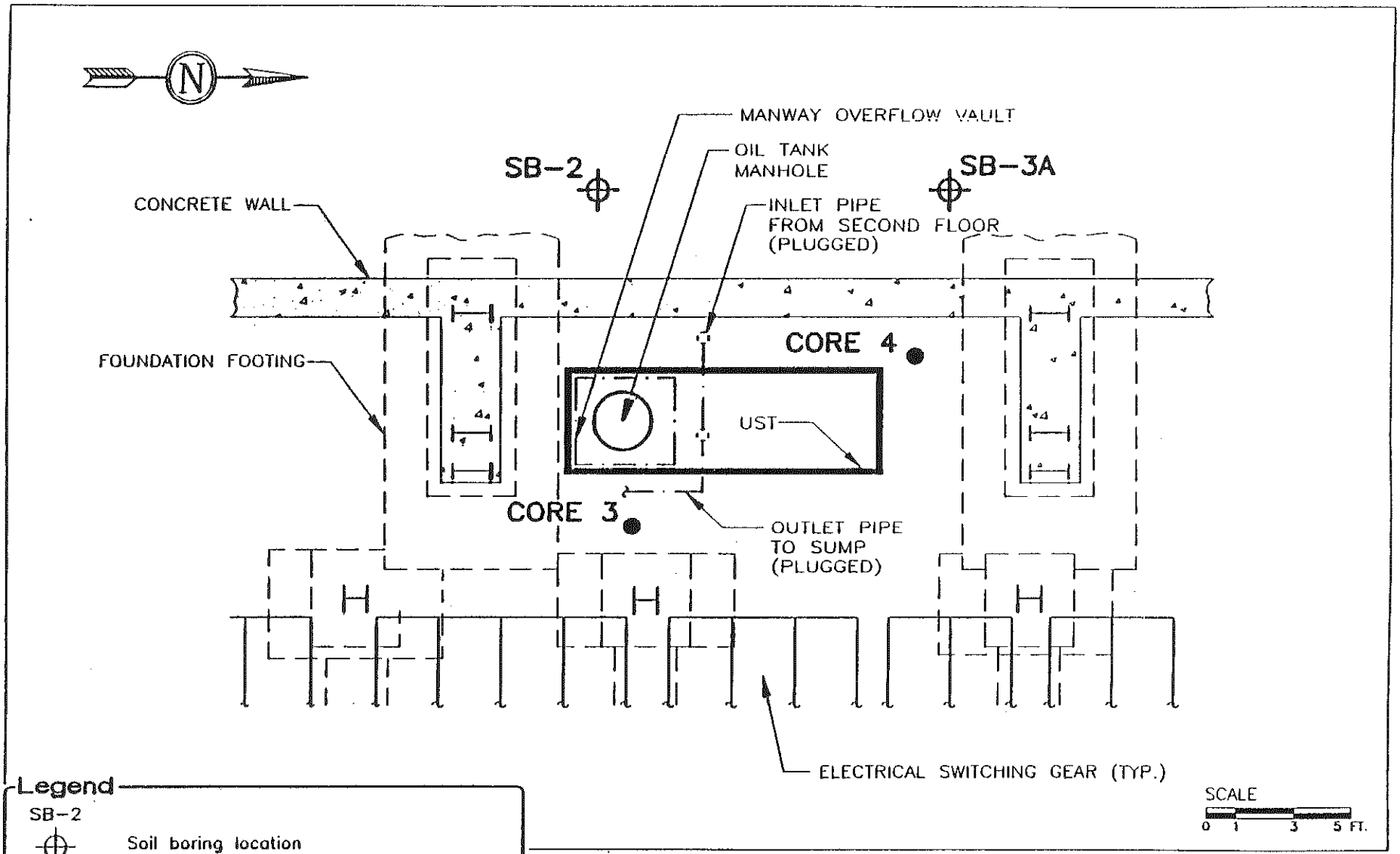
G. If "No", provide an explanation for any differences: _____

4.3 VERIFICATION OF REMEDIATION FOR OTHER MEDIA (Continued)

H. Attach data tables presenting the results of all on-site and off-site verification sampling performed for each of these other media in the attached Laboratory Results table format (Attachment No. 13). Include applicable sample results submitted previously with the Initial Assessment Report or Final Assessment Report. *(NOTE: The USTD may request copies of laboratory data sheets, chain of custody forms, and all available QA/QC information relating to these verification samples.)*

I. Attach a Verification Comparison Table for each of the other remediated media (Attachment No. 14) to demonstrate that the established target cleanup levels have been attained in accordance with the applicable MDEQ /USTD closure guidance.

J. Estimated volume of each of the other specified media remediated, or treated or disposed to date *(specify units):*_____



Legend

SB-2 — Soil boring location

CORE 3 — Core/Hand auger/Water sample location

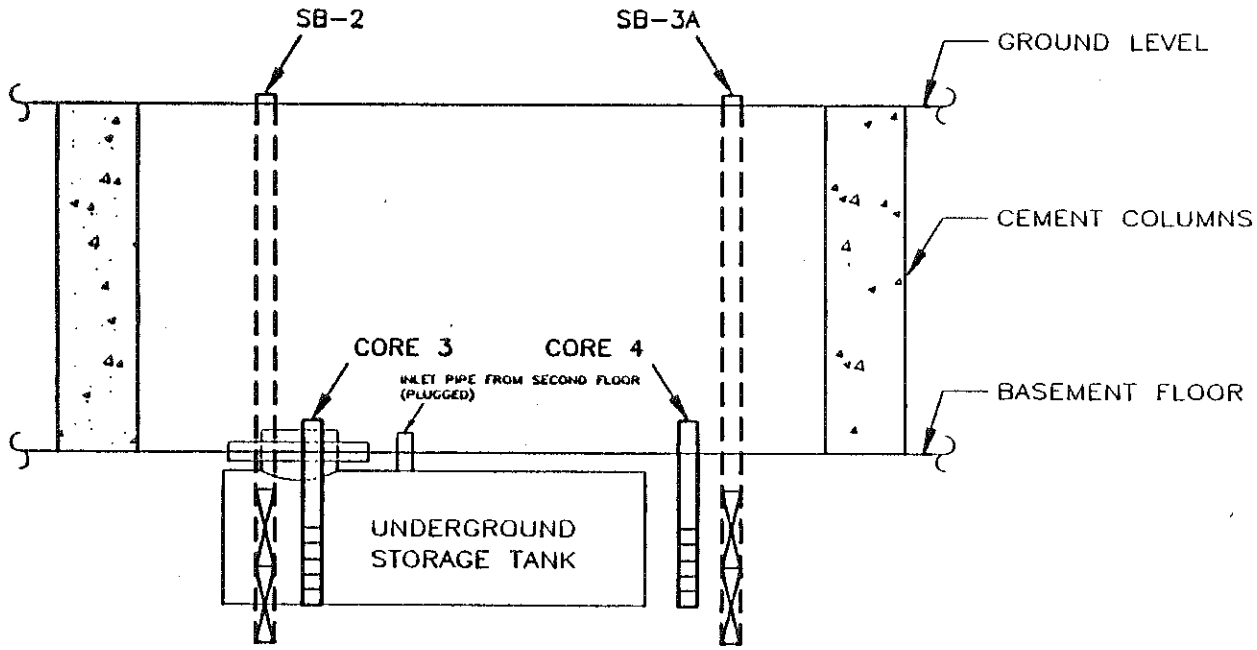
H — I – beams (support columns)

NOTE: Cores 3 & 4 located inside basement
SB-2 & SB-3A located at ground level outside of basement

ATTACHMENT NOs. 5A AND 9A
PLAN VIEW
UNDERGROUND STORAGE TANK AREA, SUBSTATION 12-B
ROUGE STEEL COMPANY
DEARBORN, MICHIGAN

ABB Environmental Services, Inc.

A9601019/9296-00/AC405 | Drawn: MDC 01/09/10 | Rev: 01/19/96 By: MDC Chkd: PJK



Legend

SB-2	Soil boring location
CORE 3	Core/Hand auger/Water sample location
	Sampling intervals (Spilt Spoon)
	Sampling intervals (Hand Auger)
NOTE:	Cores 3 & 4 located inside basement SB-2 & SB-3A located at ground level outside of basement

SCALE
0 1 3 5 FT.

ATTACHMENT NOs. 5B AND 9B
SIDE VIEW
UNDERGROUND STORAGE TANK AREA, SUBSTATION 12-B
ROUGE STEEL COMPANY
DEARBORN, MICHIGAN

ABB Environmental Services, Inc.

A9601020/9296-00/AC405 | Drawn: MDC 01/09/10 | Rev: 01/19/96 By: MDC Chkd: PJK

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE ASSESSMENT REPORT (Continued)

ATTACHMENT NO. 7

SOIL VERIFICATION SAMPLING RESULTS (LABORATORY)

FACILITY NAME Rouge Steel Co.

FACILITY NUMBER 17232

VOLATILES											
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A		SB-3A
Sample Depth (feet BGS)											
Date Collected											
Date Extracted											
Date Analyzed	N/A		N/A		N/A		N/A		N/A		N/A
Analytical Method No.											
Collection Method*											
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	
☐ Benzene											
☐ Toluene											
☐ Ethylbenzene											
☐ Total Xylenes											
☐ MTBE											
POLYNUCLEAR AROMATICS (PNAs)											
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A		SB-3A
Sample Depth (feet BGS)	2-4		2-4		10-12		12-14		10-12		12-14
Date Collected	12/27/95		12/27/95		12/16/95		12/16/95		12/16/95		12/16/95
Date Extracted	01/02/96		01/02/96		12/28/95		12/28/95		1/28/95		12/28/95
Date Analyzed	01/02/96		01/02/96		01/02/96		12/29/95		01/02/96		01/02/96
Analytical Method No.	8270		8270		8270		8270		8270		8270
Collection Method*	HA		HA		SS		SS		SS		SS
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	
☒ Acenaphthene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Acenaphthylene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Anthracene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Benzo(a)anthracene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Benzo(a)pyrene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Benzo(b)fluoranthene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Benzo(g,h,i)perylene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Benzo(k)fluoranthene	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330

ATTACHMENT NO. 7 (CONTINUED) PAGE 2 OF 4
SOIL VERIFICATION SAMPLING RESULTS (LABORATORY)
FACILITY NAME Rouge Steel Co.
FACILITY NUMBER 17232

POLYNUCLEAR AROMATICS (PNAs)												
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A		SB-3A	
Sample Depth (feet BGS)	2-4		2-4		10-12		12-14		10-12		12-14	
Date Collected	12/27/95		12/27/95		12/16/95		12/16/95		12/16/95		12/16/95	
Date Extracted	01/02/96		01/02/96		12/28/95		12/28/95		12/28/95		12/28/95	
Date Analyzed	01/02/96		01/02/96		01/02/96		12/29/95		01/02/96		01/02/96	
Analytical Method No.	8270		8270		8270		8270		8270		8270	
Collection Method*	HA		HA		SS		SS		SS		SS	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL		
☒ Chrysene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Dibenzo(a,h)anthracene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Fluoranthene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Fluorene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Indeno(1,2,3- cd)pyrene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Naphthalene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Phenanthrene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
☒ Pyrene	<330	330	<330	330	<330	330	<330	330	<330	330	<330	330
METALS												
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A		SB-3A	
Sample Depth (feet BGS)												
Date Collected												
Date Extracted												
Date Analyzed	N/A		N/A		N/A		N/A		N/A		N/a	
Analytical Method No.												
Collection Method*												
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL		
☐ Cadmium												
☐ Chromium III												
☐ Chromium VI												
☐ Total Lead												

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

MICHIGAN DEPARTMENT OF ENVIRONMENTAL . - UNDERGROUND STORAGE TANK DIVISION

CLOSURE REI tT (Continued)

ATTACHMENT NO. 7 (CONTINUED) PAGE 3 OF 4
SOIL VERIFICATION SAMPLING RESULTS (LABORATORY)
FACILITY NAME Rouge Steel
FACILITY NUMBER 17232

PCBs											
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A		SB-3A
Sample Depth (feet BGS)	2-4		2-4		10-12		12-14		10-12		12-14
Date Collected	12/27/95		12/27/95		12/16/95		12/16/95		12/16/95		12/16/95
Date Extracted	01/02/96		01/02/96		12/28/95		12/28/95		12/28/95		12/28/95
Date Analyzed	12/28/95		01/03/96		12/29/95		12/29/95		12/29/95		01/02/96
Analytical Method No.	8080		8080		8080		8080		8080		8080
Collection Method*	HA		HA		SS		SS		SS		SS
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	
☒ Aroclor 1016	<330	330	< 330	330	<330	330	< 330	330	<330	330	<330 330
☒ Aroclor 1221	<330	330	<330	330	<330	330	< 330	330	<330	330	<330 330
☒ Aroclor 1232	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Aroclor 1242	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Aroclor 1248	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Aroclor 1254	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
☒ Aroclor 1260	<330	330	<330	330	<330	330	<330	330	<330	330	<330 330
HALOGENATED HYDROCARBONS											
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A		Sb-3A
Sample Depth (feet BGS)											
Date Collected											
Date Extracted											
Date Analyzed	N/A		N/A		N/A		N/A		N/A		N/A
Analytical Method No.											
Collection Method*											
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	
☐ Carbon Tetrachloride											
☐ 1,1-Dichloroethane											
☐ 1,2-Dichloroethane											
☐ 1,1-Dichloroethylene											

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

ATTACHMENT NO. 7 (CONTINUED) PAGE 4 OF 4
SOIL VERIFICATION SAMPLING RESULTS (LABORATORY)
FACILITY NAME Rouge Steel Co.
FACILITY NUMBER 17232

HALOGENATED HYDROCARBONS										
Sample ID	Core 3		Core 4		SB-2		SB-2		SB-3A	SB-3A
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed	n/a		n/a		n/a		n/a		n/a	n/a
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene										
☐ trans-1,2- Dichloroethylene										
☐ Tetrachloroethylene										
☐ 1,1,2-Trichloroethane										
OTHER *(Specify)*										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)	2-4		2-4							
Date Collected	12/27/95		12/27/95							
Date Extracted										
Date Analyzed	01/03/96		01/03/96		N/A		N/A		N/A	
Analytical Method No.	8015 M		8015 M							
Collection Method*	HA		HA							
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
XX TPH-DRO	36,000	4,000	41,000	4,000						
☐										
☐										
☐										
☐										
☐										

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

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE ASSESSMENT REPORT (Continued)

ATTACHMENT NO. 8

COMPARISON TABLE FOR SOIL VERIFICATION

FACILITY NAME Rouge Steel Co.

FACILITY NUMBER 17232

Contaminant	Number of Samples Taken	Range of Detected Concentrations [Min - Max] (ug/kg)	Maximum Detected (ug/kg)	Applicable RBSL or SSTL Criterion *[Specify Tier Level in ( )]* (ug/kg)		
				Residential	☐ Commercial III ☐ Commercial IV	Industrial
VOLATILES						
☐ Benzene	0	--		( )	( )	( )
☐ Toluene	0	--		( )	( )	( )
☐ Ethylbenzene	0	--		( )	( )	( )
☐ Total Xylenes	0	--		( )	( )	( )
☐ MTBE	0	--		( )	( )	( )
POLYNUCLEAR AROMATICS (PNAs)						
☒ Acenaphthene	6	<330 -- <330	<330	120,000(1)	( )	( )
☒ Acenaphthylene	6	<330 <330	<330	1,400		
☒ Anthracene	6	<330 -- <330	<330	150,000(1)	( )	( )
☒ Benzo(a)anthracene	6	<330 -- <330	<330	14,000(1)	( )	( )
☒ Benzo(a)pyrene	6	<330 -- <330	<330	3,700(1)	( )	( )
☒ Benzo(b)fluoranthene	6	<330 -- <330	<330	14,000(1)	( )	( )
☒ Benzo(g,h,i)perylene	6	<330 <330	<330	1,500,000		
☒ Benzo(k)fluoranthene	6	<330 -- <330	<330	140,000(1)	( )	( )
☒ Chrysene	6	<330 -- <330	<330	1,400,000(1)	( )	( )
☒ Dibenzo(a,h)anthracene	6	<330 -- <330	<330	4,200(1)	( )	( )
☒ Fluoranthene	6	<330 -- <330	<330	68,000(1)	( )	( )
☒ Fluorene	6	<330 -- <330	<330	89,000(1)	( )	( )
☒ Indeno(1,2,3-cd)pyrene	6	<330 -- <330	<330	14,000(1)	( )	( )
☒ Naphthalene	6	<330 -- <330	<330	5,500(1)	( )	( )
☒ Phenanthrene	6	<330 <330	<330	7,400		
☒ Pyrene	6	<330 -- <330	<330	56,000(1)	( )	( )
METALS						
☐ Cadmium	0	--		( )	( )	( )
☐ Chromium III	0	--		( )	( )	( )
☐ Chromium VI	0	--		( )	( )	( )
☐ Total Lead	0	--		( )	( )	( )

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE ASSESSMENT REPORT (Continued)

ATTACHMENT NO. 8 (CONTINUED) PAGE 2 OF 2

COMPARISON TABLE FOR SOIL VERIFICATION

FACILITY NAME Rouge Steel Co.

FACILITY NUMBER 17232

Contaminant	Number of Samples Taken	Range of Detected Concentrations [Min - Max] (ug/kg)	Maximum Detected (ug/kg)	Applicable RBSL or SSTL Criterion *[Specify Tier Level in ( )]* (ug/kg)		
				Residential	☐ Commercial III ☐ Commercial IV	Industrial
PCBs				Total 1,000		
☒ Aroclor 1016	6	<330 -- <330	<330	(1)	( )	( )
☒ Aroclor 1221	6	<330 -- <330	<330	(1)	( )	( )
☒ Aroclor 1232	6	<330 -- <330	<330	(1)	( )	( )
☒ Aroclor 1242	6	<330 -- <330	<330	(1)	( )	( )
☒ Aroclor 1248	6	<330 -- <330	<330	(1)	( )	( )
☒ Aroclor 1254	6	<330 -- <330	<330	(1)	( )	( )
☒ Aroclor ~~1280~~ 1260	6	<330 -- <330	<330	(1)	( )	( )
HALOGENATED HYDROCARBONS						
☐ Carbon Tetrachloride	0	--		( )	( )	( )
☐ 1,1-Dichloroethane	0	--		( )	( )	( )
☐ 1,2-Dichloroethane	0	--		( )	( )	( )
☐ 1,1-Dichloroethylene	0	--		( )	( )	( )
☐ cis-1,2-Dichloroethylene	0	--		( )	( )	( )
☐ trans-1,2-Dichloroethylene	0	--		( )	( )	( )
☐ Tetrachloroethylene	0	--		( )	( )	( )
☐ 1,1,2-Trichloroethane	0					
OTHER*						
		--		( )	( )	( )
TPH-DRO	6	<1000 -- 41,000	41,000	4,000 (*)	( )	( )
		--		( )	( )	( )
		--		( )	( )	( )
		--		( )	( )	( )
		--		( )	( )	( )
		--		( )	( )	( )

*List additional contaminants as appropriate *TPH-DRO is an aesthetic criteria. Jean Schlaufman of MDEQ USTD instructed ABB-ES that values established for the RBSL default to the MDL (4ppm). Although TPH-DRO was detected above the MDL, no visual or olfactory impact to soil or water was encountered. This UST is located under a basement floor on site at Rouge Steel Co; therefore, the detected TPH-DRO is considered insignificant.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE ASSESSMENT REPORT (Continued)

ATTACHMENT NO. 10

GROUNDWATER VERIFICATION SAMPLING RESULTS (LAB)

FACILITY NAME Rouge Steel Co.

FACILITY NUMBER 17232

VOLATILES										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed	NA		NA							
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene										
☐ Toluene										
☐ Ethylbenzene										
☐ Total Xylenes										
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)	0-1		0-1							
Date Collected	12/27/95		12/27/95							
Date Extracted	01/03/96		01/03/96							
Date Analyzed	01/03/96		01/03/96							
Collection Method*	PP		PP							
Analytical Method No.	8270		8270							
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☒ Acenaphthene	<5.0	5.0	<5.0	5.0						
☒ Acenaphthylene	<5.0	5.0	<5.0	5.0						
☒ Anthracene	<5.0	5.0	<5.0	5.0						
☒ Benzo(a)anthracene	<5.0	5.0	<5.0	5.0						
☒ Benzo(a)pyrene	<5.0	5.0	<5.0	5.0						
☒ Benzo(b)fluoranthene	<5.0	5.0	<5.0	5.0						
☒ Benzo(g,h,i)perylene	<5.0	5.0	<5.0	5.0						
☒ Benzo(k)fluoranthene	<5.0	5.0	<5.0	5.0						
☒ Chrysene	<5.0	5.0	<5.0	5.0						
☒ Dibenzo(a,h)anthracene	<5.0	5.0	<5.0	5.0						

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE REPORT (Continued)

ATTACHMENT NO. 10 (CONTINUED) PAGE 2 OF 4
GROUNDWATER VERIFICATION SAMPLING RESULTS (LAB)
FACILITY NAME Rouge Steel Co.
FACILITY NUMBER 17232

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)	0-1		0-1							
Date Collected	12/27/95		12/27/95							
Date Extracted	01/03/96		01/03/96							
Date Analyzed	01/03/96		01/03/96							
Collection Method*	PP		PP							
Analytical Method No.	8270		8270							
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☒ Fluoranthene	<5.0	5.0	<5.0	5.0						
☒ Fluorene	<5.0	5.0	<5.0	5.0						
☒ Indeno(1,2,3- cd)pyrene	<5.0	5.0	<5.0	5.0						
☒ Naphthalene	<5.0	5.0	<5.0	5.0						
☒ Phenanthrene	<5.0	5.0	<5.0	5.0						
☒ Pyrene	<5.0	5.0	<5.0	5.0						
METALS - FILTERED	N/A		N/A							
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed	N/A		N/A							
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Chromium III										
☐ Chromium VI										
☐ Total Lead										

* *List additional contaminants as appropriate*

EQP 3843 (REV. 10/95)

ATTACHMENT NO. 10 (CONTINUED) PAGE 3 OF 4
GROUNDWATER VERIFICATION SAMPLING RESULTS (LAB)
FACILITY NAME Rouge Steel Co.
FACILITY NUMBER 17232

PCBs										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)	0-1		0-1							
Date Collected	12/27/95		12/27/95							
Date Extracted	01/03/96		01/03/96							
Date Analyzed	01/03/96		01/03/96							
Collection Method*	PP		PP							
Analytical Method No.	8080		8080							
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☒ Aroclor 1016	<0.2	0.2	<0.2	0.2						
☒ Aroclor 1221	<0.2	0.2	<0.2	0.2						
☒ Aroclor 1232	<0.4	0.4	<0.4	0.4						
☒ Aroclor 1242	<0.2	0.2	<0.2	0.2						
☒ Aroclor 1248	<0.2	0.2	<0.2	0.2						
☒ Aroclor 1254	<0.2	0.2	<0.2	0.2						
☒ Aroclor 1260	<0.2	0.2	<0.2	0.2						
HALOGENATED HYDROCARBONS										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed	N/A		N/A							
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride										
☐ 1,1-Dichloroethane										
☐ 1,2-Dichloroethane										
☐ 1,1-Dichloroethylene										
☐ cis-1,2-Dichloroethylene										
☐ trans-1,2- Dichloroethylene										

* *List additional contaminants as appropriate*

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE REPORT (Continued)

ATTACHMENT NO. 10 (CONTINUED) PAGE 4 OF 4

GROUNDWATER VERIFICATION SAMPLING RESULTS (LAB)

FACILITY NAME Rouge Steel Co.

FACILITY NUMBER 17232

DUPLICATE TABLE AS NEEDED

HALOGENATED HYDROCARBONS										
☐ Tetrachloroethylene										
☐ 1,1,2-Trichloroethane										
OTHER *(Specify)*										
Sample ID	Core 3		Core 4							
Sample Depth (feet BGS)	0-1		0-1							
Date Collected	12/27/95		12/27/95							
Date Extracted	01/02/96		01/02/96							
Date Analyzed	01/04/96		01/04/96							
Collection Method*	PP		PP							
Analytical Method No.	8015 M		8015M							
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
XX TPH-DRO	1000	1000	660	1000						
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										

* *List additional contaminants as appropriate*

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE REPORT (Continued)

ATTACHMENT NO. 11

COMPARISON TABLE FOR GROUNDWATER VERIFICATION

FACILITY NAME Rouge Steel Co

FACILITY NUMBER 17232

Contaminant	Number of Samples Taken	Sampling Frequency	Sampling Duration (months)	Range of Detected Concentrations for 6 Consecutive Months with Treatment System Operating [Min - Max] (ug/l)	Range of Detected Concentrations for 12 Months Following Treatment System Shutdown or With No Treatment [Min - Max] (ug/l)	Applicable RBSL or SSTL Criterion *[Specify Tier Level in ( )]* (ug/l)		
						Residential	Commercial	Industrial
VOLATILES	0							
☐ Benzene	0			--	--	( )	( )	( )
☐ Toluene	0			--	--	( )	( )	( )
☐ Ethylbenzene	0			--	--	( )	( )	( )
☐ Total Xylenes	0			--	--	( )	( )	( )
☐ MTBE	0			--	--	( )	( )	( )
POLYNUCLEAR AROMATICS (PNAs)								
☒ Acenaphthene	2	1X	na	na --	< 5.0 -- < 5.0	1,300 (1)	( )	( )
☒ Acenaphthylene	2	1x	na	na	< 5.0 < 5.0	26		
☒ Anthracene	2	1x	na	na --	< 5.0 -- < 5.0	7,300 (1)	( )	( )
☒ Benzo(a)anthracene	2	1x	na	na --	< 5.0 -- < 5.0	1.2 (1)	( )	( )
☒ Benzo(a)pyrene	2	1x	na	na --	< 5.0 -- < 5.0	0.20 (1)	( )	( )
☒ Benzo(b)fluoranthene	2	1x	na	na --	< 5.0 -- < 5.0	1.2 (1)	( )	( )
☒ Benzo(g,h,i)perylene	2	1x	na	na	< 5.0 < 5.0	26		
☒ Benzo(k)fluoranthene	2	1x	na	na --	< 5.0 -- < 5.0	12 (1)	( )	( )
☒ Chrysene	2	1x	na	na --	< 5.0 -- < 5.0	120 (1)	( )	( )
☒ Dibenzo(a,h)anthracene	2	1x	na	na --	< 5.0 -- < 5.0	0.12 (1)	( )	( )
☒ Fluoranthene	2	1x	na	na --	< 5.0 -- < 5.0	880 (1)	( )	( )
☒ Fluorene	2	1x	na	na --	< 5.0 -- < 5.0	880 (1)	( )	( )
☒ Indeno(1,2,3-cd)pyrene	2	1x	na	na --	< 5.0 -- < 5.0	1.2 (1)	( )	( )
☒ Naphthalene	2	1x	na	na --	< 5.0 -- < 5.0	260 (1)	( )	( )
☒ Phenanthrene	2	1x	na	na	< 5.0 < 5.0	26		
☒ Pyrene	2	1x	na	na --	< 5.0 -- < 5.0	550 (1)	( )	( )
METALS - FILTERED								
☐ Cadmium	0			--	--	( )	( )	( )
☐ Chromium III	0			--	--	( )	( )	( )
☐ Chromium VI	0			--	--	( )	( )	( )
☐ Total Lead	0			--	--	( )	( )	( )

* *List additional contaminants as appropriate*

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - UNDERGROUND STORAGE TANK DIVISION

CLOSURE REPORT (Continued)

ATTACHMENT NO. 11 (CONTINUED) PAGE 2 OF 2

COMPARISON TABLE FOR GROUNDWATER VERIFICATION

FACILITY NAME_____

FACILITY NUMBER_____

Contaminant	Number of Samples Taken	Sampling Frequency	Sampling Duration (months)	Range of Detected Concentrations for 6 Consecutive Months with Treatment System Operating [Min - Max] (ug/l)	Range of Detected Concentrations for 12 Months Following Treatment System Shutdown or With No Treatment [Min - Max] (ug/l)	Applicable RBSL or SSTL Criterion *[Specify Tier Level in ( )]* (ug/l)		
						Residential	Commercial	Industrial
PCBs								
☒ Aroclor 1016	2	1x	NA	NA --	0.2 -- 0.2	(1)	( )	( )
☒ Aroclor 1221	2	1x	NA	NA --	0.2 -- 0.2	(1)	( )	( )
☒ Aroclor 1232	2	1x	NA	NA --	0.4 -- 0.4	(1)	( )	( )
☒ Aroclor 1242	2	1x	NA	NA --	0.2 -- 0.2	(1)	( )	( )
☒ Aroclor 1248	2	1x	NA	NA --	0.2 -- 0.2	(1)	( )	( )
☒ Aroclor 1254	2	1x	NA	NA --	0.2 -- 0.2	(1)	( )	( )
☒ Aroclor 1280	2	1x	NA	NA --	0.2 -- 0.2	(1)	( )	( )
HALOGENATED HYDROCARBONS								
☐ Carbon Tetrachloride	0			--	--	( )	( )	( )
☐ 1,1-Dichloroethane	0			--	--	( )	( )	( )
☐ 1,2-Dichloroethane	0			--	--	( )	( )	( )
☐ 1,1-Dichloroethylene	0			--	--	( )	( )	( )
☐ cis-1,2-Dichloroethylene	0			--	--	( )	( )	( )
☐ trans-1,2-Dichloroethylene	0			--	--	( )	( )	( )
☐ Tetrachloroethylene	0			--	--	( )	( )	( )
☐ 1,1,2-Trichloroethane	0			--	--	( )	( )	( )
OTHER*								
☐				--	--	( )	( )	( )
☒ TPH-DRO	2	1x	NA	NA -- NA	660 -- 1000	1000 (*)	( )	( )
☐				--	--	( )	( )	( )
☐				--	--	( )	( )	( )
☐				--	--	( )	( )	( )
☐				--	--	( )	( )	( )

* TPH-DRO is an aesthetic criteria. Jean Schlaufman of MDEQ USTD instructed ABB-ES that values established for the RBSL default to the MDL (4ppm). ALthough TPH-DRO was detected above the MDL [illegible] UST is located under a basement floor

** List additional contaminants as appropriate*

ABB ENVIRONMENTAL SERVICES, INC.
TELEPHONE MEMORANDUM

PROJECT NO.: 9296-00 DATE: 1/12/96

CLIENT: Rouge Steel Co.

PROJECT NAME: Rouge Steel

CALL TO: City of Dearborn, Building & Safety Dept., Environmental Services Division

ORIGINATED BY: D. Kaczor - ABB

SUBJECT: Location of nearest wells to Rouge Steel site.

Call was made to determine if any municipal or private wells existed near the Rouge site. Environmental Services Division stated that no drinking water wells are located in the city of Dearborn and that the Detroit system supplies Dearborn's water.

DISTRIBUTION:
ABB-ES

9-110040.wp/M5-162

NATIONAL ENVIRONMENTAL TESTING, INC.

Auburn Hills Division
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Auburn Hills, MI 48326
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ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

NET Job Number: 95.07657

Project #9296-00
Rouge Steel

Enclosed is the Analytical Report for the following samples submitted to the Auburn Hills Division of NET, Inc. for analysis:

Sample Number	Sample Description	Date Taken	Date Received
193232	Core - 4 (2-4') 12/27	12/27/1995	12/29/1995
193233	Core - 3 (2-4') 12/27	12/27/1995	12/29/1995
193234	Core - 4 12/27	12/27/1995	12/29/1995
193235	Core - 3 12/27	12/27/1995	12/29/1995

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed. Reproduction of this analytical report is permitted only in its entirety.

Susan K. Schafer

Susan K. Schafer
Project Manager

NET NATIONAL ENVIRONMENTAL TESTING, INC.

Auburn
1700
Aub
Tel: (
Fax: (81
(800) 528-

ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07657
Sample No.: 193233

Project #9296-00
Rouge Steel

Sample Description: Core - 1 (2-4') 12/27

Date Taken: 12/27/1995

Date Received: 12/29/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Solids, Total	76	%		01/02/1996	jsg	160.3 (3)	
PNAM COMPOUNDS			01/02/1996				
Naphthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Acenaphthylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(ghi)perylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Chrysene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluorene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Naphthalene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Phenanthrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
PCBs			01/02/1996				
Aroclor-1016	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1221	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1232	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1242	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1248	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1254	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1260	<330	ug/kg		01/03/1996	mmk	8080 (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07657
Sample No.: 193233

Project #9296-00
Rouge Steel

Sample Description: Core ~~3~~ (2-4') 12/27

Date Taken: 12/27/1995

Date Received: 12/29/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
TPH-DRO	36	mg/kg		01/03/1996	out	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

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ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV. INC
39253 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07657
Sample No.: 193235

Project #9296-00
Rouge Steel

Sample Description: Core - 3 12/27

Date Taken: 12/27/1995

Date Received: 12/29/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PNAH COMPOUNDS			01/03/1996				
Acenaphthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Naphthylene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Anthracene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(a)anthracene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(a)pyrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(ghi)perylene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Chrysene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Fluoranthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Fluorene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Napthalene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Phenanthrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Pyrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
PCBs			01/02/1996				
Aroclor-1016	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1221	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1232	<0.4	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1242	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1248	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1254	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1260	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
TPH-DRO	1000	ug/L		01/04/1996	cue	8015M TI)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

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ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr.
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07657
Sample No.: 193232

Project #9296-00
Rouge Steel

Sample Description: Core - 4 (2-4') 12/27

Date Taken: 12/27/1995

Date Received: 12/29/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Solids, Total	76	%		01/02/1996	jsg	160.3 (3)	
PNAH COMPOUNDS			01/02/1996				
Acenaphthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Acenaphthylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(ghi)perylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Chrysene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluorene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Naphthalene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Phenanthrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
PCBs			01/02/1996				
Aroclor-1016	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1221	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1232	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1242	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1248	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1254	<330	ug/kg		01/03/1996	mmk	8080 (1)	
Aroclor-1260	<330	ug/kg		01/03/1996	mmk	8080 (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr.
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07657
Sample No.: 193232

Project #9296-00
Rouge Steel

Sample Description: Core - 4 (2-4') 12/27

Date Taken: 12/27/1995

Date Received: 12/29/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
TPH-DRO	41	mg/kg		01/03/1996	out	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

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ANALYTICAL REPORT

Garret Bondy
ABB ENVIRONMENTAL SERV. INC.
39255 Country Club Dr.
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07657
Sample No.: 193234

Project #9296-00
Rouge Steel

Sample Description: Core - 4 12/27

Date Taken: 12/27/1995

Date Received: 12/29/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PNAH COMPOUNDS			01/03/1996				
Acenaphthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Acenaphthylene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Anthracene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(a)anthracene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(a)pyrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Benzo(ghi)perylene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Chrysene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Fluoranthene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Fluorene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Napthalene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Phenanthrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
Pyrene	<5.0	ug/L		01/03/1996	wad	8270 (1)	
PCBs			01/02/1996				
Aroclor-1016	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1221	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1232	<0.4	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1242	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1248	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1254	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
Aroclor-1260	<0.2	ug/L		01/03/1996	mmk	8080 (1)	
TPH-DRO	660	ug/L		01/0471996	ouc	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 5 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

Auburn Hills Division
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Auburn Hills, MI 48326
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NOTES

1. The laboratory did not prepare a leachate. Sample contained less than 0.5% solids, therefore, a leachate would be inappropriate. Sample was filtered and analysis performed.

2. Sample did not flash but burned above the cup at _____ ^{o} F.

3. Based on results of preliminary examination, a dilution was required to perform the analyses. Elevated detection limits are reported on the tclp-organic fractions due to sample matrix. Due to the nature of the sample, a matrix spike on the organic fractions would be analytically inappropriate.

4. Based on results of preliminary examination, a dilution was required to perform the analyses. Elevated detection limits are reported on tclp-organic fractions due to matrix interference.

5. Elevated detection levels were reported due to sample matrix interference.

6. Detection levels were elevated due to the high concentration of reported compounds in the sample.

7. A Practical Quantitation Limit has been established by NET and is reported as a "<", less than value. The value reported in parenthesis is the actual value which the client has requested and assumes full responsibility for reporting.

8. ND - Not detected via forward library search.

9. Analysis was subcontrated to another laboratory.

20. No data available: Sample was spiked at an inappropriate level based on original sample concentration.

21. B: Probable laboratory artifact. Trace levels of this compound were found in the analytical batch.

22. H: Analysis was performed beyond the EPA recommended holding time.

23. J: Reported as an estimated value.

24. R: Samples were received at the laboratory beyond the EPA recommended holding time.

25. Matrix spike/matrix spike duplicate data is not available due to a required dilution.

26. The high laboratory control standard recovery did not affect the sample results as they were below detection limit.

27. Sample results released based on client history.

28. Sample results released based on other surrogate and QCI recoveries.

29. The high continuing calibration verification standard recovery did not affect the sample results as they were below detection limit.

Blank concentration is negligible in comparison to the sample result.

1. Internal Standards were beyond control criteria: Sample results were below detection limits.

NATIONAL ENVIRONMENTAL TESTING, INC.

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Auburn Hills, MI 48326
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ANALYTICAL REPORT

Katherine Karn
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

NET Job Number: 95.07484

Rouge Steel

Enclosed is the Analytical Report for the following samples submitted to the Auburn Hills Division of NET, Inc. for analysis:

Sample Number	Sample Description			Date Taken	Date Received
192821	SB-2	(12'-14')	12/16	12/16/1995	12/18/1995
192822	SB-3A	(12'-14')	12/16	12/16/1995	12/18/1995
192823	SB-3A	(10'-12')	12/16	12/16/1995	12/18/1995
192824	SB-2	(10'-12')	12/16	12/16/1995	12/18/1995

Post-it® Fax Note 7671	Date	# of pages ▶ 17
To Peter K	From NET	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analysed. Reproduction of this analytical report is permitted only in its entirety.

Susan K. Schafer

Susan K. Schafer
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV. INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192824

Rouge Steel

Sample Description: SB-2 (10'-12') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Solids, Total	78	%		12/19/1995	jsg	160.3 (3)	
M COMPOUNDS			12/28/1995				
Acenaphthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Acenaphthylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(ghi)perylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Chrysene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluorene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Naphthalene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Phenanthrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
PCBs			12/28/1995				
Aroclor-1016	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1221	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1232	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1242	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1248	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1254	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1260	<330	ug/kg		12/29/1995	mmk	8080 (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on % weight basis.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV. INC
19255 Country Club Dr.
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192824

Rouge Steel

Sample Description: SB-2 (10'-12') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
TPH-DRO	<1.0	mg/kg		12/28/1995	out	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192821

Rouge Steel

Sample Description: SB-2 (12'-14') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Solids, Total	80	%		12/19/1995	jsg	160.3 (3)	
PNAH COMPOUNDS			12/28/1995				
Acenaphthene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Acenaphthylene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Anthracene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Benzo(a)anthracene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Benzo(b)fluoranthene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Benzo(k)fluoranthene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Benzo(a)pyrene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Benzo(ghi)perylene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Chrysene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Dibenzo(a,h)anthracene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Fluoranthene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Fluorene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Naphthalene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Phenanthrene	<330	ug/kg		12/29/1995	wad	8270 (1)	
Pyrene	<330	ug/kg		12/29/1995	wad	8270 (1)	
PCBs			12/28/1995				
Aroclor-1016	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1221	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1232	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1242	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1248	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1254	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1260	<330	ug/kg		12/29/1995	mmk	8080 (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on dry weight basis.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV. INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192821

Rouge Steel

Sample Description: SB-2 (12'-14') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
TPH-DRO	<1.0	mg/kg		12/28/1995	out	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192823

Rouge Steel

Sample Description: SB-3A (10'-12') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Solids, Total	78	%		12/19/1995	jsg	160.3 (3)	
VH COMPOUNDS			12/28/1995				
Acenaphthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Acenaphthylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(ghi)perylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Chrysene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluorene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Naphthalene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Phenanthrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
PCBs			12/28/1995				
Aroclor-1016	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1221	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1232	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1242	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1248	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1254	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1260	<330	ug/kg		12/29/1995	mmk	8080 (1)	

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192823

Rouge Steel

Sample Description: SB-3A (10'-12') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
TPH-DRO	<1.0	mg/kg		12/28/1995	out	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on a dry weight basis.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV INC
39255 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192822

Rouge Steel

Sample Description: SB-3A (12'-14') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Solids, Total	81	%		12/19/1995	jag	160.3 (3)	
\H COMPOUNDS			12/28/1995				
..enaphthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Acenaphthylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(b)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(k)fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(a)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Benzo(ghi)perylene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Chrysene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Dibenzo(a,h)anthracene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluoranthene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Fluorene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Indeno(1,2,3-cd)pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Naphthalene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Phenanthrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
Pyrene	<330	ug/kg		01/02/1996	wad	8270 (1)	
PCBs			12/28/1995				
Aroclor-1016	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1221	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1232	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1242	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1248	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1254	<330	ug/kg		12/29/1995	mmk	8080 (1)	
Aroclor-1260	<330	ug/kg		12/29/1995	mmk	8080 (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on ...y weight basis.

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ANALYTICAL REPORT

Katherine Kern
ABB ENVIRONMENTAL SERV INC
19355 Country Club Dr
Farmington Hills, MI 48331

01/05/1996

Job No.: 95.07484
Sample No.: 192822

Rouge Steel

Sample Description: SB-3A (12'-14') 12/16

Date Taken: 12/16/1995

Date Received: 12/18/1995

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
TPH-DRO	<1.0	mg/kg		12/28/1995	cut	8015M (1)	

Analytical protocol complies with Michigan Act 307 MERA Operational Memorandum No. 6 Revision No. 3: Analytical Detection Level Guidance for Environmental Contamination Response Activities, February 4, 1994. Total soil analyses are reported on dry weight basis.

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TECHLAW INC.

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RZ2.R05704.01.ID.103

August 31, 2000

Mr. Thomas Manning
Work Assignment Manager
U.S. EPA Region 5, DW-8J
77 W. Jackson Boulevard
Chicago, IL 60604

Reference: EPA Contract No. 68-W-99-017; EPA Work Assignment No. R05704: Technical Document Review; Revised Final Preliminary Assessment/Visual Site Inspection Report for Rouge Steel Corporation and Final Ford Motor Company PA/VSI Report; Dearborn, MI; Task 04 Deliverable

Dear Mr. Manning:

Please find enclosed three copies of TechLaw's Revised (as per clarification provided by Mr. Chris Black on August 31, 2000) Final Preliminary Assessment/Visual Site Inspection (PA/VSI) Report for the Rouge Steel Corporation which should replace the text of the Rouge Steel Report previously provided to U.S. EPA, dated August 25, 2000. In addition, please find two additional copies (with photographs) of both the Revised Final PA/VSI Report for Rouge Steel (Attachment A) and the Final PA/VSI Report for the Ford Motor Company (Attachment B) facilities in Dearborn, Michigan.

Please feel free to contact me at (312) 345-8938 once you have reviewed this deliverable or if you have any questions.

Sincerely,

John Koehnen

John Koehnen
TechLaw Regional Manager

cc: F. Norling, EPA Region 5 RPO (w/out att)
C. Black, EPA Region 5
Chicago Central Files
G. Phillips, EPA Region 5
B. Jordan/Central Files

ATTACHMENT A

ROUGE STEEL CORPORATION - DEARBORN, MI

REVISED FINAL PA/VSI REPORT

REVISED FINAL
PRELIMINARY ASSESSMENT/VISUAL SITE INSPECTION REPORT
FOR
ROUGE STEEL COMPANY
3001 MILLER ROAD
P. O. BOX 1699
DEARBORN, MICHIGAN
EPA ID NO. MID087738431

Submitted to:

Mr. Thomas Manning
U.S. Environmental Protection Agency
Region 5 DW-8J
77 West Jackson Boulevard
Chicago, Illinois 60604

Submitted by:

TechLaw, Inc.
20 North Wacker Drive, Suite 1260
Chicago, Illinois 60606

EPA Work Assignment No.	R05704
Contract No.	68-W-99-017
EPA WAM	Mr. Thomas Manning
Telephone No.	312/886-6943
TechLaw WAM:	Mr. John Koehnen
Telephone No.	312/345-8938

August 31, 2000

REVISED FINAL
PRELIMINARY ASSESSMENT/VISUAL SITE INSPECTION REPORT
FOR
ROUGE STEEL COMPANY
3001 MILLER ROAD
P. O. BOX 1699
DEARBORN, MI
EPA ID NO. MID087738431

TABLE OF CONTENTS

		Page
I.	EXECUTIVE SUMMARY	I-1
II.	SITE DESCRIPTION	II-1
III.	SOLID WASTE MANAGEMENT UNITS	III-1
IV.	AREAS OF CONCERN	IV-1
V.	CONCLUSIONS	V-1
VI.	REFERENCES	VI-1

Tables

Table 1	Solid Waste Management Units and Areas of Concern	II-18
Table 2	Recommended Action	V-2

Appendices

Appendix A	Visual Site Inspection Photograph Log
Appendix B	Visual Site Inspection Field Notebooks
Appendix C	Facility Layout and SWMU/AOC Locations

I. EXECUTIVE SUMMARY

The RCRA Facility Assessment (RFA) is the first step in implementing the corrective action provisions of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA). The purpose of the RFA is to identify environmental releases or potential releases from solid waste management units (SWMUs) and areas of concern (AOCs) that may require corrective action by the facility owner. A preliminary assessment/visual site inspection (PA/VSI) is a form of an RFA suitable for implementing the corrective action provisions of HSWA. This PA/VSI Report constitutes the reporting requirement for the RFA at Rouge Steel Company in Dearborn, Michigan.

A preliminary assessment (PA) of the available U.S. Environmental Protection Agency (U.S. EPA) and State of Michigan file materials was conducted to familiarize the TechLaw, Inc. (TechLaw) Team with past compliance history, evidence of past releases, potential migration pathways, potential for exposure to any released hazardous constituents, closure methods and dates, citizen complaints, manufacturing processes and waste management practices at the Rouge Steel facility. A Visual Site Inspection (VSI) was conducted on May 31, 2000 thru June 2, 2000 by a TechLaw Team to identify and characterize SWMUs and AOCs. File material was provided to the TechLaw Team during the VSI by Mr. Don Windeler, Environmental Engineer at Rouge Steel. Photographs were taken during the VSI and are documented in Appendix A. The VSI Field Notebooks are included in Appendix B, and a site map showing SWMU and AOC locations is presented in Appendix C.

A total of 61 SWMUs and six AOCs were identified during the PA/VSI. These are described in more detail in Sections III and IV of this report. The units identified in the Coke Plant and By Products Area were not in operation during the VSI. A PA/VSI report dated May 6, 1987, identified 24 SWMUs and no AOCs. These units were numbered 1 thru 24, and those original numbers are identified in the SWMU descriptions. The SWMUs in this report are numbered according to the plant and/or process that they are associated with. For example, the SWMUS associated with the Coke Plant are numbered CP 1, CP 2, CP 3, etc. The subunits are identified within the SWMU description (i.e., CP 1a, CP 1b, CP 1c, etc.). Also, releases associated with several units were identified during the PA/VSI.

A Consent Order was issued to Rouge Steel by the Michigan Department of Environmental Quality (MDEQ) on May 8, 2000. According to Section 8.7.1 in the Order, it had not been determined if the Schaefer Road Area is part of the property identified in the order. The property identified in the Order refers to both the Rouge Steel plant and the Ford Motor Company (Ford) Plant. Furthermore, Sections 8.7. 2 thru 8.7.4 of the Order state that any corrective actions or response activities at the Schaefer Road Area will be addressed under Part 201 of the Michigan Natural Resources and Environmental Protection Act (NREPA) through a workplan. This workplan will include a schedule for investigation and remediation by Rouge Steel and Ford. Therefore, the Schaefer Road Wastewater Treatment Plant (SRWWTP) was not identified as a SWMU during the PA/VSI, but the wastestreams that are treated at the SRWWTP are discussed

in this report. Also, any SWMUs that may exist at the SRWWTP were not formally identified in this report. In addition, three USTs, WOT-1, WOT-2, and WOT-3 are located at the SRWWTP, but they were not identified as SWMUs or AOCs in this report.

An information request was sent out, but at the time of this report, Rouge Steel had not responded. The information request asked for information on the dates of operation, dimensions, material of construction, and function for various SWMUs and AOCs. The SWMU and AOC descriptions presented in Section III of this report identify this missing information as "unknown," where applicable.

II. SITE DESCRIPTION

The Rouge Steel facility is located at 3001 Miller Road in a commercial/industrial area of Wayne County in Dearborn, Michigan. The facility is bordered by the Rouge River on the south, Interstate 94 on the north, Schaefer Road on the west, and Miller Road on the east. The facility is located 2.8 miles upstream from the confluence of the Detroit and Rouge Rivers.

The Ford Motor Company Rouge River Complex consists of the Ford Motor Company Dearborn and Rouge Steel Company facilities. The complex is approximately 1200 acres in size, and the Rouge Steel Company makes up approximately 350 acres. According to a RCRA inspection performed on September 15 -17, 1998, the Rouge Steel facility consists of three decommissioned coke oven batteries and a coke by products recovery plant, three blast furnaces, two basic oxygen furnaces, an electric arc furnace, which is no longer operational, two ladle metallurgical facilities, three continuous casting machines, one hot strip mill, and one cold roll mill. The facility also includes of a former slabbing mill. The facility is completely fenced with security guards posted at the gates.

The facility began operations in 1919. On, January 1, 1982, the Ford Motor Company formed Rouge Steel Company as a wholly owned subsidiary. Rouge Steel Company's stock was sold to Marico Acquisition Corporation on December 15, 1989, and Rouge Steel has operated as an independent company since this sale. Currently, approximately 3,100 people are employed at the facility.

Rouge Steel Company manufactures hot rolled and cold rolled carbon steel strips. Currently, the Blast Furnace Plant, the Basic Oxygen Furnace (BOF) building, Continuous Caster Plant, Hot Strip Mill, and the Cold Rolling Mill are the primary facilities involved in the production of steel. At the Blast Furnace, iron ore, limestone, and coke are placed in the top of the furnace and heated air is blown into the bottom. The coal provides the heat that transforms the iron ore and limestone into molten iron. Molten slag floats on top of the molten iron and is subsequently removed from the bottom of the furnace. The molten slag is transported in ladle cars to the BF Slag Pit (SWMU BF 2). From July 1953 until an unknown date, the Sinter Plant, which was located at the northern end of the boat slip, was used to make clinker for the Blast Furnaces from iron oxide and slag. At the time of this report, it had not been determined as to when this plant was dismantled. Currently, the Blast Furnace Wastewater Treatment Plant (BFWWTP) (SWMU BF 1) is located where the Sinter Plant was.

The molten iron is transported in ladle cars to the BOF, where it is poured into the furnace along with scrap steel, and fluxes. Oxygen is then blown into the bottom of the furnace through a water cooled lance. Subsequently, impurities are burned off when the molten metal and the hot gases come in contact with one another. Alloys including limestone, burnt lime, dolomite, and fluorospar, are added, and the steel is tapped. The molten steel that results is transported in the

ladle cars to the Ladle Refining Stations at the Continuous Caster Plant where refinements are made to bring the steel up to certain specifications. Again, the molten slag that rests on the top is transported to the BOF Slag Pit (SWMU BOF 8).

From 1976 to 1992, the Electric Arc Furnace (EAF) was used to produce molten steel from cold steel scrap, iron charge, and fluxes. The heat for melting the scrap steel, iron, and fluxes was supplied by passing an electric current through the scrap between three cylindrical carbon electrodes which were inserted through the furnace roof. The molten steel resulting from this process was then transferred to the Continuous Caster Plant or poured into the iron molds to form ingots.

The molten steel is transferred in ladle cars to the Continuous Caster Plant. At the Continuous Caster Plant, the hot molten steel is poured from the ladle into a refractory line tundish. The tundish provides a constant head of molten steel, which provides a constant casting rate. From the tundish, the molten steel is poured into copper molds, where partial solidification occurs. Lubricants are sprayed into these molds to facilitate movement. As the partially solidified steel is withdrawn from these molds, it is sprayed with water to remove heat so that it can completely solidify. The solidified slabs of steel are then cut into the desired length. The process wastewater that results is piped to the Continuous Caster Recycle System (SWMU CCS 2) for treatment and recirculation back into the Continuous Caster Plant.

The slabs from the Continuous Caster Plant are transferred by mobile carrier to the piler at the entry end of the reheat furnaces at the Hot Strip Mill. The slabs are then placed in three walking beam reheat furnaces where they are heated to desired rolling temperature. The heated slabs are then passed through four roughing mill stands where the scale is removed by high pressure sprays to reduce the slabs' thickness. The resulting steel strips are then passed through seven finished stand rollers where the thickness of the slab is further reduced. The steel strips are now steel coils, and they continue across the run-out table where they are sprayed with water to cool them to the desired temperature.

The steel coils are transported to the Cold Rolling Mill where they are passed through three pickling lines. As the steel coils pass through the pickling lines, hydrochloric acid is sprayed to remove scale and other oxidizing impurities. Next, the coils are spray-coated with corrosion resistant oil. At this point, some of the coils are packaged and shipped to customers. The thickness of the remaining coils is further reduced by the cold rolling operations. In the cold rolling operation, the coils are sent through the tandem mills, annealing furnaces, and the temper mills. In the tandem mills, the coils are compressed between rolls to reduce the thickness while introducing the desired physical, mechanical, and surface properties. At this point, the coils have been reduced by 50 to 70 percent, but ductility of the steel has also been reduced. To increase the ductility of the steel, the steel coils are heated in the annealing furnaces to approximately 1300°F for 25 to 45 hours. Next, the steel coils are rolled in temper mills that reduce the steel strip by one to two percent in order to improve the surface texture and the forming qualities of

the steel. Lastly, the steel coils are sent through two slitters and then shipped to customers. The Cold Rolling Mill was originally constructed in the 1920s, but a new Cold Rolling Mill was installed in the 1960s.

From the 1920s to 1987, Rouge Steel produced its own coke. Coal was delivered to the facility in a boat and stored at the Hi-Line Area and on Miller Road until needed. From these storage areas, the coal was sent to the breaker building in hoppers on a conveyor. At the breaker building, a perforated drum, the breaker, broke the coal into fine pieces. The coal exited from the bottom of the breaker building to the top of the mixing building. In the mixing building, different types of coal were mixed for the foundry and the blast furnaces on a mixing belt. From the mixing belt, the coal fell into a pulverizing hammer mill. From the hammer mill, the coal fell into a spiral conveyor where it was carried to bucket elevators. The bucket elevators carried the coal upward 178 feet in the mixing building where it fed a conveyor which traveled to a charging bunker above "A" and "B" battery or to a charging bunker above "C" and "D" battery. From the bunker building, the coal was charged into the coke battery ovens through charging holes. The coal for the BF was coked for 16 ½ hours, and the coal for the foundry furnaces was coked for 28 hours. From the coke ovens, the coke was placed in a quench car, and quenched at the North and South Quench Stations (SWMU CP 1). After quenching, the coke was dumped on the wharf where the coke for the BF and the foundry furnaces were separated.

Coke oven gas was extracted from the coke ovens and piped to the coke by products recovery plant for cleaning and subsequent extraction of products. Cleaning the coke oven gas involved the extraction of tar, naphthalene, ammonia liquor, and light oil products. The naphthalene was shipped offsite. The ammonia liquor was later processed into ammonia vapor for use in the production of ammonium sulphate. The tar and the light oil were stored onsite. The clean gas flowed to an underground holder where it was mixed with BF gas and stored for use throughout the Rouge Plant. A small portion of this gas was pumped to the main line for use in the coke ovens.

The coke ovens and the by products recovery plant were originally built in the 1920s. The following table gives a historical overview of the coke ovens:

Coke Ovens	**Original Date of Operation**	**Modification Date**
"A" Battery- 45 Ovens	February 16, 1937	Rebuilt 45 ovens- August 22, 1964
"B" Battery- 61 Ovens	February 23, 1937	Rebuilt- March 4, 1962
"C" Battery- 61 Ovens	May 18, 1939	Rebuilt- August 11, 1963 and 1986
"D" Battery- 37 Ovens	October 16, 1952	
"Dx" Battery- 25 Ovens	March 3, 1963	

According to the information response submitted on November 30, 1998, during shutdown procedures of the Coke Plant and By Products Area (AOC D), the tanks were pumped out, the products were sold, and the wastes were sent offsite to a licensed waste disposal facility. The Coke Oven Light Oil Muck Tanks (SWMU CP 5) and the Coke Oven Gas Drip Water Tanks (SWMU CP 2) were visually inspected after the shutdown procedures and they were found to be residual free. The Coke Oven Tar Sludge Decanter Box (SWMU CP 3) was also visually inspected and no residual materials were found in the unit.

Also during shutdown procedures, all of the gas lines in the Coke Plant and By Products Area (AOC D) were blanked off and then purged with nitrogen gas. Certain portions of the by products area were steam cleaned and drained, including the primary cooler, tar precipitator, the AC stills, the final coolers, and the light oil still. The wash oil spiral coolers were cleaned with high pressure water and then drained. The drains and drain valves to all the tanks in this area were closed. According to the response to the information request, details on the exact procedures followed during shutdown of the area are not available. Therefore, it is not known if any sampling was performed in this area.

From 1963 to 1985, the molten iron from the blast furnaces was poured into iron molds to make ingots, lumps of steel weighing 10 to 25 tons each. These ingots were produced in the Ingot Mold Foundry by pouring the molten iron from the blast furnaces into sand molds. The molten iron was allowed to solidify before being used to cast steel ingots from the molten steel from the BOF. The spent sand from this operation was stored at the Spent Mold Foundry Sand Pile (SWMU MIS 8) and then disposed offsite. The steel ingots were then transferred to soaking pits, which operated from 1953 to 1985, in order to be heated to the desired rolling temperature before being transferred to the Former Slabbing Mill.

Prior to the BOF, from 1925 to 1965, the Open Hearth was used to transform the molten iron into molten steel. From the Open Hearth, the molten steel was transferred to the Blooming Mill and the Billet Mills where it was rolled into a billet and then a bar prior to being transferred to the Hot Strip Mill. The Open Hearth furnaces were originally installed between 1926 and 1930. They were rebuilt between 1948 and 1954, and they were removed in 1965 and replaced with the BOF. The Blooming Mill began operation on September 25, 1935 and was modified between 1953 and 1960. The Billet Mills began operation on March 29, 1926 and were modified in 1948.

The Former Slabbing Mill was not installed until the 1960s. According to the facility representative, the Former Slabbing Mill replaced the Blooming Mill. The Former Slabbing Mill was the initial rolling step for the steel ingots. After the ingots were heated in the soaking pits, they were transferred to a 48 by 96 inch universal mill were the ingot was reduced from a 37 by 68 by 96 inch block of steel to a slab that measured 8 inches high, 5 feet wide and 37 feet long. The slab was then passed through a scarfer to burn about 1/32 of a inch from all four sides to remove surface imperfections. After the slab passed through the scarfer, the slab was cut into two 16 foot sections by a hydraulic sheer. The scarfer material was transferred through a trench from the scarfer to the Former Scarfer Grit Scale Pit (SWMU FSM 3) and the wastewater from

the scale removal was transported to the Former Slab Mill Scale Pit (SWMU FSM 1). The wastewater from the Former Scarfer Grit Scale Pit and the Former Slab Mill Scale Pit were then piped to the SRWWTP prior to discharge into the Rouge River.

Bar Mills were originally used as early as 1925 at the Rouge Steel facility. They consisted of three mills: 14" Merchant Mill, 12" Spring Mill, and a 10" Rod Mill. The Merchant Mill began operation on November 23, 1925 and was removed between December 1964 and May 1965. The Spring Mill began operation on December 16, 1927, and the Rod Mill began operation on June 14, 1928 and was removed in September 1959. It could not be determined from the available file material when the Spring Mill was removed.

The following hazardous waste streams are no longer generated at the facility. According to the facility representatives, all of these waste streams were reportedly disposed offsite:

- Coke oven gas drip water (D003) was generated when moisture in the coke oven gas condensed, collected in the Coke Oven Drip Water Tanks (SWMU CP 2), and was then used at the North and South Quench Stations (SWMU CP 1) to quench hot coke.

- Tar decanter sludge (K087) was generated during the extraction of tar from the coke oven gas and stored in the Coke Oven Tar Sludge Decanter Staging Area (SWMU CP 4) prior to being rerouted to the Coke Oven Tar Sludge Decanter Box (SWMU CP 3). From 1915 until 1956, the tar sludge (K087) was stored at the Former Tar Sludge Landfill (SWMU EAF 1).

- Light oil muck (D003) was generated from decanting the wash oil used to wash the coke oven gas and then stored in the Coke Oven Light Oil Muck Tanks (SWMU CP 5).

- Final cooler water (D003) from the Coke Plant and By Products Area (AOC D) was treated and disposed of in the Injection Well System (SWMU CP 9).

- EAF dust (K061) generated during the production of steel from cold steel scrap, iron charge, and fluxes in the Electric Arc Furnace, was managed by the EAF Silo (SWMU EAF 2) and the EAF Shop Hopper (SWMU EAF 3).

- Water and PCB contaminated oil from leaking transformers in substation 12B of the Cold Rolling Mill was stored in the PCB Contaminated Oil UST (SWMU CRM 1).

- Spent methylene chloride and tetrachloroethylene (F001) generated in the dip degreaser at the Oxygen Plant for parts cleaning, was stored in the Methylene Chloride Drums - Oxygen Plant (SWMU MIS 6).

The following non-hazardous waste streams are no longer generated at the facility. These waste streams were reportedly disposed of offsite:

- Flushings from the cleaning of the north spiral cooler were collected in the 300 Gallon Hazardous Waste Tank (SWMU CP 6).

- Oil, de-emulsifier, and contaminated waste oil from the piston sealant system of the coke oven gas holder was stored in the Coke Oven Gas Holder Waste Tanks (SWMU CP 10).

- Mine refuse that included wood, slate, shale, rock, etc. was store at the GG Building Coal Picking Refuse Pile (SWMU CP 11).

- Coke Oven refractory liners that contained silica with ceramic binders were stored at the Coke Oven Refractory Refuse Pile (SWMU CP 12).

- AC Still Bottoms, diammonium phosphate effluent, and light oil plant wastewater was pumped to the Coke Oven Biological Wastewater Treatment Plant (SWMU CP 8).

- Steel pellets that were produced from blasting the surfaces of the tandem mill rolls were stored at the Roll Shop Silo and Dust Box (SWMU CRM 6).

- Used oil generated throughout the facility was stored in Used Oil Dempsters (SWMU MIS 7).

- Spent mold foundry sand generated from making iron ingots was stored at the Spent Mold Foundry Sand Pile (SWMU MIS 8).

- Wastewater from the Former Slab Mill Scale Pit (SWMU FSM 1) and the Former Scarfer Grit Scale Pit (SWMU FSM 3), was conveyed through Sewer Lines (SWMU MIS 5) to the SRWWTP.

The following are the hazardous streams that are currently generated at the facility and disposed offsite:

- Spent pickle liquor (K062) generated during the removal of scale and other oxidizing impurities from the steel strips at the pickle lines are stored in the Spent Pickle Liquor Holding Tank (SWMU CRM 3) and then piped to the <90 Day Storage Tanks (SWMU CRM 4).

- Xylene (F005), toluene (F003), and other D001 wastes are stored at the <90 Day Hazardous/Non-hazardous Waste Area (SWMU MIS 2).

- PCB filled drums and debris, used transformers, and samples taken for dielectric strength and moisture were managed at the PCB Storage Building (SWMU MIS 4).

- Spent Mineral Spirits (D001) from the Parts Cleaners (SWMU MIS 9) are disposed of offsite by Safety Kleen or the facility.

The following is a list of non-hazardous waste streams that are currently generated at the facility and disposed of offsite.

- Wastewater from the Blast Furnace Wastewater Treatment Plant (BFWWTP) (SWMU BF 1) and the North and South Hot Strip Mill Scale Pits (SWMU HSM 1) is conveyed through Sewer Lines (SWMU MIS 5) to the SRWWTP.

- Blast Furnace slag generated in the Blast Furnaces is stored at the Blast Furnace Slag Pit (SWMU BF 2).

- The blast flue dust from the Flue Dust Catcher (SWMU BF 3), is stored at the WOF Stockpiled Material (SWMU MIS 11) for use in the Waste Oxides Facility to make briquettes to be used in the Blast Furnaces. Coke breeze and iron ore fines are also stored as WOF Stockpiled Material.

- Kish and desulfer dust from the Kish Hopper (SWMU BOF 5) and the Desulfurization (D/S) Hopper (SWMU BOF 3) were stored at the Waste Material Accumulation Pile (SWMU BF 4). Presently, these dusts are stored at the New Debris Pile (SWMU MIS 10). Kish dust is generated during reladling at the Basic Oxygen Furnaces and the desulfurization dust is generated during the desulfurization process. Also, ladle refining and vacuum degasser dust from the Ladle Refining Facility No. 1 and the Vacuum Degasser System Baghouse (SWMU LRF 2) and the Ladle Refining Facility No. 2 Baghouse (SWMU LRF 3) are stored at the New Debris Pile.

- Lime dust generated when lime is dumped into a hopper for use in the Basic Oxygen Furnaces is stored in the Lime Dust Hopper (SWMU BOF 1).

- Fine and course dust particles generated during the conversion of molten iron into steel in the Basic Oxygen Furnaces are stored at the Course and Fine Dust Silo (SWMU BOF 4).

- Molten iron and slag generated from the cleaning the ladles cars is managed in the Ladle Dumping Operation Pits (SWMU BOF 2).

- BOF slag and metal generated during the desulfurization process is stored at the BOF Slag Pile (SWMU BOF 6).

- Skulls, metal that adheres inside the ladles, are stored in the BOF Slag Pit (SWMU BOF 8).

- Solids and dissolved gases from contact water generated in the Vacuum Degassing Process is handled by the Vacuum Degasser Recycling System (SWMU LRF 1).

- Blowdown from the Continuous Caster Recycle System (SWMU CCS 2), storm water and non-contact cooling water generated throughout the facility are managed in the 12A Lagoon (SWMU CCS 1).

- Scale removed from the North and South Hot Strip Mill Scale Pits (SWMU HSM 1) and the CCS East and West Scale Pits (CCS 2b and 2c) that will be used as feedstock in the WOF is stored in the Slab Mill Scale Piles (SWMU FSM 2).

- Oily wastes generated in the Cold Rolling Mill are stored at the Tandem Mill Sump Oil Tanks (SWMU CRM 5), J-9 Sludge Box (SWMU CRM 7), Scrap Oil Drums (SWMU CRM 8), Z-46 (Z-47) Waste Oil Tanks (SWMU CRM 9), and the Cold Mill Sumps (SWMU CRM 10).

- Spent oil generated from vehicle maintenance is stored in the Hi-Lo Waste Oil Tank (SWMU MIS 3).

- Rinse water from the pickling lines in the Cold Rolling Mill are managed by the North and South Neutralization Areas (SWMU CRM 2) and piped through the Sewer Lines (SWMU MIS 5) to the SRWWTP.

The following table summarizes all the USTs that have been closed and/or removed at the facility. This material is taken from Notifications for Underground Storage Tanks and Registrations for Underground Storage Tanks completed by Rouge Steel dated May 5, 1986 and February 14, 1996. According to the facility personnel, all of the USTs at the facility have been removed or closed by the facility:

UST Name	Product Stored	Capacity (gallons)	Construction Materials	Year of Installation	Closure Status/Date
HLS-1	Diesel	2,000	Fiberglass Reinforced Plastic	1983	Removed on June 26, 1990
HLS-2	Diesel	10, 000	Asphalt Coated Steel	1958	Removed on November 21, 1989
EAF-1	Diesel	1,000	Fiberglass Reinforced Plastic	1980	Removed on January 25, 1991

UST Name	Product Stored	Capacity (gallons)	Construction Materials	Year of Installation	Closure Status/Date
WOT-1	Used Oil	4,000	Steel	1969	Removed on December 20, 1991
WOT-2	Used Oil	10, 000	Steel	1964	Removed on December 20, 1991
WOT-3	Used Oil	10,000	Steel	1973	Removed on December 20, 1991
BOF UST (AOC F)	Diesel	1,000	Steel	Unknown	Closed in place on November 30, 1999
PCB-Contaminated Oil UST (SWMU CRM 1)	Used oil with PCBs	1,000	Steel	1927	Closed in place on February 9, 1996
Coke Oven Gas Drip Water Tanks (SWMU CP 2)	Coke Oven Gas Drip Waste (D003)	2-2,000 2-1,500 1-1,000	Steel 2-Fiberglass	1973	Stopped use in 1987

Regulatory History

On July 25, 1977, the Michigan Department of Natural Resources (MDNR) submitted a letter to U.S. EPA Region 5 stating that the Rouge Complex was in violation of its NPDES permit No. MI0003361.

On August 19, 1977, Final Order No. 1929 was issued against the Ford Motor Company for the Rouge Steel Plant. It was ordered that the NPDES Permit No. MI0003361 issued on December 26, 1974, and modified on September 22, 1977, was in full force except as modified by the Final Order until October 31, 1979, when the NPDES Permit expired. Ford was also ordered to treat and control their wastewater discharge to the extent necessary to achieve and maintain the final limitations and conditions as specified in the Final Order.

According to the findings of fact presented in the May 8, 2000 Consent Order, on August 11, 1980, Ford Motor Company filed a Notification of Hazardous Waste Activity for the Steel Division, the successor of Rouge Steel, with the U.S. EPA. In the notification Ford indicated that the Steel Division generates, treats, stores, or disposes of hazardous waste.

On November 17, 1980, Ford submitted Part A of its RCRA permit application for the Injection Well System (SWMU CP 9). On the Part A, Ford identified D003 as the type of waste that would be injected. The general section of the Part A was resubmitted on March 24, 1982 to reflect Ford changing its Steel Division to Rouge Steel.

In a letter dated April 15, 1982, Rouge Steel informed MDNR of the change of ownership for the deep disposal wells at that Injection Well System (SWMU CP 9) had been changed from the Ford Motor Company to them. This effected permit numbers 09736882 for the old well (deep disposal well No. 1) and 184754882 for the new well (deep disposal well No. 2). In the letter, these wells are numbered 1-009 and 2-184 respectively. There was no other information regarding these permits in the available file material.

According to the file summary in Complainant's Exhibit 13, MDNR sent Rouge Steel a notice of violation on February 19, 1982 for illegally disposing of hazardous waste leachate from the Allen Park Clay Mine Landfill in the Injection Well System (SWMU CP 9).

There have been several RCRA inspections conducted at Rouge Steel by MDNR on behalf of U.S. EPA. According to a file summary in Complainant's Exhibit 13, RCRA inspections were conducted on September 20, 1982, September 21, 1983, October 8 and 10, 1984, May 21, 1985, and March 14, 1986. The facility was also inspected on September 21, 1988, December 1-3, 1992, and September 15-17, 1998. Violations were identified during the inspections that occurred on September 20, 1982, October 8 and 10, 1984, March 14, 1986, and September 21, 1988. Most of the violations were minor, but major violations were observed during the inspections conducted on October 8 and 10, 1984 and March 14, 1986. A letter dated October 14, 1984 in the information response, explains that tar spillage was noticed in the tar pitch loading area during the inspection on October 8 and 10, 1984. In the information response, correspondence dated April 15, 1986 explains that tar pitch spillage was observed around the Coke Oven Tar Sludge Decanter Box (SWMU CP 3) during the inspection on March 14, 1986. Also, the Coke Oven Tar Sludge Decanter Staging Area (SWMU CP 4) was identified as a surface impoundment during this inspection. The details of these violations are explained further in the Release History and in the SWMU Descriptions.

Rouge Steel has submitted several Notifications of Hazardous Waste to U.S. EPA identifying different waste types. On May 31, 1989, Rouge Steel identified F001, K061, an K062 as hazardous wastes that were generated, and D001, D002, and D003 were listed as characteristics of nonlisted hazardous wastes. On January 12 and April 6, 1990, Rouge Steel identified F001 wastes and identified D001, D002, and D000 as characteristics of nonlisted hazardous wastes.

According to the available file material, there have been several instances of noncompliance with the facility's NPDES Permit. The facility was issued notices of noncompliance on October 18, 1988 and June 28, 1989, and Rouge Steel sent letters to MDNR on November 12, 1991, March 9, 1993, and November 10, 1995 stating that it had exceeded its permit limits.

The following permits have been issued to the Rouge Facility in Dearborn:

NPDES Permit No. MI0043524 was issued by MDNR on July 19, 1984, and the permit was modified on February 26, 1988 for the discharge of treated wastewater into the Rouge River. According to the available file material, new permits were issued on August 17, 1989 and on

July 22, 1997 and modified on June 11, 1999. In a letter dated February 11, 2000, Rouge Steel requested that the NPDES permit be modified to include Outfall 006 as preparation for the start up of the new co-generation power plant. The file material did not indicate if this modification occurred.

UIC Permit No. MI-163-1W-002 was issued on October 11, 1985 and modified on April 22, 1986 for the deep disposal of hazardous waste in deep disposal well No. 2 at the Injection Well System (SWMU CP 9). The injection of hazardous waste ceased in 1987 when the Coke Plant closed. From the available file material, it appears that this permit was issued after Permit No. 09736882. It could not be determined from the available file material if a new permit was issued for deep disposal well No. 1. It is highly unlikely that a new permit was issued for deep disposal well No. 1 because it stopped operation in 1984. Deep disposal well No. 2 was plugged and abandoned on July 22, 1988.

On April 27, 1992, the Department of the Army, issued Federal Permit No. 89-009-003-1 to Rouge Steel that allowed them to mechanically dredge 2,000 cubic yards of material from a 2,600 by 250 foot boat slip of the Rouge River to a depth of 23 feet below Low Water Datum of 570.5 feet. The permit also allowed Rouge Steel to dredge a maximum of 2,000 cubic yards of material every two years for a ten year period. The permit expires on December 31, 2002.

On May 8, 2000, Consent Order WMD 111-04-00 was issued to Rouge Steel, Ford Motor Company, and MDEQ. The order became effective on April 28, 2000. The objectives of the Order are as follows:

- Rouge Steel and Ford are to conduct RCRA corrective action at known and identified waste management units (WMUs) and areas of concern (AOCs).
- Rouge Steel and Ford are to clean any contaminants that might exist at the WMUs and AOCs.
- MDEQ is to act as the lead during the corrective action and clean up procedures, to facilitate the efforts for the restoration of the Rouge Manufacturing Complex as part of the Rouge Heritage 2000 Project, and to perform corrective action in accordance with RCRA Section 3004(u).

Environmental Setting

The Rouge Steel facility is bordered by industrial properties and commercial land uses on all four sides of the facility. There are no sensitive environments/wetlands within a one-mile radius of the facility.

There are only two water wells within a two mile radius of the facility. One of the water wells has been plugged and abandoned, and the status of the other well is unknown. The plugged well is 125 feet deep and the other well is 112 feet deep. The purpose of these wells could not be determined from the available file material.

The nearest surface body to the facility is the Rouge River located approximately 100 yards to the southwest. There are no reported surface water intakes used for drinking water or drinking water wells within a 3-mile radius of the facility. The drinking water is primarily obtained from surface water sources supplied by the Detroit Metro Water Department. The surface water sources of water supply for the Detroit area include Lake St. Clair, Detroit River, Clinton River, Rouge River, Huron River, and inland lakes. The surface water is used a lot because it is readily available, and the groundwater quantities are limited. At the facility, water supplies are purchased.

The Rouge Steel facility is located on the southeastern side of the Michigan Basin. The Michigan Basin covers an area of approximately 122,000 square miles with its center and deepest part located in the central portion of the Southern Peninsula. In the Southern Peninsula, the Michigan Basin includes approximately 13,000 feet of consolidated sediments, including sandstone, limestone, dolomite, and shale. These sediments rest on Precambrian Granite. In the vicinity of the facility, the surficial sediments consist of glacial deposits of lacustrine and delta sand, lacustrine clay, and lacustrine and delta loam. These sediments were deposited during the Wisconsin age of the Pleistocene glaciation.

Groundwater at the facility has been encountered at 9 feet below the ground surface. A groundwater study was conducted at Ford's Allen Park Clay Mine Landfill facility which is located within a one mile radius of the facility to provide local groundwater information. From this study, it was discovered that shallow and deep glacial aquifer systems are present in the area were the facility is located. The Michigan Department of Public Health established that the shallow aquifers, located less than 25 feet below the ground surface, are not suitable for drinking water. The deeper aquifer system, which is located more than 70 feet below the ground surface is highly mineralized and would require treatment prior to use.

The monitor wells located at the Allen Park Clay Mine Landfill were used to measure the water elevations and determine groundwater flow. The water wells penetrate a local glacial artesian aquifer system more than 70 feet below ground level. The static water levels range from 505 feet to 522 feet above mean sea level, reaching a height of up to 12 feet above the existing ground surface. The groundwater in this aquifer is to the east-southeast.

Release History

On August 6, 1964, U.S. EPA communicated that Ford waste outlets were a major contributor of oil to the Detroit and Rouge Rivers. Ford was advised to take steps to reduce the amount of oil emitted to the Rouge River from its operations to the extent necessary to eliminate oil streaks and pools that accumulate in the river below the company outlets. On March 31, 1966, the Michigan Water Resources Commission (MWRC) adopted a Notice of Determination and Hearing against Ford asking them to comply with certain conditions and restrictions in order to eliminate the pollution of the Rouge River.

A MDNR memorandum dated January 10, 1977 describes an acid loss from pickle line no. 3 that occurred on January 7, 1977. An investigation by MDNR revealed that the overflow line, where spent acid overflows to the Spent Pickle Liquor Holding Tank (SWMU CRM 3), was blocked between pickle line nos. 2 and 3. Apparently, this blockage resulted in the spent liquor spilling onto the floor of the Cold Rolling Mill to the floor drains that lead to the North and South Neutralization Areas (SWMU CRM 2). Normally, caustic is added at these areas before discharge to the Schaefer Road Wastewater Treatment Plant. The North and South Neutralization Areas normally receive wastewater from fume scrubbers that do not contain iron. When the release occurred, the iron-laden acid was not neutralized enough to drop out the iron, which resulted in an orange discoloration of the Rouge River. This line was repaired on January 8, 1977.

According to a Ford memorandum dated April 23, 1981, a spill occurred at the Coke Plant and By Products Area (AOC D) when the drain on a line, used to pump light oil from the receiving tank to the storage tank, was not shut off. The check valve on the storage tank failed and the light oil drained from the storage tank to the light oil sump. From the sump, the oil drained into the tailrace and ultimately into the Rouge River because the switch on the sump pump had been turned off. According to the memorandum, the switch was left on at all times from then on, and the sewer line from the water side of the pump was blanked and a steam syphon was used to keep the water at a safe level.

In the November 30, 1998 response to U.S. EPA's November 3, 1998 information request (hereafter referred to as the information response), correspondence dated October 15, 1984, November 14, 1984, and April 15, 1986, explains that during inspections performed by MDNR on October 8 and 10, 1984, tar spillage was observed in the tar pitch loading area. According to the correspondence, there was also a visible evidence of naphthalene crystal release to the air. The correspondence did not indicate the quantity of tar that had been spilled in the loading area. Rouge Steel responded to MDNR's October 15, 1984 letter on November 15, 1984 stating that the tar spillage in the tar pitch loading area had been removed. Rouge Steel assured MDNR that the area would be maintained. Exhibit 13 in the complaint to Rouge Steel dated October 29, 1986 shows a May 21, 1985 letter explaining that the facility was reinspected on May 7, 1985. During the reinspection, it was found that the operating procedures at the tar pitch loading area had changed to control and prevent tar pitch spillage. The letter indicated that Rouge Steel intended to install new equipment to eliminate and control organic emissions. Rouge Steel was found to be in compliance during the reinspection.

A letter dated April 15, 1986 in the information response explains that tar pitch spillage was observed around the Coke Oven Tar Sludge Decanter Box (SWMU CP 3) during an inspection on March 14, 1986. Also during this inspection, the Coke Oven Tar Sludge Decanter Sludge Staging Area (SWMU CP 4) was identified as a surface impoundment. In Complainant's Exhibit 18, Rouge Steel responded in a letter dated May 15, 1986. In this letter, Rouge Steel states that the tar pitch is a product, not tar decanter sludge (K087). According to the letter, it was normal to dispose of any tar pitch spillage with the tar decanter sludge. The facility also reported that a

new steel plate was welded on the Coke Oven Tar Sludge Decanter Box (SWMU CP 3) to prevent further spillage. The facility further explained that a continuous concrete pad extended throughout the area of the Coke Oven Tar Decanter Sludge Staging Area. The use of this area was discontinued, and in the information response, on January 18, 1988, Rouge Steel informed MDNR that the Coke Oven Tar Sludge Decanter Staging Area was closed. On March 16, 1988, MDNR certified that the area had been clean closed.

Between July 1, 1987 and June 26, 1991, Rouge Steel submitted 15-day letters to U.S. EPA Region 5 with incident reports attached describing releases of EAF dust (K061) to the environment. There were releases of EAF dust (K061) from the pneumatic dust transport system, and the EAF Dust Silo (SWMU EAF 2). Some of the causes of these releases were failure of the level indicator on the surge hopper, failure of the seal on the No. 4 compartment rotary lock, and failure of the upper level limit on the EAF Dust Silo. During each release, there were no injuries, the release was confined to the EAF, and the released material was disposed of in a hazardous waste landfill offsite.

According to a Report of Oil, Salt or Polluting Material Losses completed by Rouge Steel on September 26, 1988, seal failure inside a bus transfer box occurred on September 16, 1988. According to this report, approximately 10.1 pounds of PCB fluid leaked across the bus transfer box into the control panel, where it collected in an outside dike. The PCB fluid was soaked up and contained using absorbent pillows. The report stated that a daily inspection of the unit will be conducted by Power Utility Operations until the unit is repaired and modified. The facility communicated in the report that a modification to the bus transfer box would prevent fluid leaks to the control panel and contain the PCB material within the dike.

In a letter to U.S. EPA Region 5 dated February 23, 1990, Rouge Steel submitted an incident report explaining that a release of one pint of mercury (U151) occurred at the Hi-Line Instrument Shop on February 15, 1990. According to the report, the glass container that stored the mercury was broken. The released mercury was confined to the Instrument Repair Shop and the adjacent lunchroom. One half a pint of mercury was recovered and placed in a 55 gallon drum along with contaminated rags from the clean up for disposal offsite.

On December 10, 1990, Rouge Steel informed the Michigan State Police Fire Marshall, (MSPFM) that an UST at the EAF was discovered leaking diesel fuel at a rate of 0.092 gallons per hour (GPH), which exceeds the state guideline of 0.05 GPH. This leak was discovered on October 18, 1990 during an UST precision test. Rouge Steel also informed the MSPFM of its intent to remove the tank. In August 1991, Rouge Steel prepared a tank closure and site assessment report regarding the removal of this UST. According to this report, the UST removal activities began on December 22, 1990 and were completed on January 25, 1991. During the removal activities, there was no visible evidence of any release noted by the contractor, but a very slight odor was detected. The tank and its associated pipes appeared to be in good physical condition at the time of the removal. On January 7, 1991, three slag samples were taken from below each end of the tank and analyzed for BTEX and Total Petroleum Hydrocarbons (TPH).

The analytical results exceeded the MDNR Act 307 Type B clean up standards. Therefore, on February 8, 1991, a contractor excavated the hydrogen impacted soil discovered during the removal of the tank. At this time, samples were taken to determine the vertical and horizontal extent of contamination. It was speculated that the soils were impacted because of the piping or the tank's joints. Five soil samples were collected and analyzed for BTEX and PNAs, and the analytical results were all below the Type B cleanup criteria specified by the Act 307 Rules. Therefore, remediation of this site was not required. One groundwater sample was collected, but the analytical results were also below the Type B cleanup criteria. The excavated soil and the crushed tank were transported to Wayne Disposal, Inc. for disposal. In April 1991, the excavation was backfilled with slag, which is a common fill material used at Rouge Steel. According to a letter from Rouge Steel to MDNR dated October 19, 1993, a hydrogeologic investigation was conducted at the EAF where the UST was removed on May 13, 1993. From this investigation, it was concluded that remediation was not necessary. It could not be determined from the available file material if MDNR approved of the removal and closure activities conducted on this UST.

Rouge Steel sent U.S. EPA Region 5 a spill report on July 16, 1991 concerning a release of hydrochloric acid from the No. 4 pickle line in the Cold Rolling Mill. According to the detailed spill report submitted by Rouge Steel to MDNR on July 26, 1991, the leak from the No. 4 pickle line was discovered at approximately 5:30 PM on July 13, 1991. This leak resulted in a release of 1663 pounds of hydrochloric acid to one of the Cold Mill Sumps (SWMU CRM 10) beneath the No. 4 pickle line. The released material subsequently ran into a concrete trench that lead to the South Neutralization Area (SWMU CRM 2b). From the South Neutralization Area, the released material flowed through the Sewer Lines (SWMU MIS 5) which lead to the SRWWTP. This leak occurred at the bottom of the No. 1 tank on this line. When the leak was discovered, the contents of the No. 1 tank were pumped into the Spent Pickle Liquor Holding Tank (SWMU CRM 3). Next, water hoses and emergency showers were turned on to run water beneath the No. 4 pickle line to dilute the acid and to rinse the No. 1 tank. Afterward, approximately 6,000 gallons of liquid was pumped out of the No. 2 tank into the Spent Pickle Liquor Holding Tank to stop any additional acid from reaching the No.1 tank. The flow of caustic solution to the South Neutralization Area (SWMU CRM 2b) was increased in order to neutralize the weak acid solution running into the sewer system. From the sewer system, the acid was piped to the SRWWTP and then to the Rouge River.

When the No. 1 tank was rinsed out, the hoses and emergency showers were turned off. The water flow from the No. 4 pickle line had been stopped, but the flow of caustic solution to the South Neutralization Area continued. As a result of the July 26, 1991 release, Rouge Steel initiated an engineering study of methods for retaining spills from the acid tanks in all three pickle lines. According to the spill report, a completed report on this study was to be submitted to MDNR by August 15, 1991. When the most appropriate method of containment was found, a construction schedule was to be developed and submitted to MDNR. This report on the containment study and the construction schedule for the containment structure was not located in the available file material.

There have been several releases of spent pickle liquor (K062) as a result of ruptured transfer pipes. According to incident reports submitted by Rouge Steel to MDNR and U.S. EPA Region 5 on September 23, 1991, May 13, 1992, and June 25, 1992, ruptured transfer pipes resulted in the release of spent pickle liquor (K062). On September 19, 1991 and again on June 25, 1992, approximately 5,000 gallons of spent pickle liquor was released, and on May 7, 1991, approximately 500 gallons of spent pickle liquor was released. During all three incidents, the spent pickle liquor (K062) was first released to a trench prior to being pumped to the North Neutralization Area (SWMU CRM 2a) for neutralization before being piped to the SRWWTP. The material that was not piped to the SRWWTP was pumped to the Spent Pickle Liquor < 90 Day Storage Tanks (SWMU CRM 4). These transfer pipes were subsequently repaired before being placed back into service.

Rouge Steel submitted an incident report to U.S. EPA Region 5 on February 24, 1992 describing the release of mercury (U151) in the Cold Rolling Mill. According to the incident report, approximately 2.5 pounds of mercury was released to the ground in the storage area at the south end of the annealing isle inside the Cold Rolling Mill. This material was contained and clean up immediately.

In a letter to MDNR dated July 30, 1992, Rouge Steel explained that on July 25, 1992, a ruptured feed line on the hydrochloric acid tank adjacent to the Cold Rolling Mill released 26,300 gallons of hydrochloric acid. The acid was reportedly neutralized as it flowed through the lime bed under the tank to a storm sewer. From the storm sewer, the material went to the SRWWTP and ultimately to the Rouge River.

There have been several upsets at the "C" Blast Furnace according to correspondence from Rouge Steel to MDNR on May 15, 1992 and correspondence from MDNR to Rouge Steel on September 16, 1992. According to the correspondence on May 15, 1992, the upset at the blast furnace occurred on May 8, 1992 as the result of opening the gas washer on the "C" blast furnace. According to the letter, the drain on the gas washer had been plugged, and when it opened up, water overflowed the weir box, spilled onto the ground, and entered the adjacent catch basin. According to the correspondence dated September 16, 1992, on August 20 and September 3, 1992, 18, 646 gallons of process water and approximately 80,000 gallons of cooling water, respectively, spilled from the gas washer. All three of these discharges ultimately flowed to the Rouge River.

In a letter to MDNR, dated November 5, 1992, Rouge Steel explained that on October 27, 1992, a tote bin containing Qwerl 599 RS, a temper mill lubricant, tipped over due to improper loading and unloading procedures. Approximately 188 gallons of the material spilled on the concrete floor and flowed into the storm sewer, but visual inspections indicated that the material did not reach the boatslip leading to the Rouge River. According to the manufacturer of this material, 188 gallons of this material contained 210 pounds of sodium nitrite. The released material was removed from the floor using Dura Soak mats, and an industrial cleaner vacuumed the material

from the storm sewer and manholes in the area. The material was subsequently sent to Rouge Steel's oil recovery contractor. As a consequence of this incident, Rouge Steel reviewed the supplier loading procedure and their unloading procedure to prevent this from recurring.

On June 11, 1993, Rouge Steel informed MDNR of a tanker accident that occurred on June 3, 1993. According to the correspondence, a Ford Motor Company Locomotive collided with an Eaglebrook, Inc. tank truck containing ferrous chloride inside the Rouge Steel plant near Gate 6. The tanker was dislodged from the tractor and it overturned and punctured. As a result, approximately 848 gallons of ferrous chloride, to be used in the pickle lines, was spilled to the pavement. Some of the spilled material flowed to a storm sewer, but sand was used to absorb and dike the rest of the material to prevent further drainage to the storm sewer. A clean-up contractor vacuumed eight catch basins in the storm sewer system. This storm sewer system consists of eight catch basins to connected to a ninth manhole leading to the main sewer system. This main sewer system flows south into the Roulo Creek. The Roulo Creek outfall was monitored, and from an analysis of the material in the storm sewer, no material reached the Roulo Creek outfall.

According to an incident report submitted by Rouge Steel to MDNR on June 7, 1994, a release of spent hydrochloric acid occurred on May 29, 1994. According to the report, the release occurred while the spent hydrochloric acid was being pumped from the Spent Pickle Liquor Holding Tank (SWMU CRM 3) to a tanker truck. It appears that a fitting on the hose broke and approximately 50 gallons leaked and went into a floor drain leading to the SRWWTP and ultimately to the Rouge River.

A total of 61 Solid Waste Management Units (SWMUs) and six Areas of Concern (AOCs) were identified during the PA and VSI. The SWMUs and AOCs are listed in Table 1 on the following page.

Table 1: Solid Waste Management Units and Areas of Concern

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.
COKE PLANT AND BY PRODUCTS AREA (CP)			
SWMU CP 1	North and South Quench Stations	**HIGH**	N/A
SWMU CP 2	Coke Oven Gas Drip Water Tanks	**MODERATE**	Unit #12
SWMU CP 3	Coke Oven Tar Sludge Decanter Box	**HIGH**	N/A
SWMU CP 4	Coke Oven Tar Sludge Decanter Staging Area	**LOW**	Unit #14
SWMU CP 5	Coke Oven Light Oil Muck Tanks	**LOW**	Unit #17
SWMU CP 6	300 Gallon Hazardous Waste Tank	**LOW**	N/A
SWMU CP 7	Coke Oven Tar Sludge Tanks	**LOW**	N/A
SWMU CP 8	Coke Oven Biological Wastewater Treatment Plant	**LOW**	Unit #18
SWMU CP 9	Injection Well System	**LOW**	Unit #16
SWMU CP 10	Coke Oven Gas Holder Waste Tanks	**LOW**	Unit #10
SWMU CP 11	GG Building Coal Picking Refuse Pile	**LOW**	Unit #11
SWMU CP 12	Coke Oven Refractory Refuse Pile	**LOW**	Unit #13
SWMU CP 13	AC Still Bottom Holding Sludge Lagoon	**LOW**	Unit #15
BLAST FURNACE (BF)			
SWMU BF 1	Blast Furnace Wastewater Treatment Plant (BFWWTP)	**MODERATE**	Unit #23
SWMU BF 2	Blast Furnace Slag Pit	**LOW**	N/A
SWMU BF 3	Flue Dust Catcher	**MODERATE**	N/A
SWMU BF 4	Waste Material Accumulation Pile	**HIGH**	Unit #1
BASIC OXYGEN FURNACE (BOF)			
SWMU BOF 1	Lime Dust Hopper	**LOW**	N/A

Table 1: Solid Waste Management Units and Areas of Concern (Continued)

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.
SWMU BOF 3	Desulfurization (D/S) Hoppers	**LOW**	N/A
SWMU BOF 4	Course and Fine Dust Silo	**MODERATE**	Unit #7
SWMU BOF 5	Kish Hoppers	**LOW**	N/A
SWMU BOF 6	BOF Slag Pile	**LOW**	N/A
SWMU BOF 7	BOF 55 Gallon Drum Pick Up Area	**LOW**	N/A
SWMU BOF 8	BOF Slag Pit	**LOW**	N/A
ELECTRIC ARC FURNACE (EAF)			
SWMU EAF 1	Former Tar Sludge Landfill	**HIGH**	N/A
SWMU EAF 2	EAF Silo	**HIGH**	Unit #9
SWMU EAF 3	EAF Shop Hopper	**HIGH**	Unit #9
LADLE REFINING FACILITY (LRF)			
SWMU LRF 1	Vacuum Degasser Recycling System	**LOW**	N/A
SWMU LRF 2	Ladle Refining Facility No. 1 and the Vacuum Degasser System Baghouse	**LOW**	N/A
SWMU LRF 3	Ladle Refining Facility No. 2 Baghouse	**LOW**	N/A
CONTINUOUS CASTING SYSTEM (CCS)			
SWMU CCS 1	12A Lagoon	**MODERATE**	N/A
SWMU CCS 2	Continuous Caster Recycle System	**MODERATE**	N/A
SWMU CCS 3	Drums Storage Area	**LOW**	N/A
FORMER SLABBING MILL (FSM)			
SWMU FSM 1	Former Slab Mill Scale Pit	**MODERATE**	N/A
SWMU FSM 2	Slab Mill Scale Piles	**MODERATE**	N/A
SWMU FSM 3	Former Scarfer Grit Scale Pit	**MODERATE**	N/A
SWMU FSM 4	Soak Pit Debris Pile	**LOW**	N/A

Table 1: Solid Waste Management Units and Areas of Concern (Continued)

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.
HOT STRIP MILL (HSM)			
SWMU HSM 1	North and South Hot Strip Mill Scale Pits	**HIGH**	N/A
COLD ROLLING MILL (CRM)			
SWMU CRM 1	PCB-Contaminated Oil UST	**HIGH**	N/A
SWMU CRM 2	North and South Neutralization Areas	**LOW**	N/A
SWMU CRM 3	Spent Pickle Liquor Holding Tank	**LOW**	Unit #24
SWMU CRM 4	Spent Pickle Liquor <90 Day Storage Tanks	**LOW**	Unit #24
SWMU CRM 5	Tandem Mill Sump Oil Tank	**MODERATE**	N/A
SWMU CRM 6	Roll Shop Silo and Dust Box	**LOW**	N/A
SWMU CRM 7	J-9 Sludge Box	**LOW**	N/A
SWMU CRM 8	Scrap Oil Drums	**LOW**	N/A
SWMU CRM 9	Z-46 (Z-47) Waste Oil Tanks	**LOW**	N/A
SWMU CRM 10	Cold Mill Sumps	**LOW**	N/A
MISCELLANEOUS (MIS)			
SWMU MIS 1	Asbestos Storage Area	**LOW**	N/A
SWMU MIS 2	<90 Day Hazardous/Non-hazardous Waste Area	**LOW**	Unit #25
SWMU MIS 3	Hi-Lo Waste Oil Tank	**HIGH**	N/A
SWMU MIS 4	PCB Storage Building	**LOW**	Unit #19
SWMU MIS 5	Sewer Lines	**LOW**	N/A
SWMU MIS 6	Methylene Chloride Drums- Oxygen Plant	**LOW**	N/A
SWMU MIS 7	Used Oil Dempsters	**LOW**	Unit #21
SWMU MIS 8	Spent Mold Foundry Sand Pile	**LOW**	Unit #22
SWMU MIS 9	Parts Cleaners	**LOW**	N/A
SWMU MIS 10	New Debris Pile	**LOW**	N/A

Table 1: Solid Waste Management Units and Areas of Concern (Continued)

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.
SWMU MIS 11	WOF Stockpiled Material	**MODERATE**	N/A
SWMU MIS 12	Former Construction and Excavation Landfill	**HIGH**	N/A
AREAS OF CONCERN (AOC)			
AOC A	Oil Release Adjacent to J-9 Shop at the Cold Rolling Mill	**HIGH**	N/A
AOC B	Oil Release North Side of Hi-Lo Shop at the Bolster Layout Area	**HIGH**	N/A
AOC C	Electric Arc Furnace within the Electric Arc Furnace Building	**HIGH**	N/A
AOC D	Coke Plant and By Products Area	**HIGH**	N/A
AOC F	BOF UST at the Basic Oxygen Furnace Building	**HIGH**	N/A

III. SOLID WASTE MANAGEMENT UNITS

This section presents descriptions of the SWMUs identified during the PA and VSI at the Rouge Steel facility. Photograph numbers correspond to those presented in the photograph log in Appendix A.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 1 - North and South Quench Stations

Photograph No(s).: R1P9, R1P10, R6P8, R6P14, R6P15, R6P16, R6P17, R6P18, and R1P20

Period of Operation: Unknown to 1987; it is reported that Coke Batteries A, B, and C were constructed in the 1930s and Battery D was constructed in the 1950s. The operational history of the Quench Stations is not known; however, Reference 20 indicates the Quench Recirculating Systems may have been added in 1979.

Location: This unit is located at the north and south ends of the coke batteries in the Coke Plant Area.

Physical Description: These units are two brick towers used to quench rail cars of hot coke with water for cooling. These units consists of the following components: North Quench Station (SWMU CP 1a), South Quench Station (SWMU CP 1b), North Quench Recirculating Sump (SWMU CP 1c), and the South Quench Recirculating Sump (SWMU CP 1d). The North and South Quench Stations (SWMU CP 1a and 1b, respectively) are located at each end of the Coke Batteries. The rail car containing the hot coke entered the tower, which was equipped with a overhead sprayer to spray water on the hot coke. The floor of the unit appeared to be soil covered with gravel or slag. The water and condensed steam would drain to the adjacent associated sumps (North and South Quench Recirculating Sumps, SWMUs CP 1c and CP 1d) for recirculation as quench water. Steam was also released to the atmosphere.

The North Quench Recirculating Sump is located on the west side of the North Quench Station and the South Quench Recirculating Sump is located on the south and east corner of the South Quench Station. Each of these concrete sumps contained standing liquid at the time of the VSI, so their depth could not be determined. The estimated dimensions of the North Quench Recirculating Sump are 45 feet by 20 feet. The South Quench Recirculating Sump is roughly the same capacity as the North Quench Recirculating Sump, although it is "L" shaped. Facility representatives did not known the purpose or function of this shape.

According to file materials, coke oven drip gas condensate from the Coke Oven Gas Drip Water Tanks (SWMU CP 2) was conveyed to the Quench Stations and added to the quench water. According to the November 30, 1998 Rouge Steel response to U.S. EPA Region 5's Information Request, the Coke Oven Drip Gas was used in the North Coke Oven Recirculating Sump to quench the hot coke. However, Reference 20 indicates that perhaps both units received "coke oven gas scrubber water" for use.

At the time of the VSI, a Coke Oven Gas Drip Water Tank (SWMU CP 2) was observed to the southeast of the North Quench Tank. A smaller tank was located on the south side of the Coke Oven Gas Drip Tank. At the southwest corner of the smaller tank, a 55- gallon drum was located

SWMU CP 1 - North and South Quench Stations (Continued)

partially below grade. Facility representatives were not cognizant of the use of these tanks when the plant was operational but suggested that the smaller tank may have served as a vapor separator and the 55- gallon drum may have served as a condensate trap for the Coke Oven Gas prior to use in the North Coke Oven Recirculating Sump. Similar tanks and equipment were not observed at the South Quench Station at the time of the VSI.

Wastes Managed: The unit quenched hot coke using recirculated water and coke oven gas condensate (D003) that contained traces of cyanide and sulfide. This waste was designated D003 due to the potential; for release of toxic gases if mixed with highly acidic solutions. No analytical data were available on the chemical composition of the coke oven gas condensate, however, the facility stated in their November 30, 1998 response to U.S. EPA's Information Request that this waste was designated as hazardous at times based on its appearance and shipped offsite for disposal as a hazardous waste.

History of Releases: Reference 20 reports that out of tower quenching occurred during times of Quench Station shutdown. Effluent from this operation was reportedly collected in the facility surface drainage system and eventually discharged to the associated outfall.

Potential for Past/present Release:	**High**	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Water containing hazardous constituents was used to quench the hot coke. Steam and condensate penetrated the soils underneath the rail cars and drained to the nearby sump. Therefore, the release potential is determined to be high. It is recommended that these units be investigated during the activities proposed for the Coke Plant and By Products Area (AOC D). Furthermore, quenching was reported to occur outside of the stations during maintenance of the system. The facility should attempt to determine the location of the quenching that occurred outside of the stations.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 2 - Coke Oven Gas Drip Water Tanks

Photograph No(s).: R1P6, R1P7, R1P8, and R1P23

Period of Operation: These units were in operation from 1973 until 1987.

Location: These units were located throughout the Coke Plant and By Products Area (AOC D) and the steel making complex. The aboveground tanks were located at the XX Building, at the North Quench Station (SWMU CP 1a), Coal and Coke Lab, West Head House, northeast corner of the EE Building, and at the gas holder. The underground tanks were located in the JJ Building, Old Booster Station, Continuous Caster Plant, the Frame Plant East, and the Frame Plant West. At the time of the VSI, only four of the aboveground tanks were visible at the Coke Plant and By Products Area (AOC D). The four tanks that were visible were located at the North Quench Station (SWMU CP 1a), the XX Building, and the Coal and Coke Lab.

Physical Description: The aboveground tanks and three of the underground tanks are constructed of steel. The underground tanks located at the Old Booster Station and the Continuous Caster Plant were constructed of fiberglass. The aboveground tanks have the following capacities: 5-10,000 gallons, 1-5,000 gallons, 1-12,000 gallons. The underground tanks had the following capacities: 2-2,000 gallons, 2- 1,500 gallons, and 1-1,000 gallons. According to the facility representative, all of the underground storage tanks at the facility have been closed, and where possible, many of these tanks have been removed. According to the available file material, any spills that occurred at the aboveground tanks were contained in concrete dikes. The four tanks that were visible during the VSI were contained in concrete dikes, except the tank located at the Coal and Coke Lab. It could not be determined from the available file material or during the VSI if the Coke Oven Gas Drip Water Tanks have always been secondarily contained. This tank had been removed from the dike so that it could be used elsewhere at the site, but upon discovering that the tank contained a hole, it was determined to be unusable.

These units managed coke oven gas drip water (D003) generated when moisture in the coke oven gas condensed. This moisture was subsequently collected in gas piping, captured at drip legs, and then accumulated in these tanks. The drip water was then pumped from these tanks and deposited in the sump adjacent to the North Quench Station (SWMU CP 1a). At the North Quench Station, the drip water was used to quench the hot coke from the coke ovens. Coke oven gas drip water (D003) that was not suitable for use as quench water was disposed of offsite. According to the PA/VSI report dated May 6, 1987, prior to 1973, this material was not collected. According to the available file material, this material was treated and disposed of in the Injection Well System (SWMU CP 9) from 1956 until 1981.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 2 - Coke Oven Drip Water Tanks (Continued)

Wastes Managed: This unit managed coke oven drip water (D003), a clear, lightly colored liquid, that contained traces of cyanide and sulfide. This waste was designated D003 due to the potential for release
of toxic gases if mixed with highly acidic solutions.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	(X)
	Low	( )

Conclusions: Further action is warranted based on the lack of secondary containment that could have exited at these units in the past. Also, the coke oven drip water (D003) can contain BTEX (benzene, toluene, ethylene, and xylene) and tar compounds. It is recommended that these units be investigated during the activities proposed for the Coke Plant and By Products Area (AOC D).

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 3 -Coke Oven Tar Sludge Decanter Box

Photograph No(s).: R1P4, R1P11, and R6P10

Period of Operation: This unit was in operation from 1986 until 1987. The tar sludge decanter that deposits the waste into this unit operated from 1937 until 1986, when it was replaced with a new tar sludge decanter.

Location: This unit is located in the Coke Plant and By Products Area (AOC D), in the southeastern portion of the facility, south of one of the Coke Oven Gas Drip Water Tanks (SWMU CP 2).

Physical Description: This unit is constructed of steel and measures approximately 5.5 feet tall, 5 feet wide, and 6 feet across. Any spills that occurred at this unit were contained by a concrete pad. At the time of the VSI, black tar-like material was observed on the ground in the vicinity of this unit.

This unit managed tar decanter sludge (K087) generated during the extraction of tar from the coke oven gas. During extraction, the coke oven gas was first cooled with an ammonia liquor prior to entering precipitators, where tar particles were attracted to the sides of the precipitator pipes. The tar then dropped to the bottom of the precipitators where it was pumped to tar decanters. In the tar decanter, the tar and ammonia liquor were separated by gravity. The tar was pumped to tar collection tanks, referred to as the Coke Oven Tar Sludge Tanks (SWMU CP 7), for storage, and the ammonia liquor was pumped to storage tanks. The tar decanter sludge that collected at the bottom of the decanter was then transferred to this unit before being charged back into the coke ovens along with coal. Prior to the construction of this unit, the tar decanter sludge (K087) was stored at the Coke Oven Tar Sludge Decanter Staging Area (SWMU CP 4) and then disposed of offsite in a landfill.

Wastes Managed: This unit managed tar decanter sludge (K087) from tar sludge decanters. This waste contained traces of cyanide and benzene.

History of Releases: During a RCRA inspection conducted on March 14, 1986, tar pitch spillage was observed in the vicinity of this unit. According to the inspection report, approximately five gallons of tar pitch was observed in front of this unit. Rouge Steel later explained that the tar pitch is a product, not tar decanter sludge (K087). According to Rouge, it was normal to dispose of any tar pitch spillage with the tar decanter sludge. As a response to the spillage, a new steel plate was welded onto this unit to prevent further spillage. At the time of the VSI, black tar-like material was observed on the ground.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 3 -Coke Oven Tar Sludge Decanter Box (Continued)

Potential for Past/present Release:	**High**	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Since there have been releases at this unit and tar sludge was observed in the vicinity of this unit during the VSI, this unit has a high potential for release to the environment. It is recommended that confirmatory sampling be conducted in the vicinity of this unit during the activities proposed for the Coke Plant and By Products Area (AOC D).

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 4- Coke Oven Tar Sludge Decanter Staging Area

Photograph No(s).: R6P11

Period of Operation: This unit was in operation from the 1920s to March 14, 1986.

Location: This unit is located in the southeastern portion of the facility, east of the Coke Plant and By Products Area (AOC D).

Physical Description: This unit was constructed of concrete and measured approximately 30 feet long and 30 feet wide with coke breeze walls approximately 3 feet high. This unit was situated over the foundation of two by-product coke batteries that were constructed around 1920 and demolished in the mid-1930s. The foundation of the by-product coke batteries measure approximately 827 feet long and 70 feet wide. At the time of the VSI, the integrity of this area could not be observed because it was overlain by iron ore fines from the WOF Stockpiled Material (SWMU MIS 11).

This unit has been used for a variety of things, but primarily, it was used for storing coal and coke breeze. This unit also managed tar decanter sludge (K087) generated from the extraction of tar from the coke oven gas. The tar decanter sludge from the tar decanters was transferred to this unit where it was mixed with coke breeze prior to being transported offsite for disposal in a landfill. This practice continued until 1986, when the Coke Oven Tar Sludge Decanter Box (SWMU CP 3) began operating.

During an inspection on March 14, 1986 this unit was identified as a surface impoundment. This unit was described as an area of "liquids within black particulates." It was further observed that this area was located adjacent to a coal pile, and it could not be determined where the coal stopped and this unit began. According to the facility, the area was completely covered by a concrete pad, and therefore, the material stored there posed no threat to the environment. Following this inspection, a closure plan was submitted to MDNR. As part of this closure plan, 200 yds ^{3} of tar decanter sludge (K087), coke breeze, and soil was removed from this unit and disposed of offsite in a landfill. Also, eight core samples were taken at this unit that revealed that all parameters tested were below detection limits. On March 16, 1988, MDNR certified that the area had been clean closed.

Wastes Managed: This unit managed coke breeze and tar decanter sludge (K087) from tar sludge decanters that contained traces of cyanide and benzene.

History of Releases: There were no reported or observed releases at the time of the VSI.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 4- Coke Oven Tar Sludge Decanter Staging Area (Continued)

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the secondary containment feature, sampling results, and no release history or evidence of release. Although no further action is warranted and the unit is no longer operating, it is recommended that the facility provide more information on the historic activities conducted in this area.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 5- Coke Oven Light Oil Muck Tanks

Photograph No(s).: R1P14

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have been in operation from 1937, when the coke ovens were rebuilt, until 1987.

Location: These units are located at the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility, east of the Light Oil Building.

Physical Description: These units are constructed of steel and have capacities of 10,000 gallons each. Any spills that occurred at these units were contained in a concrete dike that is approximately 2 feet tall. At the time of the VSI, there were no signs of cracks or staining in the vicinity of these units. During the VSI, these tanks were believed to be located in the same containment as three other process tanks. These units could not be distinguished from the process tanks at the time of the VSI. Also, it could not be determined during the VSI or from the available file material if these units have always been secondarily contained.

These units managed light oil muck (D003) generated from decanting the wash oil used to wash the coke oven gas. The coke oven gas was washed with oil to precipitate light oil. Both the wash oil and the light oil were then pumped to a light oil still where they were separated. The light oil was subsequently condensed, decanted, and pumped into storage tanks. The wash oil was decanted and then cooled and recirculated to the scrubbers. The light oil muck generated from decanting the wash oil was transferred to this unit for stabilization before being disposed of in a landfill.

Wastes Managed: This unit managed light oil muck (D003), a brownish-black, "oily" liquid with a coal-tar type odor, that contained traces of cyanide and benzene.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Further action is warranted based on the length of use of these units and the lack of information showing that there have been no problems at these units. Since it could not be determined during the VSI or from the available file material if these units have always had secondary containment features, it is recommended that these units be investigated during the activities proposed for the Coke Plant and By Products Area (AOC D).

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 6 - 300 Gallon Hazardous Waste Tank

Photograph No(s).: R2P1

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have been in operation from 1937, when the coke ovens were rebuilt, until 1987.

Location: This unit is located in the Coke Plant and By Products Area (AOC D), in the southeastern portion of the facility, adjacent to the north spiral coolers.

Physical Description: This unit is constructed of steel and has a capacity of 300 gallons. This unit is situated over a pad constructed of cinder block and concrete, and any spills were contained by sumps located around and under the unit. The integrity of the pad could not be inspected due to the presence of mud.

This unit received flushings from the cleaning of the north spiral coolers. During the VSI, the facility representative referred to these coolers as the serpentine coolers. The serpentine coolers were used to cool pressure streams generated at the Coke Plant and By Products Area (AOC D). The unit was reportedly drained after the cleaning process, and the flushings were then disposed of with the tar sludge.

Wastes Managed: This unit received flushings from cleaning the serpentine coolers, which occurred two to three times a year.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the material of construction and secondary containment structures, no release history or evidence of release, and the unit is no longer operable.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 7- Coke Oven Tar Sludge Tanks

Photograph No(s).: R1P20

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have been in operation from 1937, when the coke ovens were rebuilt, until 1987.

Location: These units are located at the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility, inside the Tar Tank Farm south of the Light Oil Plant.

Physical Description: These units include three tanks. Two tanks are constructed of steel, and two of the tanks have capacities of 15,000 gallons. One tank has an estimated capacity of 30,000 gallons. Any spills that occurred at these units were contained by a concrete dike. It could not be determined during the VSI or from the available file material if these units have always been secondarily contained.

These units managed tar collected from the tar sludge decanter. Once the tar was accumulated, it was pumped from these units to barges. Any residual tar sludge (K087) that remained in these units was disposed of in an offsite landfill. These units were cleaned once every three to six years, and the material generated was a pasty mixture of tar and coke breeze.

Wastes Managed: These units stored tar sludge (K087) that contained phenol and naphthalene. The reason the tar sludge contained naphthalene is because the naphthalene that was removed from the coke oven gas was mixed with the tar and allowed to solidify.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Further action is warranted based on the length of use of these units and the lack of information showing that there have been no problems at these units. Since it could not be determined during the VSI or from the available file material if these units have always had secondary containment features, it is recommended that these units be investigated during the activities proposed for the Coke Plant and By Products Area (AOC D).

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 8- Coke Oven Biological Wastewater Treatment Plant

Photograph No(s).: R1P15, R1P16, R1P17, R6P12, and R6P13

Period of Operation: This unit was in operation from July 1985 until 1987.

Location: This unit is located at the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility, southeast of the Coke Oven Light Oil Muck Tanks (SWMU CP 5).

Physical Description: This unit is a wastewater treatment system. The components of this system include a Pump Transfer Station (SWMU CP 8a), Wet Surface Air Cooler (SWMU CP 8b), Aeration/Equalization Basin (SWMU CP 8c), Skimmed Oil Holding Tank (SWMU CP 8d), and Rotating Biological Contactors (SWMU CP 8e). Wastes entering the system were pumped to the intercepting sump, or Pump Transfer Station (SWMU CP 8a). The wastewater was then cooled in a Wet Surface Air Cooler (SWMU CP 8b) before being piped to a 70,000 gallon concrete Aeration/Equalization Basin (SWMU CP 8c) equipped with a floating aerator. In this basin, the wastewater was mixed and equalized. From the aeration/equalization basin, the wastewater was piped to a 1,000 gallon concrete Skimmed Oil Holding Tank (SWMU CP 8d) where oil was skimmed off and the pH adjusted. The skimmed oil was transported offsite for disposal, and the wastewater was piped to the rotating biological contactors. The Rotating Biological Contactors (SWMU CP 8e) are constructed of plastic and housed in steel cases situated over concrete. In these contactors, the wastewater was rotated to extract the solids before being piped through Sewer Lines (SWMU MIS 5) to the sanitary sewer system.

Wastes Managed: This unit treated several waste streams. Among these were AC still bottoms generated from adding sodium hydroxide and steam to the ammonia liquor still to extract ammonia gas from ammonia liquor. The ammonia gas was later used in the coke ovens. In the mid-1950s the AC still bottoms were stored at the AC Still Bottoms Holding Sludge Lagoon (SWMU CP 13) until they were removed offsite for disposal.

This unit also treated diammonium phosphate effluent generated from extracting ammonia from coke gas. In this process, the coke oven gas was sprayed with phosphoric acid, and the ammonia combined with the phosphate in the acid to create an ammonia phosphate slurry. The slurry was then crystallized and dried resulting in a diammonium phosphate effluent.

Wastewater from the light oil plant was also treated in this unit. The wastewater was generated from decanting the wash oil used to wash the coke gas, and the light oil that precipitated out of the coke oven gas. The AC Still Bottoms contained traces of phenol, ammonia, cyanide, and sulphides, and the light oil wastewater contained traces of phenol, cyanide, and ammonia. A hazardous waste code was not given for any of these wastes in the file material.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 8- Coke Oven Biological Wastewater Treatment Plant (Continued)

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the materials of construction, no release history or evidence of release, and the unit is no longer operable.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 9 - Former Injection Well System

Photograph No(s).: R1P12 and R1P13

Period of Operation: Well No. 1 was in operation from 1956 until 1984, and Well No. 2 was in operation from 1976 until 1987.

Location: This unit is located in the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility, at the WW Pump House. Well No. 1 and No. 2 are actually located east of the Coal Road.

Physical Description: This unit treated final cooler water (D003) from the Coke Plant and By Products Area (AOC D). In the final gas coolers, partially cooled coke oven gas was sprayed with water and naphthalene and moisture was condensed out. The naphthalene was then distilled from the cooler water naphthalene mixture, and the resulting cooler water was then piped to a final cooler sump. Piping from the final cooler sump to the injection pump is constructed of Schedule 40 steel piping and the piping from the injection pump to the well head is constructed of Schedule 80 steel piping.

When the cooler water rose to a pre-determined level in the final cooler sump, a sensor transmitted a signal to a Bristol controller which opened the Bristol Diaphragm Valve. The valve remained open until the water level dropped to the desired operating level. From the Bristol Diaphragm Valve, the cooler water was piped through a set of filters. These filters contained mesh in descending sizes that ranged from 100 microns to 1 micron. The cooler water was first piped to a set of Sparkler filters. These filters were model SCJ-24-17 filters that were enclosed in cylindrical, horizontally mounted steel containers. The mesh on these filters were 100 microns.

From the Sparkler filters, the cooler water was then piped to a set of 3 GAF cartridge type filters. These filters were enclosed in cylindrical, vertically mounted steel containers. The mesh sizes of these filters were successively smaller. These filters consisted of a 4 pac unit at 50 microns, a 2 pac unit at 5 microns, and a one pac unit at one micron.

The cooler water was piped from the cartridge filters to an 800 gallon Surge Tank. The purpose of this tank was to maintain an adequate supply of water for the Gardner-Denver steam positive displacement injection pump. The Surge Tank was vented inside of the WW Pump House to equalize tank pressure as the water level rose and fell. From 1956 until 1976, the cooler water was pumped from the Surge Tank to Well No. 1 for deep disposal into the Sylvania Formation. However, from 1976 until 1984, Well No. 1 was only used as a stand by well. From 1976 until 1987, the cooler water was pumped to Well No. 2 for disposal into the Mt. Simon Formation, which is 4308 feet below the ground surface. According to the UIC permit issued on April 22,

SWMU CP 9 - Injection Well System (Continued)

1986, Well No. 2 is constructed of four concentric "strings" of carbon steel casing cemented to the surface plus injection tubing. The four concentric "strings" of steel casing consists of conductor, surface, intermediate, and long string casing. All of the casing is constructed of carbon steel. The conductor casing is set to a depth of 10 feet, the surface casing is set to a depth of 137 feet, the intermediate casing is set to a depth of 664 feet, and the long string casing is set to a depth of 4307 feet. The conductor casing has an outer diameter of 20 inches, the surface casing has an outer diameter of 13 3/8 inches, the intermediate casing has an outer diameter of 9 5/8 inches, and the long string casing outer diameter of 5 ½ inches. The injection tubing is set to a depth of 3864 feet with an outer diameter of 2 3/8 inches. The construction details of Well No. 1 could not be found in the available file material or obtained during the VSI.

All of the elements, except the deep disposal wells, of this unit are housed in the WW Pump House. Any leaks that occurred at this unit were contained by a concrete-lined trench that connected the WW Building to the tar pitch pit at the flush liquor decanters. All the leaked or vented material from this unit was returned to the coking process at the flush liquor system.

Wastes Managed: This unit treated and disposed of coke oven gas final cooler wastewater (D003). According to the available file material, the coke oven drip water (D003) was also treated and disposed of in this unit. From the available file material, it appears that the coke oven gas drip water was treated in this unit from 1956 until 1984. This unit injected these wastes at a rate of up to 35,000 gallons per day. Only 25,000 gallons per day of coke oven gas final cooler wastewater (D003) were injected.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the materials of construction and secondary containment, no release history or evidence of release, and the unit is no longer operable.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 10- Coke Oven Gas Holder Waste Tanks

Photograph No(s).: R1P21

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have been in operation from 1937, when the coke ovens were rebuilt, until 1987.

Location: These units are located in the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility, adjacent to the coke oven gas holder tank.

Physical Description: These two tanks are constructed of steel and have capacities of 1,000 gallons each. Any spills that occurred at these units were contained by a concrete dike. At the time of the VSI, these units were rusted. Also, it could not be determined during the VSI or from the available file material if these units have always been secondarily contained.

According to the May 6, 1987 PA/VSI report, these units managed oil de-emulsifier and contaminated waste oil. When the oil used in the sealant ring of the piston inside the coke oven gas holder tank became contaminated, a de-emulsifier was added in one of these tanks to remove water. The clean oil was subsequently recycled back into the piston sealant system, and the oily water was piped to the other tank where it was stored prior to removal by an offsite vendor.

Wastes Managed: These units managed oil, de-emulsifier, and contaminated waste oil from the piston sealant system of the coke oven gas holder.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Further action is warranted based on the length of use of these units and the lack of information showing that there have been no problems at these units. Since it could not be determined during the VSI or from the available file material if these units have always had secondary containment features, it is recommended that these units be investigated during the activities proposed for the Coke Plant and By Products Area (AOC D).

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 11 - GG Building Coal Picking Refuse Pile

Photograph No(s).: R1P24 and R6P19

Period of Operation: This unit operated from approximately 1954 until 1987.

Location: This unit was located at the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility, at the GG Building.

Physical Description: According to the May 6, 1987 PA/VSI report, this unit was a hopper of unknown dimensions that was used to accumulate mine refuse. This material accumulated as a result of hand picking refuse from the coals after breaking the coal prior to crushing. The coal was broken in a perforated drum called a breaker. From the breaker, the breakable coal exited through openings and was conveyed to the mixing building. The larger, less breakable coal, iron, and other foreign materials that could not pass through the perforated plates of the breaker exited onto a picking belt. On the picking belt, the foreign material was separated from the large coal, which was fed into the crusher before going to the mixing building. The foreign materials consisted of wood, slate, shale, rock, etc. This material was stored in this unit prior to offsite disposal.

Wastes Managed: This unit managed mine refuse that included wood, slate, shale, rock, etc.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the secondary containment structure, no release history or evidence of release, and the unit is no longer operable.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 12 - Coke Oven Refractory Refuse Pile

Photograph No(s).: R1P19

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have been in operation from 1937, when the coke ovens were rebuilt, until 1987.

Location: This unit was located at the SS Maintenance Building, in the southeastern portion of the facility, south of the Coke Plant and By Products Area (AOC D).

Physical Description: According to the May 6, 1987 PA/VSI report, this unit was a waste pile with a maximum capacity of 10 yd^3. The waste pile was situated on concrete.

This unit was used to store the refractory lining from the coke oven doors. The refractory lining from the coke oven doors was removed and scraped off at this unit and allowed to accumulate until offsite disposal.

Wastes Managed: This unit stored coke oven refractory lining that contained silica with ceramic binders. According to the PA/VSI report, the refractory lining is not a hazardous waste, and any hazardous constituents present were not present in meaningful levels. The waste was removed from this unit on a monthly basis.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment structure, no release history or evidence of release, and the unit is no longer operable.

COKE PLANT AND BY PRODUCTS AREA (CP)

SWMU CP 13- AC Still Bottom Holding Sludge Lagoon

Photograph No(s).: R1P12

Period of Operation: This unit was in operation in the mid-1950s. According to the May 6, 1987 PA/VSI report, this unit was in operation for less than a year.

Location: This unit was located in the Coke Plant and By Products Area (AOC D) in the southeastern portion of the facility. Although the exact location of the unit is unknown, a document dated May 17, 1988 in the information response shows that the unit might have been located adjacent to the XX Building.

Physical Description: This unit was brick lined with a capacity of 50,000 gallons. This unit measured approximately 100 feet long and 20 feet wide.

This unit stored AC still bottoms generated during the extraction of ammonia gas from ammonia liquor. The AC still bottoms were stored at this unit until they were removed offsite for disposal. Before this unit began operating, the still bottoms were being discharged to the Power House sewer. During the operation of this unit, discharge of the AC still bottoms was relocated from the Power House sewer to Detroit's sanitary sewer system. This unit was closed and backfilled when the sewer relocation was complete. The AC still bottoms were discharged to Detroit's sanitary sewer system until the Coke Oven Biological Wastewater Treatment Plant (SWMU CP 8) began operating.

Wastes Managed: This unit stored AC still bottoms until they were removed offsite for disposal. This waste stream was not considered hazardous, but there is a possibility that it contained hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the secondary containment, no release history, no evidence of release, and the unit is no longer operable.

BLAST FURNACE (BF) BUILDING

SWMU BF 1 - Blast Furnace Wastewater Treatment Plant (BFWWTP)

Photograph No(s).: R2P2, R2P3, R2P16, R2P17, R2P18, R2P19, R2P20, R2P21, R2P22, R2P24, R2P25, and R6P2

Period of Operation: The wastewater treatment plant (BF 1a-1n) was placed into operation in 1980 or 1981 and is currently active. The period of operation for the Concrete Pit (BF 1m) is unknown.

Location: This unit is located north of the blast furnaces (BFs) and southeast of the boat slip.

Physical Description: The BFWWTP comprises the multiple components and associated piping which receive and treat blowdown water from the blast furnace cooling water. The function of the BFWWTP is to cool and separate solids from the blowdown prior to recirculation of the cooling water in the blast furnace. The components of the BFWWTP include:

BF 1a -	BF B and C Thickeners
BF 1b -	BF B and C Collection Boxes
BF 1c -	Raw Waste Sump
BF 1d -	Splitter Box
BF 1e -	North Clarifier
BF 1f -	South Clarifier
BF 1g -	Cooling Tower Sump Wet Well
BF 1h -	Cooling Towers
BF 1i -	Deep Bed Filters
BF 1j -	Thickener
BF 1k -	Vacuum Filter
BF 1l -	BF Filter Cake Garage
BF 1m -	Concrete Pit
BF 1n -	Surge tank

According to file materials, the blast furnace wastewater is collected at the BFs in the BF B and C Thickeners (SWMU BF 1a). According to Reference 47, the BF B and C Thickeners are 70,000 gallon rubber lined tanks, which are approximately 45 feet tall with a conical bottom. The sludge collected is piped to the Thickener (BF 1j) and the water is conveyed to the B and C Collection Boxes (SWMU BF 1b).

According to the BFWWTP Operator, the BF Blowdown is next received at the Raw Waste Sump (SWMU BF 1c) which is equipped with a Bar Screen to remove large solids. The wastewater is then pumped to the Splitter Box (BF 1d) where coagulant is added to facilitate solids settling and sodium hydroxide is added to control pH. The Splitter Box is a steel, open-

topped, and rectangular tank which receives approximately 5200 gallons per minute of blowdown water. From the Splitter Box, the wastewater is split and conveyed to the North and South Clarifiers (SWMUs BF 1e and BF 1f, respectively) for solids settling. These clarifiers are steel-walled tanks that rest directly on a concrete pad with no secondary containment. The tanks are open-topped and according to the BFWWTP operator, the floors of the clarifiers are inspected about once every six months.

The overflow from the clarifiers is conveyed to the Cooling Tower Sump Wet Well (SWMU BF 1g), then to the Cooling Towers (SWMU BF 1h). After cooling the wastewater is either recirculated to the Blast Furnace for reuse or conveyed for further treatment at the Deep Bed Filters (SWMU BF 1i). The Deep Bed Filters, housed inside the BFWWTP Building, consist of dual media (anthracite and sand) pressure filters. This step also includes treatment with sodium bisulfite to destroy the ammonia and phenols in the waste stream. From the Deep Bed Filters, the water is discharged to the Rouge River through Outfall 004B. According to facility representatives, the Deep Bed Filters are periodically back flushed to regenerate the filters. The generated liquids are conveyed to the Splitter Box (SWMU BF 1d) by way of the Surge Tank (SWMU BF 1n). The spent filter medium is taken to an offsite landfill.

The underflow from the North and South Clarifiers (SWMUs BF 1e and BF 1f) is conveyed to the Thickener (SWMU BF 1j). The Thickener is an open-topped steel tank, resting directly on a concrete pad with no secondary containment. The overflow from the Thickener is returned to the North Clarifier (SWMU BF 1c). The underflow is pumped to the Vacuum Filter (SWMU BF 1k), located inside the BFWWTP Building above the BF Filter Cake Garage (SWMU BF 1l). The filtrate from the Vacuum Filter is returned to the Thickener (SWMU BF 1j). The Vacuum Filter is a leaf sector filter, which drops the collected filter cake through the floor to the BF Filter Cake Garage (SWMU BF 1l) below. The BF Filter Cake Garage is also referred to within some of the Rouge references as the Filter Cake Box. The concrete floor of the garage is estimated to be 15 feet wide and 20 feet deep. A drain is located in the front of the garage floor. According to the plant operator, about 150 tons of Blast Furnace filter cake are removed daily from the BF Filter Cake Garage by front end loader for staging at the Waste Material Accumulation Pile (SWMU BF 4).

A Concrete Pit (SWMU BF 1m), approximately 10 feet by 10 feet and 4 feet deep was located adjacent to the drive outside of the BF Filter Cake Garage on the south side of the BFWWTP building. Facility representatives were unsure of its purpose or former use. The BFWWTP operator stated that the unit pre-dated the BFWWTP and had not been used in the time he was associated with the plant. At the time of the VSI, it contained materials which appeared to be BFWWTP filter cake and miscellaneous trash.

At the time of the VSI, the BF B and C Thickeners, BF B and C Collection Boxes, Raw Waste Sump and Cooling Tower Wet Wells were not directly observed.

BLAST FURNACE (BF) BUILDING

SWMU BF 1 - Blast Furnace Wastewater Treatment Plant (BFWWTP) (Continued)

Wastes Managed: The unit treats BF Blowdown water which contains solids as well as lead, zinc, ammonia, cyanide, and phenol. As a result of treatment through the system, the quantities of ammonia, cyanide and phenol are reduced by means of alkaline chlorination, and solids are removed by vacuum filtration.

History of Releases: According to the file materials, there is a history of repeated discharges to the river from this unit. A Notice of Non-compliance was issued in the mid-1980s for repeated, unauthorized bypasses of the BFWWTP. Additionally, a 65,000 gallon release of untreated wastewater occurred on September 19, 1989. The wastewater was intentionally discharged through a storm sewer, by-passing the rest of the BFWWTP, due to a malfunction in the BF C Thickener at the Blast Furnace (SWMU BF 1a). The wastewater was reported to contain lead, zinc, ammonia, cyanide, and phenol with the levels of phenols and solids in exceedance of allowable limits.

Another unpermitted release occurred on August 4, 1991 when a pump malfunctioned causing the Raw Waste Sump (BF 1c) to overflow. An estimated 2,212,500 gallons of wastewater flowed into the sewer and discharged into the boat slip through outfall 04E0.

At the time of the VSI, black sludge was observed on the outer, southeastern sidewall of the Thickener (SWMU BF 1j) and on the ground in the vicinity of the Thickener. Also, a great deal of black sludge, apparently black BF Filter Cake, was observed in the concrete drive immediately adjacent to the BF Filter Cake Garage (BF 1l). In some areas the material was observed to be several inches thick and the drive was cracked in places. Additionally, it appeared likely that runoff during heavy rainfall could reach the boat slip.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Based on VSI observations, filter cake and sludge are routinely released in the vicinity of this unit. Low levels of hazardous constituents are reported to be present, with release pathways observed to the river and underlying soils. Therefore, the potential for release is determined to be moderate. It is recommended that the facility conduct confirmatory sampling on the underlying soils in the vicinity of this unit.

BLAST FURNACE (BF) BUILDING

SWMU BF 2 - Blast Furnace Slag Pit

Photograph No(s).: R3P4 and R3P5

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1920, when the Blast Furnaces began operation, until the present.

Location: This unit is located at the south end of the Blast Furnace raw material storage area in the eastern portion of the facility. This unit is located east of the Coke Plant and By Products Area (AOC D).

Physical Description: This unit is an earthen lined pit that measures approximately 50 feet long, 100 feet wide, and varying depths.

This unit is used to store slag generated in the Blast Furnaces from melting iron ore and limestone. In the Blast Furnaces, iron ore, limestone, and coke are placed at the top of the furnace. The molten iron that results flows from the bottom of the furnaces through concrete trenches and then into a ladle. The molten slag that floats on top of the molten iron is skimmed off. The molten slag then flows through a slag runner into a slag pot. Immediately, the molten slag is poured into this unit and cooled with water. A subcontractor uses the slag from this unit to form an aggregate which is then sold back to Rouge Steel.

Wastes Managed: This unit stores non-hazardous molten slag from the Blast Furnaces.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on no release history or evidence of release.

BLAST FURNACE (BF) BUILDING

SWMU BF 3- Flue Dust Catcher

Photograph No(s).: R3P2

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1920, when the Blast Furnaces began operation, until the present.

Location: This unit is located at the Blast Furnaces in the eastern portion of the facility, south of the Spent Mold Foundry Sand Pile (SWMU MIS 8).

Physical Description: This unit is was not present at the time of the VSI, but it normally sits under a refractory brick lined opening. The dimensions of this unit could not be determined at the time of the VSI. This unit captures the blast furnace flue gas dust generated from cleaning. The blast furnace gas is generated as a result of the combustion of the iron ore, limestone, and coke. This unit captures the dust from the flue gas before it is cleaned in the gas scrubbers so that it can be burned in stones to preheat the incoming air to the Blast Furnaces. The captured blast furnace flue gas dust then drops into a hopper. At the time of the VSI, the hopper that collects the dust was not present, and the material of construction and measurements could not be determined. This unit is situated over concrete.

From the hopper, this material is taken to the WOF Stockpiled Material (SWMU MIS 11), where it will be stored for use in the Waste Oxides Facility. Prior to WOF stockpiling, this material was sold offsite.

Wastes Managed: This unit captures blast flue gas dust. This material was not found to be hazardous during the VSI or from the available file material.

History of Releases: At the time of the VSI, residue was observed underneath where this unit is normally located. It could not be determined if this unit is normally situated over concrete. The nature of these residues were not described during the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	(X)
	Low	( )

Conclusions: The release potential is moderate due to the materials that were observed underneath this unit during the VSI. The residue material underlying the unit should be sampled to determine its characteristics.

BLAST FURNACE (BF) BUILDING

SWMU BF 4 - Waste Material Accumulation Pile

Photograph No(s).: R2P4, R2P5, R2P23, and R6P2

Period of Operation: The unit has been in operation at least since 1980 -1981 when the BFWWTP (SWMU BF 1) went on line. It is unknown if it was operational prior to that time. It is currently active.

Location: This unit is located immediately south of the BFWWTP (SWMU BF 1), near the northeast boat dock.

Physical Description: This unit is a waste accumulation pile for non-hazardous wastes generated at the Rouge Plant. The unit measures approximately 100 feet long and 100 feet wide and is located adjacent to a concrete containment wall on the north and east sides, although no distinct boundary was observed on the south end. It is reportedly underlain by concrete; however, the integrity and completeness of the concrete could not be confirmed at the time of the VSI due to the storage of BF filter cake. The overall slope of the waste pile drained to the west, with no effective containment. Immediately west of the unit is a road, with the boat slip immediately adjacent to the road. Additionally, BF Filter Cake was observed throughout the drive between and around the BFWWTP Filter Cake Garage (SWMU BF 11) and the waste pile at the time of the VSI.

According to the facility representative, loads of BF Filter Cake are brought by front end loader from the BFWWTP Filter Cake Garage (SWMU BF 11) on a daily basis and removed by truck to an offsite Class III landfill for disposal.

Previously, the unit was used also for the accumulation of kish (dust from the Baghouse at the Hot Metal Reladling Station in the BOF) and desulferizer dust from the BOF desulferizer. These materials were also brought to the site daily and covered with the BF Filter Cake using a front end loader. All materials were removed by truck to an offsite landfill twice per week. These materials are now stored at the New Debris Pile (SWMU MIS 10).

Wastes Managed: The unit currently stores BFWWTP Filter Cake which is reported to contain ammonia, cyanide, phenols, zinc and lead. It's moisture content is estimated at 15%. Historically, the unit also managed kish and delsulfer dust. According to the May 6, 1987 PA/VSI report, these materials contain hazardous constituents, but are not hazardous wastes. Analysis of the waste materials was requested from the facility but not provided by the time of this report.

History of Releases: There are no documented releases from this unit. However, at the time of the VSI, runoff from the unit containing black BF Filter cake, was observed at the road located

BLAST FURNACE (BF) BUILDING

SWMU BF 4 - Waste Material Accumulation Pile (Continued)

immediately west of the unit. There is no effective containment to deter release to the boat slip west of the road. This condition was also observed in the May 6, 1987 PA/VSI report.

Potential for Past/present Release:	**High**	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Runoff containing black BF Filter Cake was observed on the road immediately west of the unit. This condition was also noted in the May 6, 1987 PA/VSI report. Additionally, runoff from the BFWWTP drive may also reach the Boat Slip (see SWMU BF 1) during periods of heavy rainfall. Therefore, the potential for release is high based on the likelihood of release to soil and surface water. It is recommended that the soil surrounding this unit be sampled.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 1 - Lime Dust Hopper

Photograph No(s).: R2P15

Period of Operation: This unit has been in operation from 1964 until the present.

Location: This unit is located in the eastern portion of the facility on the east side of the Basic Oxygen Furnace Building, just south of the Kish Hoppers (SWMU BOF 5).

Physical Description: This unit is constructed of steel and measures approximately 5 feet tall, 5 feet wide, 3 feet long. This unit is situated under the Lime Dust Baghouse over concrete. At the time of the VSI, no cracks were observed in the concrete pad beneath the unit.

This unit is used to collect the lime dust generated when lime is dumped into a hopper for use in the Basic Oxygen Furnaces as an alloy. The dust is collected in a baghouse and dispensed into this unit from which it is sold to customers for reuse. In the past, the lime dust was disposed offsite.

Wastes Managed: This unit manages lime dust. The file material and information gathered during the VSI did not indicate that the lime dust is hazardous.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on materials of construction and secondary containment, and no release history or evidence of release.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 2 - Ladle Dumping Operation Pits

Photograph No(s).: R4P20

Period of Operation: This unit has been in operation from 1964 to the present. However, the facility representative reported that this unit is not used very often.

Location: This unit is located in the western portion of the facility on the northern side of the Blast Oxygen Furnace Building.

Physical Description: According to the May 6, 1987 PA/VSI report, this unit consists of two concrete pits and a conveyance sluice. This unit manages material generated when the ladle cars that transport molten iron from the Blast Furnaces to the Basic Oxygen Furnaces are cleaned. First, the ladle cars are brought to the concrete pit located inside the ladle dumping building. This pit is covered with steel panel and equipped with high pressure water sprays. The ladle cars are cleaned at the steel paneled pit by turning them upside down. The water from the high pressure water spray then carries the material down the steel conveyance sluice to the outside concrete pit. This pit has a concrete bottom with sheet piling sidewalls. This unit measures approximately 200 feet long and 24 feet wide. The material settles to the bottom of the outside pit and water is recirculated to the steel paneled pit. The material is dug from the bottom of the outside pit bi-weekly using a crane and clamshell bucket. The material is then piled adjacent to the outside pit and allowed to drain. After one to four days, the material is loaded into trucks and removed to an offsite storage pile.

Wastes Managed: This unit managed non-hazardous material that consists of molten iron and slag. Any hazardous constituents that might be present in this material are not present at significant levels.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on materials of construction, no release history or evidence of release, and the infrequent operation of the unit.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 3 - Desulfurization (D/S) Hoppers

Photograph No(s).: R4P21 and R4P22

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have began operation in 1964, when the Basic Oxygen Furnaces began operation, until the present.

Location: These units are located in the western portion of the facility at the eastern end of the Basic Oxygen Furnace Building, southeast of the Ladle Dumping Operation Pits (SWMU BOF 2).

Physical Description: This unit is constructed of steel and measures approximately 4 feet long, 3.5 feet wide, and 3 feet tall. This unit is situated under the steel desulfurization baghouse over concrete.

This unit manages the dust generated from the desulfurization process at the Blast Oxygen Furnace Building. The desulfurization process is the first step to converting the molten iron from the Blast Furnaces into steel in the Basic Oxygen Furnaces. First, the molten iron is poured into an iron ladle and transported to the desulfurization station where lime and powdered magnesium metal are added. This process generates desulfurization dust that is captured by a baghouse and then collected in this unit. Next, the material is transported to the New Debris Pile (SWMU MIS 10) prior to offsite disposal in a landfill. Prior to 1998, the desulfurization dust was transported to the Waste Material Accumulation Pile (SWMU BF 4) prior to offsite disposal

Wastes Managed: This unit manages non-hazardous desulfurization dust that might contain hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the materials of construction and secondary containment structure, no release history, or evidence of release.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 4 - Course and Fine Dust Silo

Photograph No(s).: R4P23

Period of Operation: This unit has been in operation from 1964 until the present.

Location: This unit is located in the eastern portion of the facility on the west side of the Basic Oxygen Furnace Building.

Physical Description: This unit is cylindrical shaped and is constructed of steel. The capacity of this unit could not be determined at the time of the VSI or from the available file material. This unit is elevated approximately 10 feet above the ground.

This unit is used to store course and fine dust particles present in the gases generated during the conversion of molten iron into steel in the Basic Oxygen Furnaces. According to the May 6, 1987 PA/VSI, the gases and dust from the Basic Oxygen Furnaces first pass through an electrostatic precipitator (ESP). A dropout chamber located between the furnaces and the ESP collects the larger and heavier dust particles known as course dust. From the drop out chamber, the course dust is transported on a screw conveyor to this unit. The fine dust is collected at the ESP and subsequently transported on screw conveyors to a muller where it is sprayed with steam. The wet fine dust is then emptied onto a belt conveyor and moved to this unit. The course and fine dust are discharged from this unit directly into a truck. The truck transports the dust directly to a type 3 landfill. When the Waste Oxides Facility is brought online, this material will be used to make briquettes for use in the Basic Oxygen Furnaces.

Wastes Managed: This unit manages non-hazardous fine and course dust particles that might contain some hazardous constituents which were not identified in the available file material or during the VSI.

History of Releases: At the time of the VSI, a large quantity of dust was present under this unit. The nature of the dust was not characterized during the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Based on the lack of secondary containment and the release observed during the VSI, it is recommended that the facility examine any unpaved areas in the vicinity of this unit to determine if a release has occurred.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 5 - Kish Hoppers

Photograph No(s).: R4P24

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1964, when the Basic Oxygen Furnaces began operation, until the present.

Location: This unit is located in the eastern portion of the facility on the west side of the Basic Oxygen Furnace Building, just east of the Desulfurization (D/S) Hoppers (SWMU BOF 3).

Physical Description: This unit was not visible during the VSI due to construction. However, based on the construction of similar units, it is known that this unit is constructed of steel. This unit is situated under the steel, kish baghouse over concrete. At the time of the VSI, the baghouse for this unit was being replaced with a radiator that would suction the gases from the kish. In the past, this unit was not situated over concrete.

This unit manages kish and iron oxides generated during reladling at the Basic Oxygen Furnaces. Molten iron is transported from the Blast Furnaces in ladle cars to the Basic Oxygen Furnaces. At the Basic Oxygen Furnaces, the molten iron is poured from the ladle cars to the iron ladle for transport to the desulfurization station. As the molten iron is being poured, gases are generated that contain iron oxide and flacked graphite particles (kish). In the past, the baghouse captured the kish and iron oxide and deposited them in this unit. Presently, a radiator is being used to capture the gases and circulate them back into the Basic Oxygen Furnace Building. Prior to 1998, the kish and iron oxide were collected in this unit and transported to a type two landfill. Currently, the material from this unit is transported to the New Debris Pile (SWMU MIS 10) prior to offsite disposal. When the Waste Oxides Facility is brought on line, this material will be used to make briquettes for use in the Basic Oxygen Furnaces.

Wastes Managed: This unit manages kish (flacked graphite particles) and iron oxides. According to the May 6 ,1987 PA/VSI report, this material is not hazardous, but it might contain hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on no observed or reported releases in the vicinity of this unit.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 6- BOF Slag Pile

Photograph No(s).: R3P21

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1964, when the Basic Oxygen Furnaces began operation, until the present.

Location: This unit is located in the eastern portion of the facility, on the west side of the Basic Oxygen Furnace Building.

Physical Description: At the time of the VSI, this unit measured approximately 20 feet long and 10 feet wide and was situated on the ground with no secondary containment.

This unit manages BOF slag and metal generated during the desulfurization process. The molten iron from the Blast Furnaces is first transported to the Basic Oxygen Furnaces. The molten iron is then poured into a ladle and sent to the desulfurization process. During the desulfurization process, lime and powdered magnesium are added to the molten iron. The ladle is then tilted and the slag is skimmed into the desulfur slag pot and transported to the BOF Slag Pit (SWMU BOF 8). The slag that does not get poured into the slag pot and any scrap metal that needs to be separated out are transported to this unit and cooled. The cooled slag is then taken to the BOF Slag Pit, which is operated by a subcontractor, and the scrap metal is sold back to the facility by the subcontractor.

Wastes Managed: This unit stores desulfur slag that contains scrap metal. Based on the contents of the other materials generated at the Basic Oxygen Furnaces, this material is non-hazardous, but it might contain hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based the non-hazardous nature of the materials stored at this unit and no release history or evidence of release.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 7 - BOF 55 Gallon Drum Pick Up Area

Photograph No(s).: R5P20

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1964, when the Basic Oxygen Furnaces began operation, until the present.

Location: This unit is located in the western portion of the facility on the south side of the Waste Oxides Facility south of the Basic Oxygen Furnace Building.

Physical Description: This unit is an old steel building that measures approximately 60 feet tall, 40 feet long, and 30 feet wide with no secondary containment. At the time of the VSI, two trucks were being stored at this unit that transport fine and course dust from the Course and Fine Dust Hopper (SWMU BOF 4) to a type three landfill.

Wastes Managed: It could not be determined from the available file material or during the VSI if this unit managed a waste.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on no release history or evidence of release.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 8 - BOF Slag Pit

Photograph No(s).: R5P0, R5P1, and R5P2 (did not develop)

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1964, when the Basic Oxygen Furnaces began operation, until the present.

Location: This unit is located in the southwestern portion of the facility, west of the Electric Arc Furnace Building.

Physical Description: This unit is earthen lined and measures approximately 25 feet long, 50 feet wide, and has varying depths. The southern portion of this unit is used to store the slag generated at the Basic Oxygen Furnaces during the desulfurization process. The slag is skimmed from the desulfur slag pot and transported to this unit by a subcontractor where it is cooled and sold back to the facility for use in the Blast Furnaces as a substitute for limestone. It could not be determined during the VSI or from the available file material if the subcontractor is responsible for recovering the limestone from the slag.

The northern portion of this unit is used to store skulls, the metal that adheres inside the ladles. These skulls are knocked out of the Blast Furnace ladles and the Basic Oxygen Furnaces ladle at Gate 12 of the facility by a subcontractor. The subcontractor transports the skulls to this unit and sells them back to the facility. The skulls are also sold offsite by the subcontractor. Both iron skulls from the Blast Furnaces and steel skulls from the Basic Oxygen Furnaces are stored at this unit.

Prior to this unit, the skulls from the Blast Furnace ladles were stored at the Ladle Dumping Pit (SWMU BOF 8a), located inside the Pig Cast Building and identified in the May 6, 1987 PA/VSI report as SWMU 2. According to the report, between 1952 and December 2, 1981, the molten iron from the ladles was first poured at a controlled rate into a trough and runner system through which the iron would run to the pig machine from which pig iron was produced for use in foundries. The machine was composed of an endless chain of molds that moved along an inclined track from beneath the runner to a head sprocket located over a railroad car. As the mold chain moved, the molds were sprayed with a lime water mix to coat the molds and prevent the molten iron from sticking to the mold. The overspray and drain-off would drop onto a cement pad that drained to the Ladle Settling Pit (SWMU BOF 8b), located at the Pig Cast Building. The solids would settle out and the water would overflow into a storm sewer. The pit was cleaned at least twice a week. The Ladle Settling Pit is identified in the May 6, 1987 PA/VSI report as SWMU 3.

BASIC OXYGEN FURNACE (BOF) BUILDING

SWMU BOF 8 - BOF Slag Pit (Continued)

After pouring the molten iron into the pig machine, the ladles were then cleaned at the Pig Cast Building, which was located on Ford's property adjacent to the Dearborn Assembly Plant. The ladles were cleaned by removing the skull from around the mouth with a ram. Then, the ladle was rotated to an inverted position over the Ladle Dumping Pit to allow the skull and any molten metal and/or slag to drop out. The Ladle Dumping Pit was earthen lined and covered with a steel grating.

Currently, the Pig Cast Building is the DAP Paint Building. The Ladle Dumping Pit was cleaned two times per week, and the material was sold to a vendor who removed the waste to an offsite location for processing.

Wastes Managed: This unit manages non-hazardous BOF slag and steel skulls and BF iron skulls. Although these materials are non-hazardous, based on the other materials generated in the iron and steel making processes, these wastes might contain hazardous constituents that are negligible.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the non-hazardous classification of the wastes managed at this unit and no release history or evidence of release.

ELECTRIC ARC FURNACE (EAF) BUILDING

SWMU EAF 1 - Former Tar Sludge Landfill

Photograph No(s): R4P26

Period of Operation: This unit was in operation from 1915 until 1956.

Location: This unit was located in the southern portion of the facility, on the north side to the Electric Arc Furnace.

Physical Description: The material of construction and the dimensions of this unit could not be determined during the VSI or from the available file material.

According to a Notification of Hazardous Waste attached to a letter dated January 6, 1986, this unit stored coke oven tar sludge (K087) generated during the extraction of tar from the coke oven gas. During extraction, the coke oven gas was first cooled with an ammonia liquor prior to entering precipitators, where tar particles were attracted to the sides of the precipitator pipes. The tar then dropped to the bottom of the precipitators where it was pumped to tar decanters. In the tar decanter, the tar and ammonia liquor were separated by gravity. It is believed, but could not be confirmed, that the coke oven tar sludge was stabilized at the Coke Oven Tar Sludge Decanter Staging Area (SWMU CP 4) with coke breeze and then disposed of in this unit until 1956.

Wastes Managed: This unit managed coke oven tar sludge (K087).

History of Releases: A hazardous material was placed onto or into the ground at this location for approximately 40 years..

Potential for Past/present Release:		
	High	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Further action is warranted based on historical disposal of hazardous waste at this location. It is recommended that the facility sample the soils at this unit.

ELECTRIC ARC FURNACE (EAF) BUILDING

SWMU EAF 2- EAF Silo

Photograph No(s).: R4P28

Period of Operation: This unit was in operation from 1976 until 1992.

Location: This unit is located in the southern portion of the facility on the southern side of the Electric Arc Furnace, east of the EAF Shop Hopper (SWMU EAF 3).

Physical Description: This unit is constructed of steel and measures approximately 53 feet tall, 5 feet long, and 3 feet wide. The capacity of this unit was not identified during the VSI or from the available file material.

This unit stored the EAF dust (K061) generated during the production of molten steel from cold steel scrap, iron charge, and fluxes. As these materials were heated, hazardous dust was generated. According to the May 6, 1987 PA/VSI report, the dusts that were generated were collected in the EAF baghouse and then dispensed in the EAF Shop Hopper (SWMU EAF 3). Once the dust was collected in the EAF Shop Hopper, screw conveyors transported the dust to a pneumatic system. This system then carried the dust to the EAF Silo for storage prior to being removed daily to an offsite treatment facility by a vendor.

Wastes Managed: This unit managed EAF dust (K061) that contained traces of lead and zinc.

History of Releases: Between July 1, 1987 and June 26, 1991, Rouge Steel submitted 15-day letters to U.S. EPA Region 5 with incident reports attached describing releases of EAF dust (K061) to the environment. There were releases of EAF dust (K061) from the pneumatic dust transport system, and the EAF Dust Silo (SWMU EAF 2). Some of the causes of these releases were failure of the level indicator on the surge hopper, failure of the seal on the No. 4 compartment rotary lock, and failure of the upper level limit on the EAF Dust Silo. During each release, there were no injuries, the release was confined to the EAF, and the released material was disposed of in a hazardous waste landfill offsite.

Potential for Past/present Release:		
	High	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Further action is warranted based on the release history of this unit. It is recommended that the facility provide documentation of any sampling that was performed at this unit. If sampling was not conducted at this unit, it is recommended that the facility conduct sampling at this unit to determine if any of these releases impact the soil. Also, the facility needs to provide information on what was done to remedy the releases at this unit.

ELECTRIC ARC FURNACE (EAF) BUILDING

SWMU EAF 3 - EAF Shop Hopper

Photograph No(s).: R4P27

Period of Operation: This unit was in operation from 1976 until 1992.

Location: This unit is located in the southern portion of the facility on the southern side of the Electric Arc Furnace, west to the EAF Silo (SWMU EAF 2).

Physical Description: This unit was not present at the time of the VSI. Therefore, a physical description of this unit can not be provided. It is reasonable to believe that this unit was constructed of steel based on the material of construction for other similar units. This unit was situated under the EAF baghouse that is constructed of steel and comprised of fourteen compartments. No secondary containment was present at this unit.

The unit was used to collect the EAF dust (K061), generated during the steel making process at the Electric Arc Furnace, from the EAF baghouse. From this unit, the dust was conveyed to the EAF Silo (SWMU EAF 2) prior to being transported to an offsite treatment facility.

Wastes Managed: This unit managed EAF dust (K061), a dry, reddish brown, odorless powdery solid, that contained traces of zinc and lead.

History of Releases: On June 26, 1991, Rouge Steel informed U.S. EPA Region 5 that a release of 7 yd^3 of EAF dust (K061) occurred from the EAF baghouse. The material was confined to the immediate area until clean up was complete.

Potential for Past/present Release:		
	High	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Further action is warranted based on the release history of this unit. It is recommended that the facility provide supporting documentation that all of the released material was removed from this unit. It is suggested that copies of any sampling that was performed at this unit be provided.

LADLE REFINING FACILITY (LRF)

SWMU LRF 1 - Vacuum Degasser Recycling System

Photograph No(s).: R3P20, R3P22, and R3P23

Period of Operation: This unit has been in operation from the 1980s until the present.

Location: This unit is located inside the north end of the Continuous Caster Building, adjacent to the Ladle Refining Facility No. 1.

Physical Description: This system is designed to remove solids from water used in the process of vacuuming dissolved gasses from molten steel. The hot gasses from this process are conveyed to the Ladle Refining Facility No. 1 and the Vacuum Degasser System Baghouse (SWMU LRF 2). This unit consists of the following components: Lamella Settling Tank (SWMU LRF 1a), Cooling Towers (SWMU LRF 1b), Plate Filter Press (SWMU LRF 1c), and the Filter Cake Area (SWMU LRF 1d).

Facility representatives were not certain at what point in the degassing process the water comes into contact with the solids and dissolved gases, however the contact water is pumped to the Lamella Settling Tank (SWMU LRF 1a). This enclosed, steel tank is located inside of the building, and is equipped with a series of rectangular baffles inside the tank to increase the settling capabilities of the unit. The overflow is returned to the degasser system by way of the Cooling Towers (SWMU LRF 1b). The solids are conveyed to the Plate Filter Press (SWMU LRF 1c). The JWI Plate Filter Press is located inside the building, elevated on a metal platform, located at a lower level than the Lamella Settling Tank and directly above the Filter Cake Area (SWMU LRF 1d). The filter cake from the Plate Filter Press drops through the floor to the Filter Cake Area. The Filter Cake Area was observed to contain some sludge at the time of the VSI, and has estimated dimensions of 12 feet by 24 feet. The garage-like area is constructed at the north east corner of the building, with the wall of the building serving as the eastern wall of the Filter Cake Area. The floor of the unit is concrete and is equipped with a grated drain at the front of the unit. According to the facility representative, the filter cake is transported to the New Debris Pile (SWMU MIS 10) for offsite disposal.

Wastes Managed: This unit removes solids and dissolved gasses from contact water generated in the Vacuum Degassing Process of the steel refining process. Filter cake is generated as a result of this system.

History of Releases: No documented evidence of release from this unit in the available file material.

LADLE REFINING FACILITY (LRF)

<u>SWMU LRF 1 - Vacuum Degasser Recycling System</u> (Continued)

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: The unit is housed inside the building and manages wastes with reportedly low levels of hazardous constituents. Thus the potential for release is low.

LADLE REFINING FACILITY (LRF)

SWMU LRF 2 - Ladle Refining Facility No. 1 and the Vacuum Degasser System Baghouse

Photograph No(s).: R3P24

Period of Operation: This unit has been in operation since 1989 until the present.

Location: This unit is located in the eastern portion of the facility, adjacent to the Vacuum Degasser Recycling System (SWMU LRF 1), east of the Continuous Caster Plant.

Physical Description: This unit is constructed of steel and has a capacity of 175,000 ft^3. This unit has five individual compartments that rest on top of 1 ft^3 square dust collection boxes situated on the ground. Only one compartment was photographed at the time of the VSI.

This unit captures the dust generated in the Ladle Refining Facility No. 1 and the Vacuum Degasser System. Both of these units remove gaseous impurities from molten steel produced in the Basic Oxygen Furnaces. In the Ladle Refining Facility No. 1, which is located inside the north end of the Continuous Caster Plant, ladles of molten steel are reheated to burn off certain contaminating gases, including hydrogen, nitrogen, and oxygen. In the Vacuum Degasser System, located to the west of the Drum Storage Area (SWMU CCS 3), the molten steel is subjected to a vacuum that removes the gaseous impurities. The dust generated from these processes is collected in the dust boxes located under this unit. The dust from the dust boxes is suctioned out and then transported to the New Debris Pile (SWMU MIS 10). From the New Debris Pile, the material will be disposed of in an offsite landfill.

Wastes Managed: This unit manages ladle refining and vacuum degasser dust. Based on the description of the dusts generated in the Basic Oxygen Furnaces, where the molten steel is transported from, the wastes managed by this unit are non-hazardous. It is possible that this unit does contain hazardous constituents in negligible amounts.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment structure, no release history, or evidence of release.

LADLE REFINING FACILITY (LRF)

SWMU LRF 3- Ladle Refining Facility No. 2 Baghouse

Photograph No(s).: R4P25

Period of Operation: This unit has been in operation from the 1980s until the present.

Location: This unit is located in the eastern portion of the facility on the southern side of the Continuous Caster Plant, east of the Continuous Caster Recycle System (SWMU CCS 2).

Physical Description: This unit is constructed of steel and has an unknown capacity. This unit is situated over a steel hopper, situated on the ground, that has an approximate capacity of 1 yd^3.

In the Ladle Refining Facility No. 2, which is located inside the south end of the Continuous Caster Plant, ladles of molten steel are reheated to burn off certain contaminating gases, including hydrogen, nitrogen, and oxygen. The dust generated from this process is collected in this unit and then transported to the New Debris Pile (SWMU MIS 10). From the New Debris Pile, the material will be disposed of in an offsite landfill.

Wastes Managed: This unit manages ladle refining dust. Based on the description of the dusts generated in the Basic Oxygen Furnaces, where the molten steel is transported from, the wastes managed by this unit are non-hazardous. It is possible that this unit does contain hazardous constituents in negligible amounts.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment structure, no release history, or evidence of release.

CONTINUOUS CASTER SYSTEM (CCS)

SWMU CCS 1- 12A Lagoon

Photograph No(s).: R2P13 and R2P14

Period of Operation: This unit has been in operation from an unknown date until the present.

Location: This unit is located in the eastern portion of the facility to the east of the Electric Arc Furnace.

Physical Description: This unit is an earthen lined impoundment and measures approximately 180 feet wide at its widest part and 480 feet long. At the time of the VSI, this unit was full of standing liquid. An oil boom was located in the northern portion of the unit. This unit is sampled twice a week.

This unit was constructed to provide protection against accidental loss of oil to the Rouge River. This unit receives blowdown from the cooling towers of the Continuous Caster Recycle System (SWMU CCS 2), stormwater, and non-contact cooling water generated throughout the facility. The outflow from this unit ultimately discharges into the Rouge River.

On July 26, 1977, Ford Motor Company requested approval from MWRC to dredge this unit. According to this document, the unit had filled with sediment to the extent that cleaning was required to assure adequate retention time of the wastes. Ford estimated that the dredging would take approximately two months, and during this time, the waste received by this unit would be diverted to another outfall and then to the Rouge River. A boom would be installed at the outfall to prevent oil from being released to the River. According to the facility representatives, this unit has been dredged at least once.

Wastes Managed: This unit manages blowdown from the Continuous Caster Recycle System (SWMU CCS 2), stormwater and non-contact cooling water.

History of Releases: There were no reported or observed releases at the time of the VSI. However, the intended use of this impoundment is to catch spills before they reach the river. Any released material held in this unit would have direct contact with underlying soil.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Further action is warranted based on the lack of secondary containment at this unit. It is recommended that during the next sampling event at this unit, the facility collects soil samples from the bottom of the unit.

CONTINUOUS CASTER SYSTEM (CCS)

SWMU CCS 2 - Continuous Caster Recycle System

Photograph No(s).: R3P7, R3P8, R3P9, R3P10, R3P11, R3P12, R3P13, R3P14, R3P15, R3P16, R3P17, and R3P18

Period of Operation: According to facility representatives Strand 1&2 came into operation in 1984 and Strand 3 was added in 1995. It is assumed the CCRS came online within this time frame. The system is in use although not all components are currently operational.

Location: This unit is located to the south of the Continuous Caster Plant, west of the Ladle Refining Facility No. 2 Baghouse (SWMU LRF 3).

Physical Description: This system consists of the various units and associated piping for the treatment of oily wastewater generated in the production lines of the Continuous Caster Building. The purpose of the unit is to separate oils and solids from the water so that it can be recycled through the system. The components of the system include:

CCS 2a -	CCS Trenches
CCS 2b -	East CCS Scale Pit
CCS 2c -	West CCS Scale Pit
CCS 2d -	East and West CCS 100 Gallon Waste Oil Tanks
CCS 2e -	East and West CCS Waste Oil Receiving Tanks
CCS 2f -	CCS Scale Pile
CCS 2g -	CCS Sand Filters
CCS 2h -	CCS Cooling Towers
CCS 2i -	CCS Strand 1&2 Clarifier
CCS 2j -	CCS Strand 3 Clarifier
CCS 2k -	CCS Plate Filter
CCS 21 -	CCS Filter Cake Hopper

Oily, scale waste is collected in concrete, grated CCS Trenches (SWMU CCS 2a) located within the flooring of the Strand 1&2 and Strand 3 production lines. The waste is conveyed to the outdoor scale pits, with Strand 1&2 wastes conveyed to the East CCS Scale Pit (SWMU CCS 2b) and the Strand 3 wastes conveyed to the West CCS Scale Pit (SWMU CCS 2c). The below grade scale pits run parallel to each other with estimated dimensions of 30 feet by 60 feet and 40 feet deep. The pits are constructed of concrete. The scale settles to the bottom of the scale pits and is cleaned out by clam bucket once every 3 to 4 weeks. The removed scale is staged at the CCS Scale Pile (SWMU CCS 2f) located between the East and West CCS Scale Pits (SWMUs CCS 2b and 2c) on a concrete paved surface. At the time of the VSI, there was some scale and standing water in the vicinity of the CCS Scale Pile. The concrete pavement appeared to be cracked.

CONTINUOUS CASTER SYSTEM (CCS)

SWMU CCS 2 - Continuous Caster Recycle System (Continued)

Each scale pit is equipped with an oil skimmer which discharges oily water into the East and West 100 Gallon Waste Oil Tanks (SWMU CCS 2d). These tanks are located on a platform at their respective scale pits. The oily water contents of these tanks are pumped approximately 4 times a day to the East and West CCS Waste Oil Receiving Tanks (SWMU CCS 2e). These steel storage tanks are reported to be 6000 gallons in capacity, and the contents vacuum-pumped once every one or two weeks for removal offsite. The East and West CCS Waste Oil Receiving Tanks (SWMU CCS 2e) are located within a secondary containment pit, which is constructed of concrete and measures approximately 6 feet by 10 feet and 2 feet high. Additionally, there is a curbed, containment pad, also constructed of concrete, adjacent to the tanks to provide secondary containment for the pump trucks during oil removal.

Wastewater from the East and West CCS Scale Pits is pumped to the CCS Sand Filters (SWMU CCS 2g), located inside the CCS Recycle System Building for water filtration. The nine gravity flow filters, 100 square feet each, were not operational at the time of the VSI. Facility representatives explained this was since BF C is offline reducing the solids in the waste stream. When the units are on-line, the units operate on a continuous-clean cycle with no need to clean out sand filtration medium. The filtered water is conveyed to the CCS Cooling Tower (SWMU CCS 2h) and then conveyed back to the Continuous Caster for reuse. The blowdown from the CCS Cooling Tower is conveyed through the Sewer Lines (SWMU MIS 5) to the 12 A Lagoon (SWMU CCS 1). The backwash from the sand filters is pumped to the CCS Strand 1&2 Clarifier and CCS Strand 3 Clarifier (SWMUs CCS 2i and 2j) according to the original source of wastewater. The open-topped, steel Strand 1&2 Clarifier is 80,000 gallons in capacity, while the Strand 3 Clarifier, also steel and open-topped, is 48,800 gallons in capacity. Both Clarifiers rest directly on a concrete pad with no secondary containment.

Solids which settle in the clarifiers are conveyed to the CCS Plate Filter (SWMU CCS 2k). The plate filter separates the solids and discharges them into the CCS Plate Filter Hopper (SWMU CCS 2l) located immediately below. The estimated dimensions of the CCS Plate Filter Hopper are 15 feet wide by 30 feet long with a concrete, paved floor. The roofed unit is constructed against the side of the CCS building which serves as the eastern wall of the unit. The south and western walls are constructed of concrete containment walls approximately 5 feet tall. The north end is open to allow periodic removal of the Filter Plate Solids for off-site disposal. Water from the CCS Plate Filter (SWMU CCS 2k) and the CCS Clarifiers (SWMUs CCS 2i and 2j) is conveyed back to the Scale Pits (SWMU CCS 2b and 2c).

At the time of the VSI, there were puddles of standing water, possibly rain water, along the drive in and around the CCS. There were some areas of residuals from filter plate solids and scale observed in the drive area.

CONTINUOUS CASTER SYSTEM (CCS)

SWMU CCS 2 - Continuous Caster Recycle System (Continued)

Wastes Managed: This unit manages oily wastewater containing hydraulic oils, grease and scale. The scale is flakes of oxidized metal which forms on the surface of the exposed metal and falls during the slabbing process.

History of Releases: There are no documented releases in the available file materials.

Potential for Past/present Release:	**High**	( )
	Moderate	(X)
	Low	( )

Conclusions: There is a moderate release potential due to the nature of scale removal operations, the observed wastes on the drive area, and the observed integrity of the drive. The facility should determine if the waste materials observed in the drive area have released hazardous constituents to the environment.

CONTINUOUS CASTER SYSTEM (CCS)

SWMU CCS 3 - Drum Storage Area

Photograph No(s).: R3P19

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1980s, when the Continuous Caster System began operating, until the present.

Location: This unit is located in the eastern portion of the facility adjacent to the Ladle Refining Facility.

Physical Description: This unit is located in front of an air conditioned, corrugated steel building that measures approximately 20 feet long, 10 feet tall, and 10 feet wide. At the time of the VSI, this building was locked, and therefore, the contents could not be observed.

It was not determined during the VSI or from the available file material, what wastes were stored at this unit or inside the building. According to the facility representative, the wastes were stored outside of the building on the ground.

Wastes Managed: It was not determined what wastes were stored at this unit.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the no release history or evidence of release.

FORMER SLABBING MILL (FSM)

SWMU FSM 1 - Former Slab Mill Scale Pit

Photograph No(s).: R5P8

Period of Operation: This unit was in operation from 1964 until the late 1990s.

Location: This unit was located on the southern end of the Former Slab Mill (FSM). This mill is no longer in operation.

Physical Description: The unit comprises the pit and associated equipment used to collect, treat and store oily wastewater generated in the FSM. This unit consists of the FSM Trenches (SWMU FSM 1a), FSM Scale Pit (SWMU FSM 1b), and the FSM Waste Oil Tank (SWMU FSM 1c). Oily wastewater, containing scale, was collected inside the Slab Mill in concrete, grated FSM Trenches (SWMU FSM 1a) and discharged to the southern end of the below-grade FSM Scale Pit (SWMU FSM 1b). The estimated dimensions of the concrete FSM Scale Pit are 50 feet by 25 feet and 20-25 feet deep. At the time of the VSI, the pit was mostly dry with some piles of unidentified materials (possibly slag) so that the integrity of the concrete pit could not be verified.

The unit was designed so that the solids, mostly scale, would settle to the bottom of the pit. The scale was periodically removed by clam bucket and sold offsite.

The Scale Pit was equipped with an oil skimmer to skim oil from the wastewater surface. The collected oil was stored in the FSM Waste Oil Tank (SWMU FSM 1c). At the time of the VSI, the skimmer and oil tank were no longer present at the site. According to the facility representative, the collected oils were probably removed by a contractor for offsite recycling.

The resultant wastewater was reportedly either recirculated or conveyed through the Sewer Lines (SWMU MIS 5) to SRWWTP.

At the time of the VSI, the area surrounding the FSM Scale Pit was covered by Slab Mill Scale Piles (SWMU FSM 2) preventing the inspection of adjacent soils. It is likely, however, that scale was dumped to the ground for drainage prior to removal. According to the facility representatives, the scale was sold off site to a scinter plant.

Wastes Managed: This unit managed a slurry of wastewater containing oils and scale from milling operations. Scale is flakes of oxidized metal, which form on the exposed surface of the steel and falls off during the milling process.

History of Releases: There is no recorded history of release for this unit. However, due to the presence of the Slab Mill Scale Piles, the ground surrounding the pit could not be inspected for

SWMU FSM 1 - Former Slab Mill Scale Pit (Continued)

evidence of release. Given the nature of scale removal operations, it is likely that oily residues were routinely released in the vicinity of the unit.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**(X)**
	Low	**( )**

Conclusions: Due to the nature of scale removal operations, it is likely that routine releases occurred. The facility should determine if the waste materials released from the unit have resulted in hazardous constituent releases to surrounding soils.

FORMER SLABBING MILL (FSM)

SWMU FSM 2 - Slab Mill Scale Piles

Photograph No(s).: R5P7 and R5P9

Period of Operation: Unknown to present. According to facility representatives, accumulation of wastes for use in the WOF began in 1998.

Location: This unit is located along the south side of the Former Slab Mill.

Physical Description: This unit comprises many piles of scale, which is being stockpiled for use in the WOF. At the time of the VSI, many piles of over 1000 cubic yards were observed stored directly on the ground with no secondary containment. The piles surround the Former Slab Mill Scale Pit (SWMU FSM 1) and the Former Scarfer Grit Scale Pit (SWMU FSM 3). According to the facility representatives, the scale is brought to the Slab Mill Scale Piles from the various staging areas associated with active scale pits (HSM Scale Staging Areas (SWMU HSM 1d) and CCS Scale Pile (SWMU CCS 2f). The scale is to be used as feedstock in the WOF.

At the time of the VSI, erosion of the waste piles was observed with runoff migrating to adjacent soils. According to the facility representative, it will take an estimated one year to utilize the existing stockpile of scale in the WOF, once it is fully operational.

Wastes Managed: Scale removed from active scale pits (North and South HSM Scale Pits and CCS East and West Scale Pit (SWMUs HSM 1 and CCS 2b and 2c).

History of Releases: There is no documented evidence of release from this unit within available file materials.

Potential for Past/present Release:

High	( )
Moderate	(X)
Low	( )

Conclusions: A large volume of wastes containing some level of hazardous constituents are stored directly on the ground over a period of two to three years. Therefore the release potential is moderate and confirmatory sampling should be conducted.

FORMER SLABBING MILL (FSM)

SWMU FSM 3 - Former Scarfer Grit Scale Pit

Photograph No(s).: R5P10 and R5P11

Period of Operation: This unit was in operation from 1964 until the late 1990s.

Location: This unit is located adjacent to the Former Slab Mill, at the south side. It is located immediately west of the pump house and is currently surrounded by Slab Mill Scale Piles (SWMU FSM 2).

Physical Description: The unit is comprised of the pit and associated units used to collect, treat and store oily wastewater generated in the FSM. This unit consists of the Scarf Pit and Trenches (SWMU FSM 3a), Former Scarfer Grit Scale Pit (SWMU FSM 3b), and the Former Scarfer Pit Waste Oil Tank (SWMU FSM 3c). Oily wastewater, containing scale and scarf, was collected inside the Slab Mill in grated-concrete, Scarf Pit and Trenches (SWMU FSM 3a) and discharged to the western end of the below-grade Former Scarfer Grit Scale Pit (SWMU FSM 3b). The indoor, concrete Scarf Pit is estimated to be 6 feet by 8 feet and is located below grade at the production floor. It collected the oily, scarf sludge generated in the milling operations and conveyed it by way of the concrete, grated trenches to the outdoor pit. The estimated dimensions of the concrete Former Scarfer Grit Scale Pit (SWMU FSM 3b) are 20 feet by 30 feet and 20 feet deep. The unit consists of three chambers. The Trenches discharged the oily wastewater to the Scarf Chamber, located on the western end of the pit. The two parallel Scale Chambers run perpendicular to the Scarf Chamber. At the time of the VSI, the pit contained standing liquid in all three chambers so the depth of the unit and integrity of the concrete floor could not be verified.

The unit was designed so that the solids, mostly scarf, would settle to the bottom of the pit. The scarf was periodically removed by clam bucket and sold offsite. The resultant wastewater was reportedly either recirculated or conveyed through Sewer Lines (SWMU MIS 5) to SRWWTP.

According to facility representatives, it is likely that the Former Scarfer Grit Scale Pit (SWMU 3b) was equipped with an oil skimmer to skim oil from the wastewater surface although there was no sign of a skimmer or Former Scarfer Pit Waste Oil Tank (SWMU FSM 3c). According to the facility representative the collected oils were probably removed by a contractor for offsite recycling.

At the time of the VSI, the area surrounding the FSM Scale Pit was covered by Slab Mill Scale Piles (SWMU FSM 2) preventing the inspection of adjacent soils.

Wastes Managed: This unit managed a slurry of wastewater containing oils, scarf and scale from milling operations. Scarf and scale are flakes of oxidized metal that forms on the exposed

SWMU FSM 3 - Former Scarfer Grit Scale Pit (Continued)

surface of the steel and falls from the surface of the steel as it is milled. Although not a hazardous waste, it is likely these materials contain hazardous constituents.

History of Releases: There is no recorded history of release for this unit. However, due to the presence of the Slab Mill Scale Piles (SWMU FSM 2), the ground surrounding the pit could not be inspected for evidence of release. Given the nature of scale removal operations, it is likely that oily residues were routinely released in the vicinity of the unit.

Potential for Past/present Release:	**High**	( )
	Moderate	(X)
	Low	( )

Conclusions: Due to the nature of scarf/scale removal operations, it is likely that routine releases occurred. The facility should determine if the waste materials released from the unit have resulted in hazardous constituent releases to surrounding soils.

FORMER SLABBING MILL (FSM)

SWMU FSM 4 - Soak Pit Debris Pile

Photograph No(s).: None.

Period of Operation: It is not known when this unit was in operation.

Location: This unit was located in the basement of the Former Slab Mill.

Physical Description: According to the facility representative, the Soak Pit Debris Pile was located in the basement. The soak pits were used for heating of the steel ingots by radiant heat in past operations at the plant. There was no additional information available on this unit and it was not accessible since it was located in the basement of the closed and abandoned Former Slab Mill.

Wastes Managed: It is not known what wastes this unit managed. However, based on in the information received at the VSI, it is possible that this unit managed oily wastes and scale that were generated when the steel ingots were heated.

History of Releases: There is no documented evidence of release from this unit.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: Although there is limited information available on this unit, the potential for past release is thought to be low based on the indoor location of the unit and since there is no evidence of hazardous materials associated with the Soak Pit. The facility should determine what wastes were stored here, and what was the final disposition of these wastes.

HOT STRIP MILL (HSM)

SWMU HSM 1 - North and South Hot Strip Mill Scale Pits

Photograph No(s).: R5P12, R5P13, R5P16, R5P17, R5P18, and R5P19

Period of Operation: According to facility representatives, the units were likely constructed in the mid 1970s and upgraded and modified in the late 1980s.

Location: These units are located on the west side of the Hot Strip Mill. The North HSM Scale Pit (SWMU HSM 1b) is located outside adjacent to the Rougher Mills and the South HSM Scale Pit (SWMU HSM 1c) is outside adjacent to the Finishing Mills.

Physical Description: This unit includes two scale pits and the associated units that are used to collect, treat and store oily wastewater generated in the HSM. This unit consists of the following components:

HSM 1a-	HSM Trenches
HSM 1b-	North HSM Scale Pit
HSM 1c-	South HSM Scale Pit
HSM 1d-	HSM Scale Staging Areas
HSM 1e-	North Oily Waste Tank
HSM 1f-	South Oily Waste Tank
HSM 1g-	Former North Oily Waste Tank
HSM 1h-	Former South Oily Waste Tank.

Oily wastewater, containing scale, is collected inside the Rougher and Finishing Mills in concrete, grated HSM Trenches (SWMU HSM 1a) and discharged to the North (SWMU HSM 1b) and South HSM Scale Pits (SWMU HSM 1c), respectively. Due to time constraints, the HSM Trenches were not observed at the time of the VSI.

The below grade Scale Pits appear to be identical, are constructed of concrete, and consist of four separate compartments. The estimated dimensions of each scale pit are 30 feet wide by 75 feet long. At the time of the VSI, the pits contained standing liquid so the depths of the units could not be estimated. The HSM Trenches discharge to the north compartment of the North Scale Pit (south compartment for the South Scale Pit) for solids settling. Scale is removed from the pit on a weekly basis with clam buckets. According to the facility representatives, the scale is removed from the pits, placed on the ground adjacent to the pit in the HSM Scale Staging Areas (SWMU HSM 1d), and allowed to drain before it is removed to the Slab Mill Scale Piles (SWMU FSM 2) for stockpiling for use at WOF Facility. The HSM Scale Staging Areas appeared to be slag-covered soil located directly adjacent to the scale pits.

HOT STRIP MILL (HSM)

SWMU HSM 1 - North and South Hot Strip Mill Scale Pits (Continued)

Three additional compartments, perpendicular to the first compartment, operate in parallel and are each equipped with rope skimmers to remove oil from the surface of the wastewater. The skimmed oil is pumped to the heated, insulated North and South Oily Waste Tanks (SWMUs HSM 1e and HSM 1f, respectively). These tanks, which were added during the upgrade conducted in the late 1980s, rest on platforms constructed below grade within the scale pits, but above the liquid level in the pits. Facility representatives estimated the capacities of each tank are approximately 8,000 to 10,000 gallons. The oil tanks are reportedly pumped out by a contractor approximately once a week and the oil is taken off-site for recycling. A curbed, concrete containment pad is located adjacent to each of the scale pits and is reportedly used by trucks for secondary containment as they pump out the oily wastes from the tanks.

An above grade containment pit is also located adjacent to each of the Scale Pits. The containment pits are estimated to be 12 feet by 12 feet and 3 feet deep. Facility representatives thought these pits served as secondary containment areas for Former North and South Oily Waste Tanks (SWMUs HSM 1g and 1h, respectively). The Former North Oily Waste Tank was located in the containment area, the Former South Oily Waste Tank was located on the east side of the South HSM Scale Pit, outside of the containment area. These tanks went out-of-service when replaced by the North and South Oily Waste Tanks (SWMUs HSM 1e and 1f).

After removal of the scale and oil, the resultant wastewater is either recirculated through the HSM Trenches or conveyed through Sewer Lines (SWMU MIS 5) to the SRWWTP.

At the time of the VSI, heavy oil staining was observed on the ground around the vicinity of the scale pits and the secondary containment pits, especially in the vicinity of the HSM Scale Staging Areas (SWMU HSM 1d). In some areas, fresh slag appeared to have been recently applied. According to the facility representatives, periodic application of slag is a routine activity in this area. On west side of the North HSM Scale Pit (SWMU HSM 1b), there were areas of standing water with an oily sheen. The above grade portion of the side walls of the Scale Pits are constructed with openings at grade to allow surface water to drain into the pits.

Wastes Managed: This unit treats oily wastewater containing scale from the milling operation. Scale is flakes of oxidized metal which forms on the exposed surface of steel and falls off during milling operations.

History of Releases: Oily stains were observed throughout the area of the North and South Scale Pits.

HOT STRIP MILL (HSM)

<u>SWMU HSM 1 - North and South Hot Strip Mill Scale Pits</u> (Continued)

Potential for Past/present Release:	**High**	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: The removal of scale by clam bucket and vacuum pumping of waste oils appears to routinely cause spillage to the ground. Thus the potential is high for wastes to be released to environmental media. It is recommended that the soils immediately surrounding the North and South HSM Scale Pits (SWMUs HSM 1b and 1c) be sampled to determine if any soil contamination exists.

COLD ROLLING MILL (CRM)

SWMU CRM 1 - PCB-Contaminated Oil UST

Photograph No(s).: Photograph R4P2 was not developed.

Period of Operation: This unit operated from 1927 until February 9, 1996.

Location: According to a letter from ABB Environmental Services, Inc. (ABB) to MDEQ dated February 2, 1996, this unit is buried beneath the basement floor of Electrical Substation 12B in the Cold Rolling Mill Building which is in the northern portion of the facility. The unit is located against a wall on the west side of the substation and is surrounded by building footings on the north and south ends. The east side of the tank is adjacent to a narrow aisleway bordered by rows of high voltage electrical equipment.

Physical Description: This unit is steel and has a capacity of 1000 gallons. This unit was contained in a concrete vault. This unit was used to collect PCB-contaminated oil from leaking transformers in the substation 12B. This unit was closed on February 9, 1996. All of the steel piping was taken up from this unit, and the unit was closed in placed. The tank was not removed, instead, it was filled with concrete.

Wastes Managed: This unit managed water and PCB-contaminated oil.

History of Releases: According to a letter dated November 2, 1995 from Doepken, Keevican, & Weiss to MDEQ, a release of PCB-contaminated liquid from this tank was confirmed on October 21, 1995. This release was initially discovered on October 12, 1995 during a review of historical documents. On October 16, 1995, analytical results from the liquid inside the tank revealed that the oily layer contained PCB contamination in excess of 1,000 ppm. Analysis of the water layer showed PCBs at less than 100 ppb. On October 21, 1995, Marine Pollution Control (MPC) removed water from the concrete vault around the tank lid, and a Rouge employee noticed that liquid was leaking from the tank lid to water in the concrete vault. At this time MPC and Rouge worked to relieve hydraulic pressure on the tank to minimize any migration and to pump out the tank. All of the liquid that was removed was stored in onsite containers and disposed of offsite.

As of October 28, 1995, Rouge Steel and MPC had successfully reduced the pressure on this unit. They had also withdrawn all the liquid from the tank and plugged the overflow pipe. The initial inspection of the inside of the tank revealed that the tank was sound.

Rouge hired ABB to come up with a remedial investigation plan to determined the nature and extent of any contamination resulting from the tank. According to a letter dated February 2, 1996, a summary of the corrective actions and sampling activities performed was included in a Leaking UST Closure Report dated January 19, 1996. This report was not found in the available file material.

COLD ROLLING MILL (CRM)

<u>SWMU CRM 1 - PCB-Contaminated Oil UST</u> (Continued)

Potential for Past/present Release:	**High**	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Since a leak was discovered from this unit, it is recommended that sampling be performed at this unit if the contents of the closure report can not be found.

COLD ROLLING MILL (CRM)

SWMU CRM 2- North and South Neutralization Areas

Photograph No(s).: R4P3, R4P4, R6P4, and R6P6. Photographs R4P3 and R4P4 did not develop due to camera malfunctions.

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1935 or the 1960s, when the Cold Rolling Mill was rebuilt, until the present.

Location: These units are located inside the Cold Rolling Mill in the northern portion of the facility. These unit are also located to the south of the Spent Pickle Liquor Holding Tank (SWMU CRM 3).

Physical Description: These units consist of a fiberglass tank with a capacity of 20,000 gallons and a concrete pit that measures approximately 30 feet long, 30 feet wide, and 20 feet deep. The tank is located over concrete, approximately 10 feet below grade. The tank is referred to as the North Neutralization Area (SWMU CRM 2a) and the pit is referred to as the South Neutralization Area (SWMU CRM 2b).

These units store rinse water generated at the pickle lines. According to a letter from Rouge Steel to MDNR dated July 26, 1991, the North Neutralization Area collects rinse water from the No. 4 pickle line, which is composed of an uncoiler, a looping pit, four acid tanks, wringer rolls, a rinse tank, a second set of wringer rolls, and a recoiler, all in series. The North Neutralization Area also collects water from the fume scrubber. The South Neutralization Area collects rinse water from the No. 1 and 3 pickle lines. The No. 1 and 3 pickle lines consist of the same components as the No. 4 pickle line, except these lines only contain two acid tanks.
These rinse waters are generated during the "pickling", removal of iron oxide and other oxidizing impurities, of the steel coils. The steel coils are transported to the Cold Rolling Mill were they are passed through three pickling lines. At the pickle lines, the steel coil is first uncoiled and then sent through a looping pit. After the looping pit, the steel coil, which has been converted to a steel strip, is then passed through acid tanks were hydrochloric acid is sprayed to remove iron oxide (scales) and other oxidizing impurities. After the steel strip passes through the last acid tank, wringer rolls remove most of the acid which drains back to the last tank. The strip then enters a rinse tank which uses a continuous flow of water to remove the remaining acid solution from the surface of the steel strip. The rinse tank at the No. 4 pickle line overflows through pipes to the North Neutralization Area. The rinse tanks at the No. 1 and 3 pickle lines overflow through the Cold Mill Sumps (SWMU CRM 10) through concrete floor trenches and then to the South Neutralization Area.

COLD ROLLING MILL (CRM)

SWMU CRM 2- North and South Neutralization Areas (Continued)

At the North Neutralization Area, caustic solution is added to the rinse water and the water from the fume scrubber, used to control the fumes emitted from the pickling lines. At this area, the pH of the rinse water is monitored and caustic is added proportionally. After the pH has reached 8, the water is sent through Sewer Lines (SWMU MIS 5) to the Schaefer Road Wastewater Treatment Plant where it is treated prior to discharge to the Rouge River.

Originally, the South Neutralization Area was also to be used for neutralizing the rinse water, but this process was not successful. According to a letter dated July 26, 1991 describing a spill, one of the Cold Mill Sumps (SWMU CRM 10) under the No. 4 pickle lines, which has a sloped bottom, led to a concrete trench which led to a tank, believed to be the South Neutralization Area. The tank was used as an additional neutralization tank, but the practice was discontinued and the caustic feed lines were removed when it was discovered that additional neutralization was unnecessary. Currently, this area is used to monitor the pH of the rinse water from the No. 1 and 3 pickle lines. The rinse water first flows through concrete trenches to this area before being sent through the Sewer Lines (SWMU MIS 5) to the Schaefer Road Wastewater Treatment Plant and then to the Rouge River.

Wastes Managed: These units managed rinse water from the pickle lines and water from the fume scrubber.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

COLD ROLLING MILL (CRM)

SWMU CRM 3 - Spent Pickle Liquor Holding Tank

Photograph No(s).: R6P7

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1935 or the 1960s, when the Cold Rolling Mill was rebuilt, until the present.

Location: This unit is located inside the Cold Rolling Mill Building in the northern portion of the facility, north of the North and South Neutralization Areas (SWMU CRM 2).

Physical Description: The rubber lined steel tank has a capacity of 25,000 gallons. This unit is situated over one of the Cold Mill Sumps (SWMU CRM 10) that collects any spills from this unit and returns them to this unit.

This unit manages spent pickle liquor (K062) generated during the removal of scale and other oxidizing impurities. As the steel strips pass through the acid tanks at the pickling lines, the acid flows in the opposite direction to the motion of the steel. The motion of the steel results in an uphill flow of spent pickle liquor toward the overflow end of the pickling lines. At the overflow end, the spent pickle liquor flows through a six-inch line into this unit. From this unit, the spent pickle liquor is pumped through a concrete trench to the Spent Pickle Liquor <90 Day Storage Tanks (SWMU CRM 4).

Wastes Managed: This unit manages spent pickle liquor (K062), a non-flammable, greenish liquid with an acidic odor, that contains chromium and lead.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

COLD ROLLING MILL (CRM)

SWMU CRM 4 - Spent Pickle Liquor < 90 Day Storage Tanks

Photograph No(s).: R4P5 and R4P6

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have began operation in 1935 or the 1960s, when the Cold Rolling Mill was rebuilt, until the present.

Location: These units are located in the western portion of the facility at the Pickle Acid Tank Farm, on the west side of the Cold Rolling Mill. These units are located adjacent to two hydrochloric acid tanks and a sodium hydroxide tank.

Physical Description: These units consist of three rubber lined steel tanks that have capacities of 40,000 gallons each. These units are positioned horizontally in cradle mounts over 12 feet of limestone. According to the 1996 Contingency Plan submitted to MDEQ on September 22, 1998, the limestone, assuming that it is composed of 75 % calcium carbonate, is capable of neutralizing pure hydrochloric acid, which is sufficient for neutralizing any leaks from these units. However, it could not be determined during the VSI or from the available file material how long the limestone has been used or whether these tanks are the original tanks or replacements.

These units manage spent pickle liquor (K062) from the Spent Pickle Liquor Holding Tank (SWMU CRM 3). The spent pickle liquor flows from the Spent Pickle Liquor Holding Tank through an epoxy coated concrete trench to these units. According to the 1996 Contingency Plan, the spent pickle liquor (K062) from these units is pumped out and used as a substitute for a commercial product in wastewater treatment plants. This method of disposal renders the spent pickle liquor non-hazardous by exemption.

Occasionally, iron containing residues must be cleaned from these units. The solids that are removed from these units are removed offsite by a licensed vendor as a hazardous waste and transported to a treatment and disposal facility.

Wastes Managed: These units manage spent pickle liquor (K062), a non-flammable, greenish liquid with an acidic odor, that contains chromium and lead.

History of Releases: According to the facility representative, there was an acid leak in 1996 at the Pickle Acid Tank Farm, where these units are located. This leak was reportedly caused by a failure in minel bolts. There has not been a problem at the tank farm since 1996.

COLD ROLLING MILL (CRM)

SWMU CRM 4 - Spent Pickle Liquor < 90 Day Storage Tanks (Continued)

Potential for Past/present Release:	**High**	**( )**
	Moderate	**(X)**
	Low	**( )**

Conclusions: Further action is warranted based on the lack of secondary containment and the historical problem around the bottom valve of these units that was explained by the facility representative during the VSI. Although there is limestone under the tanks, the pit in which these units are located is not lined. Therefore, it is possible for a large enough spill to reach the soil before it could be neutralized. Since it is not known how long the limestone has been in use or whether these are the original units or replacements, confirmatory sampling is recommended at these units.

COLD ROLLING MILL (CRM)

SWMU CRM 5 - Tandem Mill Sump Oil Tank

Photograph No(s).: A photograph was not taken of this unit because it was not accessible in the basement of the Cold Rolling Mill.

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1935 or 1953 when the No. 1 tandem mill, located inside the Cold Rolling Mill, was modified, until the present.

Location: This unit is located in the northern portion of the facility in the Tandem Mill, which is located in the eastern portion of the Cold Rolling Mill.

Physical Description: This unit is located in the basement and is built into the concrete and covered with a grate. The material of construction and capacity of this unit was not known at the time of the VSI and was not found in the available file material. This unit was not accessible during the VSI.

This unit manages spent coolant generated in the cold reduction mills, called tandem mills. After the steel coils are pickled and sprayed with a corrosion resistant oil, the thickness of the coils are further reduced in the tandem mills. During this rolling operation coolant is applied directly to the rolls or coils to dissipate the heat produced during rolling and to provide lubrication. The excess coolant that results from this process drains to the Scrap Oil Drums (SWMU CRM 8) and is then pumped to this tank. The tank is pumped into a 9,000 gallon tanker truck before being pumped into a contractor's tanker truck and taken offsite.

Wastes Managed: This unit manages spent coolant that contains approximately 2 % oil.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: Further action is warranted based on the lack of information about the materials of construction and secondary containment and the release history or evidence of release. It is recommended that the facility inspect this unit to determine if any releases have occurred at this unit. Also, during this inspection, the facility should make close observations regarding the integrity of this unit.

COLD ROLLING MILL (CRM)

SWMU CRM 6 - Roll Shop Silo and Dust Box

Photograph No(s).: R4P7

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1935, or in the 1960s when the Cold Rolling Mill was modified, until an unknown date.

Location: This unit was located in the northern portion of the facility inside the southern end of the Cold Rolling Mill. This unit was also located south of the J-9 Sludge Box (SWMU CRM 7).

Physical Description: This unit is no longer present at the facility, therefore the material of construction and dimensions are unknown.

This unit managed steel pellets that were produced from blasting the surfaces of the tandem mill rolls. The surface of the rolls were shot blasted so that the tandem mill rolls would grab onto the steel coils better. The surface of the rolls were blasted and the excess steel would then fall into this collection box where it was stored until offsite disposal. Currently, the tandem mill rolls are shot blasted outside of the Cold Rolling Mill. A silo may have been present at this unit, but it was not determined during the VSI or from the available file material the purpose of this unit. Currently, this area is overlain by gravel.

Wastes Managed: This unit managed steel pellets.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on no release history or evidence of release.

COLD ROLLING MILL (CRM)

SWMU CRM 7 - J-9 Sludge Box

Photograph No(s).: R4P8

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1935, or in the 1960s when the Cold Rolling Mill was modified, until the present.

Location: This unit is located in the northern portion of the facility in the Cold Rolling Mill, north of the Roll Shop Silo and Dust Box (SWMU CRM 6).

Physical Description: This unit is a sump constructed of concrete that measures approximately 12 feet long, 8 feet wide, and 2 feet deep. This unit is covered with a metal grate.

This unit manages spent oil and water generated at the lathe at the tandem mills. The lathe is used to grind the surface of the tandem mill rolls and then spray them with corrosion resistant oil prior to placing steel coils on them. Swarf and spent oil are generated at the lathe. The swarf is collected in a waste management box and then taken offsite for disposal in a type two landfill. The spent oil flows from the lathe through a concrete trench that measures approximately 20 feet long and 1 foot wide to this unit. The spent oil and water from this unit is pumped out by a contractor and taken offsite.

Wastes Managed: This unit manages spent oil and water.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

COLD ROLLING MILL (CRM)

SWMU CRM 8 - Scrap Oil Drums

Photograph No(s).: R4P10

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that these units could have began operation in 1935, or in the 1960s when the Cold Rolling Mill was modified, until the present.

Location: These units are located in the northern portion of the facility inside the Cold Rolling Mill, east of the Z-46 (Z-47) Waste Oil Tanks (SWMU CRM 9).

Physical Description: These units are constructed of steel and have a capacity of 55-gallons. These units are situated over concrete. The purpose of these units is to store waste coolant that contains 2% oil generated in the tandem mills. The spent coolant is pumped from these units to the Tandem Mill Sump Oil Tank (SWMU CRM 5).

Wastes Managed: These units store spent coolant that contains 2% oil.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

COLD ROLLING MILL (CRM)

SWMU CRM 9 - Z-46 (Z-47) Waste Oil Tanks

Photograph No(s).: R4P11

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have began operation in 1935, or the 1960s when the Cold Rolling Mill was modified, until the present.

Location: These units are located in the northern portion of the facility inside the Cold Rolling Mill, west of the Scrap Oil Drums (SWMU CRM 8).

Physical Description: These units consist of two rectangular tanks that are constructed of steel and measure approximately 4 feet tall, 5 feet long, and 5 feet wide. These units are situated in a 6 inch steel pan over concrete. According to the facility representative, these are the only used oil dempster tanks that are still in use at the facility. The dempster tanks were SWMUs that were identified in the PA/VSI report dated May 6, 1987.

These units manage oil generated in the skin mill, also known as the temper mill. In the temper mill, the steel coils, which are not steel strips, are reduced by one to two percent in order to improve the surface texture and the forming qualities of the steel. This process generates oil which is first conveyed to one of the Cold Mill Sumps (SWMU CRM 10) and then pumped to these units. From these units, the used oil is removed offsite by a contractor.

Wastes Managed: These units store used oil from the temper mill.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

COLD ROLLING MILL (CRM)

SWMU CRM 10 - Cold Mill Sumps

Photograph No(s).: R4P1 and R6P5. R4P1 was not developed.

Period of Operation: The date these units began operating is unknown. However, the available file material indicates that these units could have began operation in 1935, or the 1960s when the Cold Rolling Mill was modified, until the present.

Location: These units are located throughout the Cold Rolling Mill, which is located in the northern portion of the facility.

Physical Description: These units are constructed of concrete and covered with steel grates. These units have varying capacities. The units collect rinse waters and oily wastes generated throughout the Cold Rolling Mill. According to the facility representative, these units were built whenever a piece of equipment was added to the Cold Rolling Mill. The oily wastes generated at the tandem mills flow to these units and are then pumped to the Z-46 (Z-47) Waste Oil Tanks (SWMU CRM 9). The contents of other sumps are pumped into a tanker truck and disposed offsite.

Wastes Managed: These units collect rinse waters and oily wastes.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 1- Asbestos Storage Area

Photograph No(s).: R2P6 and R2P7

Period of Operation: The date of operation for this unit is unknown until the present.

Location: This unit is located in the northern portion of the facility on the east side of the Rouge Operations Warehouse, west of the Blast Furnace Wastewater Treatment Plant (SWMU BF 1).

Physical Description: This unit consisted of a concrete floor on the east side of the Rouge Operations Warehouse. The dimensions of this unit could not determined at the time of the VSI or from the available file material. Currently, this unit consist of a blue, steel storage bin situated over concrete. This storage bin measures approximately 5 feet long, 10 feet wide, and 6 feet tall. At the time of the VSI, the purpose of this bin was unknown, but it was identified as a contractors box. A green storage bin is located immediately south of this unit, and it measures approximately 5 feet long, 2 feet wide, and 4 feet tall. At the time of the VSI, this bin was being used to store a bag of insulation.

Wastes Managed: This unit stored asbestos waste that was taken offsite for disposal.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 2 - <90 Day Hazardous /Non-hazardous Waste Area

Photograph No(s).: R2P9 thru R2P12

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1965, when the Open Hearth Furnaces were removed, until the present.

Location: This unit is located in the western portion of the facility at the Open Hearth Balcony 10, north of the Hi-Lo Waste Oil Tank (SWMU MIS 3).

Physical Description: This unit is constructed of concrete and measures approximately 30 feet long and 10 feet wide. This unit is covered by a roof and is surrounded by a fence. A concrete ramp leads to the opening of this unit, and a concrete berm contains any spills that might occur at this unit.

This unit is divided into three compartments that store pallets, hazardous waste, and raw materials. The pallets are stored on the ground in the southern end of this unit. These pallets are removed by a contractor for disposal offsite. The middle portion of the unit is used to store hazardous wastes generated throughout the facility. At the time of the VSI, miscellaneous hazardous wastes, used oil, and waste grease were being stored here. According to the 1996 Contingency Plan, the miscellaneous hazardous wastes stored are non-halogenated solvents that are used in the J-9 paint shop. These halogenated solvents include spent xylene (F003) and toluene (F005). Non-halogenated solvents used in the J-9 shop that are spilled are cleaned up and pumped into drums and labeled as hazardous wastes. These drums are then transported to this unit and stored until they are shipped offsite and landfilled. The waste oil is pumped out offsite. The western end of this unit is used to store raw materials.

According to the May 6, 1987 PA/VSI report, this unit also managed spent 1,1,1-trichloroethane (F001). According to the 1986 Contingency Plan located in the November information response, 1,1,1-trichloroethane was used at the Power House maintenance area in cleaning solvents for small parts and electrical equipment. If any spills or leaks occurred during cleaning, the liquid was pumped into drums and stored at this unit. All of the wastes stored at this unit are removed offsite by a licensed vendor.

Wastes Managed: This unit manages wooden pallets, xylene (F005), toluene (F003), other D001 wastes, used oil, waste grease, D001 wastes, and other hazardous wastes that were not identified during the VSI or in the available file material.

History of Releases: There were no reported or observed releases at the time of the VSI.

MISCELLANEOUS (MIS)

SWMU MIS 2 - <90 Day Hazardous /Non-hazardous Waste Area (Continued)

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 3 - Hi-Lo Waste Oil Tank

Photograph No(s).: R4P16, R4P17, R4P18, and R4P19

Period of Operation: This unit has operated from an unknown date until the present.

Location: This unit is located in the portion of the facility on the west side of the Hi-Lo shop, south of the <90 Day Hazardous/Non-hazardous Waste Area (SWMU MIS 2).

Physical Description: This unit is constructed of steel and has a capacity of approximately 15, 000 gallons. The exact capacity of this unit was not known at the time of the VSI . This unit is situated horizontally on cradle mounts over concrete. This unit is surrounded on three sides by a cinder block containment wall that measures approximately 3 feet high.

This unit is used to store waste oil generated from vehicle maintenance. The oil from this unit is pumped out by a licensed vendor and disposed offsite. At the time of the VSI, a pile of floor sweepings from the Hi-Lo Shop was located adjacent to the southwest corner of the containment wall. The floor sweepings are removed from this area with a front end loader that transports these wastes to a waste box so that they can be disposed of in a type two landfill.

Wastes Managed: This unit manages used oil that is not hazardous, but it might contain hazardous constituents. Floor sweepings are also managed adjacent to this unit, but they are not hazardous.

History of Releases: At the time of the VSI, heavy oil staining was observed on the west side of the containment wall. During the VSI, it appeared that the used oil from this unit was allowed to drain into a square steel box located on the west side of the containment wall. Consequently, the oil from the box appeared to have spilled down the west side of the wall and onto the ground. Also, cracks were observed on the west and south sides of the wall. Oily water was observed on the ground beside the southern wall.

Potential for Past/present Release:		
	High	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Further action is warranted based on the questionable integrity of the containment wall and the observed releases during the VSI. Confirmatory sampling is recommended to determine the possible extent of soil contamination at this unit.

MISCELLANEOUS (MIS)

SWMU MIS 4 - PCB Storage Building

Photograph No(s).: R5P6

Period of Operation: This unit operated from an unknown start date until 1997. According to the PA/VSI report dated May 6, 1987, this unit began operation in 1980.

Location: This unit is located in the western portion of the facility on the western end of the Continuous Caster Plant. This unit is also located northwest of the <90 Day Hazardous/Non-hazardous Waste Area (SWMU MIS 2).

Physical Description: This unit is a building constructed of corrugated steel and measures approximately 150 feet wide and 150 long. This building has of concrete, epoxy sealed floors with 8 inch high containment curbing.

According to the previous PA/VSI report, there were two PCB storage areas. Area No. 1 had a capacity of 30,000 gallons, and it was located in the vicinity of the Powerhouse. This area was used from 1980 until 1982, when it was closed and decontaminated. This area was used to store drums of PCB waste until the waste was removed by a licensed vendor and incinerated.

In the previous PA/VSI report, this building is referred to as Area No. 2. According to that report, this unit was used to store PCB-filled transformers and rectifiers from 1980 until 1982. The liquid from these units was drained onsite into drums and then incinerated. From 1982 until 1997, this area was used to temporarily store used transformers and samples taken for dielectric strength and moisture. According to the facility representative, this area was also used to store PCB filled drums and debris. Again, this material was removed offsite by a licensed vendor and incinerated. Currently, this area is used by Ford HV (high voltage) Operators.

Wastes Managed: This unit managed PCB filled drums and debris, used transformers, and samples taken for dielectric strength and moisture.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 5 - Sewer Lines

Photograph No(s).: A photograph could not be taken of this unit because it is underground.

Period of Operation: These units have been operating from an unknown start date to the present.

Location: These units are located throughout the facility.

Physical Description: These units are 96 inches in diameter, but the material of construction is not known.

These units transport blowdown from the cooling towers of the Blast Furnace Wastewater Treatment Plant (SWMU BF 1), Vacuum Degasser Recycling System (SWMU LRF 1), and Continuous Caster Recycle System (SWMU CCS 2) to the Rouge River. The blowdown from the Continuous Caster Recycle System and the Vacuum Degasser Recycling System is first transported to the 12 A Lagoon (SWMU CCS 1). Process wastewater is transported through these units from the North and South Neutralization Areas (SWMU CRM 2) and the North and South Hot Strip Mill Scale Pits (SWMU HSM 1) to the SRWWTP and ultimately to the Rouge River. Non-contact cooling water and contact cooling water respectively generated in the Blast Furnaces B and C and the tandem mills in the Cold Rolling Mill are also transported through these units to the Rouge River. This unit also manages wastewater generated at the Ladle Dumping Operation Pit (SWMU BOF 2).

In the past, this unit transported process wastewater from the Former Slab Mill Scale Pit (SWMU FSM 1) and the Former Scarfer Grit Scale Pit (SWMU FSM 3) to the SRWWTP and ultimately to the Rouge River. The wastewater from the Coke Oven Biological Wastewater Treatment Plant (SWMU CP 8) flows through this unit to the sanitary sewer system.

Wastes Managed: These units manage blowdown, non-contact cooling water, contacting cooling water, and treated process wastewater generated throughout the facility.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: No further action is warranted based on no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 6 - Methylene Chloride Drums- Oxygen Plant

Photograph No(s).: R5P7A

Period of Operation: The date this unit began operating is unknown. However, the available file material indicates that this unit could have began operation in 1962, when the Oxygen Plant began operation, until 1996, when the Oxygen Plant was shut down.

Location: This unit is located in the western portion of the facility on the west side of the Oxygen Plant, which is east of the Hot Strip Mill.

Physical Description: This unit consists of a 55-gallon drum situated horizontally in a steel frame over a steel drip pan that is approximately 2 feet wide. This unit was housed under a metal roof and is situated on a concrete slab that is approximately 4 feet above grade with no curbing. At the time of the VSI, the area where this unit was located was fenced off, and therefore, this unit was not accessible.

According to the 1996 Contingency Plan, methylene chloride and tetrachloroethylene were used in the Oxygen Plant in a dip degreaser for parts cleaning. As the solvent became laden with oily sludge, the degreaser was cleaned out. The spent solvent (F001) and any solvent that leaked or spilled was pumped into this unit and labeled as hazardous waste. If any solvent was spilled and absorbent was used, the absorbent was also disposed of in this unit as a hazardous waste. The material contained in this unit was stabilized and then landfilled.

Wastes Managed: This unit managed spent methylene chloride and tetrachloroethylene (F001).

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 7 - Used Oil Dempsters

Photograph No(s).: R2P8

Period of Operation: The period of operation for these units is unknown. Presently, the only dempsters tanks that are in operation are the Z-46 (Z-47) Waste Oil Tanks (SWMU CRM 9).

Location: According to the previous PA/VSI report, these units were located at A-39 adjacent to the Shipping Building, J-9 Shop, Hi-Lo Repair Shop, Stabilizing Mill, and at the North and South Hot Strip Mill Scale Pits (SWMU HSM 1). The Z-46 (Z-47) Waste Oil Tanks (SWMU CRM 9) in the Cold Rolling Mill were identified as used oil dempster tanks during the VSI.

Physical Description: According to the previous PA/VSI report, these units consisted of open dempster containers and tanks that were used to store used oil that consisted of general tramp oil generated from bearing leakage, rustproofing oil run-off, crankcase oils, etc. The waste from these units were pumped out daily by licensed vendors for disposal offsite. The dempster containers are no longer present at the facility, but the Z-46 (Z-47) Waste Oil Tanks are representative of how the dempster tanks looked. Based on the construction of the Z-46 (Z-47) Waste Oil Tanks, the dempster tanks were rectangular tanks constructed of steel. These measured approximately 4 feet tall, 5 feet long, and 5 feet wide and were situated in a 6 inch steel pan.

Wastes Managed: These units managed non-hazardous used oil that could have contained hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	**( )**
	Moderate	**( )**
	Low	**(X)**

Conclusions: Although minimal patches of oil stains were observed at A-39, no further action is warranted based on the materials of construction and no reported or observed releases.

MISCELLANEOUS (MIS)

SWMU MIS 8 - Spent Mold Foundry Sand Pile

Photograph No(s).: R2P26 and R3P1

Period of Operation: According to the previous PA/VSI report, this unit operated from 1962 until 1985.

Location: This unit was located in the northern portion of the facility in the Ingot Mold Foundry, north of the Blast Furnaces.

Physical Description: According to the previous PA/VSI report, this unit measured approximately 40 inches long and 60 inches wide. This unit was situated on the ground.

This unit was used to store spent mold foundry sand generated from making iron ingots. The sand molds were constructed of sawdust, clay and molasses. The sand molds were hollow and the interior of the mold consisted of sand. The molten iron from the Blast Furnaces was poured into the sand molds and allowed to solidify. The resulting iron molds were then used to cast steel ingots from the molten steel produced in the Blast Oxygen Furnaces. After the iron solidified, it was removed from the mold and taken to EE building for cleaning. Next, the cheek, sand holder, was removed from the sand mold and the sand was poured into this unit. The sand was screened and recycled, but the sand that could not be reused was landfilled.

Wastes Managed: This unit stored non-hazardous spent mold foundry sand that may have contained hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the non-hazardous characteristics of the waste and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 9 - Parts Cleaners

Photograph No(s).: R4P9

Period of Operation: These units have been operating from an unknown start date until the present.

Location: These units are located throughout the facility. According to the 1996 Contingency Plan, these units are located in the maintenance areas the Blast Furnace building, the BOF building, Continuous Caster Plant, Cold Rolling Mill, and the Hot Strip Mill.

Physical Description: Based on the parts cleaner observed at the tandem mill inside the Cold Rolling Mill during the VSI, these units are constructed of steel and measure approximately 2.5 feet tall, 1.5 feet wide, and 3 feet long. The file material indicated that these units are situated over 55-gallon drums, but the parts cleaner in the Cold Rolling Mill was not. The parts cleaner in the Cold Rolling Mill has a capacity of approximately 25 gallons.

These units are used to contain spent petroleum naphtha (mineral spirits) (D001) generated in the maintenance areas throughout the facility. According to the 1996 Contingency Plan, mineral spirits are used as a degreasing fluid, paint brush cleaner, and all-around oily parts cleaner. Usually, Safety Kleen pumps the spent mineral spirits (D001) from these units into a holding drum and transports them offsite for reclamation. If this does not take place, the material is taken to the <90 Day Hazardous/Non-hazardous Waste Area (SWMU MIS 2) from which it is transported offsite for disposal.

Wastes Managed: These units manage spent mineral spirits (D001). This waste is clear green and it has a hydrocarbon odor.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:	**High**	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the materials of construction and secondary containment, and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 10 - New Debris Pile

Photograph No(s).: R1P22

Period of Operation: This unit has been in operation from 1997 until the present.

Location: This unit is located in the southeastern portion of the facility, just northwest of the Coke Oven Gas Holder Tank.

Physical Description: This unit consists of 1500 ft^3 BOF refractory brick and miscellaneous dirt. This unit is situated on the ground with no secondary containment.

This unit manages refractory brick generated from the refractory lances in the Basic Oxygen Furnaces, desulfurization dust from the Desulfurization (D/S) Hoppers (SWMU BOF 3), flacked graphite particles and iron oxides from the Kish Hoppers (SWMU BOF 5), and ladle refining dust from the Ladle Refining Facility No. 1 and the Vacuum Degasser System Baghouse (SWMU LRF 2) and the Ladle Refining Facility No. 2 Baghouse (SWMU LRF 3). This unit also manages the filter cake from the Filter Cake Area (SWMU LRF 1d) located at the Vacuum Degasser System (SWMU LRF 1). The wastes managed at this unit are transported offsite and disposed of in a landfill.

Wastes Managed: This unit manages refractory brick and various non-hazardous waste dusts and filter cake material that contain negligible amounts of hazardous constituents.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	( )
	Low	(X)

Conclusions: No further action is warranted based on the non-hazardous characteristics of the waste and no release history or evidence of release.

MISCELLANEOUS (MIS)

SWMU MIS 11- WOF Stockpiled Material

Photograph No(s).: R1P1, R1P12, R1P13, R1P20, R1P21, R6P11, R6P16, R6P17, R6P18, Ford R3P23, and Ford R3P24

Period of Operation: This unit has been in operation from 1998 until the present.

Location: This material is located throughout the facility. The flue dust and ore fines are stockpiled at the Coke Plant and By Products Area (AOC D) adjacent to the South Quench Station (SWMU CP 1) and the coke oven gas holder tank in the southeastern portion of the facility. The coke breeze is stockpiled adjacent to the Coke Oven Tar Sludge Decanter Box (SWMU CP 3) and along the surrounding fence at Rouge.

Physical Description: This unit is composed of mounds of flue dust from the Flue Dust Catcher (SWMU BF 3) and iron ore fines and coke breeze from the raw materials for the Blast Furnaces. This material is situated on the ground. This material is being stockpiled for use in the Waste Oxide Facilities, which is not on line. According to the facility representative, the flue dust, ore fines, coke breeze, and scale from the Slab Mill Scale Piles (SWMU FSM 2) will be placed in the Waste Oxide Facilities and converted to briquets that will be used in the Basic Oxygen Furnaces. When the Waste Oxides Facility is brought online, the flue dust will remain at the facility for three to four months before it is used. The iron ore fines will be stored for nine months, and the scale and coke breeze will remain for over a year.

Wastes Managed: This unit stores iron ore fines, coke breeze, and flue dust.

History of Releases: There were no reported or observed releases at the time of the VSI.

Potential for Past/present Release:		
	High	( )
	Moderate	(X)
	Low	( )

Conclusions: The present release potential is moderate because the materials are being stored in large volumes on the ground outside. This material can easily become air borne. The facility should determine if the materials stored at this unit are releasing hazardous constituents to surrounding soils.

MISCELLANEOUS (MIS)

SWMU MIS 12 - Former Construction and Excavation Landfill

Photograph No(s): A photograph was not taken of this unit because it was added after the VSI was conducted.

Period of Operation: This unit was in operation from 1915 until 1956.

Location: This unit was located in the southwestern portion of the facility, at the southern end of the Former Slabbing Mill.

Physical Description: The material of construction and the dimensions of this unit could not be determined during the VSI or from the available file material. According to a Notification of Hazardous Waste attached to a letter dated January 6, 1986, this unit stored construction and excavation wastes that were generated from onsite activities.

Wastes Managed: This unit reportedly managed construction and excavation wastes.

History of Releases: There were no reported or observed releases identified in the available file materials.

Potential for Past/present Release:	**High**	**(X)**
	Moderate	**( )**
	Low	**( )**

Conclusions: Further action is warranted based on the lack of information on this unit. It is recommended that the facility conduct confirmatory sampling at the southern end of the Former Slabbing Mill, where this unit is shown to be located according to the Notification of Hazardous Waste.

IV. AREAS OF CONCERN

This section presents descriptions of the Areas of Concern (AOCs) identified during the PA and VSI at the Rouge Steel facility. Photograph numbers correspond to those presented in the Photograph Log in Appendix A.

AOC A - Oil Release Adjacent to J-9 Shop

Photograph No(s): R4P12, R4P13, and R4P14

Description: During the VSI, oil was observed on the ground adjacent to a transformer, which is located adjacent to the J-9 Shop at the Cold Rolling Mill in the northern portion of the facility. Oily water appeared to be coming from the base of the transformer and spilling outside of the area where the transformer is located.

A two gallon milk jug that contained oil and oily rags was also observed in this area. It was speculated during the VSI, that the oil release could have been a result of vehicle maintenance operations, but this was not confirmed.

Conclusions: Further action is warranted based on the observed release during the VSI. The oil release appeared to be continuous, therefore, it is recommended that the facility conduct sampling in this area to investigate the extent of the impact of the oil on the environment.

AOC B- Oil Release North Side of Hi-Lo Shop

Photograph No(s): R5P5

Description: Heavy oil staining was observed on and around a concrete area in the Bolster Layout Area, located on the North side of the Hi-Lo Shop and west of the Open Hearth Balcony, that measured approximately 60 feet long and 60 feet wide. This area was covered with muddy oil that was not completely contained on the pavement. Some of the oil had spilled onto the surrounding ground. It appeared that the oil releases in this area were routine.

Conclusions: Further action is warranted in this area based on the lack of secondary containment and the appearance of routine oil releases. It is recommended that sampling be performed in this area to determine the extent of contamination.

AOC C- Electric Arc Furnace

Photograph No(s): R5P3 and R5P21

Description: The Electric Arc Furnace is located in the southern portion of the facility adjacent to the 12A Lagoon (SWMU CCS 1). According to the Notification of Hazardous Waste attached to a letter dated January 6, 1986, the eastern portion of this building is located where the Former Tar Sludge Landfill was located. At the time of the VSI and in the available file material, it was not shown if the landfill had been properly closed prior to the construction of the unit. The Former Tar Sludge Landfill (SWMU EAF 1) stored tar sludge (K087) generated from extracting tar from the coke gas.

During the VSI, the inside of this building was toured and the floor of the building was covered with dust potentially contaminated with EAF dust (K061). The electric arc furnaces have not been used since 1992, but this building is currently being used for ladle car repairs.

Conclusions: Further action is warranted based on the historical use of the land at this building. Confirmatory sampling is recommended in order to determine if the soil beneath this building has been impacted from tar sludge (K087). Also, based on the dusty floor inside the building, the soil immediately surrounding the building should be sampled for the presence of EAF dust.

AOC D - Coke Plant and By Products Area

Photograph No(s): R1P5, R1P3, R1P2 and R6P9

Description: This area is located in the southeastern portion of the facility. During the VSI, this area was extremely over grown and it was difficult to determine if any releases had occurred in this area. This area was covered with dust, but it could not be determined if the dust was hazardous. Dried tar was observed adjacent to the Coke Oven Tar Sludge Decanter Box (SWMU CP 3). It could not be determined if this was tar sludge or tar pitch. The available file material indicates that during a RCRA inspection conducted on March 14, 1986, tar pitch spillage was observed in the vicinity of this unit. According to the inspection report, approximately five gallons of tar pitch was observed in the front of this unit. Rouge Steel later explained that the tar pitch is a product, not tar decanter sludge (K087). According to Rouge, it was normal to dispose of any tar pitch spillage with the tar decanter sludge. As a response to the spillage, a new steel plate was welded onto this unit to prevent further spillage.

Conclusions: Further action is warranted based on reported and observed releases in this area. It is recommended that sampling be performed in this area to determine the nature and extent of potential contamination.

AOC E - Sluice Pits

Photograph No(s): R5P4

Description: These units were located in the southern portion of the facility, south of the Basic Oxygen Furnace Building. It could not be determined from the VSI or the available file material what these units were used for. These units can be found on the site plan for Corrective Action Consent Order Phases - Rouge Manufacturing Complex dated May 30, 2000. On the site plan, these unit are located adjacent to the Booster Building.

Conclusions: Since the function of these units is not known, it is recommended that the facility research the use of these units and determine their potential to release to the environment.

AOC F -BOF UST

Photograph No(s): None

Description: According to a release report completed by Rouge Steel on December 1, 1999, elevated PID readings were detected from a 1,000 gallon diesel UST near the BOF on November 30, 1999 during tank removal activities. It could not be determined from the available file material if any sampling was conducted in this area to determine the extent of contamination. The tank was last used on August 23, 1999, and during closure, the tank was filled in with concrete and a building is located over the tank.

Conclusions: Further action is warranted based on the reported release at the BOF. It is recommended that the facility locate the closure report for this unit to verify that sampling was conducted at the time of closure. If sampling was not conducted at the time of closure, the facility should sample the soils in this area to determine if all of the contaminated soil was excavated.

V. CONCLUSIONS

Based on information obtained during the PA/VSI, further investigations under Corrective Action Authorities appear to be warranted for some of the SWMUs with associated high or moderate release potentials and for all AOCs. The facility should perform confirmatory sampling at the following SWMUs and AOCs:

- North and South Quench Stations (SWMU CP 1);
- Coke Oven Gas Drip Water Tanks (SWMU CP 2);
- Coke Oven Tar Sludge Decanter Box (SWMU CP 3);
- Blast Furnace Wastewater Treatment Plant (BFWWTP);
- Flue Dust Catcher (SWMU BF 3);
- Waste Material Accumulation Pile (SWMU BF 4);
- Former Tar Sludge Landfill (SWMU EAF 1);
- EAF Silo (SWMU EAF 2);
- 12A Lagoon (SWMU CCS 1);
- Slab Mill Scale Piles (SWMU FSM 2);
- PCB-Contaminated Oil UST (SWMU CRM 1);
- Spent Pickle Liquor <90 Day Storage Tanks (SWMU CRM 4);
- North and South HSM Scale Pits (SWMUs HSM 1b and 1c);
- Hi-Lo Waste Oil Tank (SWMU MIS 3);
- Former Construction and Excavation Landfill (SWMU MIS 12);
- Oil Release Adjacent to J-9 Shop (AOC A);
- Oil Release North Side of Hi-Lo Shop (AOC B);
- Electric Arc Furnace (AOC C); and,
- Coke Plant and By Products Area (AOC D).

The facility should determine whether waste materials present in and around the following SWMUs have released hazardous constituents to the environment:

- Continuous Caster Recycle System (SWMU CCS 2);
- Former Slab Mill Scale Pit (SWMU FSM 1);
- Former Scarfer Grit Scale Pit (SWMU FSM 3);
- WOF Stock piled Materials (SWMU MIS 11).

Two of the AOCs also require additional investigation, including the Sluice Pits (AOC E) and the BOF UST (AOC F). The facility should determine if any wastes were managed at the Sluice Pits (AOC E). In addition, the facility should locate the closure report for the BOF UST (AOC F) to determine if sampling was conducted at the time of closure. If sampling was not conducted or if the sampling results can not be found, then the facility should conduct soil sampling at the BOF UST.

Refer to Table 3 for a complete listing of all the SWMUs and AOCs and a summary of the further action recommendations for each unit.

Table 2: Recommended Action

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.	RECOMMENDED ACTION
COKE PLANT AND BY PRODUCTS AREA (CP)				
SWMU CP 1	North and South Quench Stations	HIGH	N/A	**Conduct confirmatory sampling during the RFI at the Coke Plant and By Products Area (AOC D). Also, determine the location of the quenching that occurred outside of the stations.**
SWMU CP 2	Coke Oven Gas Drip Water Tanks	MODERATE	Unit #12	**Investigate the units during the RFI at the Coke Plant and By Products Area (AOC D).**
SWMU CP 3	Coke Oven Tar Sludge Decanter Box	HIGH	N/A	**Conduct confirmatory sampling during the RFI at the Coke Plant and By Products Area (AOC D).**
SWMU CP 4	Coke Oven Tar Sludge Decanter Staging Area	LOW	Unit #14	**No Further Action (NFA), but facility needs to provide more information on the historic activities conducted in this area.**
SWMU CP 5	Coke Oven Light Oil Muck Tanks	MODERATE	Unit #17	**Investigate the units during the RFI at the Coke Plant and By Products Area (AOC D).**
SWMU CP 6	300 Gallon Hazardous Waste Tank	LOW	N/A	**NFA is recommended at this time.**
SWMU CP 7	Coke Oven Tar Sludge Tanks	MODERATE	N/A	**Investigate the units during the RFI at the Coke Plant and By Products Area (AOC D).**
SWMU CP 8	Coke Oven Biological Wastewater Treatment Plant	LOW	Unit #18	**NFA is recommended at this time.**
SWMU CP 9	Injection Well System	LOW	Unit #16	**NFA is recommended at this time.**
SWMU CP 10	Coke Oven Gas Holder Waste Tanks	LOW	Unit #10	**Investigate the units during the RFI at the Coke Plant and By Products Area (AOC D).**

Table 2: Recommended Action

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.	RECOMMENDED ACTION
SWMU CP 11	GG Building Coal Picking Refuse Pile	LOW	Unit #11	**NFA is recommended at this time.**
SWMU CP 12	Coke Oven Refractory Refuse Pile	LOW	Unit #13	**NFA is recommended at this time.**
SWMU CP 13	AC Still Bottom Holding Sludge Lagoon	LOW	Unit #15	**NFA is recommended at this time.**
BLAST FURNACE (BF)				
SWMU BF 1	Blast Furnace Wastewater Treatment Plant (BFWWTP)	MODERATE	Unit #23	**Conduct confirmatory sampling on the underlying soils in the vicinity of this unit.**
SWMU BF 2	Blast Furnace Slag Pit	LOW	N/A	**NFA is recommended at this time.**
SWMU BF 3	Flue Dust Catcher	MODERATE	N/A	**Sample the residue material to determine its characteristics.**
SWMU BF 4	Waste Material Accumulation Pile	HIGH	Unit #1	**Sample the surrounding this unit.**
BASIC OXYGEN FURNACE (BOF)				
SWMU BOF 1	Lime Dust Hopper	LOW	N/A	**NFA is recommended at this time.**
SWMU BOF 2	Ladle Dumping Operation Pits	LOW	Unit #8	**NFA is recommended at this time.**
SWMU BOF 3	Desulfurization (D/S) Hoppers	LOW	N/A	**NFA is recommended at this time.**
SWMU BOF 4	Course and Fine Dust Silo	MODERATE	Unit #7	**Examine the unpaved areas in the vicinity of this unit.**
SWMU BOF 5	Kish Hoppers	LOW	N/A	**NFA is recommended at this time.**
SWMU BOF 6	BOF Slag Pile	LOW	N/A	**NFA is recommended at this time.**
SWMU BOF 7	BOF 55 Gallon Drum Pick Up Area	LOW	N/A	**NFA is recommended at this time.**
SWMU BOF 8	BOF Slag Pit	LOW	N/A	**NFA is recommended at this time.**

Table 2: Recommended Action

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.	RECOMMENDED ACTION
ELECTRIC ARC FURNACE (EAF)				
SWMU EAF 1	Former Tar Sludge Landfill	HIGH	N/A	**Sample the soils at this unit.**
SWMU EAF 2	EAF Silo	HIGH	Unit #9	**Conduct sampling to determine if soil has been impacted, or provide documentation of any sampling that has been performed.**
SWMU EAF 3	EAF Shop Hopper	HIGH	Unit #9	**Provide supporting documentation that all released material was removed.**
LADLE REFINING FACILITY (LRF)				
SWMU LRF 1	Vacuum Degasser Recycling System	LOW	N/A	**NFA is recommended at this time.**
SWMU LRF 2	Ladle Refining Facility No. 1 and the Vacuum Degasser System Baghouse	LOW	N/A	**NFA is recommended at this time.**
SWMU LRF 3	Ladle Refining Facility No. 2 Baghouse	LOW	N/A	**NFA is recommended at this time.**
CONTINUOUS CASTING SYSTEM (CCS)				
SWMU CCS 1	12A Lagoon	MODERATE	N/A	**Collect soil samples from the bottom of the unit samples.**
SWMU CCS 2	Continuous Caster Recycle System	MODERATE	N/A	**Determine if waste materials in surrounding areas have released hazardous constituents to the soils.**
SWMU CCS 3	Drums Storage Area	LOW	N/A	**NFA is recommended at this time.**
FORMER SLABBING MILL (FSM)				
SWMU FSM 1	Former Slab Mill Scale Pit	MODERATE	N/A	**Determine if waste materials in surrounding areas have released hazardous constituents to the soils.**
SWMU FSM 2	Slab Mill Scale Piles	MODERATE	N/A	**Conduct confirmatory sampling.**

Table 2: Recommended Action

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.	RECOMMENDED ACTION
SWMU FSM 3	Former Scarfer Grit Scale Pit	MODERATE	N/A	**Determine if waste materials in surrounding areas have released hazardous constituents to the soils.**
SWMU FSM 4	Soak Pit Debris Pile	LOW	N/A	**Determine what wastes were stored here, and the final disposition of the wastes.**
HOT STRIP MILL (HSM)				
SWMU HSM 1	North and South Hot Strip Mill Scale Pits	HIGH	N/A	**Sample the soils immediately surrounding the North and South HSM Scale Pits (SWMUs HSM 1b and 1c).**
COLD ROLLING MILL (CRM)				
SWMU CRM 1	PCB-Contaminated Oil UST	HIGH	N/A	**Sample at this unit, or provide contents of closure report to show that releases have not occurred.**
SWMU CRM 2	North and South Neutralization Areas	LOW	N/A	**NFA is recommended at this time.**
SWMU CRM 3	Spent Pickle Liquor Holding Tank	LOW	Unit #24	**NFA is recommended at this time.**
SWMU CRM 4	Spent Pickle Liquor <90 Day Storage Tanks	LOW	Unit #24	**Perform confirmatory sampling at these units.**
SWMU CRM 5	Tandem Mill Sump Oil Tank	MODERATE	N/A	**Inspect this unit to determine if any releases have occurred.**
SWMU CRM 6	Roll Shop Silo and Dust Box	LOW	N/A	**NFA is recommended at this time.**
SWMU CRM 7	J-9 Sludge Box	LOW	N/A	**NFA is recommended at this time.**
SWMU CRM 8	Scrap Oil Drums	LOW	N/A	**NFA is recommended at this time.**
SWMU CRM 9	Z-46 (Z-47) Waste Oil Tanks	LOW	N/A	**NFA is recommended at this time.**

Table 2: Recommended Action

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.	RECOMMENDED ACTION
SWMU CRM 10	Cold Mill Sumps	LOW	N/A	**NFA is recommended at this time.**
		MISCELLANEOUS (MIS)		
SWMU MIS 1	Asbestos Storage Area	LOW	N/A	**NFA is recommended at this time.**
SWMU MIS 2	<90 Day Hazardous/Non-hazardous Waste Area	LOW	Unit #25	**NFA is recommended at this time.**
SWMU MIS 3	Hi-Lo Waste Oil Tank	HIGH	N/A	**Perform confirmatory sampling at this unit.**
SWMU MIS 4	PCB Storage Building	LOW	Unit #19	**NFA is recommended at this time.**
SWMU MIS 5	Sewer Lines	LOW	N/A	**NFA is recommended at this time.**
SWMU MIS 6	Methylene Chloride Drums-Oxygen Plant	LOW	N/A	**NFA is recommended at this time.**
SWMU MIS 7	Used Oil Dempsters	LOW	Unit #21	**NFA is recommended at this time.**
SWMU MIS 8	Spent Mold Foundry Sand Pile	LOW	Unit #22	**NFA is recommended at this time.**
SWMU MIS 9	Parts Cleaners	LOW	N/A	**NFA is recommended at this time.**
SWMU MIS 10	New Debris Pile	LOW	N/A	**NFA is recommended at this time.**
SWMU MIS 11	WOF Stockpiled Material	MODERATE	N/A	**Determine if materials stored at unit are releasing hazardous constituents to surrounding soils.**
SWMU MIS 12	Former Construction and Excavation Landfill	HIGH	N/A	**Conduct confirmatory sampling at the southern end of the Former Slabbing Mill.**

Table 2: Recommended Action

SWMU/AOC No.	SWMU/AOC NAME	RELEASE POTENTIAL	1987 PA/VSI REPORT SWMU No.	RECOMMENDED ACTION
AREAS OF CONCERN (AOC)				
AOC A	Oil Release Adjacent to J-9 Shop	HIGH	N/A	**Sample this area to investigate the extent of the impact of the oil release.**
AOC B	Oil Release North Side of Hi-Lo Shop	HIGH	N/A	**Conduct sampling to determine the extent of contamination.**
AOC C	Electric Arc Furnace	HIGH	N/A	**Sample the soil beneath and surrounding the building.**
AOC D	Coke Plant and By Products Area	HIGH	N/A	**Conduct sampling to determine if soil has been impacted.**
AOC E	Sluice Pits	UNKNOWN	N/A	**Research the use of these units and determine their potential to release to the environment.**
AOC F	BOF UST	HIGH	N/A	**Locate the closure report to verify that sampling was conducted during closure. If sampling was not conducted, sample the soils to determine if all of the contaminated soil was excavated.**

5-31-00 (11)

Refractory Brick + Misc. Pit (1-22)
- Refractory lances used in making steel
this mat'l is going to the Landfill, (off-site Landfill)
- No 2° containment.
- ~~5000 yd3.~~ 5-31-00
- 1000 yd3.

~~1-22~~ 1-23. Coke Oven Drip H_2O Tank! w/ Hole!
- Removed from 2° Containment

1-24! Overview of GG Bldg

1-25 Scrap Bin: No 2° Containment
~~Coal was picked~~ 5-31-00
Waste was picked from bins

1-26! Storage Yards!
- Used to equipment that will be disposed of.
- No secondary containment.

- Lunch @ 1:00 P.M.
- Back for Meeting @ 2:00 P.M. Document Review
- I asked about solidification pit. This area is where the Tar Sludge Decanter Pit (1-4) is located. In the file mat'l there was big descrepancy as to whether this was a surface impoundment or a concrete area. Later, it was found that this area had been concreted. There is mat'l in the files that shows that this area was closed. — Reminder, bring this file mat'l tomorrow (6-1-00).

- Documents Handed Out:
- 1998 Response from Rouge - NPDES Permit
- Documents on Well Closure - Air Permits (All copies)
List of Documents Needed:
- Copy of MDEQ Consent Order
- Coke Oven Drip Line H_2O - Ans. in the formal response.
-

5-31-00

(10) 5-31-00

H_2O would come into Clarifier and distributed to the RBCs, from RBCs to sanitary sewer.

- ~~R~~
- Clarifier
  H_2O came into weir, then to ☐ and then under flow through RBCs.
  - H_2O from By-Products Plant

1-15: Skimmer Oil Holding Tank

1-16: Clarifier for C.O. W.T.P.
Approx 15 ft. L x 20 ft. Long, 3.5 ft. High

1-17: RBCs

1-18: Gas Holding Tank: - Coke Oven Gas Holding Tank
- Rusted, peeling tank - ~~250,000 ft.³~~ ~~R~~ 5-31-00
- Huge tank 2.5×10^6 ft³

Coke Oven Refractory Refuse Bldg. 1-19

- Knock the refractory off and replace here, on the coke oven doors.
- Yellow Bldg.
- Scrap would probably be landfilled.
- Blast furnace flue Dust: -

1-20: Stock Pile Mat'l
- Gen. in off-gas of BFs prior to scrubbing
- Goes into settling tank (or a drop box where it is collected + then taths
- Right now it goes into pile and will then go into the waste pile
- oxides
- In the background of the mat'l is the old quench tower.

Refractory in furnaces is changed every 5 to 6 yrs. Take Temp. readings to determine Δ outs.

- ~~Hydraulic O~~ Coke Oven Gas Holder Waste Tanks 1-21
- Concrete containment tanks with standing H_2O
- Overgrown grass
- ~~300 to 500~~ 1000 gallons ~~capacity~~ capacity
- ~~R~~
- Rusted - Steel Tanks

1-7

- a second ~~tank~~ Coke Drip Line H_2O tank was approx 10 ft. from the other, Made of same mat'l with the same ~~dimensions~~ dimensions
- Concrete base approx 20 ft long x 10 ft across, 2 ft. high
- No cracks obs. in concrete.

1-8: Coke Oven Drip Tank

1-9: - Not sure what this is
  - Might have been for vapor liquid separation.
  - Vapor & Gas would go over into this tank.
  - Capped Blr Tank.
  - ~~Aff~~ Prevents the gas line from ~~sucki~~ sucking liquid back into the line. Instead, goes into tank behind it.
  - Again, same dimen. & mat'l of construction.
  - ~~[illegible]~~

1-10: Q.A. Quesca Area, looked like an abandoned rail car.

- 1-11: Picture of two tar sludge tanks.

1-12: Picture of where Deep Injection wells were. This area is currently covered by coke breeze.
1-13-5: looking east & S.

- 1-14: Light Oil Muck Tanks:
  - Constructed of steel
  - Meas. 20 ft. long, 5 ft. wide
  - On a concrete base.
  - 5 tanks
  - No cracks or spills.

~~[illegible]~~ Rotary Biol. Contactors - Coke Oven Bio. Treatment Plant
- G.A. - Inactive
- Rebuilt in 1986 & operated in 1987.
- Rotate & build up slime
- Organic Waste Hgl
-

(8) 5-31-00

~~By-Products Past H_2O discharge~~

(1) QA. - Quench Area - H_2O was recaptured and recirculated through the batteries.

(8) RIP1 Coke Breeze Loading Station.
- Stockpiling for waste oxide area.

- Use the same # as consent order.

RIP2: Overview of Abandoned Coke Plant (1-2)

RIP3- Coke Oven By-Products Plant (1-3)

Note To Shannon: Dust under the coke oven batteries.

1-4: Tar Sludge Decanter Pit: SWMU # 14
- Overgrown with grass
- Steel
- Approx. 20ft. Tall, 60ft. Wide + 10 ft. Across
- Irreg. Shaped
- Adj. tank is a weak liquid tank.
- Bottom of big tank is concrete, Not cracked.
- Some dried mud.
- Sludge dropped out in the front of the tank and into a smaller holding box that was 5.5 ft. tall, 5ft. wide 6 ft. across. Could not tell what was under tank because it was overgrown.

1-5 Overview of Coke Ovens Plant w/ Coke Breeze in the distance.

1-6 Coke Oven Gas Drip Tank
1-6: Overview of 1st One
- Steel tank - Rusted
- 15 ~~20~~ ft. long, 6 to 8 ft. in Diameter
- Sits 5ft. off ground on a concrete stand
- Green H_2O sat in bottom of the tank.
- Concr. base ax. 18ft. Long x 10ft. Wide + 5ft. high
- No cracks in concrete.

5-31-00 (7)

~~Scale Pits +~~

Dempster Containers + Tanks #21: Not sure where these are.
Wast Oil Tank @ H-Lo Shop Area.

Don Windler Sine 6-97.
84-91

Soaking Pits are not SWMUs.

(4)
- Soaking Pits + Stab Mill are no longer in operation.
- Soaking Pits were used to heat the ingots. This has been filled in.
- Would role ~~now~~ down ingots in Stab Mill. This generated scale that was sold to companies making ~~ing~~ brickets.

- Scale has been saved. ~~Sc~~ taking to waste oxide plant and then charged. Stockpiling since 98.

- BFs not ran from 2-1 through May: during Pwrhouse explosion.
- Use temporarily boilers in lieu of Pwrhouse explosion.

- Cause of Pwrhse Explosion: Leaking gas into inactive boiler that ignited and caused explosion.

→ Duplicates of Pictures - Ask Chris

→ Site Tour @ 11:08 A.M: w/ Don Windler

- Coke Plant:
- ~~Past Mold~~ Casting Area.
- ~~Metta~~ B ~~Metta~~ ~~Metta~~ Metal is poured into cars from the blast furnaces. Oxygen is being fed around the Iron oxide to prevent Oxidation.

- Coke was put into basin and spray coded.

- Down by Coke Batteries
- Truck would load out of tar sludge bottoms.
- Coke Breeze or fines for waste Oxide area. This is a
- raw mat'l.

(6) ~~[illegible]~~ in iron making 5-31-00

- Use BOF Slag - Back to the 60's.
- Use BF is aggregate.

- Elec. Furnace does not have BF.

- Elec. Furnace Stop is no longer operated. Shutdown in 79. Make iron out of melted scraps.

(2)

- Metal is poured out in iron ladle. Ladle to Desulfurization Station - Lime + Powered Mg. Metal is added. Ladle is tilted and Slag is skimmed into desulfur slag pot. Iron is poured to a BOF + further processed. Desulf slag is poured into pot. Cooled. Brought to Levy. Levy recovers iron from slag. Cast Irons made out of hi sulfur iron. Iron implements cast as is. These items don't have to be worked on. Levy sales large peaces back to Rouge. Charged back into BF.
- Blows O_2 into molten iron. Iron = 4% carbon. Steel is 100% carbon.
- Iron is poured into steel ladle and transferred into BOF.
- Electrostatic precipitator collects BOF dust. Loaded into trucks and taken to type 3 ~~lad~~ landfill.
- Built an emissions area. Screen cole fines and ore fines. Get better control in furnaces.
Recover fines in waste oxides process. Uses reducing furnace. Makes brickate of mat'l. Put into rotary furnaces. Brickate to BOFs. Added to ladle. The brickate is added to iron ladle.

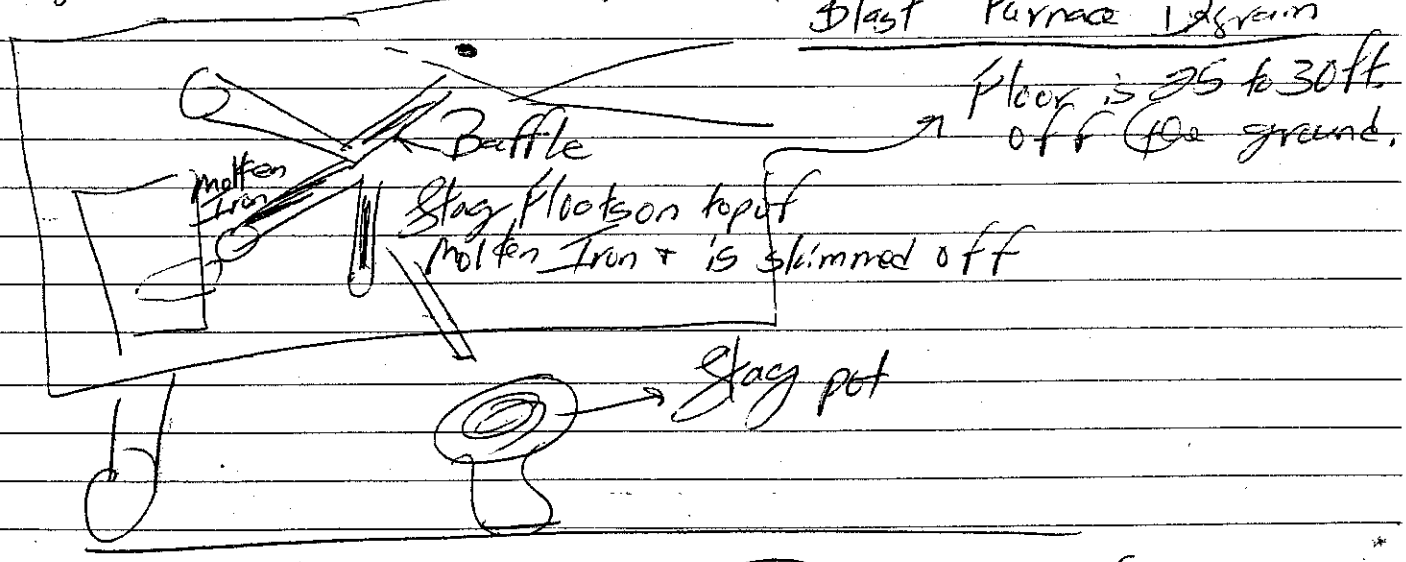
(3) Volitize Zinc out of BOF. Prod. Zinc Oxide + sell.
Iron (no longer made into ingots and then molded).
- Continous Casting + then Slabs. Then finished coiled steel.
- Increase strength of steel by coil rolling. Remove the scale from the hot strip mill (gray iron oxide). Scale is knocked of in course of rolling. Pickle the strip of steel. Feed through hydrochloride acid. Brought to Tandem Mill + cold rolled - Doubling strength of steel. Coiled steel to ~~Milling~~ area to slightly reduce stress. Reduces internal stress. Kneeling. (Hydrogen + blended gas) Kneeled + set aside to cool. Then sold.
- Galvanized steel
- Pickle lines are in the West Side of the Plant, ~~G + H~~ ~~[illegible]~~ J + K; Picklers
- Sale: Picled + Oil Steel or hot rolled steel.

5-31-00 (5)

- Iron to steel making
- Small part used in mold foundry to cast molds for ingots
  Lump of steel poured into steel making. 15 to 25 tons - ea. ingots.
- Made your own molds.
- SWMUs from '87 in Cole Plant
- Molding Sand!
- Mold foundry is now used for raw mat'l.

- Iron ore is in form of pellets
- Limestone - Sized stone, not fine
- Coal is brought in by railcars. Some is stored onsite.
  (The part!) Dumped into hoppers and brought to Hi-Lime + into bins.
- Now - Goes to stockhouse to B+ C furnaces. Convert. goes to top of furnace. Converted over in Nov.-Dec. 1997. Jan. 10-1997.
- Iron + Slag of BF!
- Iron → Railcars → Steel making area. (BOF)
- (Molds step has been eliminated.
- Ladles → BOF → to Continous Cast Iron.
- BF Slag → furnaces → Goes to Raw Mat'l Storage! Poured into horme areas and then goes into cool H_2O.
- Ed. C Levy Company
- Slag is made into aggregate.
- Slag is calcium mat'l.
- Slag exists furnace on slag house floor.

Blast Furnace Diagram



- Coke + Limestone + Pellets Start the process.
- BOF Slag is used to replace limestone in iron making side.
- In BF Calcite Lime in BOF slag. BF slag is mostly limestone

④ Scope of VSI 5-31-00
- 3 SWMUs on Ford Side & 3 in Pwr house
- Defs. of SWMUs:
  - SWMUs: Contaminates, placed, release, threat of release, or subj. to MI regulations.
    - Doesn't have to be a hazardous waste
  - AOC: Doesn't mean a waste managed.
    - Release on a non-routine basis.
    - Subj. to Part III.
  - These are definitions that came out of a consent order entered with MDEQ.
- Scope - Facility in Consent Order: Bounded by thick black line on map.
  - Ford is in Yellow.
  - Rouge " " Blue.
- SRWWTP: Off of investigation. Possible other parties that have wastes there.
- Rouge: Start @ the Coke Plant
- Pwr house Explosion last fall: 6 or 7 people died. Can not go inside.
- Facility Overview/Document Review: @ 9:45 A.M.
- Began Again @ The Process.
  - Coal - Raw Mat'l
  - Coal - Grind → Boil
    - By-Products (Sold what was produced.)
    - Coke Oven Gas used in the plant
    - Coke Oven Gas held in gas holder - no longer pres.

This is the old process.

① - Coke is bought today
- Coke, Oven, limestone into BF (air is pre-heated & blown into BFs. Only BF C are operated.

Rouge H+S Training 5-31-00 (3)

- Overhead crane! Casthouse along cylindrical BF. Has floor with trenches. Drive railcars under floor and use trenches to guide one.
- Utility piping + conduits! Hot !! Conduits = ↑ Voltage
- Furnace Area! Nat'l Gas Line
- Rail movement around blas + furnace! Coke Plant - West side has rail movement. Rail movement on both sides of BFs.
- Molten Slag transf. from furnaces to Slag Dumping area
- Convey. of coke, and pellets in furnace area.
- Radiation Hazards - in Stock house: Radition Source might be small Gamma Radiation Cylinder

• Hi-Line! Elevated Rail along BFs

VIII. Hazardous Mat'ls
- Blr Bldg. to Power house cleaned out!!
- Fine coal or coke in Stockhouse + BF wk area - Possible Fire hazard.
- Sodium hydroxide
- Na B...
- Asbestos insulation
- PCB + oil transforms in BF + Coke Oven
- Hydraulic Oil

IX. Confine Spaces! Do not go in! TL's Policy
BF Stoves
Gas Mains
Bustle Areas

Ford H+S Training

- H+S Training ended @ 9:10 A.M.
- @ 9:15 A.M! Bathroom/Coffee Bk.
- Chris Black brought up area where there are hot surfac

Scope of VST! @ 9:32 A.M.
- Ford + Rouge! Voluntary Consent order in Coke Oven
Enforceable (MDEQ)

1989! Remediation
~~1998~~ VST At Rouge Complex. 24 SWMUs

(2) Rouse H+ S Training 5-31-00

PPE: Safety Glasses with Side Shields
Hard hat
Safety Shoes

CSS Contractor Employee Review:
- Notify others of if someone is coming on site.

Please Note! The State is scheduled to bring 4 people on-site.

IV. Job Specific Safety Req'ments
- Confined Space Entry Procedures: Make Appointment
- Overhead Cranes: 3 Overhead Bridge Cranes
- Hot Slabs + Coils: Present: Ambient Temp. to 2000°.
- O'erhead Work Procedures: Demo + Construc.

V. Area Spec. Safety Req'ments
Blast Furnace / Coke Plt. Area:
- Tunnel, Vehicle Issues, Rail Traffic, Boat Slip Rd
- Chemical Hazards: Ask for MSDs, Safety Depart. will have

VI. Contractor Emerg. Response Ck. list
A. Emerg. Incident Recognition: Emergency threatens, life, Environ., or Property
- Emerg. Response Plan - has diagrams of all bldgs.
- Chemical Spills: Evac. + Stay Away.
- Pwr Failure: Leave Bldg. except in Tornadoes
→ - There is a rescue team. to pull from Confined Spaces
- Structural Failure or Roof Collapse: Evac. immedly. - Has been one in BOP area
B. Emerge. Notification
C. Evacuation: → Ind. Bldgs.

VII. Blast Furnace / Coke Ovens Area Hazs. + Emerg. Response
- Carbon Monoxide Accum. - Move to open area hearing alarm
- Coke Oven Bldgs. are deteriorating - Bdgs. have concrete floors.
- Casthouses: Molten Iron + Slag
- Ore bridges along hi-line area

- May 31, 2000 @ 8:00AM,
- 65° - Sunny, Mild Wind

Present:
M. Powers, TL
R. Young
S. Ridley
J. Hilbert - Ford Rouge Heritage 2000 Proj.
C.
J. Harklin - Project Manager
- Don Windeler: Fed ~~Sa~~ H&S Training - Proj. Coord. for Rouge
A. Hotchis

- CRA - Doing Remediation on Coke Ovens
- H&S Training @ ~~8:30 A.M.~~ 8:15 A.M. Rouge H&S Training
  Fed by Don Windeler
Note to Shannon: Get names of people for opening meeting from R. Young

- I. Emerg. #'s
  Fire (Rouge) 313-377-3313
  Security (Rouge) 313-317-7888
  Ambulance (3,3)

II. General Safety Requirements
- Specific Haz. - The Tunnel Rd. #4
- Rail Traffic: Liquid Iron
- Boat Slip Rd: Rds E & H

- 1st Aid: ① 911 (Dearborn Responds)
  ② Local Hosp. on Site

→ Glass Plant was being demoed. Coke Oven area has construction activities

III. Haz. Comm. Prog.
- List of mat'ls on site
- MSD's

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

HORIZONTAL LINE

All-Weather Maxi-Spiral
No. 393-MX

Shannon D. Ridley
Ford / Rouge V8 I
May 31st - June 30 2000
6-7-00

APPENDIX B
VISUAL SITE INSPECTION FIELD NOTEBOOKS

(12) 5-31-00.

Underground Storage Tanks (USTs) - 1986 Listing
- 1989/90: List of Known USTs.
- Hist. Information on the facility.
-

Skull Cracking Bldg:
- Mold Stripper converted to Waste Oxides.
- Would push ingots out of the molds.
- Cast Steel Ball using to break the skulls (metal that coats the ladle.) Metal coo that adheres to the side of the ladles
Metal is put back into the furnace.
- Done of by Gate 12 by Levy.
- Iron Skulls - BF
- Steel " - BOF
- Levy can sale off-site.

- Spill Control Plan - Aboveground & Blew Ground Waste Storage Tanks and locations
- Abandone Tanks - Coke Oven Gas Drip Line Tanks

- Note to Shannon: Look @ Coke Oven Tar Sludge Tanks

* p. 10 of 1998 Response - Shows where the mat'l from the Light Oil Muck Tanks.

* PCB - containing Oil UST - Closed in 9811? - Look @ reference → Maybe
300 Gallon Waste Tank by Serpentine Coolers.

12 A Lagoon = Open

12 A Treatment Facility = 12 A Lagoon = Open Hearth Rd. Oil Polishing Lagoons

- Testing Boxes - Temporary Removal
- Belt Cale Box: Part of BFWTP
- SAA - Grease Drums in Storage Area - N.W of Caster
Plan to Visit: BFWTP, 12A Lagoon, SAA Area.

5-31-00 (43)

- MC.G.C - Landfill on west side of Rouge River. @ SRWF. Landfilled wastes from manufacturing to Landfilled in the late 60's.
- Cannot go after Mich. Con. Put under a separate order to hold Mich. Con. reliable. Corp. of Engins. as a flood plain project.
- B
- 300 gallon Tank 2-1
- Held Flushings out of Serpentine Cooler. Cooled proesse streams out of by-products plant.
- Steel -
- Crate is located underneath tank.
- Serpentine coolers may have set to the rt. and left of the tank.
- Tank sits in a concrete ~~basin~~ trench that meas. 15 Ft. L x 5 Ft wide
- Trench was probably used to contain spills that were pumped out to allow for walking.
- Cinder block construction
- One end cinder + one end concrete
- Couldn't insp. integrity of the trench due to about 2 inches of H_2O and mud in the btm.
-

B.F WWTP! and Filter Cake Box! 2-2 + 2-3
- Foreman was gone therefore, we could not get a tour inside.
-

2-4 + 2-5! Filter Cake Storage Area!
- No 2° Contain.
- 10 Ft. long + 9 Ft. wide
- Hauled off for disposal.
- Waste Oxide! ~~S~~ Dust, Fines have to have Iron or Carbon, - Make into Bricket.

R.O.W: Rouge Operations Warehouse - East Side 2-6 + 2-7
- For Staging Asbestos - Temp Storage
- Taken off site for disposal.
- 2-7! Green steel box! ~~Lost~~ One bag of instulation was stored @ the time. On concrete 2 Ft. long, 5 Ft. wide, 2 Ft. High

~~(X)~~ ~~X~~ 5-31-00 (B) (14)

2-8 Co A-39- This is where Dempsters were.
- Either on ground - no 2° Containment or by the yellow & black door.

2-9 & 2-10'

Pallets	Waste	Raw
5-31-00 ~~2-10~~ 2-1	(90-Day Storage ~~2-11~~	Materials ~~2-10~~ 2-9 (North 9)

Pallets Storage - On Plain Ground. 2-10, 2-11 (North & East)
- Staining not noticed
Pallets set sent off-site

Haz Waste Storage - Non Haz. Waste are pumped out & sent to Edward's Oil.
- Misc. Haz Waste
- Used Oil
- Waste Grease Area
- Some Staining
- No cracks
Bermed
- Surrounded by gate
- Ramp leading up to area
- Graded pt at Form to the South
- 10 Ft. Wide & 30 Ft. Long
-

17 A Lagoon! 2-13 + 2-14
Size unknown
- Blowdown from Caster WWTP, Storm H_2O, and non-contact cooling H_2O
- Goes out to the Rouge River
- Probably sampled twice a week.
- Face
- Fish observed in the pond.
- Oil boom located across the Lagoon

2-15 Looking East! Fine Hopper.
- This was a SWMU
- Fine Dust used to be disposed as waste (off-site).

(14B) 5:31:00

- Baghouse controls dust when dumping lime inside the bldg.
- The lime is then taken to the D.P.

Off-Site @ 5:00 P.M. 5:31:00
5:10 P.M.

~~14~~ 6-1-00 (14) 14C
- Onsite @ 8:05 A.M.
- Cloudy & Breezy
- Temp 65°
- Forecast says that it might rain in the afternoon.

- Opening Meeting with Don, Christ, Ann and CSA person
- Opening Meeting @ 8:15 A.M.
- Dave Staten from MDEQ @ 8:10 A.M.
- Charlene " " @ 8:10 A.M. - Will Participate in the Ford Tour.
- Jerry Geirston
- Handed Out Revised/Rearranged SWMU List!
- and Jeff Hartland - Ford MC
- Let the state guy know what years of arerial photoes we get.

Order of Site Visit
BF
BOF
Continuous Caster ~~at~~ 6-1-00
~~After~~ 6-1-00
Hot Mill
- Cold Mill (Roll Shop is located here)
- EAF
Slab Mill
- SWMU Note!
Please Note! Waste Mat'l Accumulation Pile! This only holds the BF WTP Filter Cake. This was seen on 5-31-00. The New SWMU by the Gas Holder holds the kish and the de-sulfuriser dust.

- Tour Began @ 9:20 A.M.
- Still Cloudy
Blast, Furnace Area!
Blast Furn. WWTP! Mel Nuvansky - RSC
- 3 mill gal. loop
- BF Cleaning gas with Scrubbers
① Bar Screen CH2O from BF Cleaning
② Raw Waste Sump
③ Three Vertical Pumps
④ Splitter box
⑤ Two Clarifiers
- Coagulates in Splitter Box
- 225 ppm for dirt or solids
- 20 ppm after Clarifier
Chlor.
⑥ - Plan Tire Sump
⑦ - Cooling Towers @ 30° D
⑧ - Gravity to Reuse tank

Blast Furnace Area 6-1-00 (B)

- level
- Centrifugal Pump and recirculated back to Furnace Operation
- Pick up H_2O and run through press. filter
- Parshall Flume through and
- Over Flow from filter goes to Clarifier Sludges Fi~~lter~~ Cake
- Sludge from thickener goes to landfill
- Will recover sludge is waste oxides Produce 15 tons/day of sludge
- Clean H_2O goes to ~~st~~ coolers, sump, and back to furnace
- Some H_2O from towers goes to sand filter and then to River
- the waste stream is the filter cake.
- Oxidizing with Chlorine dioxide. (~~Eta~~ In the Effluent.)
- Cyanides + phenols
- 20 yrs. Built in 1980 or 81.
- This plant treats blowdown from the gas scrubbing unit @ BF.
- BET - Recycle Plant
- The Blowdown would have gone out of discharge without being treated.
- ~~Spilitter~~ Flow in BBWTP

520 ml/min. (~~Ba~~ OH to Control PH)

Sump → Spilitter Box → Clarifiers → ~~Rec. Chamber~~ (Reaction Chamber in the center)

Sludge goes to thickener. → Over Flow ↑ Well Well → Centrifugal Pump (Cooler Sump)

- Clarifiers - Mill gallons each → Cooling Towers → underground Sump by gravity → BF to gas scrubber.

Summary of Flow

BF
/ \
N.C. S.C.
| 20 ppm
C.T. Clean H_2O Blowdown to the River

- Underflow: Door Tanks in BF
- Return from Filter Press
- Dirt from press. Filters
- Clean H_2O from Press. Filters goes to Rivers
- Return from filter press comes back thickeners.

- Three Waste Streams from this System!

① BF River
② H_2O to Cooling Towers
③ Sludge in Filter Cake

6-1-00

BF Area

- Clarifiers insp. every 6 mons. to 1 yrs. : Clean weirs
- Lubricated Once a week

So the reaction chamber attracts solids to the middle, using elec. to attract solids to the center. The solids also set scraped to the middle. Solids go to classical dehydrating proc.

2-16 Splitter Box
2-17 Thickener
2-18 N. Clarifier
2-19 Closeup, S. "
2-20 Cooling Towers,

Photo #'s

Classical Dewatering Process:

UnPlow Thickeners (Studge) - (Slurry) - Makes Filter Cake

Leaf!

Vat (Scatter into Vat)
- DeH2O Solids
- Wheels Turn Bulls Vaccuum
Apply Pressures 21 turns a day.

Ro 6-1-00

Press Filters
- have sand & ethricite for H2O to the river,

- Product falls into a garage on groundlevel
- Pick up with loader into staging area and then into landfill.

- H2O from center of vat goes back to Splitter Box
- OverPlow goes back to the thickeners.

6-1-00

~~So Recap!~~

- Filter cake from vat goes into garage, then to the staging Area (seen yesterday), then to land fill. 15 % moisture.

6-1-00

~~Recap!~~

- Some H2O from the clarifiers goes back to the BF and some goes to cooling towers and then to the River.

Please Note! There was staining on sides of Clarifiers + Thickeners,

BF Area 6-1-00 (17)

Iron Mold Foundry - Cast Molds that were used to cast the igots into.

Casting Iron! 101 - Process

Box

(hollow) Form (Sand) (Sawdust + Clay, and Molasses (real)

↓

Pull out + have Frame work

↓

and then put interior form)

↓

Line up on cars and pour the iron in.

- The waste that came out was the sand.

- Spent Mold Foundry Sand Pile

- Screen + recycle
- Sand that ~~count~~ couldn't be reused was landfilled.

6-1-00

- Probable ~~Col~~ Location of Spent Mold Foundry Sand Pile North End of Former Foundry in the Ingot Mold Bldg.
- ~~Photo #'s:~~ 6-1-00
- Foundry Sand would be green or dark ~~pla~~ black after use.
- Hoppers would be raw mat'l for sand + other additives.

Flue Dust Catcher! (There is one BF # B + C)
- At the time there was no bin located under those hoppers.
- This dust is used. mat'l is stockpiled for use in the waste oxides, Stock piled where old quench tower was. This is noted as stock pile mat'l in log book.

3-3 is a mistake.

(18) 6-1-00 BF Area

BF Slag Pit!
- Just earthen lined!
- As soon as slag comes from BF, then it gets put into a pit.
- Mat'l is taken from cooler part of the search pile.
- The Levy takes over.
- Two pictures were taken here.

Continuous Casting Area (CCA): Gene ~~Farmlik~~ Pilek

Quick Process Note!
- BF converts limestone & ore to iron. (iron making)
- BOF converts iron to steel (steel making) and then goes to ladle.
- Continous Casting Area - Casts the Steel.

~~Cont~~
(CCA) -

Caster Mill Scale Pits (Strans 1+2 of the Steel Stab (Forming & Cooling the Steel Stab)
- # One Caster Scale Pit
- Oxidizing Surface & Gen. Scale - Scale is flakes of gray oxide
- Scale falls here
- Scale is dug out 3 to 4 ~~weight~~ x a day
- Scale drops @ scale end.
- Oil is skimmed and put in 100 gallon tank.
- Pump tank to Oil receiving tank (600 gallon) Steel tank
  - hydraulic oil & grease
- At normal operating level.

Oily H_2O Tank!
- Sits is 2° Containment
- Vaccuumed & hauled offsite (Once a ~~or~~ week or Jice a month.
- No cracking or staining
- 6 Ft. Wide x 10 Ft. Long 2 Ft. Hight. - Measurements of 2° containment.

There are two sets of scale pits.
~~2 Caster~~ Scale Pit! Stran 3
Uses a C-type skimmer, a pipe rotates & collects oil.
Oil is pumped to adj. Oily H_2O tank.

6-1-00 (19)

- Oily H_2O Tank is then pumped out + hauled offsite.
  H_2O from Caster goes to Scale Pits
- H_2O from Scales → to Sand filters → Dirty H_2O Clarifiers → Clean H_2O to ~~Scales~~ Cooling towers + then to Caster.
  One Another Clarifier is 40,000 Gallons.
  80,000 gallon

- Two Systems that have clarifiers + sand
- Solids from clarifiers goes to filter press + then to hopper, and offsite.
  ? 95 Scale 3
- 84 Scale One
- Clean H_2O from Sand filters goes to cooling towers → Caster
- Backwash → to Clarifiers → Slurry to Plate + Frame (Sand filters)
- Press → H_2O back to Scale Pits.
- This is not a Belt ↑ press, Cake
- Waste Streams through Continous Caster

- The Press was ~~shout~~ shut down because "C" furnace is offline so you aren't generating as many solids

- 3-14: Plate + Frame Press,

- Nine Sandfilters @ 100 sq ft² apiece. Gravity Flow
- Again, these are not running.
  - The sand stays in.
  - Continuous clean.
  - If you keep H_2O ~~to~~ clean, you don't need to clean out.
  - ? 84 C date of operation

- Plate + Frame Press. Filter Cake Area
- Concrete Area
- 5 ft. Tall x 10 ft Long, 6 ft. Wide.
- Some cake was being stored here, but not much.

6-1-00

(20) 6-1-00

- Truck that comes in to empty tank sits on a concrete containment pad with sump to catch any drippage from the truck.
- Meas. approx: 5 Pt. wide, 7 Pt. long w/ One foot form.
* This area was filled with H_2O due to the rain yesterday.
- No cracks or stains observed.

- Tundish: Metal that ladles go into.
- can have two molds

- Double Stran Caster
= #3 is a Single Stran Caster } You have a Scale Pit for each Strand.
- Two scale pits one for the double stran
- One is for the Single stran or Stran #3.

- H_2O from ~~the~~ Cooling Hot Slabs falls into trenches & then to scale pits. Trenches are gravity fed to scale pits. The ~~scale~~ trenches might have a recirculation pump.

Drum Storage Area @ Continuous Casting
55 gallon Drum
Pick-up Area
Continuous Casting

- Steel Corrugated Bldg. - 7 Pt. Tall, 10 Pt. ~~wide~~ long, 5 Pt. ~~long~~ wide

Vaccuum Degasser System:

- Ladle - U Tube into Ladle - use ~~Steel~~ Steam through inductor to suck metal into U-Tube and falls down other side. Absorbs the gases. 300° metal through a table.
- H_2O and metal. H_2O is recycled through Vacuum Degasser System. Gases go to baghouse. Tube is H_2O cooled

6-1-00

- Did not see inside of Drum area.
- The degassing process is the last process that some of the steel goes through before it is cast.
-

- Filter Press from the Vaccuum Degasser System
  Cake Fallout Area

- BOF Slag that didn't set poured into the slag pots also, any scraps of metal that needs to set separated out. Metal sets sold back to RSC.

- Vaccuum Degasser Filter Press - sits ~~on a~~ elevated above the filter press cake area on a metal platform.
- This is a JWI filter press.

- Le ~~Meller~~ Meller Settler: Enclosed Clarifier
  6-1-00

- Baghouse for the Ladle Refining Facility (LRF) and Vaccuum Degasser System - 175,000 yr^3 baghouse with six boxes. I only took a picture of one box.

- Baghouse for

- Broke for Lunch @ 12:45 P.M.
- Back @ Tour @ 1:37 P.M.
- ~~Sunny~~ Hot + Humid, Still Cloudy

~~Cold Mill~~
Cold Mill Sump
- 4-1 - Looking down into the Sump for the No. 4 Pickle Line.
  - Dirty + grimy. No cracks or stains observed.
  - Pumped off-site.
  - Capacity:

4-2 PCB - Contaminated Oil Tank located in "J" Section
- Cleaned + Apoxy Coated Floor
- Cement Stabilized Clay Ash
- Closed + plastered over.
- 1000 gallons
- Steel.

- Where it couldn't be cleaned, the floor was apoxied.
- Originally to capture trans. leaks.

(22) 6-1-00

- Pipes going to PCB tank were taken up.
- 2: Look down on the floor of the Cold Mill.
- There are other basements, but they are not known to contain UST's.

North

↑ Neutralization Tank

- Caustic is added using proportion control
- Rinse H_2O for No. 4 Pickle Line. through pipes
- Goes to Tremer Line + then to Scaefer Road WWTP

4-3 North Neutralization Tank

- Capacity 20K Gallons
- Fiberglass Tank
- Metal Railing Surrounds
- Located in a "sumped" area
- Located on columns about 4 Ft. above grd.
- H_2O goes through trenches to the SR WWTP.

4-4 S. Neutralization Pit

- Intended to be Neutralizing Station but this never worked.
- 20 Ft. dp. 30' x 30' - Concrete Pit covered with a grate.
- Pumped to S
- Lines 1 + 3
- Ground H_2O (Floor Drains go to the South Pit.

Sump Oil Tank for Tandem Mill

- Tank is pumped out.
- The Dempster Tanks are gone. - According to Facility personnel.

→ Asked for report

4-5 Acid Tank Farm Waste Pickle Liquor Tanks: Facing SE.

- Rubber Lined Steel - 12 Ft.
- 30,000 Gallons

G-F00

- Pickle Lines Wastes goes to Sumps + then to the Tank Acid Farm
- Pickle line wastes from these three Tanks are sold for there iron content.
- Time to Time, waste pickle liquor tanks are cleaned out, Nothing routine.
- HCL Tanks sit to the rt. of these tanks.
- Solids from cleanout are sent offsite as haz. waste
- Pickle is used to clean fine scale off bands of steel, fine iron oxide is on the surface.

4-6 : Pick. of entire acid tank farm.

Roll Shop

4-7 Roll Shop Dust Box facing SW
- Gravel Base
- Adj to Roll Shop X-15
- East of J-9 Shop
- No longer here,
- Blaster would blast steel and excess steel pellets would fall into this box, (Look @ Ann's Notes)

4-8 J-9 Sludge Box inside Roll Shop facing N.E.
- Collects Oil from Lade
- Swarf - goes to type J plant
- Emptied into Box in waste management box
- Pumped out by SRS - Off site contractor
- Size unknown
- Grated.

4-9 SK Parts Washer in Roll Shop
- Steel
- 2.5 Ft. Tall, 1.5 Ft. Wide, 3 Ft. L.
- Contained some liquid

- Waste Coolant Tank in Tandem Mill In basement Did not See

(24) 6-1-00

4-10 Scrap Oil Tank in ~~Roll Shop~~ Cold Mill
- Waste Coolant is unloaded here.
- 9000 gallon tank unloads the coolant tank in T.M.

4-11 ~~Skim~~ 2 ~~146~~ 247 Waste Oil Tank inside ~~Roll Shop~~ Cold Mill
- Two rectangular boxes.
- Facing SW
- SRS Suck out oil
- Skin Mill - Sump has oil that will be pumped to these tanks
- These are the only dumpster tanks known of.

- Tandem Mill is in the Cold Mill

4-12 4-13 Oil Release Adj. to Roll Shop inside of Cold Mill
- Oil Spill
- Possibly someone changing oil out into the ground.
- Facing N & W
- Transformer
- 4-12 thru 4-14 - Facing NW
- Oil Stains obs. Probably from the transformer.
- Oil was also seen in the base of the transformer
- 4-15 is nothing.

- 4-16 Hi-Lo Shop Waste Oil Tank or Smiley Tank!
- Steel Tank inside block containment Facing NE & W
6-1-00

- 4-17 Waste Oil Spill Facing NW
and 4-18 - Facing N - NE
4-19 Facing W

Process Note! Slabs go into Cold Mill & become coils.
- Break @ 4:00 P.M.
- Back @ 4:15 P.M.

- DOF Shop
4-20 Ladle Dumping Oper'tion Pit!
Facing ~~West~~ ~~South~~ ~~North~~ South
6-1-00

6-1-00 (5)

- Small abmount of iron from ladle is dumped here.
- Capacity: 200 ft. x 24 ft. - Would dis out
- H_2O is convey. + cooler for iron. - Hasn't seen done in 3 yrs
~~D/S Hoppes~~

D/S Hopper
4-21 + 4-22 Baghouse with hopper.
Desulfure with
- Facing South
- Mat'l is put on debris pile
- Six compartments
- Dust from Desulfurization Process

4-22 Facing NE of box that holds the Desulfurization Dust
D/S Dust Box.
4-23: Course + Fine Dust Hopper Facing East
- Dust hopper for Electrostatic precipitator.
Truck takes mat'l to JF.
6-1-00 ~~Shed~~ when waste oxides is up, will be used for making briclets.
- Dust is held here and then truck

4-24 Kish Baghouse Facing South
- Shows the baghouse - The hopper is underneath, but the box can't be seen.
- Kish + Iron Oxide from reladlings from ladle car into iron ladle, poor iron into
- Kish collected in box goes to debris pile + then to type two landfi
- Orange arms are to suck gases from Kish through radiator.
- Can't go back on-line
Waste Oxides

4-25 JRP 2 Bghse Dust Pit Facing West

4-26: Tar Sludge Land Pill (historic) Facing West
bundles

4-27: Electric Furnace Sharp Hopper Facing South West

4-28 EAF Silo: Facing North

The mat'l held here was 2000

6-1-00

5-1 Levy Slag Pile Facing East
BOF Slag Pile

Skulls are knocked out Facing South

6-1-00

5-2 - BOF Slag Pile Facing South
- No 2° Containment

5-3 - EAF Bldg. Cold Land Pill Facing S.E.
- White Silo was gunning compound.
- Spray to patch holes in the Furnace.

- Finished Site visit @ 5:18 P.M.

6-2-00

(28) 6-28-00

76° - Cloudy - Overcast
On Site @ 7:45 A.M. - Started Meeting @ 7:55 A.M.
Those Present,
Don
Jerry
Shannon
Ann
Ans. To Questions
- ① Silo & Box would have been in the same location.
② COWTP:
Concrete Basin:
Concrete Clarifiers is Neutralization & Aeration Basin
Same until Field Visit Today
Wet Surface Air Cooler would be pretreat

③ Drum Storage Yd. Old Open Hearth Balcony Structure overhead
90-Day Storage is balcony. Remember, there were three
storage areas

Pallets	90 Day	Raw Mat'ls

④ 6-2-00

⑦ Vaccuum Degasser:
- H_2O from Le Malla is recycled to the Vacuumm Degasser
- Steam from the 15,000 gallon that comes in contact with the

⑤ Permit for Scrubber is still current

⑥ PCB Incident Report: Need this for closure.

⑦ Refuse Pile by Gas Holding Tank
- Refractory Brick Pile = New Debris Pile → this was moved from the Waste Accumulation Pile (#1 in old '87 PANSI report. The WAP only takes the BFWWTP filter cake.
- New Debris Pile Takes Refractory Brick, ~~Dirt~~ Various Dust from Baghouses.

- Flue Dust Catcher - Stockpiled for Reuse (South end of Cola Ovens
- Kish Hoppers - NBP Fine Dust Off-site for reuse

6-2-00 (29)

- D/S Dust - ~~Off site~~ To NDP.
- F/C Dust Silo - Directly to Land Fill
- e AF Dust Silo High Temp Process
- Roll Shop Dust Silo - LR
- Continous Caster - NDP
- Filter Cake - Vaccuna Degasser NDP

} Destinations of Waste

From New Debris Pile mat'l goes to Land Fill

(8) FRP Baghouses to New Debris Pile

(9) Coke Breeze Fines Screened off from coke. Relatively pure Carbon. No process has been done. Literally a raw mat'l.

(10) Skin Mill: = Temper Mill - Puts surface treatment on the steel

(11) Penciled in Roll Shop + Tandem Mill

(12) Two Tanks
- WOT - 15 - Used Oil Tank in Pwr Area Sub-15
- WT - ~~67~~ - Sub-15 - SWMU 20 - Previous VSI
→ These SWMUs by Pwrhse will be covered by Rob + Mike

(13) Take Care of Maintenance Area - where the oven doors were replaced.

Questions from Clark:
- Sluice Pits by the BOF
- Waste Oxide Facility - ~~where the molds for the~~ Stripping lot
- ingots out of molds.
-

- East Shaft + West Shaft + Tunnel - Goes under Boatslip and Utility to ck electrical + steam collections

- Started Site Visit @ 9:05 A.M.
-

5-4 Sluice Pits facing West SW @ 9:10 A.M.
- Not known what they were used for.
- Located west of BOF Lab.

(30) 6-2-00

- Hi Lo Shop is now used as a maintenance shop. (note in
- SWMU write up of "smiley" Pace Tank.

5-5 North end of Hi Lo Shop @ 9:12 A.M.
- ~~Bolster~~ Bolster Layout Area
- Facing East
- P- Paved area
- Above is Open Hearth Balcony
-

5-6 PCB Bldg. Facing North @ 9:15 A.M.
- Sealed Floor
- Corrugated Steel Bldg.
- 30 Ft. x 20 Ft.
- Looking inside PCB Bldg.
- This would have been short term storage
- No longer op tional -
- HVO- High Voltage Operation
- Stopped 12.97.
- Start date unk.

O_2 Plt! - Only used as storage
- No longer in use
- Methylene Chloride drums stored under a shed.
- Blue ~~Tank~~ Drum 55 gal. Dr
- Facing North 5-7
- In the Foreground is a fence.
- Not able to get into O_2 plt.
- Mounted on Frame over concrete pd and (there is a drip pan.

5-7! ~~Hot Mill Scale~~ Slab Mill Piles Facing NW - Stored on Concrete + Grass @ 9:20 A.M. grassy area to the west of the Slab Mill Scale Pit.

5-8 Former Slab Mill Scale Pit Pit Facing NW 9:30 A.M.
- ~~Looking Down into the Pit~~
- Would have been a skimmer dart
- Railroad Tracks @ the bottom of pit
- Concrete Floor
- Pit is probably ~~25~~ 25 Ft. deep
-

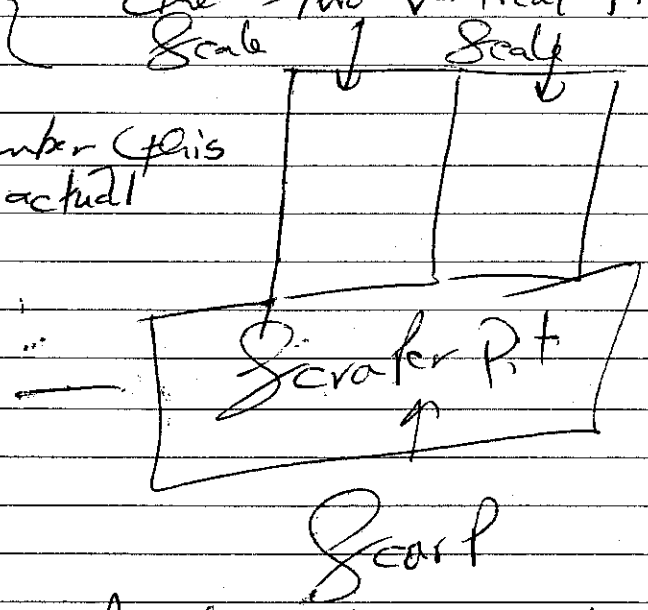
G-2-00 (31)

5.9 - ~~Hot Mill~~ Slab Mill Scale Piles Facing S-SW 9:45 A.M.
- Note erosion of the piles.
- There is no 2° containment in this area.
- These piles extend along the Slab Mill
- Rust E-W along Slab Mill bldg.
W-E Collection Point or Trench.

5.10 Scarfer Pit in the ~~[illegible]~~ West portion of the Slab Mill @ 10:05 A.M. (Time that we were in the bldg.) - The Bldg. is no longer in operation.
Facing North inside Bldg. @ 10:10 A.M. - When pict. was actu. taken.
This is a trench. The ~~pit~~ sat underneath this box in the ~~[illegible]~~ foregrd. trench
- The pit extends back

5.11 @ 10:11 A.M. 10:15 A.M. These are the actual Scarfer Pit.
In the foreground is the Scarfer Pit.
- Facing SE
- The Two vertical Pits are the Scale Pits.

Remember this is the actual Pit.



- Annelos notes on what was in the shed.

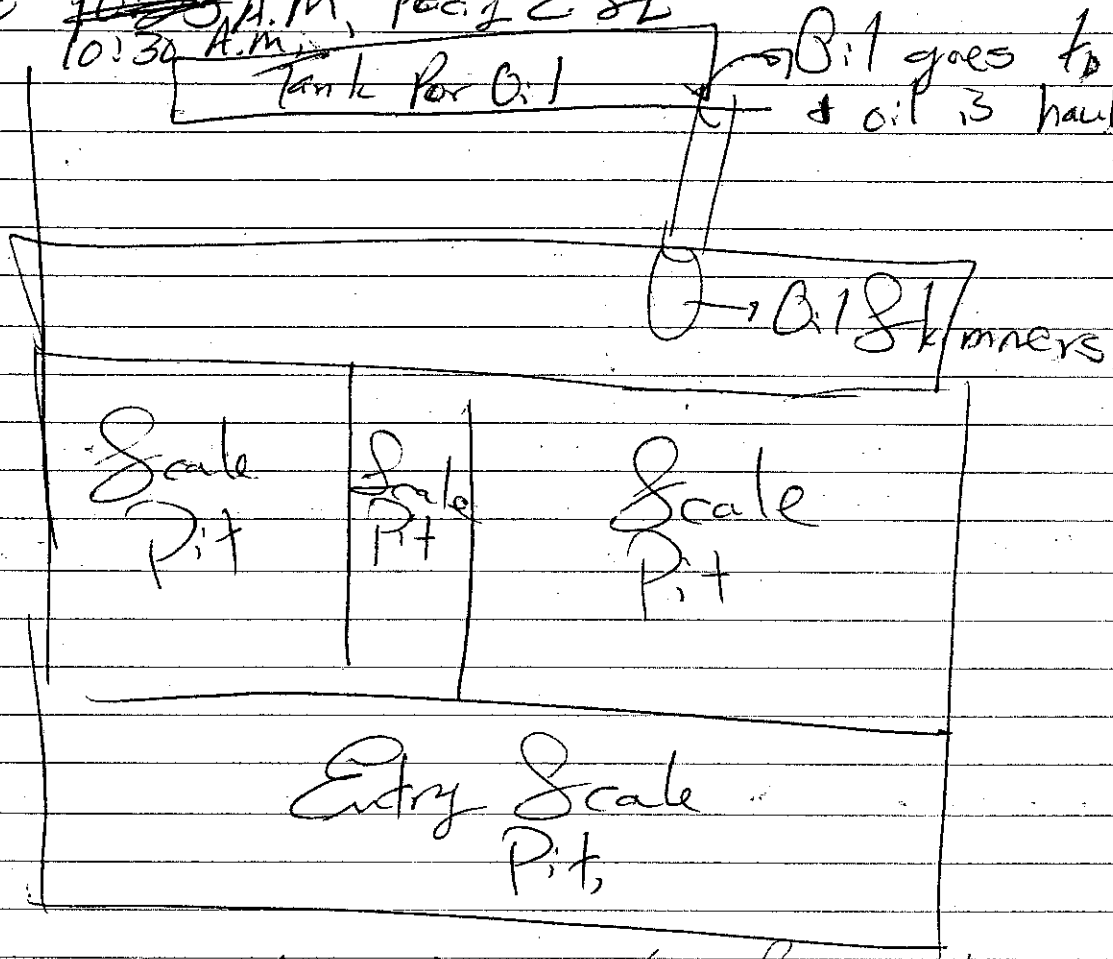
- Scale Pit Deb Pile was in the basement of Slab Mill
- This was not accessible.

~~Process Notes~~ G-2-00

(32) [illegible] 6-2-00

V. Hot Strip Mill Scale Pit - On NW Side of Hot Strip Mill

5-12 @ ~~10:35~~ 10:30 A.M. Facing ESE



- Note: The entry pit is in the foreground.

- The Oil Skimmers and holding Tank are in the background
  Oil is piped into the tank.
- Handles scale pit

5-13 @ 10:38 A.M. View facing N-NW ~~@ the pit~~ in front of the Hot Strip Mill Scale Pit.
- Oily Sheens noted on the grd.

5-14: - Circa Pump Facing East - Product @ 10:40 A.M.
- On W. Side of Hot Strip Mill
- Tanks are ranged.

~~South Scale Pits~~

- Concrete Trench collects Spills
- Pump trench out.

[illegible] 6-2-00

6-2-00 (33)

5-15: Dumpster Facing East on W. Side of HSM @ 10:40 A.M.
- On concrete - Surrounded by Limestone

5-16: Location of former ~~Lo~~ Used Oil Tank on West @ 10:45 AM Side of HSM. Facing ESE
- Note the oil Skimmers in the bkgrd. (3)
- Oil Tank is located ~~under the~~ below these skimmers.

5-17: Location of Oil Loading Truck Pad @ Westend of HSM @ 10:47 A.M. Facing East
- Note Oily H_2O in the pad.
- Has Same dimensions as other truck loading pad.

5-18- Facing E. SE on the West Side of HSM.
~~Not~~ ~~Pr~~ 6-2-00 South Hot Strip Mill (HSM) Pits.
- This picture is an overview of area.
- Note oily residues on the grd.
@ 10:50 A.M.

5-19 @ 10:52 A.M. Facing SE on West Side of HSM.
- Former Tank that used to be used oil tank.
- See Ann's Notes on this.

- Please note! The trend seems to be that a truck Loading pad is located near each scale pit (including the ones seen yesterday) to capture any oil spillage from the trucks that occurs when the oil from the tanks are pumped out.

- H_2O from the HSM Scale Pits is recycled and after recycles sent to SR WWTP.

- Please Note! The Used Oil Tanks @ the HSM Scale Pits are overlaid with mounds of dried oil. It could not be determined what mat'l these tanks were constructed of.

Break @ 11:00 A.M.
Back @ 11:05 A.M.
- Addem to Last Note! These oil tanks are insultated heated tanks.

(34) 6-2-00
→ Polyurethane ~~Plum~~ foam covers the oily tanks @ the HSM scale Pits. 6-2-00

Waste Oxide Facility @ 11:20 A.M.
- baghouse takes fines off conveyor and then recycled.
- mat'l is going to be used.

5-2 (1) BOF 55-gallon Drum Pick-up Area
- Facing North @ 11:22 A.M. Look inside
- Old Steel Bldg.
- On the West side of the Waste Oxides Facility Bldg. is approx. ~~100 ft~~ 6-2-00 - 60 ft high x 40
- ft across.
- Sturdy
- Trucks located in this area opened the Course & Fine Dust Silo @ the BOF unit. This would haul the mat'l out.
- Pulling Zinc Oxids from the Fine & Course Dust from BOF
- Place mat'l in white silos.

- Process note!! Hot Fe to BOF and bricket into ladle. Charge 10 tons of bricket with iron. Get more iron using the brickets. Brickets are made of scale and BOF Dust, ore fines, coke breeze, & flue dust.
- ~~Scale & Breeze Piles~~ 6-2-00
- ~~Ore~~

Elec. Arc Furnace! Inside Electric Furnace Bldg. @ 11:30 ~~P.M.~~ A.M.
- Two Furnaces.
- Stopped in 1992 (Operations)
- Using this to repair ladles, totes and railcars.
- This bldg. is extre
- 5-2 @ 11:45 A.M. - Dusty Floor of EAF. On the upper
- level of Electric Arc Furnace.

- BOF Outfall from Waste H_2O Treatment Plant
- G-1 Facing East looking down @ outfall (Rouge River) @ 11:55 A.M.
- North of the BOF Plant

G2 Spill Way from Facing S.E. Rouge Out Fall
N. of Blast Furnace WWTD.

6-2-00 (35)

- ~~Burbank~~ 6-2-00

6-3 - Burbank Out Fall Facing ESE
- Rouge River
- Green H_2O

Lunch @ 12:07 P.M.
Finished Lunch @ 12:50 P.M.
Back to Discuss Coke Plant and look @ Pile mat'l.

Back on the tour @ 1:20 P.M. Facing NW
Back to the Cold Mill! looking Down in Cold Mill

6-4 N. Neutralization Tank in the Cold Mill @ 1:28 PM
6-5 Sump in Cold Mill @ 1:29 P.M. Extends along the Floor of the cold. This is probably mid way.
6-6: S. Neutralization Pit ~~from~~ in Cold Mill @ 1:30 P.M. Looking Down From a Catwalk. Facing South

6-7: ~~Waste~~ Pickle Liquor Holding Tanks @ 1:33 P.M. in the Cold Mill S. of the S. Neutralization Pit.
- 25,000 Gallon Tank - Steel (Rubber Lined
- Collects the waste pickle liquor and pipes to the < 90 Dry Storage Tanks at the Acid tank Farm.

~~4-1~~ 6-4, 6-5, and 6-6 replaces 4-1, 4-3, + 4-4.

Back to the Coven Oven Gas B Plant
N. Quench tower - used a waste to quench the coke.
@ 1:49 P.M.
6-8 - Sump Adj. to the North Quench tower where Coke Oven
- Drip H_2O was used to quench the coke.
- Sumps with two adj. bins.
- Green H_2O inside
- Assuming concrete is the mat'l of construc.
- Facing South.
- Gas Tank Drippings come into the Sump.

Tar Deca Prev'y labeled SWMU 14 is the Tar Decanter Sludge Box, on 5-31-00. The Bin is a vessel that probably separated

(35) ~~8~~ G-2.00
the tar from the sludge.
- Tar is noticed throughout the area.

The Coke Oven Decanter Sludge was staged where the Cole breeze is located.
G9 @ 2:05 P.M. adj. to Cole Oven Tar Decanter Sludge Box

G-10 ~~Coven~~ Tar Decanter @ 2:11 P.M.
Facing ~~NE~~ NW

G-11! Former location of the Cole Oven Tar Decanter Staging Area @ 2:15 P.M.
Facing N.E.

G-12: Pit Transfer Facing NW @ 2:20 P.M. to the S. of the Cole Breeze Area.

G13 Cooling Tower for the C.O. WWTP. @ 2:21 P.M.
Facing South
- Wet Surface Cooler

Aeration Basin (Already

G-14! South Quench Tower Facing North @ 2:40 P.M.
- This would quench the hot coke.
G-15: Looking up @ the quencer knozzles @ 2:41 PM

G-16! S. Quench Tower Sump @ 2:42
Looking East, - H_2O that didn't evap. drained back into the sump.
G17! ~~P~~ pumps to recirculated the H_2O to the tower from the sump.
- Facing N.E. @ 2:45 P.M.
- Vertical Centrifugal Pumps
G-18 Looking down into the Sump @ the South Quench Towers Station. @ 2:47 P.M.
On the east side of the sump.

G-20 = GG ~~B~~ Bldg. Refuse Pile @ 2:50 P.M.
- Facing East
- This is not the refuse pile
- This might have been where the pile was located.

G 2:00 (37) (38)

Finish Site Tour @ 2:55 P.M

Off-Site @ 3:00 P.M.

Kick-off - 8:15 a.m. ; Ford Hq Offices

Linda Hibert - Ford
Chris Black - Reg 5
M. Power, TL
J. Haakland Ford
Kevin Bollen Ford
Don Weinder, Rouge
R. Young TL
Gordon Hachkiss, CRA
Alan Van Norman, CRA
Jerry Biersteker, CRA

Ann Anderson, TL
S. Ridky, TL

Safety Training @ 0821 - 0905

Hi Line - Elevated Railway / Now abandoned

Sealed Sources in Old Stock House what are these? ⇐

coke plant has asbestos insulation
PCB transformers still present

0910 - signed statement saying we had ~~been~~ received safety training

0915 - 0930 BREAK

0930 - Scope

voluntary / consent order 1989 ~~1990~~ - VSI 24 sumps
MDEQ

05/31/00

2/45.

Definitions

Waste M. Unit - includes USEPA SWMU definition
Contaminants placed release or potential for release

AOC - may have released on non-routine basis

Schaeffer Road Plant - is not included within scope of this VSI.

T~~#~~TS - Transportation

* Add 90-day storage shed

0945 - Split teams < Ford / Rouge

1987 - only coal → Power Plant
coke oven gas used a couple locations but unknown
held in gas holder and second near BCF
↑ gone

purchase coke today

air preheated in stoves, blown into BF
BC BF operating
A closed in 1980s no longer make ingots

iron → mold foundry → mold for ingots size of desk ~ 15-25 Tons
bulk → steel making

molding sand = mold foundry now storage

6/21/06

Support Areas for BF
iron ore = pellets
limestone = sized stone
coke by rail
only storage for emergency
other remains in rail

conveyor

Modern Stockhouse - weighed → conveyed to top of BF (1997)

Iron & slag from BF

↳ rail cars to steelmaking → BOF → continuous slab

slag end of BF raw material storage
poured into constructed berm area,
lightweight slag - poured into water
poured water on poured

subcontractor Edward C. Levy
make into aggregate & sell
black beauty

exists on cast house floor
through

Iron thru trenches to rail cars.

slag baffle / underflow baffle
Slag runner (trench) to big pot

use BOF slag to replace ~~sta~~ limestone in BF
↳ calcined lime so purer than limestone with some steel
practice extends back into 60s

05/31/00
[illegible]

4/45

EAF - shut down mid-1992

iron to BOF, cars rotate / poured into iron ladle →

desulphurization station

added powdered ~~lime~~ mg metal
lime

→ ladle then tilted and slag skimmed into desulf slag pond

→ iron poured into ½% process vessel

cooled

iron - process ladle blow ~~iron~~ oxy into iron
4% carbon → 0.01% carbon

levy cools fast → high sulfur recovery iron marketiron

steel ladle by rubber tire vehicle to caster

BOF emissions captured by ESP / dust loaded some goes back into Trucks to BF for limestone

Type III Landfill

waste oxide processing plant - shut down in December

coke fines / ore fines screened better control of furnace

plant may restart this week

bricket → reducing furnace → metalize brickets → hauled to BOF in refractory lined totes.

added as pouring iron into iron ladle

also volatilizes zinc out of dust -> produces zinc oxide for sale

hot roll - some scale knocked off -

cold roll - (40-50% product) / W side of Steel Mill

must remove scale by 3 pickle lines HCl acid

gray iron oxide on surface

light oil coat

tandem mill (9 stands) doubles strength

annealed
*hydrogen
*blended gas
hyd/nitro

reduces internal stress

↳ cooled & sold

Products.
hot rolled
picked steel
cola

No galvanizing on-site - done on USX across side

SWMU #21 Oil / Dempster Box = Never on-site since DON came on board.

* Waste oil tank at hi-low shop area

Don - June 1997
84-91

Soaking Pit / Furnace / Radiant Flames to heat ingots
but closed
has been filled.

Slab Mill - scale & scale pit.

05/31/00

6/45

scale sold to scinter-making plant
Algoma - scinter plant

ore pellets to be charged in BF

saving scale & ore fines stockpiled for oxide plant

stockpiling since 1998

explosion Feb 1 → May BFs down due to explosion

⇒ ASK CHRIS IF THEY CAN HAVE DUPLICATES OF OUR PICTURES.

BREAK 10:40 → 1100

1108 - LEFT BLDG BY VAN TO TOUR COKE PLANT
overcast skies

Quench Areas - cars of hot

* PL-1 1115 aa Coke Breeze Pile - Looking South on Drive

~~Pt 1~~ Quench Area - water recirculated through pit

slight odor of napthelene noted in area adjacent to coke breeze pile, adjacent to Coke Ovens

* coke oven gas holder

coke oven gas line Drip Water
12 tanks
doesn't know where underground

#13 Coke Oven Refractory Refuse

Coke Oven Tar Decanter Sludge.

AC Still Bottoms Holding Lagoon - unknown location

Muck Tanks

1115 aa overview of
P1-2 looking NW at Coke Oven Battery B
1-3 overview of By product Area, looking NE
1117 aa

P1-4 1118 aa looking SE SUMUL #4 Coke Tar Decanter Sludge

* tank - ? South of S. Weak Liq. Tank.
Not a ~~possible~~ Coke Gas Drip Line Tank?
has a process line connection

weak liquor = Ammonia liquor

1119 aa
P1-5 Looking S at Coke Oven Battery B

process tanks - pumped out at some time

05/31/00

1 45

p. 1-6 Coke Oven Gas Drip Tank (2)
1121 aa Overview of first tank,
looking N

Concrete containment about 4½ feet tall,
6 inches stagnant liquid inside.

p. 1-7 Coke Oven Gas Drip Tank (2nd)
1122 aa overview looking NE

1-8 Coke Oven Gas Drip Tank - looking NW
1134 aa Quench tower behind

get document on this. } aa Believes in formal response given in afternoon session I'd out and is.

View looking N → Condensate trap - 55 gal drum adjacent (S) of Tank.

1-9. Smaller tank on S side
1138 aa vapor separator

1-10 Base of Quench Area. Much black fines around
1146 aa looking S. area

1-11 Tar Decanter Tanks, twin Looking West
1150 aa

01/31/00

Coke Oven Deep Disposal Well

1-12 1151 am Deep Well Injection - East
1-13 " " SE
1152 am General vicinity of former DW Inj.
under ~~coke Breeze~~ ore fines South

two in same area

Haz Waste →

p. 1-14 5 HW tanks within containment area,
1154 am Looking SW
One ~~pair~~ = light oil

Waste Water Treatment Plant = Our SWMU 6B.
Rotary Biological Contactors
Now inactive Organic H_2O from
operated in 1987 By Products.
~~to~~ 15 contactors.

concrete clarifier approx 24 X 50'
2 oil skimmer, full of liquid,
underflow 2 oil storage tank
went to after RBC to sanitary sewer,

1-15 SE, skimmed oil holding tank.
1200 am

1-16 clarifier note skimmer/weir in front right. looking SW
1202 am

1-17 RBC Looking SW.
1215 am

Coke Oven
1-18 - Gas Holding Tank looking N
1216 am 250,000 cubic ft (20) corrected later to 2.5M cubic feet.
05/31/00.

10/45

BF Flue Dust - fines off top
used to sell, now stockpile for Waste Oxide Facility

generated from off-gas of BF prior to scrubbing
* goes to settling tank → pile to WOF
called Hopper.

1-19 ~~WOF~~ looking SW, Used to replace refractory brick on doors of coke oven
1218 an

1-20 Stockpiled Material, looking W prob taken to landfill like Refractory brick in furnaces
1219 an

Tanks Held oil / hydraulic oil
appeared to be in same containment
2 tanks / standing H_2O.

~~no photo taken as unaccessible.~~
1-21 looking N'N.
1220 an

* 1-22 Refractory Brick Waste Pile looking ~~NS~~ N
1221 an
Not paved underneath
~1500 cubic ft

1-23 looking ~~East~~ ~~SW~~ SE
1225 an Coke Oven Gas Drip tank outside of containment tank.
COG = Coke Oven Gas.

[illegible] 05/31/00

Building GG

Scrap Coal picked out —
1-24 over view SW Building GG
1230aa

1-25 view of Scrap bin S
1232aa

1-26 View of ~~staging area~~ Storage Yard looking SE
1238aa

lunch break 0100 - 024

reconvened in mtg room
provided documents re: decanter sludge
Rouge Steel Response to Ry V 11/3/98 Inf Request.
Documents RCO 000001 → RCO 000740

Rouge Certification of Closure Report

- many tanks labeled as H.W. in Coke Plant, but they did not contain h.w. Process materials.
Don said former facility manager labeled as such to prevent draining to sewer line.

- ~~waste~~ water permits -1986
- air permits
- 1986 Underground Storage Notification
- circa 1986 tank listing
all removed except WMT-4/5, ruled not to be UST.
no mentioned of 5 UST for Coke ~~Tar~~ Oven Drip Gas Tanks.

Gas distribution diagram -

GAS HOLDING TANK $\boxed{\text{2.5 Million Cubic ft.}}$ Not 250,000 cubic ft.

ajn 05/03/00

12/45

* Open Hearth Road Polishing Lagoons = 12A -

Gate 12 - Treatment Plant ?

** Chris ?s -

Skull Cracker & Mold Stripper → Converted to WOF.

cast steel ball -
skulls are metal adheres to inside ladle.

metal put back into furnaces.

Levy operates this now by Gate 12.

iron skulls → BF
steel skulls → BOF

Levy can also sell off site

above ground tanks = spill control plan.

abandoned - only known are COG Drip Tanks in Coke Plant.

⇒ Look up SWMU 3F in file material

3G - in 4-5 tankfarm in w/ muck tank
2 HW/ - ?

* p.10 - material from collection pts was pumped by licensed and reused North Coke Oven, to Quench ~~Coke~~ hot coke
recirculating quenching sumps

if determined off-spec by visual inspection

p. I-5 3-H N & S Neutralizing Tanks.
possibly sumps in pickling unit.

⇒ Bring in Ref for PCB-containing oil UST

Dempster Dumpsters were not found in previous efforts.

⇒ Any sampling when closure of LUST tank? PCB contamination
Nov 95
- did not reach gtH2O

Hot Strip Mill Recycle System

12A Lagoon ⇐ Open Hearth Polishing Lagoons.

SAAs -

PCBs - he knows of one / Ford knows others

7.B. Asbestos Bags and Boxes
temp during removal
can show us one example.

MC - Belt Cake Box is part of BF WWTP.

✗ Grease Drums - SAA for HW get grease drums delivered a
Waste.
NW of Caster.

05/31/00

17/45 today

- 300 gal tank.
- BF WWTP < Belt Cake Box
- Filter Cake Pile
- 12A Lagoon
- Satellite HW Drum

A & B are not same

Raw Waste.

#10 - Filtration Treatment System = UIC
11 - Gate 11 Clarifier = Schaeffer.

Michigan Consolidated Gas - landfill on West Side of River in late 60s. @ Schaeffer Road.
Landfill waste from mfg. gas plant.

cut through landfill to install channel.

⇒ Chris Black about landfill north of EAF.

0420-broke for site tour

300 gallon tank held flushings out of Serpentine Coolers - cooled process stream in By Products Plant.

reviewed COG - Drip Tanks. N & S tanks previously seen

reviewed AC Lagoon

[illegible] 5/31/00

Photo 2-1 Looking N at 300 G. tank.
0425 organic odor detected
aa Concrete containment > cinder block construction on 2/4 sides
grated sump in center
collected waste water in sump? → ??

BF WWTP.

~~Photo 2-2~~ Looking North at Filter Cake Box
0435 aa
2-3 Looking at BF WWTP. > Looking N
0436 aa

aa 0440 2-4 Looking South at BF Sludge Pile
aa 0441 2-5 Closeup View of BF Sludge Pile.
⇒ will be used in WOF, currently sending off site

⇒ GET DATA ON SLUDGE.

0444 aa 2-6. Former Temp. Asbestos Storage Area.
Looking South -
Roll Off Box - unknown Box / Contractor's Box
0445 aa 2-7 - Green Box - Bag containing Insulation but no label

→ Ford Used Oil Tank

A= Cold Mill Storage. Raw Material Only.

2-8 · Reported location A-39 where oil dumpsters were reported looking SW
0447 aa. gravel minimal patches of oil stains observed on ground.

afn 5/31/00

16/45 Drum Storage Areas

2-9- Raw Material Storage Area, facing NW.
0448 an

2-10 View looking ~~towards~~ adjacent to entrance of less than 90 day
0449 an storage area looking west - on concrete

2-11 looking N to back of less than 90 day
0449 an. drum storage area.

contains MT drums/ waste oil → Edwards oil.

2-12 looking S @ pallet storage
0450 an removed by contracts

pile of rubbel - Levy? [illegible]

12 A Lagoon

Blowdown from C.C. Treatment Plant/Recycle System
storm water
NON contact Cooling H_2O.

oil boom - in case a problem
discharge to River sampled 2x week

2-13 - NW EW, at oil boom/weir
0454 an

2-14 - SW end of Lagoon
0456 an skull breaker

2-15 Lime Hopper Looking East,
0505 an. Lime dust used to be disposed off-site,
now sold to a customer.

Lime dumped into hopper - dust collected,
Lime then conveyed into BOF

DAY 2 June 1, 2000

arrived on site at security bldg 0800

conveined meeting Rm 3127 @ 0830.

⇒ let state ~~kn~~ David Slayton know about
aerial photographs ~~#~~ 517-373-8012

departed for site tour 0915
gray, hazy ~70°
predicted to 80's

arrived at BF WWTP.
met with Mel Nuransk:

3 mill gallon

BF - gas cleaned & scrubbers
↓
Bar Screen
↓
raw waste sump
↓
3 vertical Hazeltons
↓ pumped ↙ Coagulate added
Splitter box
↙ ↘ 225 ppm dirt/silt
N S
Clarifiers
↓ weir
Overflow ↓ 20ppm
Wet Well / Cooling Tower Sump
over 6 Cooling Towers
↓
Reuse Tank
Particial Flume
Oxidation ← Anthracite/Sand Filters pumped to BF afa [illegible]

18/45

cyanide / phenol "destroyed" in alkaline oxidation (?)
prem

plant been here about 20 yrs - 1980-1981

doesn't know what they did before then.
untreated to river ...

BPT

(?) 2-~~15~~ 14 at 0928 splitter Box, View of E side of looking North.

2-~~16~~ 17 0930 View of thickener looking W
Note Stains S side, possible leak

2-~~17~~ 18 at 0931 View of N Clarifier, looking N

2-~~18~~ 19 0932 at Closeup View of weir system in S clarifier

2-~~19~~ 20 0933 at View of Cooling Towers, looking SW

Under flow pressure filter
"dirt" → Surge tank → splitter box
clean H_2O → river

Sludge removed from thickener pumped to vacuum filter
Cent sector dewinters
Cake goes into bin

3 discharge

clean blowdown → River
clean H_2O to BF →
Filter Cake Sludge

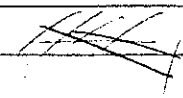
04/01/00

monthly monitoring checks system

inspected 6 mo/1 yr

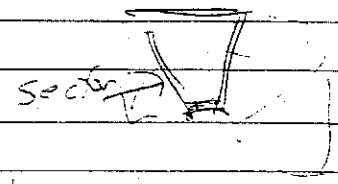
NaOH tank may be in picture of splitter box.

~~[illegible]~~ sludge observed around based of thickener.



Dewatering System

Thicken to leaf sector filter



Vacuum pulled as sector goes to cloth.

pressure applied after to blow off solids.

Solids drop to garage below.

0940 aa
2-21 View of Leaf Setor Dewatering Unit, looking NE

Pressure Filters prior to blow down to River
anthracite coal, sand.

backflushed periodically → surge tank, splitter box.

0944 aa
2-22 V looking W of pressure filter
1/3 - center filter.

"garage" - dumps onto concrete pavement.

0950 aa
2-23 View of SWMU #1 Looking SE

ajn 06/07/00

20/45

2-24 Closeup View of concrete pit adj to BFWWTP -
0952 ar note sludge in
predates facility, NE

2-25 - Outer View NE
0957

SWMU 1 concern - slopes to River

SAND - screened for reuse,
screened material landfilled.

View of Sand/refractory pile now -
possible location of Waste Sand Pile

1010 ar
2-26 - View of possible location of Sand Pile
N End of foundry.

1020 ar
3-1 Another possible locati

1025 ar
3-2 View looking N of Flue Dust Catcher on BFC
Loading area. (down)
Catcher dust off gas -

3-3 - Camera malfunction

much coke observed on ground near coal Handling facility
E of H Line.

1100 ar

Slag Area

BF Slag Pit - earthen
Sheet Piling edge - concrete in foreground.

1030 ar
3-4 Overview of Pit - looking NW
1031 ar 3-5 " " looking NE.

3-6 - Camera malfunction.

Continuous Caster Area -
Start at LULCTP / Recycle Area.

LRF = Ladle Refining Station

Maintenance of Scale Pit = 3-4 weeks. Clean out scale
Retention time - gravity drop out.

waste oil tank / pumped 4x day to oil storage tank
6000 gal tank.

oil skimmers -

1055 ar 3-7 View N of East Scale pit.

1057 ar 3-8 View of oily water tank -
MTU'd every one to two weeks.
Containment concrete - grass growing in

H2O from Scale pit pumped to Sand filters
in WWTP

1102 ar 3-9 View of Scale pile between Scale pits
(N)
1103 ar 3-10 View (N) of West Scale Pit

06/01/00
ARA

22/45

3-11 View NE of Oily Water Tank of Second Scale Pit

1104 am

Sand Filter —clean→ Cooling Tower → C.C.

↓ Heat

backwash

Clarifier (1) 80,000 (1+2) Stand 3

Clarifier 48,000

solids

return

Scale Pits underflow

plate filter

off-site

↓ Used to be belt press

1114 am

3-12 View (S) of Stand 1-2 Clarifier and MT dumpster

1120 am

3-13 View N of Strand 3 Clarifier

note no Secondary Containment

Vacuum De Gasser

Lamella Settler — Recycle

↓ sludge

Filter Press

↓ once a month press full

1137 am

3-14 View of Plate Filter Press - Looking S.

6/01/00

Nine Sand filters Gravity Flow Filters
100 sq ft.
Not running

1129 aa
3-15 View of Sand filters - looking W,

1135 aa
3-16 Overview of Scale Pits looking N

1137 aa
3-17 "Hopper" beneath filter
concrete pavement
view (S) approx 15 ft X 30 feet.

Concrete containment "area" infront of scale pit
where oil tanker parks to MT oil tanks
drain in center to sump
to capture any spill

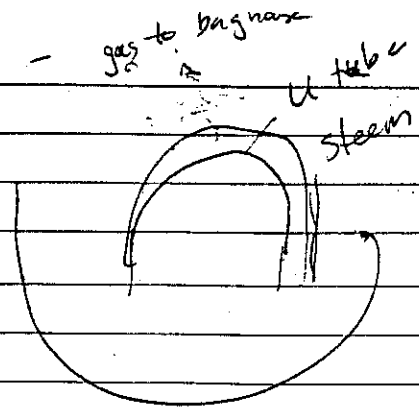
aa 1138
3-18 - V looking east at contain approx 10' X 20'.
1 ft curbing.
collected liquids
go back to Scale Pit

Strand 1 & 2
Viewed as representative process area.

Observed area - no photo taken because
not able to
clearly see
trenches below.

1143 aa
3-19 L-SW -
View of 55 gallon Drum Picking Area
locked, air conditioned
Wastes may have been stationed here

24/45 - gas to bagnase



metal sucked up one leg deposited out other

dissolved gasses in metal
vacuumed.

tube is water cooled.
jacket.

Lamella
rectangular slanted baffles to make tortuous pathway
short settling distance.

press for solids.

1200 am
3-20 Filter Cake Area - (S)
partial concrete floor possibly 12 X 24 ft.
drain in front.

Filter press above
Sluicing in area.

1202 am
3-21 BOF Slag Cooling Pit / W of BOF,
looking E.

1206 am
3-22 Plate Filter Press, Looking SE.

1210 am
3-23 Lamella Settler, looking N from
one level down.

06/01/00
RK

Baghouse → Dust Collected
for LRF from SWMU (to New Debris Pile

1215 am
3-24 View W looking at

5 Collection Boxs Degasser & LRF
vent to Baghouse
175,000 cubic ft.

~~3-25 Baghouse for LFR #2~~
~~Blue box is dust box~~ photo - end of roll

WOF
100% Pellet Fines
100% Flue Dust Used

Lunch BREAK 1245 → 0135

In Cold Mill Concrete collection sump.
trenches along floor
collected oily waste ~~pumped to~~ pumped
out to a truck.
Representative SRS pulls out.
[illegible]

SW Corner.
Cleaned / Epoxy Coated Floors.
problem c̄ H_2O on floor
found top of tank -
unlisted tank
oil, lot of H_2O, oil was PCB-contaminated
pumped out tank
cement - stabilized fly ash.

06/01/00
[illegible]

Capacity of tank? 1000 gal?

drains caught spills

area is about 15' X 15' - expoxied floor]
12-B

other basements, but this is only one with UST

North Neutralizer - add caustic here.
proportional addition
Rinse H2O comes by pipe / conveyed by pipe to
#4 lines → Sewer line to Schaffer

Rinse H2O #1 + 3 lines
↳ join sewer line
monitor but south end of pi
don't add.

no South "tank" - Pit

North tank inside concrete containment
area approx 10 ft below grade.

grates in floor 20 - 25K?

collection drains in basement to
the South Neutralizer.
Never looked / X 30X'30
about 20 ft below grade.
Concrete pit, pumped to Schaffer
Treat Plant.

06/01/00

Sump Oil Tank / drain tanks / goes to pit
periodically
pumped out

Waste Oil Tank on Pickle Line -
possibly Some dumpster but there
is no waste oil tank on pickle.

Pickle Liquor Tanks

4-1 5 tanks - 2 virgin,
3 waste - taken

Release? 1996 acid leak -
30,000 gal tanks rubber lined
bermed limestone bed - 12 ft deep.
cradle mounted horizontal tanks.
failure in ~~casing of valve caused~~ leak.
mixed bolts were problem.
→ spark test integrity of lining of tank
annually historical problem around bottom valve

4-1

No Problem since 1996

pipe trench / epoxy coated
conveys acid from pickle lines

~~waste pickle comes from Tank 4 of line~~
controlled off Conveyed by trenched pipes from line

waste pickle liquor tanks have to be cleared out
iron remains in solution - solids - / sent off as haz. waste 06/01/00

28/45 pickling process cleans off very fine scale.

South End of Rolling Mill - by Sub 24-H

06/01/00

RS. Dust Box -
viewed former location
Shot Blasted for Rolls
grind / shot peene.

took picture of probable location of dust box, silo may have been here also (aa)
metals fines
paddles - steel shot

Viewed ~~S~~ J-9 Sludge Box -
coming off the lathe · metal fines & oil swarf.

2 side by side / pumped into WM box -

swarf - goes to type II landfill
about 2 feet dep 12 x 8' -
trench off of lathe to box - 1 ft x 20 ft.

Viewed Standard SK Parts Washer
Red Tub - ≈ 5 gallon tank.
SK Solvent Mineral / Naptha Blend
4' x 3'

drum of waste stones

Waste ~~oil~~ Tank in Basement / not viewed
built into concrete covered w/ grate
Coolant (2% oil)
collects oil from Tandem Rolling Mill
pumped out to truck

AJA
06/01/00

Scrap Oil Drums 1 near pump station
for Waste Oil Tank - pumped from
(coolant) subgrade tank Truck
directly to SRS Tanker

Viewed ~~Z-46~~ 47 Waste Oil Tank
two ~~sqft~~ rectangular tanks
resting in sti" pan ~ 6" deep
services SKIN MILL sump ~~a~~ French collects oil pumped
into tanks.
SRS vacuum pumps oil
only dempster tank he is aware of.

Sub 15 -
Mineral Sp. 90 day pail.

Sub Station 24 - H1
Transformer on N End.
oily release to soils observed - Trash bin very oily
oil in base of containment
2 ~~mt~~ gallon milk jugs of oil on ground also.

Hi-Lo Shop Tank. (Smiley Face)
Waste Oil from Vehicle Maintenance

Cradle mounted, horizontal tank.
With concrete tank
Cinder block, questionable integrity due
to observed cracks
Standing H_2O approx 6 ft /
~~At~~ heavy staining observed on
west end of containment

AJA 06/01/00

⇒ prefab tank / capacity?

surrounding shop floor sweepings piled adjacent
end loader / waste box / landfill ~~Class~~ Type II

BREAK 0400 - 0415

BOF

SWMU #8

N side of BOF
Ladle Dumping operation Pit, ↓ molten chunks,
iron/slag in ladle car / turn upside down,
over flowing water in trench. trench goes
to pit, then pumped for recirculation,
sheet piling sides approx 200 ft X 24 ft
bottom unknown

cleaned out rarely
pump station at S end,
pumps / recirculates
H_2O cools / conveys.

D/S Hopper between BOF & SWMU #8
6 compartments in Baghouse

Blue Boxes collect dust / vacuumed to truck,
H_2O into truck
over to new Debris Pile.

in back of SWMU #8 / Scrubber System but
not ever used

West Side of BOF
drop out Boxes at top / coarse → conveyed to collection

fines are trapped by ESP and dropped into same collection box, truck drives under and discharged directly into truck -
truck takes direct to landfill -
will take to WOF to make briquettes.
much dust at base of ~~dus~~ loading area

Kish Hopper a.k.a. Iron Relad Cing / Baghouse Hopper

~~flaked~~ Cannot get to hopper due to construction

flacked graphite & fine iron oxide Baghouse being sandblasted out.

Kish collected to debris pile (new).
will not WOF

now concrete pavement under hopper

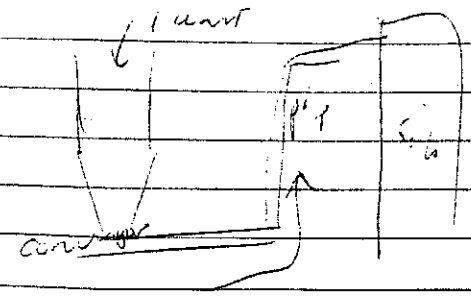
did not use to be

Photo - Re took 3-25 dust bin
LRF-2 Baghouse Dust bin

EAF - Historical ~~Sludge~~ Tar Disposal Area
thought to be under railroad on North Side.

Baghouse for EAH, Bins on bottom, conveyed to Silo behind us.

14 units / conveyor



06/01/00

No known EAF slag pile at EAF. Slag removed in pots to BOF -

Levy operates BOF slag pile W of EAF probably where EAF

first picture is skull yard.

second is of slag area.

took overview of EAF

Arrived @ Car at 05:02 / 06/01/00

-TP 6/2/00
0745 - arrived @ site

0800 convened mtg

discussed approach.

⇒ get copy of Cercla Notice to DON

Went over ?s
& RS Dust Box / Silo same location
May have been same unit or immediately adjacent to each other. No longer there.

RBC - Revisit later in day
Con

Old Open Hearth Balcony = 90 Day Storage.

Vacuum Degasser

H_2O from lamella → cooling tower → Vacuum Degasser

Solids probably from steam flash tank.

"New ~~B~~ Debris Pile" is
Refractory Brick
Kish Dust
Misc Dusts
Reladling Dust
De Sulf Dust

Old - now just filter cake.

06/02/00
GHa.

Outfalls - Near

ended mtg @ 08:50
arrived @ BOF 0910 Overcast / 75°
photo taken of area of former sluice pits -
shown on CEA "colorful" map.
No pits there ~~t~~ now. FR did not know
about the sluice pits or what they were
used for

Ceramic glass gaskets observed in green boxes so of
BOF, N of Sluice Pit Location

~~PCB Bldg.~~

North End of Hi Lo Shop / , Area of Staining
W of Open Hearth Balcony. Bolster Lay Out Area.
Concrete pavement
approx 60' X 60'
heavily stained.

PCB Bldg. 0920 - 0926
Building Concrete floor, Epoxy Sealed Floor -
8" high containment curbing
~ 150' x 50' ramp into

Short term storage of drums PCB / debris / ~~Transformers~~
corrugated steel roof
no longer used, FORD HV Operators used this
no start date stopped using Dec 1997

Drove past Soaking Bldg. Store equipment know.
heated or "soaked" slabs to re heat. / filled in
Oxygen Plant - not accessible / not operational.
viewed from outside gate area
55 gal drum / blue / horizontal under a roof
concrete slab - 4/6 ft. above grade no curbing.
drip pan observed underneath drum

Mounted on a frame on concrete pad.
SE side of Oxygen Plant.

paint spray booth in Maintenance Warehouse.

Scale Piles / Stockpiled for WOF

SLAB MILL

FORMER SLABMILL SCALE PIT.
20-25 ft deep X approx 60 ft X 25 ft.
reportedly concrete floor,
settled scale remove by clam

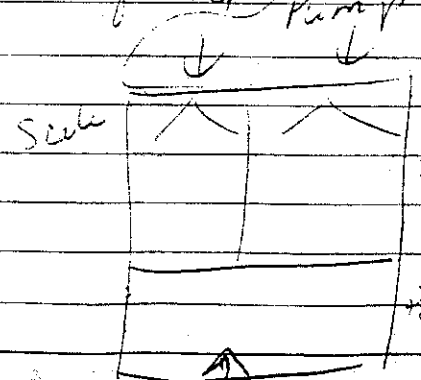
trenches in floor in mfg plant,
oily/scale/H_2O slurry piped into pit.

Scale removed and sold
H_2O - eventually discharged to SRWWTP.
may have recirculated some
oil skimmer and oil tank.
oil would have been picked up by contractor

Trench observed
Skarf ~~Pit~~ - inside bldg along production line.

Concrete pit, subgrade about 6-8 ft below grade - skarf/sludge remains in pit.

Outdoors - 20-30 ft dep. Pump house



Clame dug out, stockpiles
oily, but NO sign of oil tank

Stockpile materials on South side - prevented observation

[illegible] 06/02/00 Skarf.

1023

Hot Mill Scale Pit @ West side of bldg. - Northern end.

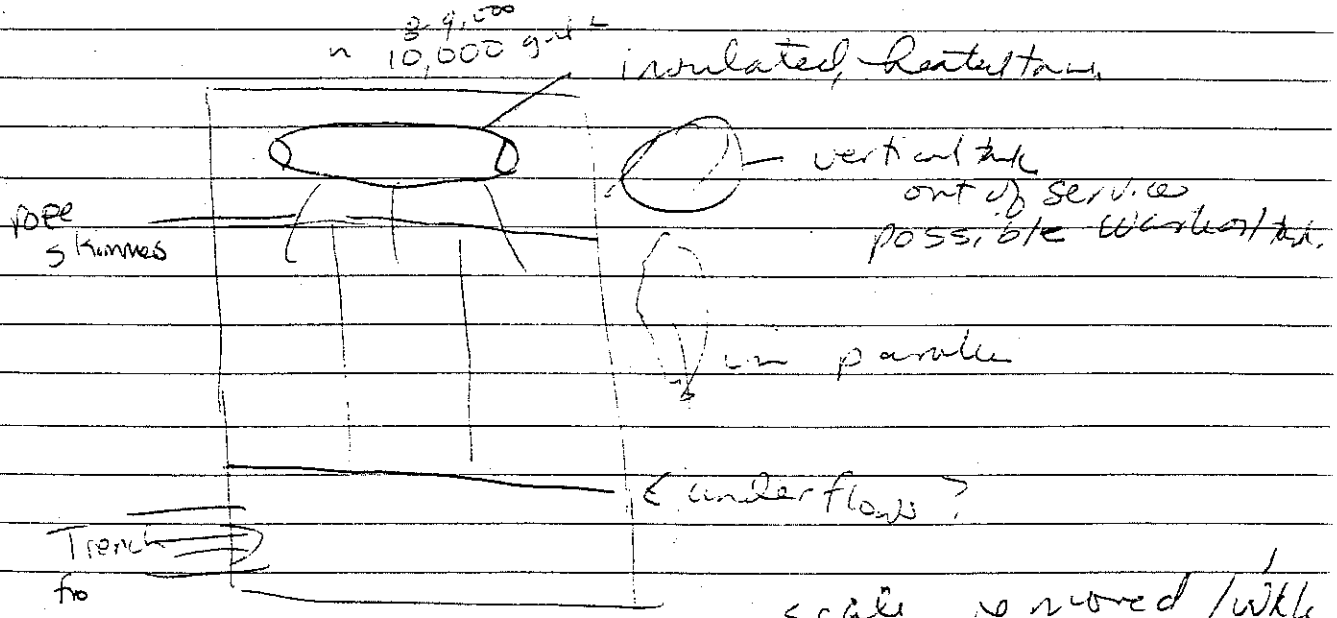
scale and oil stains

discharge from Rougher Mills.
Trenches & H_2O flushes scale into pit

pumps out 1 wk or so,
mid 1970's

about 25 - 30 ft visibly deep

drainage holes in concrete walls
to allow storm H_2O runoff into mt.
Concrete floor



scale removed / wkly

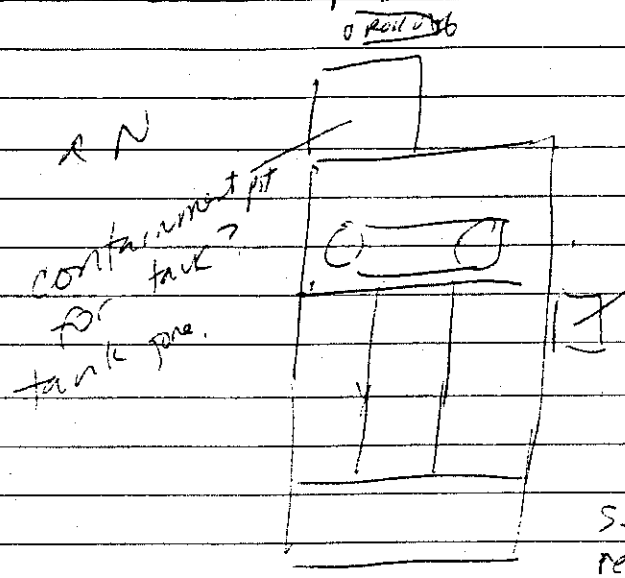
standing liquid
likely rain H_2O,
with oily sheen

ajd
06/02/00

38/45

GREASE DRUMS = product A AREA
mentioned in

South Scale Pit - Finishing Scale Pit



Replaced orig. system. in late 1980s in same location

waste oil tank - not hooked up to any appeared to be alternative skimmering

Same dimensions/

Some H_2O recirculated, then sent to Schaefferkd WWTP.

may have been part of orig. system.

roll off container ~~mown~~ resting on concrete pavement.
40 cubic yds.

containment pavement for truck & grate.
one ft high curbing

Some fresh "slag" gravel applied
in vicinity of
appeared to be stained underneath.

Scale allowed to drain adjacent to pit then flowed only.

DJL 06/02/00

11:00 - 1100 Break.

WOF - waste oxides collected
scale
ore fines

fines collected from conveyor, collected in bins,
return to ~~b~~ material bins on for reuse.

material bins → pulverized → mixers

furnace Bricket ← molasses as binder

Zinc Oxide volatilized after combustion, converts to zinc oxide,
sell zinc oxide as product.

on N side of WOF,
55 gal drum pickup area.

stripper ingot molds pushed out

skull cracker behind it, dropped headach ball to

MT'd before reconstruction into WOF
forms briquets to be charged into BOF

~~12~~ 1127
estimated times.
3-4 mos Flue dust stock piles vanish immediately
Scale & breeze will be here longer > over 1 yrs supply!

9 mos - ore fines

Sinter plant at ingot foundry area.

[signature]
06/02/00

Electric Arc Furnace -

2 furnaces - when operating
stopped ~~closed~~ in 1992
operating -

very dusty inside. 2-3 inches deep on floor

BOF Cooling H_2O outfall,
~~overflow~~
minimal contact
observed. No signs of oil

skeleton yd - North of BOF -

Burbank outfall - Cold Mill and Annealling H_2O -
non contact H_2O.

spillway - not operating on east side of River,
South of Ford WWTP.

BF WWTP = 1981 constructed

1207 - BREAK FOR LUNCH

12:45 - MTG ROOM

UNITS TO REVISIT.

#14 - Coke Oven Tar Decanter Sludge
Concrete Collection Pit <90 day.
stabilized with coke breeze.

AS SOLE BOTTOMS
#15 - holding lagoon - closed & backfill.
Brick Lined - near

#16 wells.

10/20/00

#17 Coke Oven Light oil.

? Two tanks - <90 day storage
1 underlain by concrete. c̄ 2° containment.

#18 CO Biological Treatment 70,000 gal
concrete equalization basin -

#13 Coke Oven Refractory Refuse.
at Mainterrace

left meeting Room 1220 / arrived pickle area
1225.

revesited N. Neutralization tank / receives
rinse H_2O ? sewer.
scrubber H_2O.

S. Neutralization 1227

25,000 g Wastle Pickle Tank all three lines
(1, 3, 4) discharge
to this tank.
No 2 non functional

steel tank, probably rubber lined. pumped thru enclosed trench to outdoor tanks.

Sump beneath storage tank,
receives spillage / drainage
pump returns to storage tank.

1445

Read 5 weepings go thru debris

North Quench Station

Sump on West side
concrete & wood pilings side,
standing H_2O /
~ 45' X 20 ft.
pump at south end
COG Drip tanks contents would have been put into
this sump.
Liquid in sump pumped over to
adj. station, then drained
back into sump / recirculated.

RJH 06/02/00

~~What previously as SWMU #14 on 5/31/00,~~

is now thought the Tar decanter, with a Tar decanter sludge box ~~is~~ immediately west end.

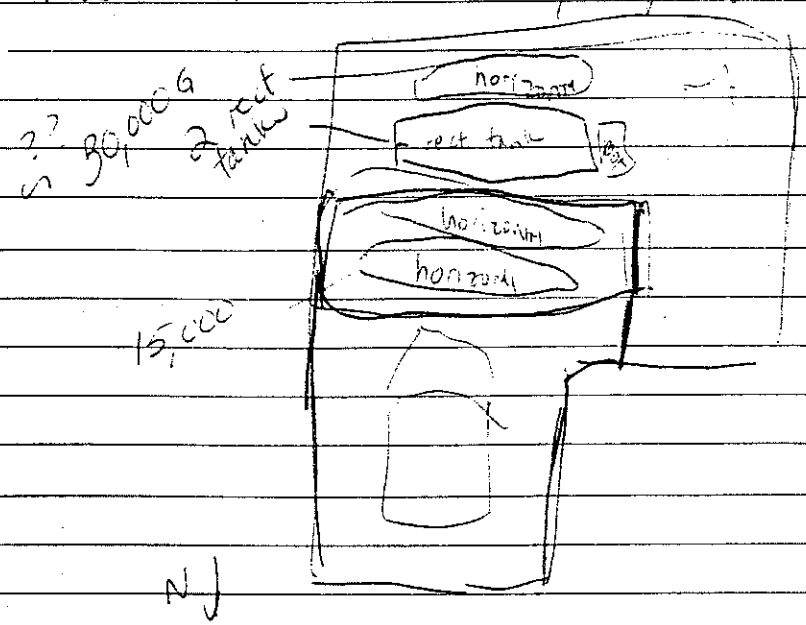
tar tank to North. underlain by concrete, dark materials on what soil could be observed,

found pumphouse substation

wet surface cooler observed, two tower.
twin tower

Aerator was a floating aerator,

KW Tank FARM by - product area

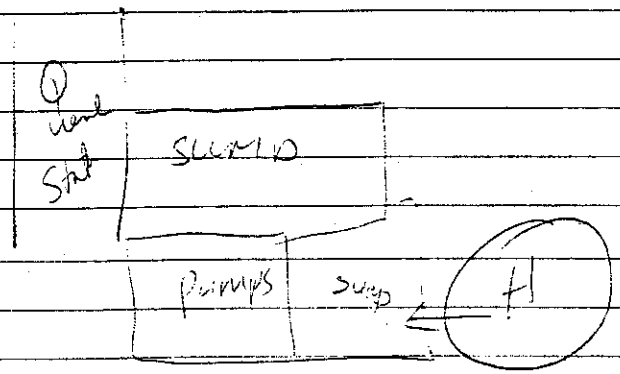


06/02/00

44/45

South Quench ~~Tower~~ Station,

~~Qu~~ Coke into



6/2/00
RJh

tank out of containment
by coke Lab.

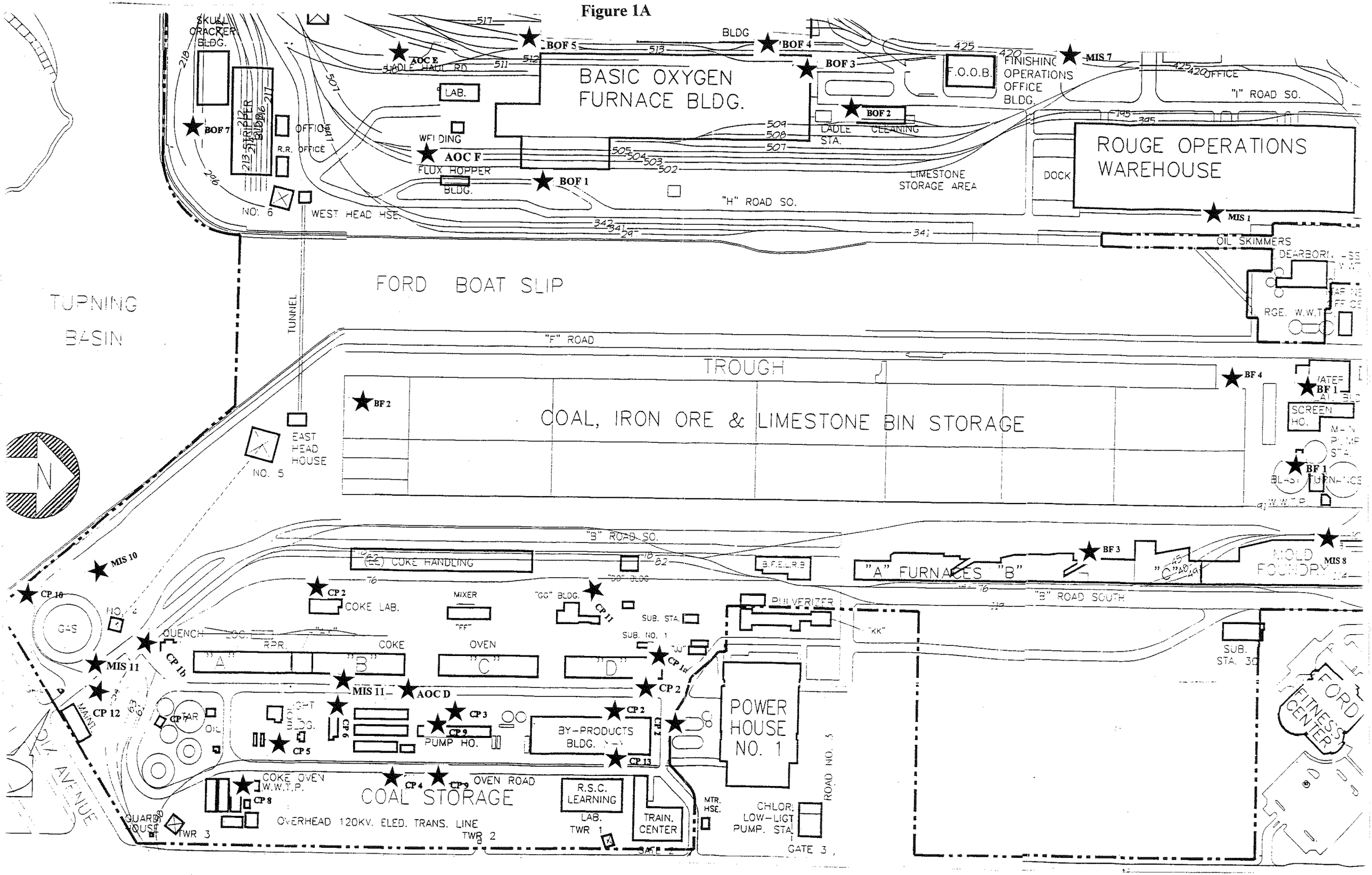
Viewed GG Building - did not observe any refusiple

arrived 0300 parking lot - Left facility 0340

0340
6/2/00

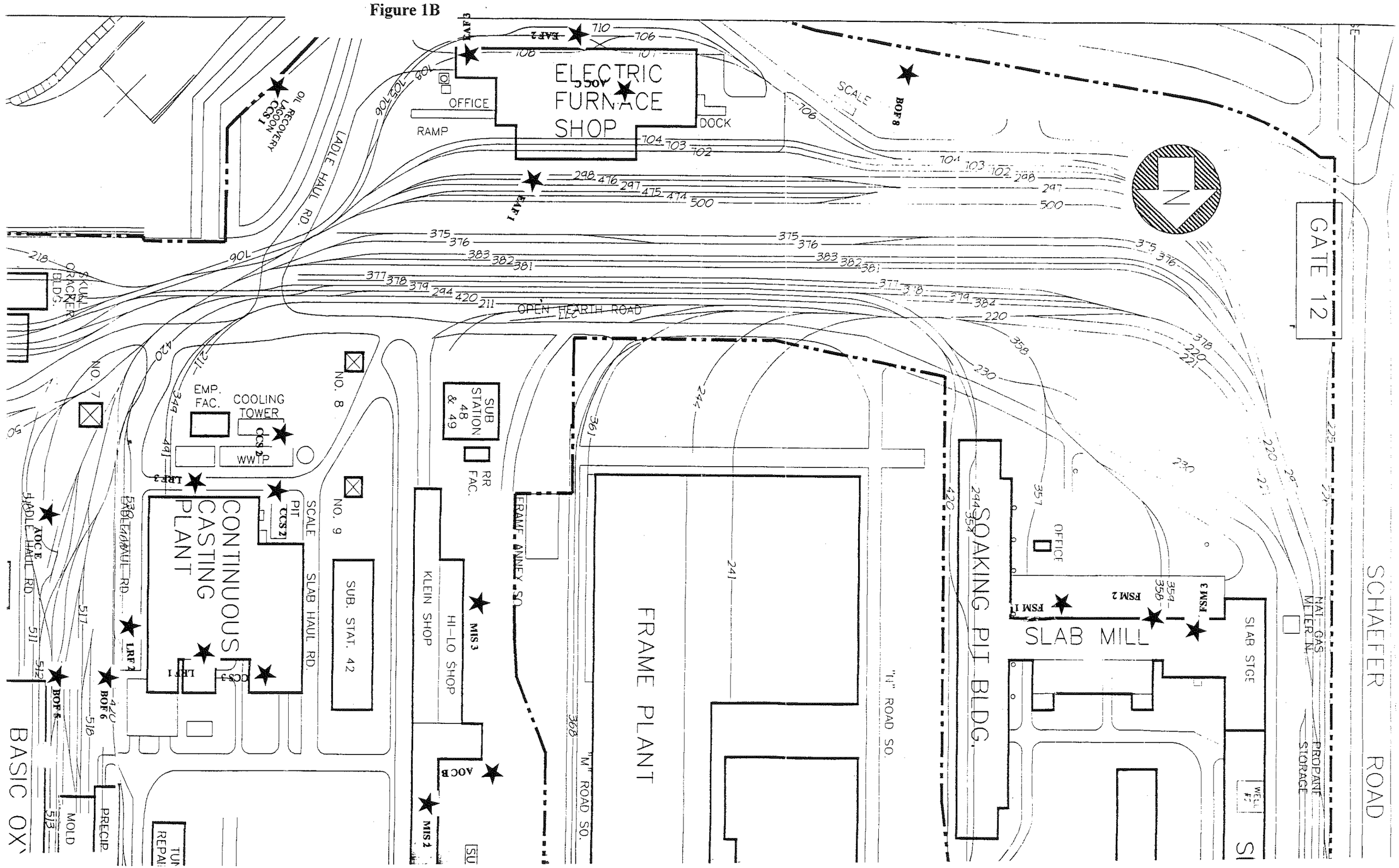
APPENDIX C
FACILITY LAYOUT AND SWMU/AOC LOCATIONS

Figure 1A



BASIC OXYGEN FURNACE BLDG.
BLDG
BOF 5
BOF 4
BOF 3
BOF 2
BOF 1
BOF 7
AOC E
AOC F
LAB.
WELDING
FLUX HOPPER BLDG.
LADLE HAUL RD.
F.O.O.B.
FINISHING OPERATIONS OFFICE BLDG.
MIS 7
OFFICE
"I" ROAD SO.
LADLE CLEANING STA.
LIMESTONE STORAGE AREA
"H" ROAD SO.
ROUGE OPERATIONS WAREHOUSE
DOCK
MIS 1
OIL SKIMMERS
DEARBORN
RGE. W.W.T.P.
SKULL CRACKER BLDG.
STRIPPER BLDG.
OFFICE
R.R. OFFICE
NO. 6
WEST HEAD HSE.
FORD BOAT SLIP
TUNNEL
TURNING BASIN
"F" ROAD
TROUGH
COAL, IRON ORE & LIMESTONE BIN STORAGE
BF 2
BF 4
BF 1
SCREEN HO.
EAST HEAD HOUSE
NO. 5
N
"B" ROAD SO.
(EE) COKE HANDLING
B.F.E.L.R.B
"A" FURNACES "B"
"C"
MOLD FOUNDRY
MIS 8
"B" ROAD SOUTH
MIS 10
CP 10
GAS
NO. 4
CP 2
COKE LAB.
MIXER
"FF"
"GG" BLDG.
CP 11
SUB. STA.
PULVERIZER
"KK"
SUB. NO. 1
"JJ"
QUENCH
RPR.
COKE
OVEN
"A"
"B"
"C"
"D"
CP 1b
CP 1a
MIS 11
CP 12
MIS 11
AOC D
CP 2
CP 3
CP 9
PUMP HO.
BY-PRODUCTS BLDG.
CP 2
CP 13
POWER HOUSE NO. 1
SUB. STA. 30
FORD FITNESS CENTER
CP 6
CP 5
TAR
OIL
MAINT.
COKE OVEN W.W.T.P.
CP 8
CP 4
CP 9
OVEN ROAD
COAL STORAGE
R.S.C. LEARNING LAB.
TRAIN. CENTER
MTR. HSE.
CHLOR. LOW-LIGT PUMP. STA.
ROAD NO. 3
GATE 3
GATE 2
TWR 1
TWR 2
TWR 3
GUARD HOUSE
OVERHEAD 120KV. ELED. TRANS. LINE
AVENUE

Figure 1B



ELECTRIC FURNACE SHOP
OFFICE
RAMP
DOCK
SCALE
BOF 8
EAF 1
EAF 2
EAF 3
OIL RECOVERY LAGOON
CCS 1
LADLE HAUL RD.
OPEN HEARTH ROAD
GATE 12
SCHAEFER ROAD
SKULL CRACKER BLDG.
EMP. FAC.
COOLING TOWER
WWTP
CCS 2
NO. 7
NO. 8
NO. 9
SUB STATION 48 & 49
RR FAC.
CONTINUOUS CASTING PLANT
PIT
CCS 2
SCALE
SLAB HAUL RD.
SUB. STAT. 42
LRF 1
LRF 2
LRF 3
CCS 3
AOC E
BOF 5
BOF 6
KLEIN SHOP
HI-LO SHOP
MIS 3
AOC B
MIS 2
FRAME ANNEX SO.
FRAME PLANT
"M" ROAD SO.
"N" ROAD SO.
SOAKING PIT BLDG.
OFFICE
FSM 1
FSM 2
FSM 3
SLAB MILL
SLAB STGE
NAT. GAS METER N.
PROPANE STORAGE
BASIC OX
MOLD
PRECIP.

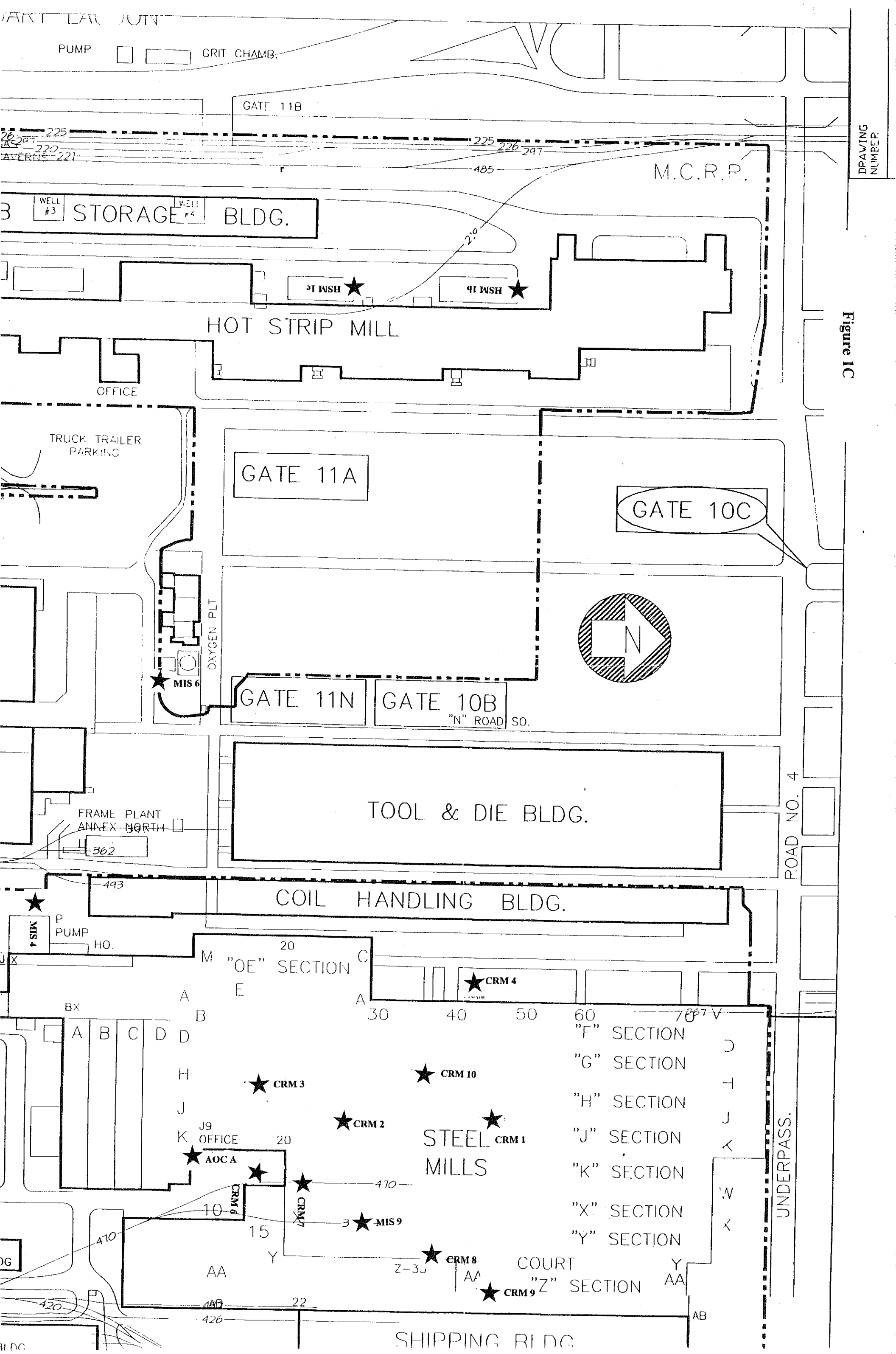

PUMP
GRIT CHAMB.
GATE 11B
225
220
221
225
226
297
485
M.C.R.R.
DRAWING NUMBER
WELL #3
STORAGE
WELL #4
BLDG.
HSM 1c
HSM 1b
HOT STRIP MILL
OFFICE
TRUCK TRAILER PARKING
GATE 11A
GATE 10C
OXYGEN PLT
MIS 6
GATE 11N
GATE 10B
"N" ROAD SO.
N
TOOL & DIE BLDG.
ROAD NO. 4
FRAME PLANT ANNEX NORTH
362
493
COIL HANDLING BLDG.
MIS 4
PUMP
HO.
"OE" SECTION
CRM 4
BX
A B C D
"F" SECTION
"G" SECTION
"H" SECTION
"J" SECTION
"K" SECTION
"X" SECTION
"Y" SECTION
"Z" SECTION
CRM 3
CRM 10
CRM 2
CRM 1
STEEL MILLS
J9 OFFICE
AOC A
CRM 6
CRM 7
MIS 9
CRM 8
CRM 9
COURT
470
420
426
UNDERPASS.
SHIPPING BLDG

Figure 1C