INITIAL COMMENTS UPON EPA'S JULY 1979 PROPOSED WATER QUALITY STANDARDS FOR OHIO

Submitted to

United States Environmental
Protection Agency, Region V
Chicago, Illinois

by

Olin Corporation
Stamford, Connecticut

October 18, 1979

CONFIDENTIAL STATUS REQUESTED

OLIN ASHTABULA

PRESENTATION

TO THE

OHIO EPA

JANUARY 23, 1980

12. Monochlorobenzene (MCB) and Toluene diisocyanate (TDI) vapors are generated from the process which produces toluene diisocyanate vacuum bottoms. The source emission point consists of a 6' x 6' x 10' enclosed shed which is used to confine and collect these process vapors.

13. Source emission data:

Vapor:

Component	MW	#/hr (max.)	#/hr (avg.)
TDI	174.15	0.175	0.046
MCB	112.56	0.877	0.174

14. a) Water: No wastewater will be discharged

b) Air:

Component	MW	#/hr (max.)	#/hr (avg.)
TDI	174.25	0.175	0.046
MCB	112.56	0.877	0.174
Air	29	16,252	16,252
H_2O	18.02	254	254
Total		16,507	16,506
Pressure, Psia		14.52	15.6
Temp., ^oF		77	77
CFM		3800	3,800

15. a. Air emission (see attached flow sheet-Kontro blower system, Part "A").

The enclosed building will be provided with vent piping which collects and transports TDI and MCB vapors to the blower suction which, in turn, discharges to a stack. This system will maintain ground level concentrations of TDI and MCB below 0.02 ppm and 75 ppm respectively.

The purpose of this system is to:

1) Protect operating personnel from TDI/MCB vapors.

2) Collect and disperse TDI/MCB vapors to allowable ground level concentrations as shown in (a) above.

16. N.A.

17. N.A.

18. Anticipated #/day TDI = 1.1
Anticipated #/day MCB = 4.2

Appropriate Box(es)

[X] Air Discharge

[ ] Water Discharge to New Source Treatment Works

[ ] Solid Waste Disposal Facility

Application No. 02-446

Date Received 5/19/78

OHIO ENVIRONMENTAL PROTECTION AGENCY

Application for Permit to Install

OLIN CHEMICALS GROUP, DIV. OLIN CORPORATION
Applicant's Name

P. O. BOX 206
Mailing Address

ASHTABULA — OHIO (44004) — 216-998-1176
City — County — State — Telephone Number

W. McClasson PLANT MANAGER 216-998-1176
Person to contact (Name and Title and Telephone Number)

Facility to be Located within the Battery Limits of the Existing Plant
Location of Proposed Facility (State the location as completely and precisely as possible)*

Ashtabula — ASHTABULA
City or Township — County

DIRECTIONS: A Permit to Install is required under the provisions of OAC Rule 3745-31. Complete each item on this application form. An application cannot be considered unless all questions are answered and required supplemental information submitted. If any of the information requested does not apply to your situation, then state the reasons why it does not apply. This application must be signed as provided for in OAC Rule 3745-31-04(B) or it will not be accepted. Applicants for permits which involve air emissions or waste water treatment facilities are advised they will be required to pay a fee upon approval of their applications as provided for in OAC Rule 3745-[illegible]

1. Name of Source: "Kontro" Shed Stack, X-101

2. Product or Use of Source: Toluene Diisocyanate Vacuum Bottoms

3. Will the proposed source involve any of the following: Check all that apply.

   A. X Air Discharge

   B. ____ Waste Water Treatment Works

   C. ____ Solid Waste Disposal Facility

*EXAMPLE: "The source will be constructed on a 20 Acre plot to be located on Franklin Township Road No. 17, approximately 1 1/4 miles north of the intersection of State Route 93 and Franklin Township Road No. 17."

OEPA-420-2 (5/77)

092001

Olin PLASTICS

P.O. BOX 808, ASHTABULA, OHIO 44004

December 26, 1974

Mr. A. R. Winklhofer, Director
US. Environmental Protection Agency
Michigan-Ohio District Office
21929 Loraine Ave.
Fairview Park, Ohio 44126

Mr. David Woodring, Director
Ohio Environmental Protection Agency
Northeast District
2110 E. Aurora Rd.
Twinsburg, Ohio 44087

Gentlemen:

Confirming my telephone report to your office at approximately 1:00 P.M. on Thursday, December 26, 1974, the outfall effluent from the Olin Designed Products plant located on Middle Road, Ashtabula, Ohio, was found to contain a concentration of monochlorobenzene (MCB) above that permitted under NPDES permit number OH 0001376.

The higher than normal (MCB) concentration in our outfall effluent occurred when a side stream receiver overflowed and contaminated the process sewer.

The process sewer, storm sewer and miscellaneous effluent streams feed into a three (3) pond (in series) settling and oil removal system and thence into Fields Brook.

The material which contaminated the process sewer (approximately 50 gallons) contained a mixture of toluene diisocyanate (TDI), Monochlorobenzene (MCB) and various high boiling materials. Since the TDI rapidly forms insoluble ureas type compounds upon contact with water, it was prevented from reaching the outfall by the solids settling and oil skimming feature of the system. The MCB is also relatively insoluble in water and we feel the majority of it was isolated in the first of the series of settling ponds. We are now in the process of proving this analytically.

LDH:mf

019621

Emissions Determination for
Crude Column Intermediates Tank
V10-305

(DCB) Dichlorobenzene

3	mole	147g	lb	l	10	34500 gal	
760	22.4l	mole	454g	.2642 gal	100	year	

= .745 lb/year

(MCB) [redacted]

10	mole	113g	lb	l	20	34500 gal	
760	22.4l	mole	454g	.2642 gal	100	year	

= [redacted]

(HCE) [redacted]chloroethane

1	mole	237g	lb	l	10	34500 gal	
760	22.4l	mole	454g	.2642 gal	100	year	

= [redacted]

(TDI) Toluenediisocyanate

.05	mole	174g	lb	l	60	34500 gal	
760	22.4l	mole	454g	.2642 gal	100	year	

= 0.088 lb/year

	lb/hr	lb/day
DCB	8.5×10^{-5}	.002
MCB	4.36×10^{-4}	.0105
HCE	4.57×10^{-5}	.0011
TDI	1.01×10^{-5}	2.411×10^{-4}

Crude Column Intermediates Draw-Off

13. The Crude column in the TDI plant separates toluene diisocyanate from monochlorobenzene. There are several impurities in the process that boil between these two compounds, that inventory in the middle of the crude column. These impurities are drawn off the crude column to the crude column intermediates drum. This drum is vented to the atmosphere. A pump, pumps this material at a set rate to the discharge of the W.F.E. bottoms pump where it serves as a flush for the residue going down the line.

13. Tank 710-305, which has a 130 gallon capacity, will store a mixture of (MCB) Monochlorobenzene, (DCB) Dichlorobenzene, (HCE) Hexachloroethane, and (TDI) Toluene diisocyanate. Approximately 34,500 gallons per year will be displaced through the tank.

14. The emissions will consist of the following:

DCB	8.5×10^{-5} lb./hr.	1.47 %
MCB	4.36×10^{-4} lb./hr.	75.6 %
HCE	4.57×10^{-5} lb./hr.	7.9 %
TDI	1.01×10^{-5} lb./hr.	1.8 %
Total	5.768×10^{-4} lb./hr.	

15. The emissions will be discharged to the atmosphere through a 1 inch pipe about 2.5 feet above ground level.

16. N/A, no wastewater

17. N/A, no wastewater

18. The emission discharge rate will be the following:

DCB	.002 lb./day
MCB	.0105 lb./day
HCE	.0011 lb./day
TDI	2.411×10^{-4} lb./day

These low emission levels should have no immeasurable effect on the surrounding environment.

19. No monitor devices are currently planned for this vent stack.

20. Zoning Regulations, Ashtabula Township, Ashtabula County, Ohio Part two, Section VIII, Number 4, Page 11.
"No emission which would be demonstrably injurious to human health, animals, or plant life at or beyond the Industrial zone in which the emission originated, will be permitted. Where an Indistrial use could produce such emission as a result of accident or equipment malfunction, adequate safeguards in the industry involved, as required in the Ohio State Building Code, shall be taken."

For Office Use Only
Check Appropriate Box(es)

[X] Air Discharge

[ ] Water Discharge to New Source Treatment Works

[ ] Solid Waste Disposal Facility

For Office Use Only

Application No. 02-596

Date Received 74/07/05

MC3

OHIO ENVIRONMENTAL PROTECTION AGENCY
Application for Permit to Install

Olin Corporation
Applicant's Name

P. O. Box 206
Mailing Address

Ashtabula	Ashtabula	Ohio 44004	216-998-1176
City	County	State	Telephone Number

Paul Duff, Environmental Affairs Specialist 203-356-3476
Person to contact (Name and Title and Telephone Number)

Olin Plant is located on Middle Road approximately 1/2 mile east of State Road
Location of Proposed Facility (State the location as completely and precisely as possible)*

Ashtabula	Ashtabula
City or Township	County

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1. Name of Source: Crude Column Intermediates Storage Tank Vent

2. Product or Use of Source: Storage of Crude Column Intermediates Draw-Off

3. Will the proposed source involve any of the following: Check all that apply.

   A. X Air Discharge

   B. ___ Waste Water Treatment Works

   C. ___ Solid Waste Disposal Facility

*EXAMPLE: "The source will be constructed on a 20 Acre plot to be located on Franklin Township Road No. 17, approximately 1 1/4 miles north of the intersection of State Route 99 and Franklin Township Road No. 17."

OEPA-42G-2 (10/78)

Attachment # 6

Excursions from January 1979, through December 1979,
as Reported in Entity's Self-Monitoring Reports

Date	Outfall	Parameter	Reported Value	Permit Limit	
				Monthly Avg.	Daily Max.
1/79	001	COD	515 kg/day		480 kg/day
1/79	001	pH	2.4-9.1 s.u. (2 violations)		6.0-9.0 s.u.
2/79	001	pH	3.1-10.0 s.u. (3 violations)		6.0-9.0 s.u.
3/79 - In compliance					
4/79	001	TSS	11309 kg/day		10200 kg/day
5/79	001	pH	9.1 s.u.		6.0-9.0 s.u.
6/79 - In compliance					
7/79 - In compliance					
8/79 - In compliance					
9/79	001	[redacted]			[redacted]
10/3/79	001	Zinc	1.84 kg/day		1.80 kg/day
11/79 - In compliance					
12/79	001	Chloro-benzene	10.0 kg/day		8.4 kg/day

Volatile Organic Analys of Effluent from
Olin Corporation Ashtabula - January 22-23, 1980
(3 grab samples)

Date/Time of Collection	1-22-80/1130	1-22-80/2255	1-22-80/1127	
	Sample Number and Concentration (ppb)			
Compounds Detected	VOA #1 EDO472 80-EM03S07	VOA #2 EDO472 80-EM03S08	VOA #3 EDO472 80-EM03S09	Reagent Blank EDO472 80-EM03R10
1,1-Dichloroethane	<2.2	<2.1	<1.7	9.9
1,2-Dichloroethylene	3.7	<1.1	2.2	1.1
Chloroform	**<1.5**	**3.6**	**4.6**	**<1.5**
1,2-Dichloroethane	<1.1	<1.1	<1.1	<1.1
1,1,1-Trichloroethane	<1.7	<1.7	<1.7	<1.7
Carbon Tetrachloride	1.8	3.0	2.1	<1.8
Bromodichloromethane	<3.8	<3.8	<3.8	<3.8
1-Bromo-2-Chloroethane	<4.6	<4.6	<4.6	<4.6
1,2-Dichloropropane	<0.7	<0.7	<0.7	<0.7
Trans-1,3-Dichloropropene	1.5	<0.7	<0.7	<0.7
Benzene	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	<6.0	<6.0	<6.0	<6.0
Chlorodibromomethane	<1.5	<1.5	<1.5	<1.5
1,1,2, Trichloroethane	<1.5	<1.5	<1.5	<1.5
Cis-1,3-Dichloropropene	<1.5	<1.5	<1.5	<1.5
Bromoform	<1.4	<1.4	26.3	<1.4
1,1,2,2-Tetrachloroethane	**<1.0**	**<1.0**	**[illegible]**	<1.0
Tetrachloroethylene	**4.0**	**<0.5**	**2.0**	1.0
Toluene	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.5	<0.5	<0.5	<0.5
1-methoxy-1-propene*	<0.5	<0.5	<0.5	<0.5
1,1 Oxybisethane*	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro - 1,2,2-Trifluoroethane*	<0.5	<0.5	<0.5	<0.5

*Concentrations of all compounds denoted (*) were [illegible] versus the response of the other compounds.

Brook. The discharge is responsible for raising the concentration of copper downstream just above the water quality limit of 0.010 mg/l. Both the upstream and downstream concentrations of dissolved solids are above the water quality standard of 1500 mg/l. Here the company discharge raises the already high upstream concentration of 2344 mg/l to a concentration of 2470 mg/l downstream.

The samples at Outfall 001 were analysed for volatile and non-volatile organics using gas chromatography (FID) and computerized gas chromatography-mass spectrometry. The results of these analyses are contained in Attachment 4 with the other sampling results.

A total of seven volatile organic compounds were detected in one or more of the three volatile organic grab samples collected at the plant discharge. These included: 1,2-Dichloroethylene (3.7 µg/l and 2.2 µg/l); [redacted] Carbon Tetrachloride (1.8 µg/l, 3.0 µg/l and 2.1 µg/l); [redacted] Bromoform (26.3 µg/l); Tetrachloroethylene [redacted] 1,1,2,2-[redacted] All of these compounds are priority pollutants and all of these compounds except 1,2 dichloroethylene are qualitatively rated as highly toxic in The Condensed Chemical Dictionary[1]. 1,2 Dischloroethylene is rated as moderately toxic. Attachment 8 contains descriptions of each of these compounds. Four of these compounds are known or suspected carcinogens[2]. These are: carbon tetrachloride, chloroform, tetrachloroethaline and bromoform. It should be noted that a field reagent blank run as a quality control check was contaminated with two of the compounds found in the three grab samples. These compounds were Tetrachloroethlene (1.1 µg/l) and 1,2-dichloroethylene (1.0 µg/l). The presence of both these compounds in the Olin discharge is therefore suspect.

Only one non-volatile organic compound was found during the testing. This was Bis(2 ethylhexyl)phthalate (1.5 µg/l) a phthalate ester. Phthalate esters can be detrimental to aquatic organisms at low water concentrations. A freshwater criterion of 3 µg/l is recommended in Quality Criteria for Water. This is also the Ohio Water Quality standard for a warmwater habitat. Although the level found is below this criteria its presence is still of some concern.

In addition to the organic scans done on the Olin discharge sample the Ames Test and bioassay testing were also conducted.

The Ames Test is used to indicate the presence of mutagenic/carcinogenic compounds. It involves the exposing special strains of bacteria to concentrated portions of the sample in question. Changes in genetic structures in the strain of bacteria used are relatively common and occur at a predictable rate under normal conditions. These changes are detectable by differences in colony growth rate (size of colony) or other variations which develop when these bacteria are exposed to various growth media. Changes in genetic structures for this test are called revertants. When revertants occur at a rate greater than 2.5X the normal or background rate, there is an indication of the presence of mutagenic or carcinogenic compounds in the sample being tested. Toxicity is detected by the absence of bacteria, and may occur without an indication of mutagens/carcinogens. Dose response is reported as positive when a pattern of revertant counts develops with several different concentrations of the sample in question.

The Ames Test conducted on the Olin discharge sample was positive. That is, the test indicated the presence of mutagenic/carcinogenic compounds in the sample. The revertant counts were 2.5X background or greater at the 100X and 200X concentrations. A dose response was obtained, and the sample was toxic to bacteria at the higher doses.

5. Summary of Findings and Conclusions

a. The sampling results from this compliance sampling inspection show Olin to be achieving the limits contained in the NPDES permit. During 1979 the company's self monitoring reports indicate that there were, however, a total of eleven instances when the NPDES limits were not met by the company.

b. Based upon the data collected during this study the Olin discharge causes the concentrations of copper and dissolved solids in Fields Brook to exceed the maximum criteria in Ohio Water Quality Standards - Warmwater Habitat.

c. A total of eight organic compounds were found to be present in the Olin discharge sample. The concentration of these compounds ranged from 1.5 µg/l to 26.3 µg/l. Seven of these were volatile organics while the one was a non-volatile organic. The seven volatile organics were: 1,2 dichloroethylene; [redacted] tetrachloride; Trans-1,3-Dichloropropene; bromoform; [redacted]; 1,1,2,2-tetrachloroethane. All of these compounds can be [redacted] 1,2 dichloroethylene which is moderately toxic. Four [redacted] are known or suspected car[redacted] chloroform, tetrachloroethylene, [redacted] The [redacted] hexyl)phthalate, [redacted] Phthalate esters are detrimental to aquatic [redacted] at low concentrations. The concentration of this compound measured in the Olin effluent, however, was below the Ohio Water Quality phthalate ester standard for a warmwater habitat of 0.003 mg/l.

d. The Ames Test performed on the Olin effluent sample proved to be positive. That is, the effluent did induce a mutagenic/carcinogenic response in the test bacteria. A possible cause may be the four organic compounds present in the effluent which are known or suspected carcinogens.

e. The static fish bioassay results were inconclusive, however, the 24 and 48 hour mortality to daphnia averaged 95% and 100%, respectively.

6. Description of Permittee

A. Facility

The Olin Corporation in Ashtabula manufactures meta-toluene, diisocyanate(M-TDI) which is used in the production of polyurethane foams. Two byproducts of TDI production, hydrochloric acid and ortho-toluenediamine (O-TDA) are also produced at this plant. Operations at the facility are on a 24 hour per day, 7 day per week basis. The plant location and the location of its wastewater discharge to Fields Brook are shown in Attachment 1.

B. Process

Attachment 2 is a schematic of the TDI production process. The raw materials used in the manufacture of TDI are: coke, oxygen, carbon dioxide, chlorine, and TDA.

The process begins wtih carbon, in the form of coke, being burned to produce carbon monoxide (CO). The CO gas is passed through a scrubber in order to remove coke fines and to cool the gas. The CO gas is then reacted with chlorine to produce carbonyl chloride. Together with toluene diamine, the carbonyl chloride is reacted in an organic solvent, monochlorobenzene. After this reaction, several distillation steps are performed to remove the product and the by-product. The first distillation removes the by-product HCl which is sold as acid. The second step recovers unreacted

U.S. Environmental Protection Agency
Region V
Surveillance & Analysis Division
Eastern District Office

Compliance Monitoring Field Report

1. Permittee Identification

Olin Corporation
Middle Road
Ashtabula, OH 44004

Corporate Offices:
Olin Corporation
120 Long Ridge Rd.
Stamford, CT 06904

NPDES Permit: OH 0001376

Receiving Streams:

Fields Brook to Ashtabula River

Responsible Official:

William G. McGlasson - Plant Manager
(216) 998-1176

2. Dates of Inspection and Survey: January 22-23, 1980

3. Participants

Permittee

Paul Duff, Specialist Environmental Affairs, Olin Corporate Headquarters, Stamford, Connecticut
Lawrence Matson, Production Supervisor
Robert Smith, Plant Chemist

Ohio EPA

Melinda Becker, Environmental Scientist

U.S. EPA

Mark Moloney, Environmental Engineer, Author
Charles Beier, Engineering Technician
Joseph Good, General Mechanic
Philip Gehring, Chief, Field Support Team
Roland Hartranft, Engineering Technician

4. Objective

This compliance sampling inspection was conducted pursuant to a December 19, 1979, Enforcement Division request to verify compliance with NPDES permit OH 0001376 and applicable stream standards. In addition, three special tests were performed at this facility to check for the presence of any toxic pollutants in the company discharge. These tests include static bioassay tests, scans for organic pollutants and the Ames Test.

ATTACHMENT 14

Attachment #5
1 of --

U.S. ENVIRONMENTAL PROTECTION AGE :Y
REGION V
Eastern District Office

)H 0001376)

Sample Type: 8 C-8 hour flow proportioned composite
24C-24 hour flow proportioned composite
EVC-Equal Volume Composite
G-Grab

	Intake Ashco Water	Outfall 001 Process Discharge			Upstream Fields Brook			Downstream Fields Brook			NPDES Permit Limits		
Sample Type Time	G 1/23/80 0940	24C 1/23/80 1130-1127			G 1/23/80 1105			G 1/23/80 1055					
Flow (MGD) Temperature (°C) pH (su) Residual Chlorine, mg/l	10.0	0.5181 11.0-14.0 7.6-7.8 <0.03			2.82 2.0 7.4 <0.03			4.29* 2.0 7.3 <0.03			0.3		
PARAMETER	PPM	PPM		GROSS lbs/day	PPM			PPM					GROSS lbs/day
Dissolved Oxygen (field)	12.5	--			11.1			10.1					
Conductivity (field)	400	6000			2700			3300					
pH (lab)	7.7	7.7			7.2			7.4					
Conductivity (lab)	310	5535			4121			4526					
Total Solids	241	3123			2370			2521					
Dissolved Solids	174	3015		13012	2344			2470					22491
Suspended Solids	46	17		73.4	13			9					198.5
BOD_5	2	7			1			2					
Fecal Coliform	--	--			360			410					
Phenol	<0.002	0.039			<0.002			0.009					
Chloride	22	1580			1090			1180					
Ammonia-N					0.21			0.78					
COD	31	52		224.4	26			50					1058.4
Total Mercury		0.0001			0.0006			0.0006					
Calcium	34.5	32.1			31.2			31.1					
Magnesium	8.1	8.2			6.9			7.2					
Sodium	15.1	865			698			714					
Silver	<0.003	<0.003			<0.003			<0.003					
Aluminum	1.460	0.438			0.363			0.518					
Boron	<0.080	<0.080			0.180			0.141					
Barium	0.028	0.038			0.022			0.028					
Beryllium	<0.001	<0.001			<0.001			<0.001					
Cadmium	<0.002	<0.002			<0.002			<0.002					
Cobalt	<0.005	<0.005			<0.005			<0.005					
Chromium	<0.005	<0.005		0	<0.005			<0.005					1.98
Copper	0.011	0.016			<0.006			0.011					

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Attachment [illegible]
[illegible] of 5

Discharger: Olin Corporation
Ashtabula, Ohio (OH 0001376)

Sample Date: January 22-23, 1980

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION V
Eastern District Office

Sample Type: 8 C-8 hour flow proportioned composite
24C-24 hour flow proportioned composite
EVC-Equal Volume Composite
G-Grab

	Intake Ashco Water	Outfall 001 Process Discharge			Upstream Fields Brook			Downstream Fields Brook			NPDES Permit Limits		
PARAMETER	PPM	PPM		GROSS lbs/day	PPM			PPM					GROSS lbs/day
Iron	2.070	0.979			2.050			1.970					
Manganese	0.040	0.053			0.230			0.197					
Molybdenum	<0.010	<0.010			<0.010			<0.010					
Nickel	<0.030	<0.030			<0.030			<0.030					
Lead	<0.030	<0.030			<0.030			<0.030					
Tin	<0.030	<0.030			<0.030			<0.030					
Titanium	0.015	0.008			0.031			0.028					
Vanadium	<0.005	<0.005			0.018			0.017					
Yttrium	<0.005	<0.005			<0.005			<0.005					
Zinc	<0.050	<0.050		0	<0.050			0.141					3.97
Grease & Oil (grab samples)													
#1 1/22/80, 1130		3		1[illegible]									41.90
#2 1/23/80, 1127		<1		0									
* Flow believed to be in error.													
Chlorobenzene	(2 vos grabs)												
#1		<0.0005		0									18.52
#2		<0.0005		0									
		<0.0005		0									

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5. Summary of Findings and Conclusions

a. The sampling results from this compliance sampling inspection show Olin to be achieving the limits contained in the NPDES permit. During 1979 the company's self monitoring reports indicate that there were, however, a total of eleven instances when the NPDES limits were not met by the company.

b. Based upon the data collected during this study the Olin discharge causes the concentrations of copper and dissolved solids in Fields Brook to exceed the maximum criteria in Ohio Water Quality Standards - Warmwater Habitat.

c. A total of eight organic compounds were found to be present in the Olin discharge sample. The concentration of these compounds ranged [redacted] Seven of these were volatile organics while the one was a non-volatile organic. The seven volatile organics were: 1,2 dichloroethylene; [redacted] Trans-1,3-Dichloropropene; bromoform; [redacted] 1,1,2,2 tetra[redacted] All of these compounds can be [redacted] 1,2 dichloroethylene which is moderately toxic. Four of these, are known or suspected carcinogens. These four are carbon tetrachloride, chloroform, tetrachloroethylene, and bromoform. The non-volatile organic found to be present was Bis(2 ethyl-hexyl)phthalate, a phthalate ester. Phthalate esters are detrimental to aquatic organisms at low concentrations. The concentration of this compound measured in the Olin effluent, however, was below the Ohio Water Quality phthalate ester standard for a warmwater habitat of 0.003 mg/l.

d. The Ames Test performed on the Olin effluent sample proved to be positive. That is, the effluent did induce a mutagenic/carcinogenic response in the test bacteria. A possible cause may be the four organic compounds present in the effluent which are known or suspected carcinogens.

e. The static fish bioassay results were inconclusive, however, the 24 and 48 hour mortality to daphnia averaged 95% and 100%, respectively.

6. Description of Permittee

A. Facility

The Olin Corporation in Ashtabula manufactures meta-toluene, diisocyanate(M-TDI) which is used in the production of polyurethane foams. Two byproducts of TDI production, hydrochloric acid and ortho-toluenediamine (O-TDA) are also produced at this plant. Operations at the facility are on a 24 hour per day, 7 day per week basis. The plant location and the location of its wastewater discharge to Fields Brook are shown in Attachment 1.

B. Process

Attachment 2 is a schematic of the TDI production process. The raw materials used in the manufacture of TDI are: coke, oxygen, carbon dioxide, chlorine, and TDA.

The process begins wtih carbon, in the form of coke, being burned to produce carbon monoxide (CO). The CO gas is passed through a scrubber in order to remove coke fines and to cool the gas. The CO gas is then reacted with chlorine to produce carbonyl chloride. Together with toluene diamine, the carbonyl chloride is reacted in an organic solvent, monochlorobenzene. After this reaction, several distillation steps are performed to remove the product and the by-product. The first distillation removes the by-product HCl which is sold as acid. The second step recovers unreacted

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N,N-Diethylaniline (probable)
Tetradecanol
Hexanedioicaciddimethylester
Methylnaphthylene (2 isomers)
Diisopropylbenzene
Tetrachlorobenzene
Biphenyl
Dihydroacenaphthylene

C. HEAVY METAL ANALYSIS

ELEMENT	CONCENTRATION (ppm, except where noted)
Beryllium	0.67; 0.5; 0.82
Cadmium	1.9; 0.5; 1.3
Chromium	18; 21; 19
Copper	40; 36; 52
Nickel	281; 340; 866
Lead	42; 37; 44
Zinc	102; 97; 98
Silver	None Detected (Limit - 3 ppm)
[redacted]	[redacted]
Antimony	None Detected (Limit - 0.05 ppm)
Selenium	0.22: 0.28; 0.34
Thallium	561; 38; 422
[redacted]	[redacted]
Sodium	674; 751; 909

*Concentration in ppb

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COMPOSITION

A. OVERALL COMPOSITION

1) actual on specific sample

38% total solids
4% oil and grease
.1 → .3% heavy metals (explained in item C)
tr → .1% organics (explained in item B)
57.6% water

B. ORGANIC CONTENT

COMPOUND	CONCENTRATION (ppm)
Tetrachloroethylene	22
Monochlorobenzene	125
Styrene	362
Dichlorobenzenes (2 isomers)	17
Hexachloroethane	32
Trichlorobenzene	0.21
Naphthalene	0.13
Acenaphthalene	1.4
Fluorene	greater than 1.7
[redacted]	[redacted]
Anthracene	4
Fluoranthene	-
Isomer of Fluoranthene	3.7
Pyrene	

Compounds Identified but not quantitated

Trichloroethylene	BHT
Toluene	Dimethylnaphthalene (2 isomers)
Octane	Nonylbenzene
Dimethylcyclohexane	Heptadecene
Methylethylbenzene (3 isomers)	Trimethylnaphthalene (4 isomers)
2-Ethylhexanol	Pentachloropyridine
Methylethenylbenzene	Butylnaphthylene
Methylethylcyclopentane	Phenalene
Ethyldimethylbenzene (3 isomers)	Methylfluorene
Dodecane	Dibenzothiophene
Ethyltrimethylbenzene	Methyldibenzothiophene (2 isomers)
2-Phenylaminoethane (probable)	Methylphenanthrene
Ethylethenylbenzene	Dimethylphenanthrene (2 isomers)
Undecane	Methylpyrene (2 isomers)
Pentanedioic aciddimethylester	

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Volume

Cleanout of the lagoon during Olin's May turnaround resulted in the generation of approximately [redacted] To put the amount of organic contaminants into perspective, the following is a compilation of the quantity of several major impurities that would be present in the sludge.

COMPOUNDS	POUNDS IN SLUDGE
Monochlorobenzene	1.5
Styrene	4.34
[redacted]	[redacted]
Nickel	5.94
Zinc	1.2

Proposal Method of Handling

Olin respectfully requests permission to allow disposal of this material in Environmental Reserve's facility on Middle Road. The method of disposal would be similar to the disposal techni ues already approved for Olin's contro bottoms residue.

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Olin

120 LONG RIDGE RD., STAMFORD, CONN. 06904

August 16, 1979

Mr. Dennis Lee
District Engineer
State of Ohio Environmental
Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

Dear Mr. Lee:

This letter will confirm our phone conversation on August 6, 1979. Olin has generated approximately 12,000 pounds of sludge precipitated in the north end of our large wastewater treatment lagoon. Baffling has been constructed to promote laminar flow and assure that this insoluble material is deposited in the specially compartmentalized area encompassing approximately 20% of the total lagoon area.

Plant personnel obtained permission from the Ohio EPA to reduce the level in the west pond and initiate cleaning operations to remove deposited material. Only 12,000 lbs. of sludge was removed during the semi-annual plant shutdown conducted in May. Olin has isolated this material in a solar dewatering area, however, it is now necessary to dispose of this sludge in an Ohio EPA approved disposal site.

Olin respectfully requests approval to dispose of this wastewater treatment sludge in Environmental Reserve's (Reserve Environmental Services) Middle Road lagoon system. The composition of this stream is listed in the attachments, plus other pertinent information.

After you have reviewed this request, I would appreciate notification of your decision prior to any conversations and/or correspondence with Environmental Reserve. Once it has been determined that Environmental Reserve can handle this waste stream, I would appreciate the opportunity of discussing this situation with them directly.

If you require any additional data, please don't hesitate to call me.

Very truly yours,

Paul B. Duff (L.M.)

Paul B. Duff
Specialist, Environmental Affairs

PBD/kc
Attachment

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FIELDS BROOK SEDIMENT SAMPLES

DATE	LOCATION	SAMPLE DEPTH	[redacted]	TDA
7/15/81	100 ft. West of Outfall 001	0-3 in.	41	ND
7/15/81	50 ft. West of Outfall 001	3-6 in.	14	ND
7/15/81	10 ft. West of Outfall 001	2-6 in.	24	ND
7/15/81	Between Outfalls 001 and 002	2-4 in.	16	ND
7/15/81	30 ft. East of Outfall 002	4-12 in.	2	ND
8/27/81	10 ft. West of Outfall 001	1 ft.	[redacted]	-
8/27/81	10 ft. West of Outfall 001	2 ft.	[redacted]	-
8/27/81	10 ft. West of Outfall 001	3 ft.	268.49	-
8/27/81	10 ft. West of Outfall 001	4 ft.	185.75	-
8/27/81	10 ft. West of Outfall 001	5 ft.	91.80	-
8/27/81	100 ft. West of Outfall 001	1 ft.	209.00	-
8/27/81	100 ft. West of Outfall 001	2 ft.	155.68	-
8/27/81	100 ft. West of Outfall 001	3 ft.	42.14	-
9/1/81	100 ft. West of Outfall 001	4 ft.	.05	-
9/1/81	100 ft. West of Outfall 001	5 ft.	ND	-
9/1/81	400 ft. West of Outfall 001	0-3 in.	1.01	-
4/30/82	8 ft. East of Outfall 001	1 ft.	1298	-
4/30/82	8 ft. East of Outfall 001	2 ft.	3937	-
4/30/82	8 ft. East of Outfall 001	33 in.	666	-

e. Summary of excavation:

1. The primary toxic chemicals that soils were tested for were Monochlorobenzene (MCB) and Toluene Diamine (TDA).

2. The allowable levels of toxic chemicals were established as follows:

   (a) (MCB) Monochlorobenzene 100 p.p.m.

   (b) (TDA) Toluene Diamine 10 p.p.m.

3. [redacted]

   One area contained 5% concentrations of TDI Residue (Refer to Section V, paragraph a.).

4. After excavations soil contaminations were reduced to 30 p.p.m. to 33 p.p.m. MCB and nondetectable to 2 p.p.m. of TDA.

5. All clean backfill soils were predominately of a clay consistency and were trucked to the plant site from a stockpile on a parcel of land located on Middle Road in Ashtabula Township. Topsoil was provided from a stockpile on the plant site.

6. All site excavation, backfill and grading was completed by December 8, 1982. At this time all contaminated soils had been trucked off the plant site with the exception of a contained stockpile of 229 cubic yards with a concentration of approximately 5% TDI Residue. This stockpile was subsequently shipped off site by February 17, 1983. (Refer to Section V, paragraph a.)

of MCB from the environment. Approximately 1400 cubic yards of soil were removed from the four sites and replaced with clay.

- [redacted] Fields Brook sediments taken in August 1981 contained MCB and, therefore, a brook sediment removal project was added to the plant decontamination program. These sampling results were previously submitted to the Ohio EPA (Attachment 10).

The area of excavation extended bank to bank from the oulet pipes at the current and former outfalls to Fields Brook and from a point in Fields Brook 10 feet upstream (east) of the former outfall for a distance of about 400 feet to General Tire's outfall. Excavation to a maximum depth of three feet was planned. The proposed excavation plan was previously submitted to USEPA Region V (See Attachment 11).

The outfalls were excavated to a depth of three feet. The first 215 feet in Fields Brook were excavated to a depth exceeding three feet to remove all sediments and penetrate the underlying hard blue clay. The next 100 feet were excavated to a depth of three feet and the remaining distance to the General Tire outfall to a depth of two feet. The entire excavation extended below the sediment into the underlying clay. The excavation was backfilled with compacted clay and covered with a six inch layer of washed bank gravel. No soil samples were taken during the excavation. EP toxicity samples on the removed sediments proved to be negative. Almost 700 cubic yards of material were removed from Fields Brook and the outfalls.

- Wastewater Treatment Ponds

In October 1982 about 900 cubic yards of sludge from the three wastewater treatment ponds and the emergency spill basin were removed and shipped off-site for disposal. The soil surrounding the area where the east and middle ponds had been was tested and removed as necessary (See Attachment 12). The resultant 95 feet by 43 feet pit, 9 feet deep, was filled with clay. The emergency spill basin and the west pond were turned over to General Tire for incorporation in their wastewater treatment system.

- Closure of the Hazardous Waste Facilities

The Ohio EPA did not approve the closure plant for the hazardous waste facilities until early October 1982. At the end of October another round of soil sampling was conducted to further investigate the hazardous waste facilities, to reexamine areas in the southeast corner of the plant site and to seek the source of the MCB in groundwater monitoring well 11. A back hoe was used to dig three to four foot

RECEIVED
DEC 13 1985
OHIO EPA-N.E.D.O.

Olin CHEMICALS GROUP
120 LONG RIDGE ROAD, P.O. BOX 1355, STAMFORD, CT 06904-1355

July 13, 1983

RECEIVED
WASTE MANAGEMENT BRANCH
EPA, REGION V

Mrs. Elizabeth Utley
USEPA Region V
RCRA Activities
Post Office Box A3587
Chicago, Illinois 60690-3587

OHD001813708 G, T-SO, PA

Dear Mrs. Utley:

This letter is a formal reply to the questions you have asked about the closure of the hazardous waste facilities at Olin's former Ashtabula Plant during several telephone conversations. Specifically you requested and we have discussed the following:

- the basis for Olin's decontamination criteria
- a description of the analytical procedures used
- the test results of the soil sampling program
- information about the drainage ditch discovered during closure

You have stated that Olin has fulfilled all the regulatory requirements for closure and that this request for information is in addition to regulatory requirements.

As I previously explained, Olin demolished a chemicals manufacturing plant and decontaminated the plant site in addition to closing the associated hazardous waste facilities. The responses to your questions cover all these activities and support Olin's position that there is no threat to human health or the environment from any current or future escape of toxic or hazardous chemicals from our former plant site.

Decontamination Criteria

Olin only developed decontamination criteria for toluene diamine (TDA) and monochlorobenzene (MCB). Toluene diisocyanate (TDI) reacts with moisture to form harmless ureas and will not persist. By-product hydrogen chloride, if spilled, would have been neutralized by alkaline materials in the soil. TDI residue, hazardous waste K027, is a solid which can be visually identified and removed. No other chemicals used by the plant have the potential for a significant continuing adverse environmental impact.

7/29/83

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EPA I.D. NUMBER (enter from page 1): W O H D 0 0 1 8 1 3 7 0 8 — 1

FOR OFFICIAL USE ONLY: W DUP — 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	K0[redacted]	[redacted]500,000	P	T04 S03	
2	U002	0*			
3	U037	2,000	P	S01	
4	U037	55	P	S02	
5	F002				Included with above
6	U056	5	P	S01	
7	P095	0*			
8	F005	300	P	S01	
9	U154	0*			
10	U221	160,000	P	S01	
11	U221	15,000	P	S02	
12	U223	2,000	P	S01	
13	F002	40,000	P	S01	
14	D001				Included with above
15	D002	36,500,000	P	T01	
16	D002	80,000	P	S01	
17					
18		*No waste is normally generated; however, material is handled as a commercial			
19		product or a manufacturing intermediate which is listed under 40 CFR 261.33,			
20		and may become a hazardous waste if it is either spilled or becomes off-			
21		specification.			
22					
23					
24					
25					
26					

'81 APR 16 PM 1 57
LEGAL RECORDS SECTION

EPA Form 3510-3 (6-80)

CONTINUE ON REVERSE

(enter "A", "B", "C", etc. behind the "3" to identify photocopied pages)

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

A. FIRST	B. SECOND
2818 (specify) ORGANIC CHEMICAL MANUFACTURING	C 7 (specify) N/A
C. THIRD	**D. FOURTH**
(specify) N/A	C 7 (specify) N/A

III. OPERATOR INFORMATION

A. NAME: OLIN CORPORATION

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

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; If "Other", specify.)
F = FEDERAL, M = PUBLIC (other than federal or state), S = STATE, O = OTHER (specify), P = PRIVATE
P (specify)

D. PHONE (area code & no.): C A 203 356 2000

E. STREET OR P.O. BOX: 120 LONG RIDGE ROAD

F. CITY OR TOWN: STAMFORD

G. STATE: CT

H. ZIP CODE: 06904

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

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): N F314-DD	D. PSD (Air Emissions from Proposed Sources): 9 P N/A
B. UIC (Underground Injection of Fluids): U N/A	E. OTHER (specify): 9 (specify) SEE ATTACHED SHEET
C. RCRA (Hazardous Wastes): R N/A	E. OTHER (specify): 9 (specify)

XI. MAP

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

XII. NATURE OF BUSINESS (provide a brief description)

THE MANUFACTURE OF TOLUENE DIISOCYANATE BY THE CATALYTICALLY ENHANCED REACTION BETWEEN PHOSGENE AND TOLUENE DIAMINE.

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XIII. CERTIFICATION (see instructions)

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

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
MR. W. A. OPPOLD SENIOR VICE PRESIDENT MANUFACTURING AND ENGINEERING		11/10/80

COMMENTS FOR OFFICIAL USE ONLY

C

013666

IMC Company		TWIMIC Index
IMC-101	Hg in filter cake, stored in lagoon. Att. 16, D.Barna and D.Easterling's "Toxics Summary Report."(Westlake OH)	1982
IMC-102	Hg in process water discharged to Lake Erie	1982
IMC-103	Map of IMC lagoons and surrounding surface; (D.Barna and D.Easterling)	1982
IMC-104	Hg pond polluting groundwater.	1980
IMC-105	Hg at 280 ppm in clay; 56 " " soil: 0.24 % " sludge.	1980
IMC-106	Hg in groundwater 1,000' from plant. (Repeat of IMC-104).	1980
IMC-107	"Hg in waste water treatment sludge," Hazardous Waste Activity Report	1980

LCP Company		TWIMIX Index
LCP-130	MRI Field Tests (EPA Sponsored) shows LCP in compliance with H_g emission stds (1000 g/day) by releasing 285 g/day (while IMC).	1977
LCP-131	6500 g H_g/day (calc'd by EPA) released, far exceeding standard.	1977
LCP-132	IMC connected to Sobin.	1977
LCP-133	Detrex sold chlor-alkali plant to Sobin in 1974; Enforcement action recommendation.	1977
LCP-134	Sobin Chemicals, Inc. converted to IMC Chemicals Group.	1977

has been made aware by Ohio EPA. It was brought out in the inspection that IMC and OEPA have met concerning the lagoon, and a study presented which indicates significant groundwater degradation. Please refer to an OEPA letter to IMC documenting this, Attachment 4. Additionally, a program for waste collection and treatment to phase out the use of the lagoon was presented. A copy of the groundwater study and treatment proposal was requested of IMC's Plant Manager, George Shahin. Mr. Shahin stated that the study and proposal were submitted to OEPA in confidence and that the reports would not be provided at this time. He added that a request for this information must be made in writing to IMC.

2. There is considerable storage of finished product on-site. There is over 900,000 gallons of finished caustic potash storage. While these materials are not covered by an SPCC Plan, it was requested of Mr. Shahin if IMC had an SPCC Plan. Mr. Shahin stated IMC did, but to see or obtain a copy, a formal written request must be made. He did divulge that IMC has plans to dike the storage areas and that contracts are to be let soon.

Based on the field inspection, it is recommended that:

1. IMC continue to pursue an alternative method of handling their solid wastes in order to replace the usage of the on-site lagoon. Enforcement Division should request from IMC copies of the groundwater study and groundwater collection and treatment proposal to keep current on the IMC situation.

2. Also, Enforcement Division should request IMC plans for diking of process and storage areas.

Ohio EPA was notified and participated in the inspection. No samples of field measurements were taken. Permission to take pictures was granted with the stipulation that IMC take a duplicate of every picture. IMC officials were guarded in offering information. Requests to see and obtain reports and information were denied. IMC has had meetings with OEPA on their situation and it appeared that they were annoyed somewhat by this EPA inspection.

If you have any questions concerning this inspection, contact David R. Barna at FTS 293-7260.

Attachments

cc: L. Townsend, 5SCRL
H. Zar, 5E
V. Saulys, 5GLNP

3. "EPA System" - Mercury Treatment System

Mercury bearing wastes, including hydrogen gas cooling water, and cell room floor wash water are discharged to a sump and pumped to the on-site lagoon. The so called "EPA System" treats and filters contaminated water from the lagoon. Treatment consists of pH control, sodium sulfite addition to neutralize hypochlorites, sodium borohydride addition to reduce the mercury to its metallic form, and a filter aid addition prior to filtering on a small pre-coat leaf type filter. The filtration of contaminated water results in the generation of about 9000 lbs/month of filter cake. [redacted]on.

4. Brine Settler Purge

A 250,000 gallon capacity clarifier receives various wastes, including brine wastes, a mixture of floor cell washings and other contaminated wastes. The brine settler purge contributes about 120,000 lbs/month of material consisting of potassium chloride, calcium carbonate, magnesium hydroxide, and mercury, which is disposed of also in the on-site lagoon.

5. Retort System

The retort system processes graphite from the mercury cell decomposers, cell and box washings, and other mercury contaminated materials. In the retort system, solids rich in mercury are heated to about 800°F. The mercury is evaporated and recovered. After retort, the solids, approximately 2000 lbs/month are taken to the on-site lagoon.

6. Waste Oils

Waste oils generated by IMC are hauled away be Laskin Waste Oil Service of Jefferson, Ohio. Oil usage does not appear to be in large quantities. Three waste oil drums were observed in storage.

7. Solid Wastes and Scrap

Current disposal of scrap metal is by Acme Scrap Iron & Metal of Ashtabula. Trash and garbage are hauled by Ashtabula County Waste, Inc.

The total volume of materials returned to the on-site lagoon is estimated by IMC at 157,000 lb/month or 960 tons/year.

As a result of the plant inspection at IMC, the following conditions were observed or noted:

1. The on-site lagoon is the major source of potential environmental contamination. As discussed above, the lagoon is the ultimate disposal site for numerous contaminated solids, filter cakes, settler purges, and other materials. These materials contain mercury, calcium, magnesium, potassium, and other chemicals. It would appear that the groundwater is in danger of contamination from this lagoon, but a reconnaissance survey such as this cannot determine the extent of contamination. Apparently, IMC is aware of the seriousness of the problem or

A1L

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: May 28, 1980

SUBJECT: RCRA Reconnaissance Inspection Report - International Minerals & Chemical Corporation, Ashtabula, Ohio

FROM: David R. Barna, Environmental Engineer, EDO db
THRU: A. R. Winklhofer, Director, EDO ARW

TO: Compliance Section, 5EWPE
ATTN: William Miner

On May 8, 1980 the writer and Charles Beier, Engineering Technician, EDO, conducted a RCRA reconnaissance survey at the subject facility. The inspection was conducted pursuant to requests made by Sandra Gardebring on January 24, 1980, February 26, 1980, and March 5, 1980 for inspection activities in the Ashtabula area. A copy of the site inspection report (EPA Form 2070-3) is attached.

International Minerals & Chemical Corporation, IMC, operates a facility for the production of chlorine and caustic potash (KOH). Potassium chloride salt (KCl) is made into a brine, purified, then fed into a mercury type electrolytic cell. The plant converts AC power to DC power which operates the 24 mercury cells. The KCl is electrolyzed into chlorine, caustic potash, and hydrogen. Chlorine is processed into dry gas and is shipped by tank cars. Caustic potash is produced at 50% strength and shipped as 45-50% via tank car or truck. IMC has the facilities to produce another product, chloropicrin, at this site. Chloropicrin (trichloronitromethane) is produced through the reaction of nitromethane and potassium hypochlorite and is used as a fumigant, fungicide, and insecticide. Production is variable based on market demand. IMC has not produced any chloropicrin this year but has the capacity to make 3 tons per day. IMC operates 24 hours a day and employs about 80 people.

Potentially toxic and hazardous materials are generated, stored, and disposed of within the plant site. A schematic diagram showing the flow of solid wastes is presented in Attachment 6. The handling of these materials is discussed below:

1. Caustic Potash Filter Waste

Caustic potash is purified through filters prior to final storage. Waste from the caustic potash filters consists of diatomaceous earth and graphite. According to IMC, about 650 lbs/month of waste is generated and pumped to an on-site lagoon.

2. Brine Filter Cake

The purification of brine results [redacted] diatomaceous earth contaminated with calcium, magnesium, potassium, and [redacted]. About 27,000 lbs/month of dry cake are generated and ultimately disposed of in the on-site lagoon.

[redacted]

IMC

Narrative Statement

Muriate of potash (KCl) from IMC's Esterhazy, Canada, mine is decomposed by D.C. electricity into CHLORINE, CAUSTIC POTASH, AND HYDROGEN. The salt is made into a brine, then purified and fed into [redacted] The plant converts AC power to DC power (direct current) which operates the 24 OLIN E-510 type Mercury cells. These cells can be visualized as large batteries, containing positive and negative terminals. The positive terminal or anode is constructed of titanium. The negative terminal or cathode is a flowing layer of metallic mercury. The KCl is dissolved in circulating brine, purified and fed to 24 OLIN E-510 Mercury cells. Power purchased from CLEVELAND ELECTRIC ILLUMINATING CO. is converted to D.C. current and used to electrolyze KCl into CHLORINE, CAUSTIC POTASH, and HYDROGEN.

CHLORINE is processed into a dry gas and liquid product. Gas is piped for HCl manufacture, while liquid CHLORINE is shipped by tank cars.

CAUSTIC POTASH (KOH) is produced at 50% strength and shipped as 45/50% via tank car and tank truck. HYDROGEN is sold via pipeline.

Principal rating of the Chlor-Alkali plant:

CHLORINE	110	Tons Daily
CAUSTIC POTASH(90%)	180	Tons Daily
HYDROGEN	1,170,000	Cu.Ft. Daily
KCl USED	250	Tons Daily
ELECTRICITY USED	500,000	KHW Daily

The potassium portion of the salt reacts with the flowing layer if mercury to form a potassium-mercury amalgam, which flows from the cell into the denuder. In the denuder tank, water is added which reacts with the potassium to form potassium hydroxide and hydrogen. The stripped mercury is recycled to the cell. The potassium hydroxide (caustic potash) is taken off as a 45/50% solution. The hydrogen is purified to remove mercury and then is sold to make hydrochloric acid and liquid hydrogen.

The principal end uses of caustic potash are in the photographic, soap and detergent, liquid fertilizer, petroleum, rubber, chemical process, textile, electroplating, and battery industries. Chlorine is principally used in water and sanitation treatment, pulp and paper, and in the production of muriatic acid, titanium dioxide, and chlorine organics.

[illegible]

3.) Condensate from steam tracing and caustic storage tank heaters - 5 gpm.

C.) Existing Water Treatment System

The present water treatment system consists of the lagoons that are being replaced by the system covered in this plan, five treatment tanks (20,000 gals. each), spent acid head tank (4,000 gals.), three reagent tanks (approximately 750 gals. each), two filters (400 sq. ft. each) and associated pumps and instrumentation.

The contaminated waste water is pumped from the existing plant sumps to the lagoons where the solids settle out. Approximately 17,500 gallons of water is pumped periodically back to one of the treatment tanks where sodium sulfite and sodium borohydride are added from one of the reagent tanks to remove the available chlorine and reduce the mercury salts to the metal. The water is then passed through the filter, with the addition of admix from the second reagent tank, to a second treatment tank. In the second treatment tank. spent sulfuric acid is added from the head tank to neutralize the treated water prior to dumping to the outfall. The third reagent tank is used to mix up precoat for the filter.

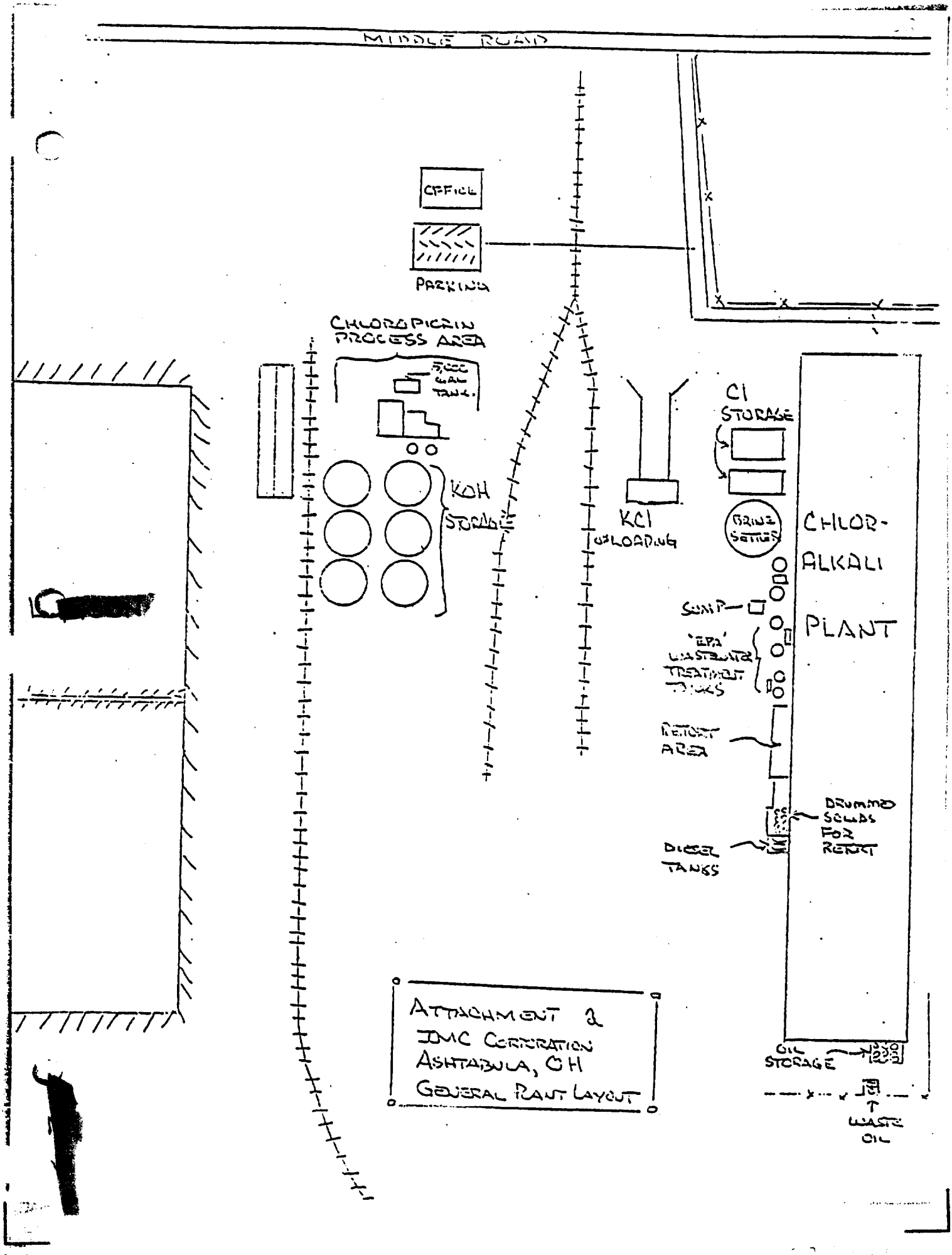
The treated water then flows to a final holding [redacted]ough the final monitoring station.

D.) Proposed System (Figure I)

The makeup of lines (A) and (B) from the main plant effluent sump and caustic storage area sump, respectively, are detailed in section 8-2 of this plan. The flows given are average except for the rainfall inside diked areas which is for a 24 hour - 25 year storm. The total combined average flow, less rainfall, is 156 gpm.

This average is the maximum, as tank car washing (50 gpm) is only during the day, and not continuously. The two (2) sumps are controlled by level switches which turn the pumps on and off. The main effluent sump pump is 250 gpm and the caustic area sump pump is 100 gpm giving a maximum flow of 350 gpm.

The combined flows (A+B) from the plant sumps will be diverted to the proposed clarifier (C). This clarifier is designed to handle a maximum flow of 600 gpm with a retention time of 2.6 hours minimum.



ATTACHMENT 2
JMC CORPORATION
ASHTABULA, OH
GENERAL PLANT LAYOUT

Glacial Map of Ohio 1967

[redacted]

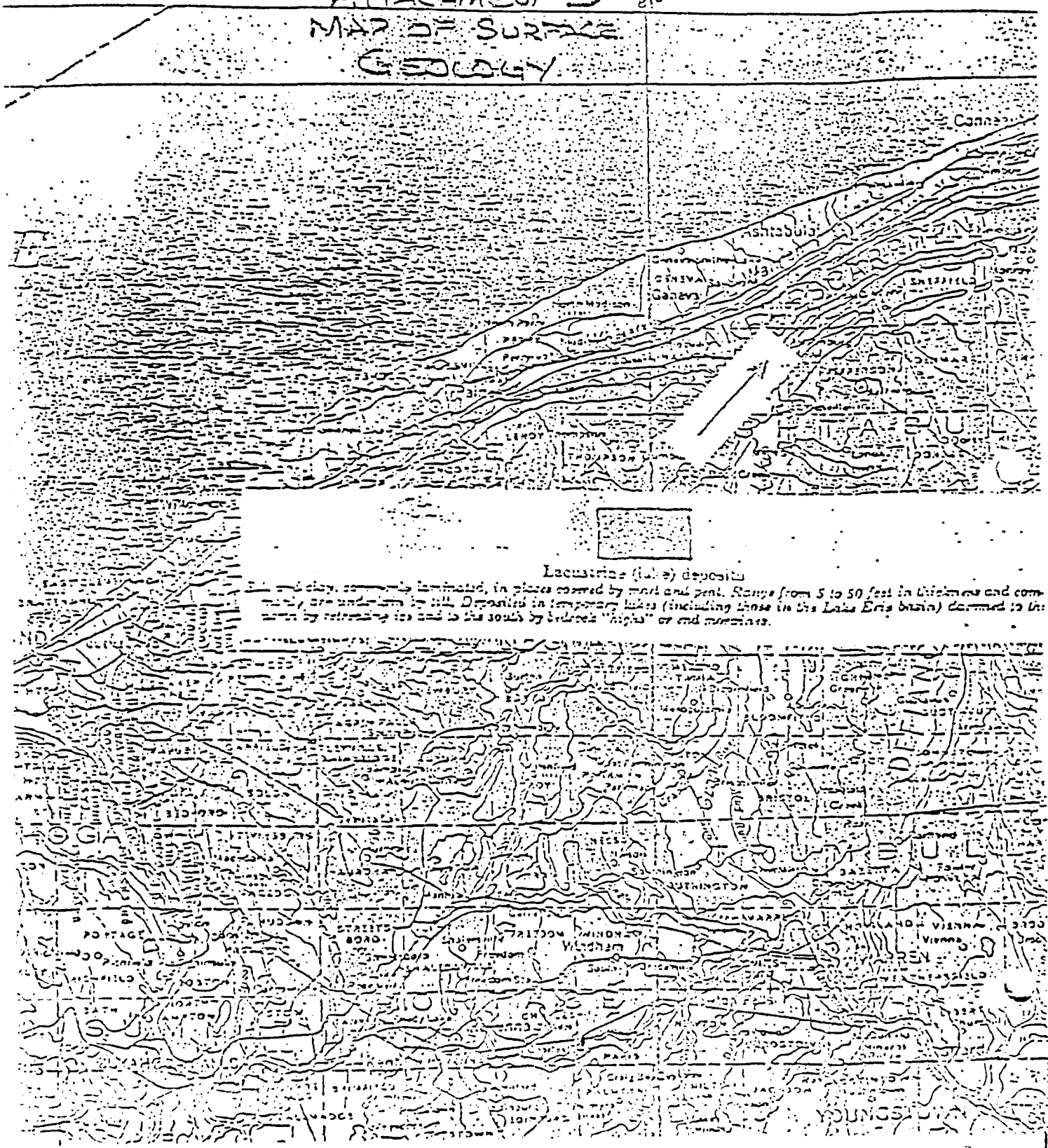
N
W E
S

Scale (Approx)
1.25 inch = 20 miles

MISCELLANEOUS GEOLOGIC MAP I-516

ATTACHMENT 3

MAP OF SURFACE GEOLOGY



021045

104

Mr. George Shahin
Plant Manager
I.M.C.
P.O. Box 858
Ashtabula, Ohio 44004

April 25, 1980

Dear Mr. Shahin:

On April 2, 1980, representatives of I.M.C. and Ohio E.P.A. met with Mr. Phillip LaMoreaux to discuss [redacted] Mr. LaMoreaux presented the results of his study of this pond and its impact on groundwater quality in the vicinity of the pond. Those results [redacted] feet of the pond:

A concept of groundwater collection and treatment was also presented by Mr. LaMoreaux. The remedial action proposed should mitigate the existing stressed groundwater quality situation. It is recommended that your company proceed as expeditiously as possible to construct the containment and treatment devices necessary to alleviate the current disposal pond related problems.

Sincerely,

Lynn A. Clark, P.E.
Section Chief
Office of Land Pollution Control
Northeast District Office

LAC:psj

cc: Dan Redman, Ohio E.P.A. - Central Office
Dennis Lee, Ohio E.P.A. - Northeast District Office
Chris Khouray, Ohio E.P.A. - Northeast District Office
Mr. Phillip LaMoreaux
Mark Bergman, Ohio E.P.A. - Northeast District Office

Ashtabula [redacted] (off pond side)

[redacted] Anomaly

Mineralogy: Major: Quartz
Medium: Plagioclase
Minor: K feldspar
Very minor: mica, chloride
Trace: Kaolin

[redacted] from Ashtabula Plant

Hg	0.254 % (contains metal mercury)
MgO	3.24
CaO	1.56
K_2O	21.9
Na_2O	1.59
Al_2O	6.6

In a slurry [illegible] system bentonite will hold this liquid.

031082

Data on IOC Ashtabula

~~Chem [illegible]~~

LOI (500°C/1hr)	4.74 %
LOI ([illegible])	2.88 %
[illegible]	7.62 %
SiO_2	58.1 %
Al_2O_3	20.4
Fe^{2+}	4.1
Fe^{3+}	2.29
Na_2O	1.54
CaO	1.85
K_2O	3.4
MgO	2.26
[redacted]	[redacted]
Mn	657
Ba	132
Cu	242
Cr	186
Ni	[illegible]
[illegible]	6.7

Phase Composition: Major [illegible]
Minor: Quartz, [illegible], Mica, [illegible]
Very Minor: [illegible]

031081

3. "EPA System" - Mercury Treatment System

Mercury bearing wastes, including hydrogen gas cooling water, and cell room floor wash water are discharged to a sump and pumped to the on-site lagoon. The so called "EPA System" treats and filters contaminated water from the lagoon. Treatment consists of pH control, sodium sulfite addition to neutralize hypochlorites, sodium borohydride addition to reduce the mercury to its metallic form, and a filter aid addition prior to filtering on a small pre-coat leaf type filter. [redacted]

4. Brine Settler Purge

A 250,000 gallon capacity clarifier receives various wastes, including brine wastes, a mixture of floor cell washings and other contaminated wastes. The brine settler purge contributes about 120,000 lbs/month of material consisting of potassium chloride, calcium carbonate, magnesium hydroxide, and mercury, which is disposed of also in the on-site lagoon.

5. Retort System

The retort system processes graphite from the mercury cell decomposers, cell and box washings, and other mercury contaminated materials. In the retort system, solids rich in mercury are heated to about 800°F. The mercury is evaporated and recovered. After retort, the solids, approximately 2000 lbs/month are taken to the on-site lagoon.

6. Waste Oils

Waste oils generated by IMC are hauled away be Laskin Waste Oil Service of Jefferson, Ohio. Oil usage does not appear to be in large quantities. Three waste oil drums were observed in storage.

7. Solid Wastes and Scrap

Current disposal of scrap metal is by Acme Scrap Iron & Metal of Ashtabula. Trash and garbage are hauled by Ashtabula County Waste, Inc.

The total volume of materials returned to the on-site lagoon is estimated by IMC at 157,000 lb/month or 960 tons/year.

As a result of the plant inspection at IMC, the following conditions were observed or noted:

1. The on-site lagoon is the major source of potential environmental contamination. As discussed above, the lagoon is the ultimate disposal site for numerous contaminated solids, filter cakes, settler purges, and other materials. These materials contain mercury, calcium, magnesium, potassium, and other chemicals. It would appear that the groundwater is in danger of contamination from this lagoon, but a reconnaissance survey such as this cannot determine the extent of contamination. Apparently, IMC is aware of the seriousness of the problem or

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: May 28, 1980

SUBJECT: RCRA Reconnaissance Inspection Report - International Minerals & Chemical Corporation, Ashtabula, Ohio

FROM: David R. Barna, Environmental Engineer, EDO
THRU: A. R. Winklhofer, Director, EDO

TO: Compliance Section, 5EWPE
ATTN: William Miner

On May 8, 1980 the writer and Charles Beier, Engineering Technician, EDO, conducted a RCRA reconnaissance survey at the subject facility. The inspection was conducted pursuant to requests made by Sandra Gardebring on January 24, 1980, February 26, 1980, and March 5, 1980 for inspection activities in the Ashtabula area. A copy of the site inspection report (EPA Form 2070-3) is attached.

International Minerals & Chemical Corporation, IMC, operates a facility for the production of chlorine and caustic potash (KOH). Potassium chloride salt (KCl) is made into a brine, purified, then fed into a mercury type electrolytic cell. The plant converts AC power to DC power which operates the 24 mercury cells. The KCl is electrolyzed into chlorine, caustic potash, and hydrogen. Chlorine is processed into dry gas and is shipped by tank cars. Caustic potash is produced at 50% strength and shipped as 45-50% via tank car or truck. IMC has the facilities to produce another product, chloropicrin, at this site. Chloropicrin (trichloronitromethane) is produced through the reaction of nitromethane and potassium hypochlorite and is used as a fumigant, fungicide, and insecticide. Production is variable based on market demand. IMC has not produced any chloropicrin this year but has the capacity to make 3 tons per day. IMC operates 24 hours a day and employs about 80 people.

Potentially toxic and hazardous materials are generated, stored, and disposed of within the plant site. A schematic diagram showing the flow of solid wastes is presented in Attachment 6. The handling of these materials is discussed below:

1. Caustic Potash Filter Waste

Caustic potash is purified through filters prior to final storage. Waste from the caustic potash filters consists of diatomaceous earth and graphite. According to IMC, about 650 lbs/month of waste is generated and pumped to an on-site lagoon.

2. Brine Filter Cake

The purification of brine results in a filter cake which consists of diatomaceous earth contaminated with calcium, magnesium, potassium, and [redacted]

106

file

Re: Solid Waste
Ashtabula County
I.M.C.

Mr. George Shahin
Plant Manager
I.M.C.
P.O. Box 858
Ashtabula, Ohio 44004

April 25, 1980

Dear Mr. Shahin:

On April 2, 1980, representatives of I.M.C. and Ohio E.P.A. met with Mr. Phillip LaMoreaux to discuss the [redacted] your plant site. Mr. LaMoreaux presented the results of his study of this pond and its impact on groundwater quality in the vicinity of the pond. Those results [redacted]

A concept of groundwater collection and treatment was also presented by Mr. LaMoreaux. The remedial action proposed should mitigate the existing stressed groundwater quality situation. It is recommended that your company proceed as expeditiously as possible to construct the containment and treatment devices necessary to alleviate the current disposal pond related problems.

Sincerely,

Lynn A. Clark, P.E.
Section Chief
Office of Land Pollution Control
Northeast District Office

LAC:psj

cc: Dan Redman, Ohio E.P.A. - Central Office
Dennis Lee, Ohio E.P.A. - Northeast District Office
Chris Khourey, Ohio E.P.A. - Northeast District Office
Mr. Phillip LaMoreaux
Mark Bergman, Ohio E.P.A. - Northeast District Office

031094

II. PROCESSES *(continued)*

SPACE FOR ADDITIONAL PROCESS CODES O ON DESCRIBING OTHER PROCESSES *(code "7 ")*. FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

This application is for two (2) processes, the first is for treatment of approximately 100,000 gallons per day of waste water generated from a mercury cell process in chlorine production. This waste water is stored, treated and the mercury removed by filtration. The waste water [redacted] off-site landfill for [redacted] lly. Treated water from this process meets all criteria of our NPDES permit.

The second hazardous waste process involves the dewatering of our brine purification muds from the mercury cell process in Chlorine production (K071). These muds are dewatered on a vacuum- belt filter. The dewatered solids will be shipped to an approved, off-site landfill for disposal. This amounts to 0.88 acre feet annually. The liquid removed by this process will either be returned to process or treated in the waste water treatment system.

V. DESCRIPTION OF HAZARDOUS WASTES

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

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

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

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

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

D. PROCESSES

1. PROCESS CODES:
For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
For non—listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non—listed hazardous wastes that possess that characteristic or toxic contaminant.
Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

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

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

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

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non—listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 400 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

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

031354

Please print or type with ELITE type *(12 characters/inch)* in the unshaded areas only.

GSA No. 0246-EPA-OT

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTIFICATION OF ZARDOUS WASTE ACTIVITY

Ashtabula NEDO

INSTALLATION'S EPA I.D. NO.: OHD070782760

I. NAME OF INSTALLATION: INC CHEMICAL GROUP INC

II. INSTALLATION MAILING ADDRESS: MIDDLE RD, ASHTABULA, OH 44004

000191 AUG 18 80

III. LOCATION OF INSTALLATION: MIDDLE RD, ASHTABULA, OH 44004

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act).*

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
F 31		800818

I. NAME OF INSTALLATION

INTERNATIONAL MINERALS & CHEMICAL CORP

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX	CITY OR TOWN	ST.	ZIP CODE
3 PO BOX 858	4 ASHTABULA	OH	44004

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER	CITY OR TOWN	ST.	ZIP CODE
5 MIDDLE ROAD	6 ASHTABULA	OH	44004

IV. INSTALLATION CONTACT

NAME AND TITLE *(last, first, & job title)*	PHONE NO. *(area code & no.)*
7 SHAHIN GEORGE PLANT MANAGER	216-997-5221

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: 8 INTERNATIONAL MINERALS & CHEMICAL CORP

B. TYPE OF OWNERSHIP *(enter the appropriate letter into box)*

F = FEDERAL
M = NON-FEDERAL

M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY *(enter "X" in the appropriate box(es))*

- [X] A. GENERATION
- [ ] B. TRANSPORTATION *(complete item VII)*
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION *(transporters only – enter "X" in the appropriate box(es))*

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER *(specify)*:

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION *(complete item C)*

C. INSTALLATION'S EPA I.D. NO.: OHD070782760

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

AUG 15 1980

EPA Form 8700-12 (6-80)

CONTINUE ON REVERSE

STATION 3IE00016800 COUNTY 04 ASHTABULA

800 AT POINT REPRESENTATIVE OF INTAKE WATER
OEPA PERMIT #- 3IE00016*FD NPDES PERMIT #- OH0000752 EFF DATE 83/12/23 EXP DATE 88/12/20
LINDEN CHEM & PLASTICS, INC ***** MAJOR *****

CHLORINE-ALKALI PLANT
P.O. BOX 958 ASHTABULA OH 44004
GLEN CARR, MANAGER
AC( ) - EXT

ck w ahlstrom

PARMS WHICH FAILED FREQ. SCREENING- OBSERVED/EXPECTED Two

71900 [redacted]

********** SCREENING TYPE LEGEND **********

S.T.- 1 : DAILY CONCENTRATION	S.T.- 2 : DAILY LOADING	S.T.- 3 : DAILY BOTH
S.T.- 4 : MONTHLY CONCENTRATION	S.T.- 5 : MONTHLY LOADING	S.T.- 6 : MONTHLY BOTH
S.T.- 7 : WEEKLY CONCENTRATION	S.T.- 8 : WEEKLY LOADING	

12643

PART I, A - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on July 1, 1984 and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall: 3IE00016600

EFFLUENT CHARACTERISTIC			DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
			Concentration Other Units(Specify)		*Loading kg/day			
REPORTING Code	UNITS	PARAMETER	30 day	Daily	30 day	Daily	Meas. Freq.	Sample Type
50050	MGD	Flow	-	-	-	-	Daily	24 Hour Total
[redacted]		[redacted]cury	-	-	[redacted]		Daily	Composite
50060	mg/l	Total Residual Chlorine	-	-	0.164	0.276	3/Week	Grab

* The effluent limitations are net. Daily loading shall be determined by analyzing the contents of each batch treatment tank and any other batch process waste discharge and calculating the mass loadings to be discharged from each batch on any monitoring day. The daily loading shall equal the daily summation of the individual mass loadings.

2. Samples taken in compliance with monitoring requirements specified above shall be taken at sampling Stations described in Part II, OTHER REQUIREMENTS

3. See Part II, OTHER REQUIREMENTS

130584

DEC A&C
12-30-83

04/NE

OEPA Permit No. 3IE00016*FD

Application No. OH0000752

Effective Date: December 23, 1983

Expiration Date: December 20, 1988

OHIO ENVIRONMENTAL PROTECTION AGENCY

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq. hereinafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

LCP Chemicals - Ohio
Division of LCP Chemicals and Plastics
Ashtabula Plant

is authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge from the wastewater treatment works located

at 3509 Middle Road, Ashtabula, Ohio

and discharging to Lake Erie via storm sewer

in accordance with the conditions specified in Parts I, II and III of this permit.

This permit is conditioned upon payment of applicable fees as required by Section 3745.11 of the Ohio Revised Code.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Steven J. Grossman

Steven J. Grossman
Assistant Director

Form EPA 4428

RECEIVED
DEC 30 1983
OHIO ENVIRONMENTAL PROTECTION AGENCY
N. E. D. O.

138581

LCP CHEMICALS-OHIO
A Division of LCP Chemicals & Plastics, Inc.
3609 MIDDLE ROAD • P.O. BOX 858 • ASHTABULA, OHIO 44004
TELEPHONE: (216) 997-5221 • TWX 810-427-2934

JAN 31 1983
JAN 1 3 1983

January 13, 1983

Ms. Donna Myers
Ohio EPA
980 King Street
Columbus, Ohio 43212

Dear Ms. Myers:

During our telephone conversation, I explained the reasons for discrepancies in values reported on the Laboratory Performance Evaluation Report.

According to our Xerox copy of the report, our laboratory reported [redacted]

The Total Suspended Solids value we reported was incorrect due to miscalculation.

Finally, after investigation, our laboratory discovered a defective combination pH electrode was utilized during the pH analysis, resulting in an erroneous result.

The necessary actions have been taken to eliminate these and similar situations from future occurrences.

Please accept our apologies. Thank you.

Sincerly,
LCP Chemicals-Ohio

J. McMillan Martin

J. McMillan Martin
Plant Chemist

JMM/ek

cc: G. D. Carr - LCP
D. M. Ahlstrom - LCP
Dennis Lee - Twinsburg

13264

OEPA Permit No.: 3IE00016FD

Application No.: OH 0000752

National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding NPDES Permit to Discharge to State Waters

Ohio Environmental Protection Agency
P. O. Box 1049
361 East Broad Street
Columbus, Ohio 43216
614-466-4891

Public Notice No.: 83-06-018
Public Notice Date: June 28, 1983

Name and Address of Applicant:
LCP Chemicals - Ohio
Division of LCP Chemicals and Plastics
3509 Middle Road
Ashtabula, Ohio 44004

Name and Address of Facility Where Discharge Occurs:
SAME

Receiving Water: Lake Erie

I. Location of Discharge

The above named applicant has applied for an NPDES permit, which will be issued by the Ohio Environmental Protection Agency, to discharge into the designated receiving water. A description and/or sketch of the location of the discharge is appended as Attachment I.

II. Description of Existing Discharge

A quantitative description of the existing discharge in terms of significant effluent parameters is appended as Attachment II.

III. Determinations

The Ohio Environmental Protection Agency has examined the application and has made the determination to issue the permit subject to certain effluent limitations and other mandatory conditions.

The effluent limitations in the permit are appended as Attachment IIIa.

The schedule of compliance for meeting the effluent limitations is appended as Attachment IIIb.

Derivation and calculation of specific effluent limitations are accomplished in accordance with standard engineering practices and applicable guidelines, standards and documents. Justification of specific characteristics is appended as Attachment IV.

LCP Chemicals

ROOF DOWNSPOUT SAMPLES
DURING RAIN

11/6/81

[redacted] 7.3 pH
[redacted] 7.6 pH

Above samples contained uncured latex roof coating. Coating contained Phenyl Mercurial Acetate.

11/10/81

West Side	0.0085 ppm Hg	7.2 pH
East Side	0.101 ppm Hg	8.0 pH

ROOF DOWNSPOUT SAMPLES
DURING RAIN

12/18/81 EP

		1 PPM Hg	2 PH	3 RAIN INCHES	4	5	6
11/6/81	WEST SIDE	.36	7.3		SAMPLES CONTAINED UNCURED		
	EAST SIDE	.18	7.6	.23	LATEX ROOF COATING, WHICH		
					CONTAINED PHENYL		
					MERCURIAL ACETATE		
11/10/81	WEST SIDE	.0085	7.2				
	EAST SIDE	.0101	8.0				
11/19/81	WEST SIDE	.01	NO DATA				
	EAST SIDE	INSUFFICIENT FLOW - NO DATA					
12/2/81	WEST SIDE	1.48	NO DATA	.30			
	EAST SIDE	3.76	NO DATA				
12/5/81	WEST SIDE	INSUFFICIENT FLOW		NO DATA			
	EAST SIDE	1.70					
12/9/81	WEST SIDE	.9	NO DATA	.20			
	EAST SIDE	.4					

IMC CHEMICAL GROUP • INDUSTRIAL CHEMICAL DIVISION
P.O. Box 858 (Middle Road) • Ashtabula, OH 44004
Telephone: (216) 997-5221 • TWX 810-427-2934

LCP Green

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

December 18, 1981

Ohio Environmental Protection Agency
2110 East Aurora Road
Twinsburg, Ohio 44087

Attention: Mr. Dennis Lee

Dear Mr. Lee:

Since our meeting of November 19, 1981, additional data has been obtained correlating mercury levels between our 001 and 600.

The new data is attached and combined with previously submitted data.

Scope of the testing was to run composites at 001 and compare to 600, measure mercury levels in the roof drains, block off the east side non-contact sewer for ten (10) days and compare again 001 and 600 during this period, and collect and analyze roof sediments at various emission stacks.

While these tests were being undertaken, USEPA did a compliance review for water. USEPA also did air sampling tests and a housekeeping audit.

There were twenty-four (24) days that 001 was higher than 600. However, there were also sixteen (16) days when 600 showed more discharge than 001. There are five (5) days when rain appeared to have an effect on high readings, yet a couple of other days no effect was found.

RECEIVED
DEC 21 1981
OHIO ENVIRONMENTAL PROTECTION AGENCY
N. E. D. O.

13206

Ohio Department of Health
Sanitary Chemistry Section

Environmental Sample Submission Report

Agency: OEPA
Division Program: WW 22
Analysis Reported To: ☐ CO ☐ CDO ☐ SE ☒ NE ☐ SW ☐ NW

Laboratory: ☐ Central ☐ SE ☒ NE ☐ SW ☐ NW
Sample Number: 0
Analyst: J. Luce Supervisor: Kris Codis
Date Received: 6-4-81
Date Reported: 6-9-81

Sample Identification

Station: IMC [redacted]
ID Number: SC, — — — — — — — —
Address:
City: Zip:
County: Ashtabula Phone:
Collected By: Wysocki

Grab Sample Date or Beginning Date of Composite Sample—Use Military Time

Year	Month	Day	Hour	Minute
81	81	03	08	00

Ending Date of Composite Sample—Use Military Time

Year	Month	Day	Hour	Minute	CVT	S-T	TYP
81	81	04	08	00			

Field Treatment:
☐ Filtered ☐ $CuSO_4 + H_3PO_4$
☐ Iced ☐ H_2SO_4
☐ NaOH ☐ HNO_3
☐ Unpreserved ☐ Other (explain)

Additional Information—Analyst Remarks—Non Routine Analytical Requests

☐ Sample Code	P115.	☐ Conductivity, Field U-MHO	P94	☐ Chlorine Total Resd mg/l	P50060.
☐ pH Field S U	P400.	☐ Flow, Instantaneous CFS	P61.	☐ Water Temperature, Field	P10.
☐ Dissolved Oxygen Field mg/l	P300.	☐ Hydrogen Sulfide mg/l	P71875.	☐ Sample Purpose	P71999.
☐ Stream Gage	P65	☐ Chlorine Free Avl. Field mg/l	P50064.	☐	

☐ Regular (or indicate by checking boxes)		☐ Phosphorus Sol. P mg/l	P666.	☐ Lithium Total, Li ug/l	P1132.
☐ Turbidity FTU	P76.	☐ Phosphate Reactive P mg/l	P70507.	☐ Manganese Total, Mn ug/l	P1055.
☐ Color Pt-Co	P80.	☐ Chloride, Cl mg/l	P940.	[redacted]	
☐ Conductivity at 25°C U-MHO	P95.	☐ Fluoride Total, F mg/l	P951.	☐ Molybdenum Total, Mo ug/l	P1062.
☐ pH Lab S U	P403.	☐ Cyanide CN mg/l	P720.	☐ Nickel Total, Ni ug/l	P1067.
☐ pH $CaCO_3$ Stability S U	P70311.	☐ Silica, Diss. SiO_2 mg/l	P955.	☐ Selenium Total, Se ug/l	P1147.
☐ Alkalinity Total, $CaCO_3$ mg/l	P410.	☐ Calcium Total, Ca mg/l	P916.	☐ Silver Total, Ag ug/l	P1077.
☐ Alkalinity Phth, $CaCO_3$ mg/l	P415.	☐ Magnesium Total, Mg mg/l	P927.	☐ Strontium Total, Sr ug/l	P1082.
☐ Alkalinity $CaCO_3$ Stabl. mg/l	P74023.	☐ Sodium Total Na mg/l	P929.	☐ Thallium Total, Tl ug/l	P1059.
☐ Acidity Total, $CaCO_3$ mg/l	P70508.	☐ Potassium Total, K mg/l	P937.	☐ Tin Total, Sn ug/l	P1102.
☐ Acidity M O $CaCO_3$ mg/l	P436.	☐ Aluminum Total, Al ug/l	P1105.	☐ Titanium Total, Ti ug/l	P1152.
☐ Hardness Total, $CaCO_3$ mg/l	P900.	☐ Antimony Total, Sb ug/l	P1097.	☐ Vanadium Total, V ug/l	P1087.
☐ Residue, Total mg/l	P500.	☐ Arsenic Total, As ug/l	P1002.	☐ Zinc Total, Zn ug/l	P1092.
☐ Residue, Total Volatile mg/l	P505.	☐ Barium Total, Ba ug/l	P1007.	☐ Carbon Total, Organic C mg/l	P680.
☒ Residue Total Nfilt (Sus) mg/l	P530. <10.	☐ Beryllium Total, Be ug/l	P1012.	☐ Carbon Diss. Organic C mg/l	P681.
☐ Residue, Vol. Nfilt mg/l	P535.	☐ Bismuth Total, Bi ug/l	P1017.	☐ Phenol ug/l	P32730.
☐ Residue, Total Filt (Diss) mg/l	P70300.	☐ Boron Total, B ug/l	P1022.	☐ MBAS mg/l	P38260.
☐ Residue, Vol Filt mg/l	P520.	☐ Cadmium Total, Cd ug/l	P1027.	☐ Oil-Grease, Total mg/l	P556
☐ Residue, Settlable ml/l	P545.	☐ Chromium Total, Cr ug/l	P1034.	☐ BOD 5-Day mg/l	P310.
☐ Sulfate, SO_4 mg/l	P945.	☐ Chromium Hex. Cr ug/l	P1032.	☐ COD mg/l	P335
☐ Nitrogen TKN, N mg/l	P625.	☐ Cobalt Total, Co ug/l	P1037.	☐ TOD mg/l	P343.
☐ Nitrogen Ammonia, N mg/l	P610.	☐ Copper Total, Cu ug/l	P1042.	☐	
☐ Nitrite, N mg/l	P615.	☐ Iron Total, Fe ug/l	P1045.	☐	
☐ Nitrate-Nitrite, N mg/l	P620.	☐ Iron Diss. Fe ug/l	P1046.	☐	
☐ Phosphorus Total P mg/l	P665	☐ Lead Total, Pb ug/l	P1051.	☐	

Distribution 1—Data Processing 2—Central Office 3—District Office 4—Owner 5—Laboratory

4956-32 (REV 4-79) Ohio Department of Health

Ohio Department of Health
Sanitary Chemistry Section

Environmental Sample Submission Report

Agency: OEPA
Division Program: WW22
Analysis Reported To: ☐ CO ☐ CDO ☐ SE ☒ NE ☐ SW ☐ NW

Laboratory: ☐ Central ☐ SE ☐ NE ☐ SW ☐ NW
Sample Number: 36062
Analyst:
Supervisor: Cafrent
Date Received: 6 5 81
Date Reported: 7/9/81

Sample Identification

Station: IMC B 562
ID Number: SC, #2
Address:
City: Zip:
County: Ashtabula Phone:
Collected By: Wyscuski - IMC

Grab Sample Date or Beginning Date of Composite Sample—Use Military Time

Year	Month	Day	Hour	Minute
81	06	03	23	20

Ending Date of Composite Sample—Use Military Time

Year	Month	Day	Hour	Minute	CVT	S/T	TYP

Field Treatment
☐ Filtered ☐ $CuSO_4 + H_3PO_4$
☐ Iced ☐ H_2SO_4
☐ NaOH ☒ HNO_3
☐ Unpreserved ☐ Other (explain)

Additional Information—Analyst Remarks—Non Routine Analytical Requests
Compliance Monitoring (1)

☐ Sample Code Compliance	P115. III	☐ Conductivity, Field U-MHO	P94.	☐ Chlorine Total Resd mg/l	P50060.
☐ pH Field S U	P400.	☐ Flow, Instantaneous CFS	P61	☐ Water Temperature, Field	P10.
☐ Dissolved Oxygen Field mg/l	P300.	☐ Hydrogen Sulfide mg/l	P71875.	☐ Sample Purpose	P71999.
☐ Stream Gage	P65.	☐ Chlorine Free Avl. Field mg/l	P50064	☐	

☐ Regular (or indicate by checking boxes)		☐ Phosphorus Sol P mg/l	P666.	☐ Lithium Total, Li ug/l	P1132.
☐ Turbidity FTU	P76.	☐ Phosphate Reactive P mg/l	P70507.	☐ Manganese Total, Mn ug/l	P1055.
☐ Color Pt-Co	P80.	☐ Chloride, Cl mg/l	P940.	[redacted]	
☐ Conductivity at 25 C U-MHO	P95.	☐ Fluoride Total, F mg/l	P951	☐ Molybdenum Total, Mo ug/l	P1062.
☐ pH Lab S U	P403.	☐ Cyanide, CN mg/l	P720.	☐ Nickel Total, Ni ug/l	P1067.
☐ pH $CaCO_3$ Stability S U	P70311.	☐ Silica, Diss SiO_2 mg/l	P955.	☐ Selenium Total, Se ug/l	P1147.
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☐ Alkalinity Phth $CaCO_3$ mg/l	P415.	☐ Magnesium Total, Mg mg/l	P927.	☐ Strontium Total, Sr ug/l	P1082.
☐ Alkalinity $CaCO_3$ Stabl. mg/l	P74023.	☐ Sodium Total, Na mg/l	P929.	☐ Thallium Total, Tl ug/l	P1059.
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☐ Acidity M O $CaCO_3$ mg/l	P436.	☐ Aluminum Total, Al ug/l	P1105.	☐ Titanium Total, Ti ug/l	P1152.
☐ Hardness Total, $CaCO_3$ mg/l	P900.	☐ Antimony Total, Sb ug/l	P1097.	☐ Vanadium Total, V ug/l	P1087.
☐ Residue Total mg/l	P500.	☐ Arsenic Total, As ug/l	P1002.	☐ Zinc Total, Zn ug/l	P1092.
☐ Residue, Total Volatile mg/l	P505.	☐ Barium Total, Ba ug/l	P1007	☐ Carbon Total Organic C mg/l	P680
☐ Residue Total Nfilt (Sus) mg/l	P530.	☐ Beryllium Total, Be ug/l	P1012.	☐ Carbon Diss. Organic C mg/l	P681.
☐ Residue Vol. Nfilt mg/l	P535	☐ Bismuth Total, Bi ug/l	P1017.	☐ Phenol ug/l	P32730.
☐ Residue Total Filt (Diss) mg/l	P70300.	☐ Boron Total, B ug/l	P1022.	☐ MBAS mg/l	P38260.
☐ Residue Vol Filt mg/l	P520.	☐ Cadmium Total, Cd ug/l	P1027.	☐ Oil-Grease, Total mg/l	P556.
☐ Residue Settlable ml/l	P545.	☐ Chromium Total, Cr ug/l	P1034.	☐ BOD, 5-Day mg/l	P310.
☐ Sulfate, SO_4 mg/l	P945.	☐ Chromium Hex, Cr ug/l	P1032	☐ COD mg/l	P335.
☐ Nitrogen TKN, N mg/l	P625.	☐ Cobalt Total, Co ug/l	P1037.	☐ TOD mg/l	P343.
☐ Nitrogen Ammonia, N mg/l	P610.	☐ Copper Total, Cu ug/l	P1042.	☐	
☐ Nitrite, N mg/l	P615.	☐ Iron Total, Fe ug/l	P1045.	☐	
☐ Nitrate Nitrite, N mg/l	P620.	☐ Iron Diss, Fe ug/l	P1046	☐	
☐ Phosphorus Total P mg/l	P665.	☐ Lead Total, Pb ug/l	P1051	☐	

Distribution 1—Data Processing 2—Central Office 3—District Office 4—Owner 5—Laboratory

4956-32 (REV 4-79) Ohio Department of Health

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. [redacted] Assurance Company and [redacted] Fire Insurance Company of Pittsburgh, Pa., (the "Insurer"), of 70 Pine Street, New York, New York 10270, and the [redacted]ce Company, 89 Haddon Avenue, Box 3030, Haddonfield, New Jersey 08033 hereby certifies that it has issued liability insurance covering bodily injury and property damage to L.C.P. Chemicals and Plastics, Inc., (the "Insured"), of Raritan Plaza II, Raritan Center, Edison, New Jersey 08837, in connection with the Insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at (see attached) for "sudden accidental occurrences". The limits of liability are $1,000,000 each occurrence and $2,000,000 annual aggregate, exclusive of legal defense costs. The coverage is provided under policy number GLA 945 63 60 RA and policy number A1UD0025, issued on October 1, 1981. The effective date of said policy is October 1, 1981.

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

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

   (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the Insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.174(f) or 265.147(f).

L.C.P. Chemicals and Plastics, Inc. Locations

Coverage for "Sudden Accidental Occurrences at:

1) [redacted]
#NCD991278631

2) Ashtabula, Ohio
EPA I.D. #OHD070762760

3) Brunswick, Georgia
EPA I.D. #GAD099303182

4) Linden, New Jersey
EPA I.D. #NJD079303020

5) Moundsville, West Virginia
EPA I.D. #WVD000765297

6) Orrington, Maine
EPA I.D. #MED000242701

7) Syracuse, New York
EPA I.D. #NYD095586377

LINDEN CHEMICALS & PLASTICS INC.

Raritan Plaza II • Raritan Center • Edison, New Jersey 08837 • 201-225-4840

June 11, 1982

Ohio Environmental Protection Agency
HWFAB
361 East Broad Street
Columbus, Ohio 43216

Attn: Robert Fragale

RE: OHD 070762760

Dear Sir:

This is to inform the Agency that on April 30, 1982 [redacted] national Minerals and Chemical's As[redacted] Chemicals & Plastics, Inc.

I respectfully request that the RCRA Interim Status permit be transferred to LCP Chemicals & Plastics, Inc.

If you have any questions, please advise.

Very truly yours,

Ronald Burkett

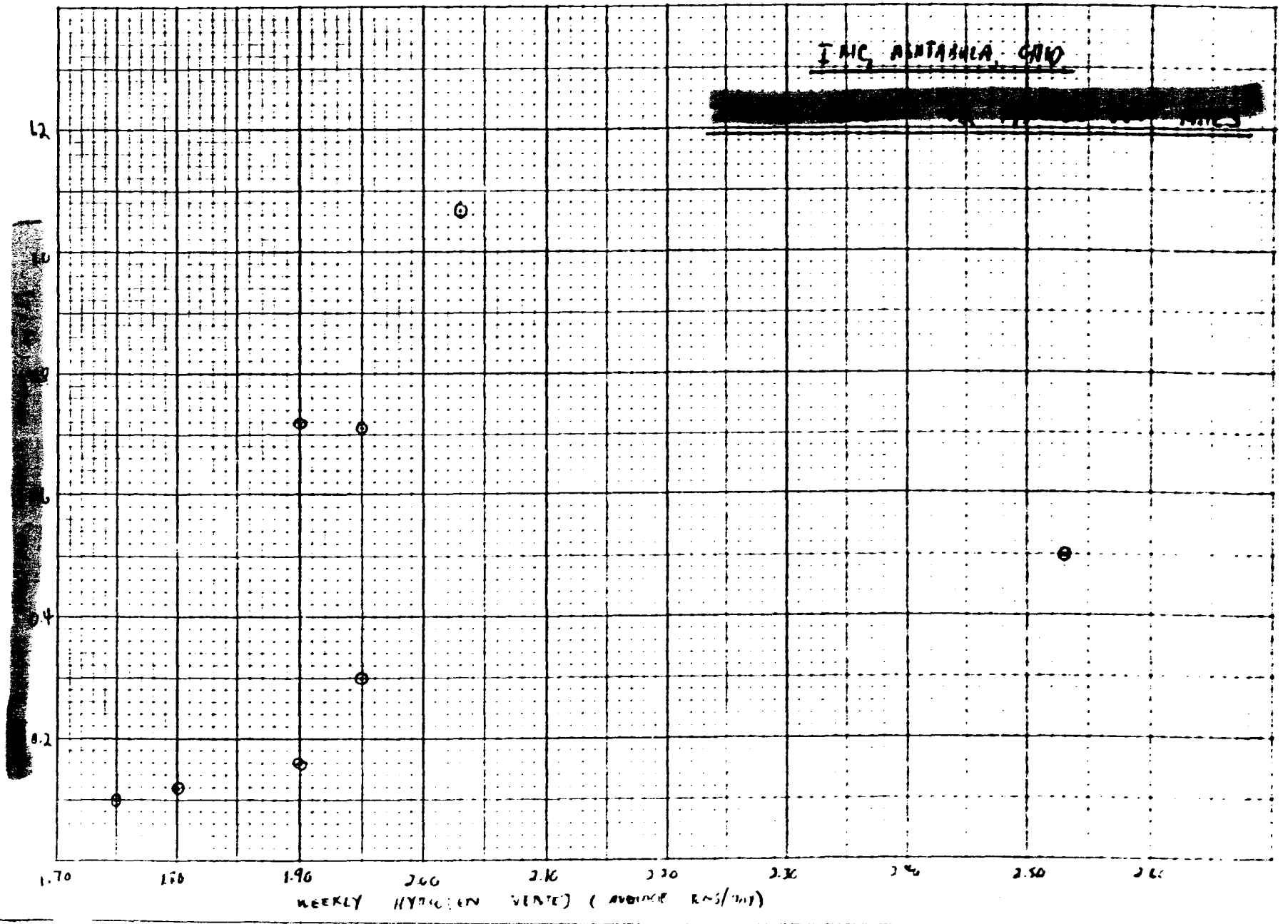
Ronald J. Burkett
Vice President, Technical

RJB:mtm

RECEIVED
OHIO EPA
JUL 23 1982
DIV. HAZARDOUS
MATERIALS MANAGEMENT

RECEIVED
STATE OF OHIO
1982 JUN 18 A 8: 12
HAZARDOUS WASTE FACILITY
APPROVAL BOARD

1/31/81


I MC, ASHTABULA, OHIO
[redacted]
1.2
1.0
0.8
0.6
0.4
0.2
1.70
1.80
1.90
2.00
2.10
2.20
2.30
2.40
2.50
2.60
WEEKLY HYDROGEN VENTED (AVERAGE KMS/DAY)

[redacted]

	HYDROGEN USAGE (tons/day)		MERCURY DEPOSITION - ng/l			
			WEEKLY		MONTHLY	
WEEK	DETICEX	VENTED	FAIRPORT	HARBOR	FAIRPORT HARBOR	CONNEAUT
1/27-2/2	0.62	1.90	0.16			
2/3-2/9	0.49	1.99	—			
2/10-2/16	0.68	1.80	0.12		0.1	8.17
2/17-2/23	0.66	1.75	0.1			
2/24-3/2	0.28	1.07	—			
3/3-3/9	0.70	1.92	—			
3/10-3/16	0.69	1.95	0.71		0.4	0.1
3/17-3/23	0.68	1.96	—			
3/24-3/30	0.69	1.95	0.3			
3/31-4/6	0.63	1.98	—			
4/7-4/13	0.60	2.03	1.07		0.2	—
4/14-4/20	0.69	1.93	—			
4/21-4/27	0.67	1.70	—			
4/28-5/4	0.53	1.77	—			
5/5-5/11	0.67	1.92	—			
5/12-5/18	0.77	1.90	0.72			
5/19-5/25	0.71	2.42	—			
5/26-6/1	0.99	2.53	0.50			

International Minerals & Chemical Corporation

Chlor-Alkali Plant - Ashtabula, Ohio

Ref. Letter Aug. 3, 1981 - Ref. #5EAE

DATE JAN. 1981	TOTAL Tons H_2	DETREX Tons H_2	VENTED Tons H_2
1	2.58	0.45	2.13
2	2.62	0.46	2.16
3	2.71	0.46	2.25
4	2.71	0.46	2.25
5	2.36	0.42	1.94
6	2.32	0.48	1.84
7	2.05	0.48	1.57
8	2.35	0.42	1.93
9	2.36	0.55	1.81
10	2.35	0.55	1.80
11	2.36	0.55	1.81
12	2.36	0.47	1.89
13	2.36	0.47	1.89
14	2.36	0.53	1.83
15	2.36	0.57	1.79
16	2.34	0.55	1.79
17	2.35	0.55	1.80
18	2.34	0.55	1.79
19	2.34	0.51	1.83
20	1.28	0.35	0.93
21	1.42	0.24	1.18
22	2.37	0.55	1.82
23	2.47	0.70	1.77
24	2.71	0.70	2.01
25	2.71	0.70	2.01
26	2.35	0.71	1.64
27	2.36	0.68	1.68
28	2.34	0.65	1.69
29	2.35	0.65	1.70
30	2.56	0.60	1.96
31	2.83	0.61	2.22
32			
33			
34			
35			
36			
37			
38			
39			
40			

[illegible] 4/7/81

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UNITED ST. .S ENVIRONMENTAL PROTECTION A .NCY
REGION V

DATE: AUG 2 6 1981

SUBJECT: Trip Report - IMC, Ashtabula, Ohio

FROM: Bruce Varner, Engineer Bruce Varner
Gail Suchman, Attorney GS

TO: File

Through: Czerniak/Kertcher/Frey/M. Smith

On July 29, 1981, U.S. EPA, Region V and PEDCo-Environmental personnel conducted an unannounced inspection of the International Minerals and Chemical Corporation (IMC) mercury cell chlor-alkali plant in Ashtabula, Ohio. This plant is subject to the mercury National Emission Standard for Hazardous Air Pollutants (NESHAPS). The inspection is summarized in the attached July 31, 1981, PEDCo memorandum. The purpose of this trip report is to supplement the memorandum.

Background

A preliminary assessment of mercury atmospheric deposition along the southern shore of Lake Erie by the Great Lakes National Program Office [redacted] and the week of April 7-14, 1981. [redacted] as other types of mercury-emitting sources either could not be located or are distributed all along the lake shore.

The three mercury emission points at a mercury cell chlor-alkali plant are the hydrogen by-product stack, the cell end-box ventilation air stack, and the cell room ventilation system (building vent). The emission standard is 2300 grams of mercury per day. If the source elects, as IMC

FOI EXEMPT

EPA FORM 1320-6 (REV. 3-76)

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EMISSIONS TESTS AT IMC ASHTABULA MERCURY CELL PLANT

by

William H. Maxwell
Midwest Research Institute
Kansas City, Missouri 64110

Draft Report
EPA Contract No. 68-01-4139, Task No. 9
MRI Project No. 4310-L(9)

Project Officer
John R. Busik
U.S. Environmental Protection Agency
Room 3202
401 M Street, S.W.
Washington, D.C. 20460

Task Manager
Bruce A. Varner
Air Enforcement Branch
U.S. Environmental Protection Agency, Region V
230 South Dearborn Street
Chicago, Illinois 60604

SECTION 2

CONCLUSIONS

The major conclusions that can be drawn from the results of this study are:

1. The average mercury emission, of three runs, of the end-box stream as analyzed by the published Federal Register Method 101 is 48 g/day; and as analyzed by the draft revision to the method [redacted].

2. The average mercury emission, of three runs, of the hydrogen stream an analyzed by the published Federal Register Method 102 is [redacted] as analyzed by the draft revision to the method [redacted].

3. Based on these results, the facility during the period of sampling w[redacted] a [redacted] of 1,000 g/day from both sources together.

that an aqueous layer over the mercury in the end-box is part of the process, and not a control technique. The minimum mercury emission factor of 2 pounds per 100 tons corresponds to (2/100)(73.36) = 1.47 pounds per day from the end-box ventilation stream. Total mercury emissions from the hydrogen and end-box streams is then 6.79 + 1.47 = 8.26 pounds per day, or 3750 grams per day, a clear violation of the 1000 grams per day limit.

3. All emission estimates thus far have been based on the 1976 average daily production rate of 73.36 tons of chlorine per day. On days when production exceeds the average, all of the extra hydrogen will bypass the hydrogen compressor, since the compressor can only handle 600,000 CF per day. At capacity, as much as 500,000 CF per day could bypass the compressor. This would result in a mercury emission of ((50/100)(50) + 0.11) = 25.11 pounds per day from the hydrogen stream, and (2/100)(110) = 2.20 pounds per day from end-box ventilation, for a total of 25.11 + 2.20 = 27.31 pounds per day, or 12,400 grams per day. The plant's maximum daily production rate was not determined.

Revised U.S. [redacted]

Following the calculational procedure in my July 6, 1977, report, mercury emissions corresponding to a maximum daily production rate of 85 tons per day are ((50/100)(25) + 0.11) = 12.61 pounds per day from the hydrogen stream and (2/100) (85) = 1.70 pounds per day from the end-box ventilation stream, for a total of 12.61 + 1.70 = 14.31 pounds [redacted]

Company Mercury Emission Estimates

The company estimate of mercury emissions from the hydrogen streams employs Figure 6 and is shown in Table 1. The calculations show that 0.68 pounds of mercury vapor per day is emitted. The estimate of 0.5 pounds of mercury particulate per day is a judgment based on the fact that most of the mercury is compressed, and the company claim that this compression eliminates mist, largely in the Pritchard Hydrogen Model 20AJ15E-8-FA7 packed dryers. The total mercury from the hydrogen stream is then 1.18 pounds per day.

Paul Tobias recently sampled the end-box stack by inserting a sampling line into the top of the stack. He did not use the sampling and analytical procedures of Test Method 101. He promised to put his procedures in writing and send them to us. His test showed 0.4 to 0.8 pounds of mercury per day. The total mercury emissions from the hydrogen and end-box streams then does not exceed 1.18 + 0.8 = 1.98 pounds per day, equal to about 900 grams per day, and is thus within the 1000 grams per day limit.

U.S. EPA Mercury Emission Estimates

Analysis of the company's mercury estimates, after the visit, revealed certain flaws in the analysis as follows:

1. Not all the hydrogen is compressed. For that portion that is not, page 3-22 of AP-118 gives an emission factor of 50 pounds per 100 tons of chlorine for cooling to 110°F (43°C) and partial mist elimination (vs. essentially no mist elimination at Ashtabula). Although the hydrogen cooler exit gas stream was at 37°C during the plant visit, it likely reaches 43°C in August, and the difference between mercury vapor emissions at 37°C and those at 43°C is minimal. The 133,600 CF of hydrogen per day bypassing compression corresponds to (133.6/733.6)(73.36 tons of chlorine per day) = 13.36 tons of chlorine per day. Mercury emissions from the uncompressed hydrogen stream are then (50/100)(13.36) = 6.68 pounds per day, for a total mercury emission of 6.68 + 0.11 = 6.79 pounds per day.

2. Page 3-23 of AP-118 states that mercury emissions from untreated or inadequately treated end-box ventilation systems range from 2 to 15 pounds per 100 tons of chlorine. It is clear from page 3-20 of AP-118

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AUG 12 1977

Mr. Walter R. Watson, Director
Manufacturing and Engineering
Electrochemical Division
INC Chemical Group, Inc.
[redacted]
Boston, Massachusetts 02199

Dear Mr. Watson:

After a visit to INC's mercury cell chlor-alkali plant at Ashtabula, Ohio, and an evaluation of all the information we have regarding your plant, the United States Environmental Protection Agency (U.S. EPA) has estimated that the mercury emissions from the hydrogen and end-box ventilation streams are at least 3.75 times the emissions allowed under 40 CFR Part 61, Subpart E (National Emission Standard for Mercury). Furthermore, U.S. E[redacted] U.S. EPA after the waiver of compliance September 1, 1974, construction completion milestone and after the January 1, 1975, final compliance milestone. Our file does contain a letter of March 12, 1975, from yourself to Mr. Ken Ganim, U.S. EPA, which letter indicated that a comprehensive status and plans report would be sent to U.S. EPA by the end of March 1975; however, such report is not present.

Because of the seriousness of this matter and prior to further action by this office we want to offer you an opportunity to supply whatever additional information you have available relating to emissions from this facility. Such information should be submitted as soon as possible. In addition, it might be beneficial to meet in Chicago to discuss these matters within the next few weeks.

If there are any questions please contact Mr. Arthur E. Smith, Jr. Attorney, of my staff at (312) 353-2086.

Very truly yours,

ORIGINAL SIGNED BY JAMES O. McDONALD
James O. McDonald, Director
Enforcement Division

bcc: McDonald/Kee/Ullrich/Smith, A.
Rothblatt/Varner
Hurt/Cohen

A Smith/mvb 3-2083 8/10/77

060785

X

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SOBIN CHEMICALS, INC.

sobin

SOBIN PARK, BOSTON, MASSACHUSETTS 02210
TELEPHONE: (617) 268-5100
CABLE: IRSOBIN BOSTON
TELEX/TWX: 710-339-1934 710-321-1156
TELEX: 94-0477

March 13, 1975

CERTIFIED MAIL
RETURN RECEIPT

Ron Ganim, Esq.
Air Standards
U.S. Environmental Protection Agency
230 South Dearborn
Chicago, Ill. 60604

RE: SOBIN - ASHTABULA, OHIO - CHLOR-ALKALI PLANT

Dear Mr. Ganim:

In furtherance to my letter of March 12, 1975, our records indicate that SOBIN officially notified your office on [redacted] R. Malloy to Mr. James McDonald, Director Enforcement Division U.S. EPA Region V. A copy of this letter is attached for your reference and file.

We also note in our files that Mr. Robert Howlett, Vice President - Manufacturing and Engineering - SOBIN, telephoned Mr. Romanek April 9, 1974 to advise the Regional EPA Office that SOBIN was purchasing the facilities from Detrex Corporation in May 1974.

We would like to suggest a meeting sometime in early April to review with you SOBIN'S program at Ashtabula and will be in further contact with you on this matter in the next several weeks.

Yours truly,

Walter R. Watson
Director of Engineering
Industrial Chemical Division

WRW/cn

FOI EXEMPT

Violation

After Detrex sold [redacted] Sobin on May 30, 1974, Sobin and IMC [redacted] operating the plant in noncompliance with the mercury regulation [redacted] without waivers of compliance or without following notification or substantive requirements of the waivers granted to Detrex. Section 111(c) of the Clean Air Act; 40 CFR Section 61.10. Furthermore, after April 6, 1975 (end of waiver period under regulations), IMC has been operating in noncompliance (IMC bought out remaining the remaining 19% of Sobin in the [redacted]).

Evidence

U.S. EPA received neither notification after the waiver's September 1, 1974 completion milestone, nor after January 1975 final compliance milestone. Sobin, IMC (specifically Walter Watson, Director of Manufacturing and Engineering, Electrochemical Division) were aware of the mercury regulations. After U.S. EPA (R. Ganim) made a telephone call to Sobin (March 11,1975), there were a number of letters indicating compliance, urging a meeting to discuss the air program and the change in corporate ownership. Emission factors indicate a serious violation of 40 CFR Section 61.52(b), 1,000 gms/day from hydrogen and end-box ventilation gas streams.

Recommendation

Although Sobin made a $800,000 capital expenditure to change their process from NaOH production to KOH production and spent $2,000,000 for water pollution control equipment since May 1974, Sobin and IMC apparently [illegible]ted not to install air pollution control equipment required for [illegible]liance. In order to bring a criminal count against responsible corporate officials, besides Walter Watson, additional evidence is necessary (perhaps through a grand jury). Criminal penalties should be sought against Sobin, and primarily IMC, for their noncompliance during the three years (only IMC) since purchase of the plant. The following steps should be taken:

1. An agency expert or consultant should verify that the emission factors used to calculate IMC's present noncompliance are accurate for the processes used at IMC;

2. After verification that a serious violation exists a contractor should be retained by U.S. EPA to stack test the gas vents; and,

3. A grand jury should be impaneled to find out what actions have been taken to bring the plant into compliance and who the responsible officials have been for the decision not to comply with the regulations.

In addition, a civil action should be initiated. The purpose of this suit should be to get an injunction for compliance. Because we are

060501

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JUL 13 1977 REGION V

FOI EXEMPT

IMC Chemical, Ashtabula, Ohio

Arthur E. Smith, Jr., Attorney
Case Development Section

David Ullrich, Chief
Case Development Section

This memorandum will outline my recommendations for enforcement actions to be taken against Detrex, Sobin and IMC for violating various aspects of 40 CFR Part 61, Subpart E, (National Emission Standard for Mercury). I will outline each violation, specify our evidence of such violation or evidence we would need, and suggest a course of action:

1. Violation

Detrex, the owner and operator of the NaOH (presently KOH) plant, was the party that requested waivers of compliance in order to comply with the mercury regulations. Detrex violated 40 CFR Section 61.10(b) by not describing controls to be installed, and violated this same section by failing to report a final control plan by June 29, 1973, and neither initiating on-site construction of controls by March 1, 1974, nor reporting of such milestone, as required in the waivers of compliance.

Evidence

Requests for waivers May 15, 1973; U.S. EPA's approval of waivers June 5, 1973, and deficient notification of final control plan on June 29, 1973.

Recommendation

1. No action on inadequate waiver request; reason - U.S. EPA approved.

2. No action on inadequate submittal of final control plan - U.S. EPA did not do anything about the matter.

3. Possible criminal action against Detrex, Robert Malloy, Plant Manager and others for failing to report initiation of on-site construction and never intending to install control equipment. U.S. EPA would need additional information, e.g., what steps were taken to put in control equipment before Detrex sold out to Sobin (80% owned by IMC) on May 30, 1974, who were the responsible officers, and exactly what were the events surrounding the ownership transfer to Sobin. Information for a criminal case is still needed and a possible mechanism for obtaining such information would be through a grand jury.

060300

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X

ELECTROCHEMICALS DIVISION

IMC CHEMICAL GROUP, Inc.

June 2, 1977

2000 Prudential Tower, Boston, Mass. 02199, (617) 266-8100

Mr. George Hurt
Chief, Air Compliance Section
Enforcement Division, U. S. EPA
230 South Dearborn
Chicago, Illinois 60604

REFERENCE: Mr. D. Ullrich letter to W. Watson, Sobin Chemicals, Inc., April 11, 1977.

Dear Mr. Hurt:

Sobin Chemicals, [redacted] now IMC Chemicals Group, Inc. [redacted] following will confirm IMC's response regarding Mercury emission testing at our Ashtabula, Ohio location. The questions were clarified by Glenn Carr of IMC with Mr. Eric Cohen of your office April 29, by telephone.

IMC Chemical Group, Inc., Chlor-Alkali plant in Ashtabula, Ohio is in compliance with the National Emission Standards for Hazardous Air Pollutants (40 C.F.R., S61.53 (c) (4)). In addition to following the aforementioned housekeeping and maintenance practices, the company has implemented additional programs and practices to maintain cell room Mercury emissions at less than 1300 grams per day and minimize personnel exposure to Mercury.

A. An effective routine training program has been implemented to train the employees in Mercury handling, limiting exposure and stressing the importance of good personal hygiene.

B. Employees are supplied clean uniforms daily, and locker and shower rooms are designed such that street clothing does not come in contact with any work clothing that might be contaminated with any toxic chemicals. There are two separate locker rooms with showers in between and lockers are vented properly.

C. The plant maintains a routine urinalysis program, using industry approved methods, to monitor employee exposure to Mercury on a quarterly basis. Results have averaged approximately 0.20 ppm Mercury.

If any employee shows an increase in Mercury level, immediate measures are taken to discuss the problem with the employee and remind him of Mercury handling procedures and personal hygiene. This employee is then monitored on a weekly basis until his Mercury level drops. If the Mercury level does not decrease, the employee is then reassigned to another job.

D. Environmental Improvement Capital Program:

1. Since the plant was purchased from Intrex Chemical Industries, Inc. in May 1974, IMC Chemical Group, Inc. (formerly Sobin Chemicals, Inc.) has spent and committed over $2,000,000 for pollution abatement and related capital projects. IMC has been and will remain committed to operate within established guidelines and effluent permit conditions.

060582

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IMC CHEMICAL GROUP Inc.

Mr. George Hurt
Enforcement Division, U.S. EPA
Chicago, Illinois 60604

June 2, 1977

76-49 Air Vent Scrubber:

A packed column scrubber will be installed in the end-box ventilation system. Chlorinated brine will be used in the scrubber to remove trace Mercury from the air before it is discharged to the atmosphere, as final assurance.

E. IMC hereby applies for a waiver of emission testing on the Hydrogen and end-box ventilation streams since we are within the 1000 gms per day maximum emissions. In addition to our operating and capital programs covered above, we regularly compress and re-cool H_2 by-product for customer P/L sales, which eliminates nearly all Mercury emission via Hydrogen venting.

Please send application forms to our Boston office, so we can complete them and file for waiver of emission testing.

Very truly yours,

Walter R. Watson

Walter R. Watson
Director, Manufacturing & Engineering
Electrochemical Division

WRW:fe

cc: Mr. James O. McDonald - Director, Enforcement Division, EPA - Chicago, Ill. 60604

cc: Mr. E. Lantz - IMC - Mundelein, Ill.
Mr. F. E. Daley - IMC - Boston
Mr. E. L. Mollman - "
Mr. G. Carr - "
Mr. D. W. Ayers - - Ashtabula
Mr. E. Sparks III - "

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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

JAN 30 1978

Mr. George Shahen, Plant Manager
[redacted]
Post Office Box 858
Ashtabula, Ohio 44004

Dear Mr. Shahen:

We have evaluated the report of mercury emission testing by Midwest Research Institute (MRI) at the IMC Chemicals, Ashtabula, Ohio, mercury cell chlor-alkali plant, performed October 25-28, 1977. We find the tests to be valid and to demonstrate compliance with the mercury National Emission Standards for Hazardous Air Pollutants (NESHAPS) for the hydrogen and end-box ventilation gas streams. During the tests, we also observed adherence to the approved design, maintenance, and housekeeping practices necessary to demonstrate compliance with the mercury NESHAPS for the cell room ventilation system. Please be advised that compliance with the mercury NESHAPS must be maintained at all times.

A copy of the MRI test report is attached. Should you have any questions on these matters, please contact Mr. Bruce Varner of my staff at (312)-353-2086.

Very truly yours,

David Keo, Chief
Air Enforcement Branch
Enforcement Division

Attachment

cc: Walter R. Watson, Director (without attachment)
Manufacturing and Engineering
Electrochemical Division

Richard Gullickson (with attachment)
Environmental & Safety Specialist
International Minerals and Chemical Corp.

OH1552

TABLE 1. SUMMARY OF MERCURY EMISSIONS - IMC MERCURY CELL PLANT; ASHTABULA, OHIO

Run	Date	Mercury emissions (g/day)[a/] Federal Register[b/] End-box	Federal Register[b/] Hydrogen	Draft revisions[c/] End-box	Draft revisions[c/] Hydrogen	Chlorine production (kgpd)[c/]	Chlorine production (tpd)[a/]
1-H	Oct 25, 1977		[illegible]		[illegible]	82,506	90.9
2-H[d/]	Oct 26		[illegible]		[illegible]	82,874	91.4
1-E	Oct 27	[illegible]		[illegible]		71,954	79.3
2-E		[illegible]		[illegible]		77,793	85.8
3-E	Oct 28	59		[illegible]		81.837	90.2
3-H			[illegible]		[illegible]	83,110	91.6
Average		[illegible]	[illegible]	[illegible]	[illegible]		

a/ g/day - grams per day.
kgpd - Kilograms per day (rate during run only).
tpd - tons per day (rate during run only).

b/ Federal Register - published methods of April 6, 1973

c/ Draft revisions - proposed revisions of October 13, 1977.

d/ Sample time of only 75 minutes instead of 120 minutes.

Fields Brook dunstrm SCM

22201

SCM Corporation			TWMIC Index
SCM-101	Field's Brook File		1980
SCM-102	Chromium-6	Disch. 13-34 ppb avg. 14-54 " max. (Perm. 60 " avg.) (Perm. 120 " max.)	1979-80
SCM-103	Hexachlorobenzene (HCB)	0.31 ug/L 0.16 "	1977
SCM-104	Chromium Total	74 (ug/L?) max. 46 (ug/L?) avg.	1971 or more recent
SCM-105	Chromium (Cr)	Avg. / Max. conc: 0.06 / 0.10 mg/L load: 0.14 / 0.28 kg/day	
SCM-106	Chromium (Cr)	Discharge Limits conc: 120 ug/L - Daily load: 0.50 kg/day - Daily	1984-89
SCM-107	Chromium (Cr)	Discharge Limits conc: .12 mg/L - Daily load: 0.50 kg./day - Daily	1978-81
SCM-108	Cyanide (CN)	(a) 15 mg/L(?) max. 9.6977 lbs/day avg. (b) 0.43 mg/L(?) max. 0.7015 lbs/day avg.	1971
	Chromium (Cr)	(a) 0.10 mg/L(?) max. 0.116 lbs/day avg. (b) 0.600 mg/L max. 1.566 lbs/day avg.	
SCM-109	Toxics Summary Report (D. Barna & D. Easterling) " " TDS at 35,608 lbs/day (Need Appendix 12)		1981

SCM-110	Chromium (Cr)	106 vs. 1130 mg/L rept'd "true"	1981
	NPDES Lab evaluation corrected report:	1.06 mg/L (1060 uL)	OK
SCM-111	Chromium (Cr) Limits	conc: 0.06 mg/L load: 0.25 kg/day	1977
SCM-112	Chromium Total	conc: 74 ug/L ? max. 46 " " avg. load: <1 lb/day	since 1971
	Arsenic (As)	conc: 31 ug/L? max. 30 " avg. load: <1 lb/day	
SCM-113	Toxic Bioassay		1981
SCM-114	(a) Lead (Pb) excursion	0.25 mg/L	1985
	" " "	2.05 kg/day	
	(b) " " "	0.26 mg/L	1985
	" " "	1.5 mg/L	
	(c) " " "	0.24 mg/L	1986
		2.12 kg/day	
SCM-115	Lead (Pb) excursion	1.5 kg/day	1984
SCM-116	Chromium (Cr) excursion	1.68 kg/day	1985
SCM-117	SCM has coal-fired boiler (BF-101) (Potential fly-ash pollutants) - with precipitators; SCM Plant 2. - Avg. 1000 tons coal burned/mo(summer). - Ash content 7% (70 tons ash/month). -(Other data show avg. 1500 tons/month burned).		1985
SCM-118	Change in ownership notification, Sept. 1985. SCM's Plant 2 (2426 Middle Road) transferred to ABC Chemicals, Inc.		1985
SCM-119	Ownership change from G & W to SCM, effective Nov. 1, 1983.		1984

SCM-120	Scrubber water to waste treatment system ($TiCl_4$ flow diagram) - PTI data sheet (NJ Zinc).	1973
SCM-121	Name change from NJ Zinc to G & W Natural Resources involves no change in ownership.	1977
SCM-122	NJ 2, Inc. operates under lease from Cabot Corporation.	1973
SCM-123	Sale of Sherwin-Williams TiO_2 plant to SCM-notification to EPA.	1974
SCM-124	Schematic of Wastewater Treatment System - to Fields Brook.	1976
SCM-125	ABC Chemical, Inc. is the new corporation responsible for Plant 1 at 2900 Middle Road.	1985
SCM-126	Incinerator Permit Application shows wet scrubber separator.	ND
SCM-127	Dust Emission (coke cont.) incident- Fallout on Plant property.	1973

Ohio Department of Health
Sanitary Chemistry Section

Environmental Sample Submission Report

Agency: OEPA
Division Program: WW 20
Analysis Reported To: ☐ CO ☐ CDO ☐ SE ☒ NE ☐ SW ☐ NW

Laboratory: ☐ Central ☐ SE ☒ NE ☐ SW ☐ NW
Sample Number: 00624
Analyst: J. Lue Supervisor: Kris Coder
Date Received: 12-30-80
Date Reported: 12-30-80

Sample Identification

Station: Fields Brook @ [redacted]
ID Number: SC, ___
Address:
City: Zip:
County: Ashtabula Phone:
Collected By: Tuckerman

Grab Sample Date or Beginning Date of Composite Sample—Use Military Time

Year	Month	Day	Hour	Minute
80	12	30	09	20

Ending Date of Composite Sample—Use Military Time

Year	Month	Day	Hour	Minute	CVT	S/T	TYP

Field Treatment:
☐ Filtered ☐ $CuSO_4 + H_3PO_4$
☒ Iced ☐ H_2SO_4
☐ NaOH ☐ HNO_3
☐ Other (Explain)

Additional Information—Analyst Remarks—Non Routine Analytical Requests

☐ Sample Code	P115 Routine	☐ Conductivity, Field, U-MHO	P94	☐ Chlorine Total Resd mg/l	P50060
☐ pH, Field S.U.	P400	☐ Flow, Instantaneous CFS	P61	☐ Water Temperature, Field	P10 11.5
☐ Dissolved Oxygen, Field mg/l	P300	☐ Hydrogen Sulfide mg/l	P71875	☐ Sample Purpose	P71999
☐ Stream Gage	P65	☐ Chlorine Free Avl, Field mg/l	P50064	☐	

☐ Regular (or indicate by checking boxes)		☐ Phosphorus Sol, P mg/l	P666	☐ Lithium Total, Li ug/l	P1132
☐ Turbidity FTU	P76	☐ Phosphate Reactive P mg/l	P70507	☐ Manganese Total, Mn ug/l	P1055
☐ Color Pt Co	P80	☐ Chloride, Cl mg/l	P940	☐ Mercury Total, Hg ug/l	P71900
☒ Conductivity at 25 C U-MHO	P95 4100	☐ Fluoride Total, F mg/l	P951	☐ Molybdenum Total, Mo ug/l	P1062
☒ pH, Lab S.U.	P403 73	☐ Cyanide, CN mg/l	P720	☐ Nickel Total, Ni ug/l	P1067
pH, $CaCO_3$ Stability S.U.	P70311	☐ Silica, Diss, Si mg/l	P955	☐ Selenium Total, Se ug/l	P1147
☐ Alkalinity Total, $CaCO_3$ mg/l	P410	☐ Calcium Total, Ca mg/l	P916	☐ Silver Total, Ag ug/l	P1077
☐ Alkalinity Phth, $CaCO_3$ mg/l	P415	☐ Magnesium Total, Mg mg/l	P927	☐ Strontium Total, Sr ug/l	P1082
☐ Alkalinity $CaCO_3$ Stabl mg/l	P74023	☐ Sodium Total, Na mg/l	P929	☐ Thallium Total, Tl ug/l	P1059
☐ Acidity Total, $CaCO_3$ mg/l	P70508	☐ Potassium Total, K mg/l	P937	☐ Tin Total, Sn ug/l	P1102
☐ Acidity M.O., $CaCO_3$ mg/l	P436	☐ Aluminum Total, Al ug/l	P1105	☐ Titanium Total, Ti ug/l	P1152
☐ Hardness Total, $CaCO_3$ mg/l	P900	☐ Antimony Total, Sb ug/l	P1097	☐ Vanadium Total, V ug/l	P1087
☐ Residue, Total mg/l	P500	☐ Arsenic Total, As ug/l	P1002	☐ Zinc Total, Zn ug/l	P1092
☐ Residue, Total Volatile mg/l	P505	☐ Barium Total, Ba ug/l	P1007	☐ Carbon Total, Organic C mg/l	P680
☐ Residue, Total Nfilt (Sus) mg/l	P530	☐ Beryllium Total, Be ug/l	P1012	☐ Carbon Diss, Organic C mg/l	P681
☐ Residue, Vol Nfilt mg/l	P535	☐ Bismuth Total, Bi ug/l	P1017	☐ Phenol ug/l	P32730
☐ Residue, Total Filt (Diss) mg/l	P70300	☐ Boron Total, B ug/l	P1022	☐ MBAS mg/l	P38260
☐ Residue, Vol Filt mg/l	P520	☐ Cadmium Total, Cd ug/l	P1027	☐ Oil Grease, Total mg/l	P556
☐ Residue, Settlable ml/l	P545	☐ Chromium Total, Cr ug/l	P1034	☐ BOD, 5 Day mg/l	P310
☐ Sulfate, SO_4 mg/l	P945	☐ Chromium Hex, Cr ug/l	P1032	☐ COD mg/l	P335
☐ Nitrogen TKN, N mg/l	P625	☐ Cobalt Total, Co ug/l	P1037	☐ TOC mg/l	P341
☐ Nitrogen Ammonia, N mg/l	P610	☐ Copper Total, Cu ug/l	P1042		
☐ Nitrate Nitrite, N mg/l	P620	☐ Iron Total, Fe ug/l	P1045		
☐ Nitrite N mg/l	P615	☐ Iron Diss, Fe ug/l	P1046		
☐ Phosphorus Total, P mg/l	P665	☐ Lead Total, Pb ug/l	P1051		

Distribution: 1 Data Processing 2 Central Office 3 District Office 4 Owner 5 Laboratory

4956-32 (REV 4-79) Ohio Department of Health

10223

SCM CORPORATION

SCM Corporation produces titanium dioxide from impure titanium ores such as rutile and ilmenite, both of which contain iron impurities. The ore is reacted with gaseous chlorine in the presence of coke to produce titanium chloride. The titanium chloride is then converted to titanium dioxide by oxidation. A review of Region V's report of the Compliance Sampling Inspection of January 22, 1980, and of the NPDES permit and compliance files shows the following:

1. During the January, 1980, inspection, the company was meeting all of its permit limits (chlorine residual, TSS, TDS, chromium, copper, zinc, and pH). While in the past, the company has had problems in complying with its pH limitations, from 10/79 to 3/80 no violations of this or any other NPDES parameter occurred.

2. The effluent was toxic to Daphnia (an average of 70% after 24 hours in two replicate tests). Both the fish bioassay and the Ames test for mutagenicity were negative.

3. In Region V's analysis of SCM's effluent, two organic compounds were detected, 1,1-dichloroethane and 1-(2-butoxyethoxy) ethanol, but background levels of dichloroethane in the blank make this result suspect. The little information available on the ethanol compound suggests it would not be toxic at the level detected.

4. Three metals, copper, chromium, and zinc, are limited in SCM's NPDES permit to levels shown below. Also shown are the results of effluent analyses, U.S. EPA WQC, and Ohio Water Quality Standards for these metals:

Compound	Effluent Levels Average	Effluent Levels Maximum	U.S. EPA WQC Aquatic Life Acute	U.S. EPA WQC Aquatic Life Chronic	Ohio Water Quality Stand
Copper					
10/79-3/80 (Compliance File)	2-56ppb	4-93ppb	18ppb[1]	5.6ppb	10ppb[2]
Permit Limit	60ppb	120ppb			
CSI Report	9ppb				
Zinc					
10/79-3/80 (Compliance File)	9-63ppb	9-73ppb	262ppb[1]	47ppb	55ppb[2]
Permit Limit	none	360ppb			
CSI Report	152pbb				

1 Estimated hardness of 78mg/l as $CaCO_3$ in tributary to which effluent is discharged.
2 Assuming a hardness of 81-120mg/l as $CaCO_3$.

Compound	Effluent Levels Average	Effluent Levels Maximum	U.S. EPA WQC Aquatic Life Acute	U.S. EPA WQC Aquatic Life Chronic	Ohio WQS
Chromium			Hexavalent		
10/79-3/80	13-34ppb	14-54ppb	21ppb	0.29ppb	
Permit Limit	[illegible]	120ppb			100ppb
			Trivalent		
CSI Report	6ppb		3,600ppb	44ppb	

The effluent concentrations of copper, zinc, and possibly chromium (hexavalent) may be responsible for the Daphnia toxicity (70% lethality) given the low hardness (59mg/l as $CaCO_3$) in SCM's effluent and may cause adverse effects on aquatic life in Fields Brook given the volume of SCM's effluent(1.07MGD compared to the flow of the Fields Brook tributary of 0.4MGD).

SNGSTD 10

NO PEAKS 8
BASE PEAK INT 160

TIME CENTROID	NO POINTS	ABSOLUTE INTENSITY
2681	22	52
4717	27	27
8096	41	144
10713	12	29
14867	26	160
19768	14	29
20317	24	73
22547	27	88

LIMIT OF DATA

SNGSTD 10

NO PEAKS 7
BASE PEAK INT 135

TIME CENTROID	NO POINTS	ABSOLUTE INTENSITY
1061	10	23
4668	10	27
8049	44	134
14865	40	135
19064	10	20
20464	20	48
22554	21	76

LIMIT OF DATA

SNGSTD 14

NO PEAKS 6
BASE PEAK INT 100

TIME CENTROID	NO POINTS	ABSOLUTE INTENSITY
4681	19	46
8092	26	99
14851	23	75
20391	29	65
22082	12	27
20512	22	100

LIMIT OF DATA

@ Why wasn't 1147 repeated?

1234 was repeated. No significant ions (282-288) were collected by the computer and the run was not printed.

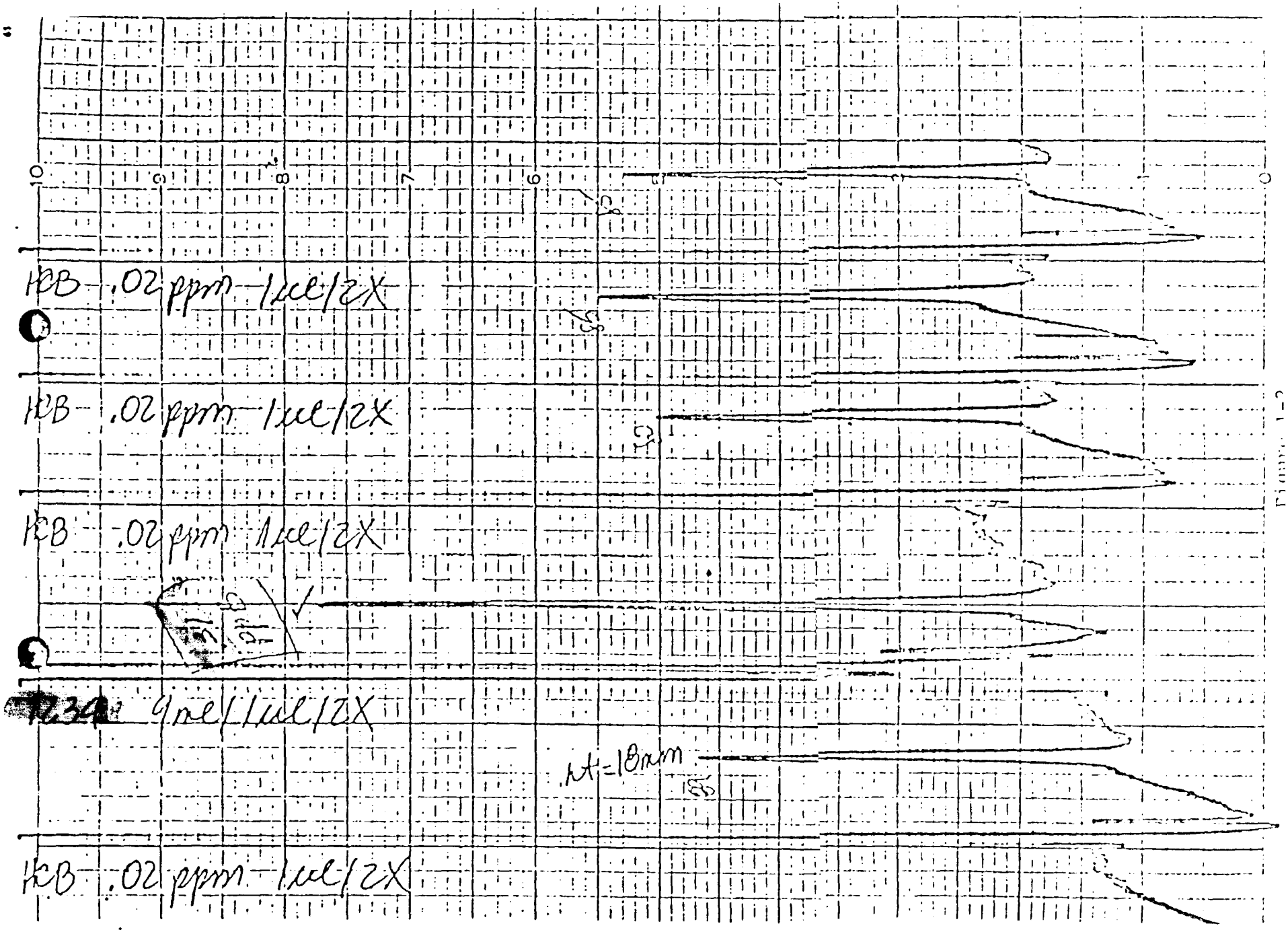

10
9
8
7
6
0
HCB .02 ppm 1uL/2X
HCB .02 ppm 1uL/2X
HCB .02 ppm 1uL/2X
9uL/1uL/2X
M=18mm
HCB .02 ppm 1uL/2X

Figure 1-2

HCB 0.05 ppm 1ml/2X

847 64 ml/1ml/2X

HCB 0.05 ppm 1ml/2X

DETERMINATION OF HEXACHLOROBENZENE

IN WATER

FOR

SCM GLIDDEN-DURKEE COMPANY

Ashtabula, Ohio

January - February

1977

By: Environmental Research Group, Inc.
Cleveland, Ohio

PRESENTATION OF RESULTS

The results of our testing program are summarized in Table I.

Analysis of the 24-hour composite effluent sample (#1234) by gas chromatography showed a significant peak corresponding in retention time to hexachlorobenzene. Quantification of this peak on the basis of HCB yielded a concentration of 0.31 μg/liter (Figure I-2). Since HCB was not expected to be present in this sample, it was recommended that further analysis be performed using GC-mass spectrometry. This technique, however, did not confirm the presence of HCB, but indicated a value less than .20 μg/liter (Figure II). This result suggests that a contaminating compound may have been present that interfered with the gas chromatography analysis.

SUMMARY OF RESULTS: HEXACHLOROBENZENE CONTENT IN WATER

SCM GLIDDEN-DURKEE COMPANY - Ashtabula, Ohio

DATES OF COLLECTION	RMI OUTFALL CODE	ERG SAMPLE NUMBER	HEXACHLOROBENZENE (µg/l)
1/20/77 - 1/21/77 (24-hr. composite of three grabs)	Ashco Intake Water	1235	.07
2/7/77 - 2/8/77 (24-hr. composite of three grabs)	Ashco Intake Water	1331	.08
1/4/77 - 1/5/77 (24-hr. flow proportional composite)	Plant Effluent	1247	.16
1/20/77 - 1/21/77 (24-hr. flow proportional composite)	Plant Effluent	[illegible]	.31 by GC <.20 by GC/MS

Table I

16200

FORM APPROVED
OMB NO. 49-R 0408

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

APPLICATION FOR PERMIT TO DISCHARGE OR WORK IN NAVIGABLE WATERS AND THEIR TRIBUTARIES

SECTION I. GENERAL INFORMATION

1. State	Application Number (to be assigned by Corps of Engineers)			
O H	Div.	Dist.	Type	Sequence No.

2. Name of applicant and title of signing official: THE SHERWIN-WILLIAMS COMPANY; GROUP VICE PRESIDENT, CHEMICALS, G. F. SCHLAUDECKER

3. Mailing address of applicant:
THE SHERWIN-WILLIAMS COMPANY
101 PROSPECT AVE., N.W.
P. O. BOX NO. 6027
CLEVELAND, OHIO 44101

4. Name, address, telephone number and title of applicant's authorized agent for permit application coordination and correspondance.
G. F. WYMAN, PLANT MANAGER
SHERWIN-WILLIAMS CHEMICALS DIVISION
P. O. BOX NO. 310
ASHTABULA, OHIO 44004
PHONE: 216-998-1825

NOTE TO APPLICANT: Refer to the pamphlet entitled "Permits for Work and Structures in and for Discharges or Deposits into Navigable Waters" before attempting to complete this form.

Required Information

a. All information contained in this application will, upon request, be made available to the public for inspection and copying. A separate sheet entitled "Confidential Answers" must be used to set out information which is considered by the applicant to constitute trade secrets or commercial or financial information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential treatment can be considered only for that information for which a specific written request of confidentiality has been made on the attached sheet. However, in no event will identification of the contents and frequency of a discharge be recognized as confidential or privileged information.

b. The applicant shall furnish such supplementary information as is required by the District Engineer in order to evaluate fully an application.

c. If additional space is needed for a complete response to any item on this form, attach a sheet entitled "Additional Information." Indicate on that sheet the item numbers to which answers apply.

d. Drawings required by items 20 and 21 should be attached to this application. Other papers which must be attached to this application include, if applicable, copies of a water quality certification or a written communication which describes water quality impact (see Item 22 and Item 10 of Section II below), the additional information sheet(s) in "c" above, and the confidential information sheet described in "a" above.

Fees

If any discharge or deposit is involved, an application fee of $100 must be submitted with this application. An additional $50 is required for each additional point of discharge or deposit.

Signature

a. If a discharge is involved, an application submitted by a corporation must be signed by the principal executive officer of that corporation or by an official of the rank of corporate vice president or above who reports directly to such principal executive officer and who has been designated by the principal executive officer to make such applications on behalf of the corporation. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor. Other signature requirements are discussed in the pamphlet.

b. If no discharge is involved, an application may be signed by the applicant or his authorized agent.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate.

Signature of Applicant
G. F. SCHLAUDECKER, GROUP VICE PRESIDENT

18 U.S.C. Section 1001 provides that:

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

FOR CORPS OF ENGINEERS USE ONLY

Acronym name of applicant

Are discharge structures
Major? ☐ Minor? ☐ N/A? ☐

Date received, form not complete — — — — — —
Date received, form complete but without certificate — — — — — —
Date received, form complete — — — — — —
Date of Cert./Ltr. — — — — — — (day mo yr)

Date sent to EPA, form not complete — — — — — —
Date sent to EPA, NOAA, D/I, AEC, FPC in complete form — — — — — — (day mo yr)

PART B

(Office use only)

Discharge Serial No. 000205-001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake	Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	DAILY AVG. CONCENTRATION (5)	AVERAGE POUNDS PER DAY (6)	SAMPLE FREQUENCY (7)	SAMPLE TYPE (8)	METHOD OF ANALYSIS (9)	CONTINUOUS MONITORING (10)	(11)
CALCIUM-TOTAL 00916	W 49.3	32.1	25.2	2.1	146.2	23.8	138.1	CONT	DYLY	STD MTHD	ABS
CHROMIUM-TOTAL 01034	12	7	74	< 1	< 1	46	< 1	CONT	"	"	"
COBALT-TOTAL 01037	W < 10							CONT	"	"	"
COPPER-TOTAL 01042	13	13	32	< 1	< 1	25	< 1	CONT	"	"	"
IRON-TOTAL 01045	1,133	84	297	< 1	2	271	2	CONT	"	"	"
LEAD-TOTAL 01051	W < 10	< 10	< 10	< 1	< 1	< 10	< 1	COMP	"	"	"
MAGNESIUM-TOTAL 00927	W 8	5	6	< 1	34	5	29	CONT	"	"	"
MANGANESE-TOTAL 01055	W 52	5	10	< 1	< 1	9	< 1	CONT	"	"	"
MERCURY-TOTAL 71900	W < 0.5	< 0.5	< 0.5			< 0.5		COMP	"	"	"
MOLYBDENUM-TOTAL 01032	W < 10							COMP	"	"	"

ENG FORM JUN 71 4345-1

161737

GLIDDEN-DURKEE
DIVISION OF SCM CORPORATION
PIGMENTS & COLOR GROUP

2900 MIDDLE ROAD • P. O. BOX 310 • ASHTABULA, OHIO 44004

file

Attn: Don Seed

January 22, 1975

State of Ohio
Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio, 44087

Gentlemen:

In compliance with NPDES Permit OH-0000523, a copy of the Discharge Monitoring Report (EPA Form 3320-1) is enclosed for the Ashtabula plant of Glidden-Durkee.

This plant was formerly owned by The Sherwin-Williams Company and was purchased by the Glidden-Durkee Division of SCM Corporation on October 12, 1974.

Very truly yours,

GLIDDEN-DURKEE DIV.
SCM CORPORATION

T. C. Gillen
Plant Manager

TCG/am
enclosure

161676

NATIONAL POLLUTA[illegible]CHARGE ELIMINATION SYSTEM
DISCHARG[illegible] MONITORING REPORT

Form Approved
OMB [illegible] 158-R0071

Glidden-Durkee Division,
SCM Corporation
P. O. Box 310
Ashtabula, Ohio, 44004

NOTE: Plant formerly owned by The Sherwin-Williams Company.

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
OH	0000523	001	2816	41°53'41"N	80°45'10"W

REPORTING PERIOD FROM 74 10 01 (YEAR MO DAY) TO 74 12 31 (YEAR MO DAY)

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "__ hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

PARAMETER		QUANTITY (3 card only) MINIMUM	AVERAGE	MAXIMUM	UNITS	NO EX	CONCENTRATION (4 card only) MINIMUM	AVERAGE	MAXIMUM	UNITS	NO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow	REPORTED	32	2,876	5,319	M^3/Day	0						Cont.	NA
	PERMIT CONDITION											Cont.	NA
Temperature	REPORTED			71	°F	0						Cont.	NA
	PERMIT CONDITION											Cont.	NA
pH	REPORTED	6.1	7.1	8.2	S.U.	0						Cont.	NA
	PERMIT CONDITION	6.0		9.0								Cont.	NA
Chlorine Residual	REPORTED						0	0.03	0.50	mg/l	2	3 X Day	Grab
	PERMIT CONDITION							0.1	0.3			2 X Monthly	Grab
Total Suspended Solids	REPORTED	0	6	35	kg/Day	0	0	2	9	mg/l	0	Daily	Comp.
	PERMIT CONDITION		23	50				8	17			2 X Monthly	Comp
Total Dissolved Solids	REPORTED	279	8026	14,605	kg/Day	0	1011	2724	4194	mg/l	0	Daily	Comp.
	PERMIT CONDITION		15,000	17,000				5000	7000			2 X Monthly	Comp.
Chromium	REPORTED	0	0	0	kg/Day	0	0	0	0.002	mg/l	0	Weekly	Comp.
	PERMIT CONDITION		.14	.28				.06	.10			2 X Monthly	Comp.
Copper	REPORTED	0.01	0.10	0.494	kg/Day	2	.01	.04	.12	mg/l	1	Daily & Weekly	Comp.
	PERMIT CONDITION		0.14	0.28				0.06	0.10			2 X Monthly	Comp.

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE
Byrne (LAST) Lewis (FIRST) C. (MI)	Vice President - Pigments & Colors Group (TITLE)	75 01 22 (YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

EPA Form 3320-1 (10-72)

ORIGINAL

161677

04/NE

OEPA Permit No. 3IE00013*DD

Application No. OH0000523

Effective Date: September 28, 1984

Expiration Date: September 25, 1989

OHIO ENVIRONMENTAL PROTECTION AGENCY

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq. hereinafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

SCM Corporation
Plant #1

is authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge from the wastewater treatment works located

on 2900 Middle Road, Ashtabula, Ohio

and discharging to Fields Brook & tributary to Fields Brook

in accordance with the conditions specified in Parts I, II and III of this permit.

This permit is conditioned upon payment of applicable fees as required by Section 3745.11 of the Ohio Revised Code.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Steven J. Grossman
Assistant Director
Form 4428

RECEIVED
OCT 1 - 1984
OHIO ENVIRONMENTAL PROTECTION AGENCY
N.E.D.O.

PART I, A - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall: 3IE00013001. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

EFFLUENT CHARACTERISTIC			DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
			Concentration Other Units(Specify)		Loading kg/day			
REPORTING Code	UNITS	PARAMETER	30 day	Daily	30 day	Daily	Meas. Freq.	Sample Type
74060	M3/Day	Flow	-	-	-	-	Daily	24 Hr Tot
00530	mg/l	Total Suspended Solids	15	30	63	125	1/Week	24 Hr Comp
70300	mg/l	Total Dissolved Solids	8700	9900	36270	41273	1/Week	24 Hr Comp
01034	ug/l	Chromium, Total	60	120	0.25	0.50	1/Week	24 Hr Comp
01042	ug/l	Copper, Total	60	120	0.25	0.50	1/Month	24 Hr Comp
01092	ug/l	Zinc, Total	-	360	-	1.5	1/Month	24 Hr Comp
01045	ug/l	Iron, Total	-	-	-	-	1/Month	24 Hr Comp
00010	°C	Temperature	-	-	-	-	1/Week	Daily Max
50060	mg/l	Chlorine Residual	-	0.05	-	-	1/Week	Grab

2. The pH (Reporting Codes 00401 (minimum), 00402 (maximum)) shall not be less than 6.0 S.U. nor greater than 9.0 S.U. and shall be monitored continuously with daily minimum and maximum being reported daily.

3. Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.

4. See PART II, OTHER REQUIREMENTS.

Page 1 of 10

OEPA Permit No. E313*CD

Application No. OH0000523

Effective Date: November 20, 1978

Expiration Date: March 31, 1981

OHIO ENVIRONMENTAL PROTECTION AGENCY

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq. hereinafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

SCM Corporation
Glidden Pigments Group

is authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge from the wastewater treatment works located

at 2900 Middle Road, Ashtabula, Ohio

and discharging to Fields Brook

in accordance with the conditions specified in Parts I, II and III of this permit.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Ned E. Williams

Ned E. Williams, P.E.
Director

OEPA-NPDES-48

48 160827

PART I, A - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfalls: E313001. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

EFFLUENT CHARACTERISTIC			DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
			Concentration Other Units(Specify)		Loading kg/day			
REPORTING Code	UNITS	PARAMETER	30 day	Daily	30 day	Daily	Meas. Freq.	Sample Type
74060	m^3/ Day	Flow	-	-	-	-	Daily	24 hr Total
00530	mg/l	Suspended Solids	15	30	63	125	1/week	Composite
70300	mg/l	Dissolved Solids	5000	5700	21,000	23,800	1/week	Composite
01034	ug/l	Chromium Total	0.06mg/l	0.12mg/l	0.25	0.50	1/week	Composite
01042	**ug/l**	**Copper Total**	**0.06mg/l**	**0.12mg/l**	**0.25**	**0.50**	1/week	Composite
01092	ug/l	Zinc Total	-	0.36mg/l	-	1.5	1/week	Composite
50060	mg/l	Chlorine Res.	0.1	0.3	-	-	1/week	Grab
00010	Deg. Cent.	Temperature	-	-	-	-	1/week	Max. of day
01045	ug/l	Iron Total	-	-	-	-	1/month	Composite

2. The pH (Reporting Codes 00400 (average), 00401 (high), 00402 (low)) shall not be less than 6.0 S.U. nor greater than 9.0 S.U. and shall be monitored by a continuous recorder, with high, low, and average values reported daily.

3. Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.

4. See PART II, OTHER REQUIREMENTS.

160828
160828

1 JUL 1971

FORM APPROVED
OMB NO. 49-R 0408

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

APPLICATION FOR PERMIT TO DISCHARGE OR WORK IN NAVIGABLE WATERS AND THEIR TRIBUTARIES

SECTION I. GENERAL INFORMATION

1. State: O H

Application Number (to be assigned by Corps of Engineers): 020 (Div.) 4X2 (Dist.) 2 (Type) 000200 (Sequence No.)

2. Name of applicant and title of signing official: The Sherwin-Williams Company; Group Vice Presiden Chemicals, G. F. Schlaudecker

3. Mailing address of applicant:
The Sherwin-Williams Company
101 Prospect Ave., N.W.
P. O. Box #6027
Cleveland, Ohio, 44101

4. Name, address, telephone number and title of applicant's authorized agent for permit application coordination and correspondence.
G. F. Wyman, Plant Manager
Sherwin-Williams Chemicals Division
P. O. Box #310
Ashtabula, Ohio, 44004
Phone: 216-998-1825

NOTE TO APPLICANT: Refer to the pamphlet entitled "Permits for Work and Structures in and for Discharges or Deposits into Navigable Waters" before attempting to complete this form.

Required Information

a. All information contained in this application will, upon request, be made available to the public for inspection and copying. A separate sheet entitled "Confidential Answers" must be used to set out information which is considered by the applicant to constitute trade secrets or commercial or financial information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential treatment can be considered only for that information for which a specific written request of confidentiality has been made on the attached sheet. However, in no event will identification of the contents and frequency of a discharge be recognized as confidential or privileged information.

b. The applicant shall furnish such supplementary information as is required by the District Engineer in order to evaluate fully an application.

c. If additional space is needed for a complete response to any item on this form, attach a sheet entitled "Additional Information." Indicate on that sheet the item numbers to which answers apply.

d. Drawings required by items 20 and 21 should be attached to this application. Other papers which must be attached to this application include, if applicable, copies of a water quality certification or a written communication which describes water quality impact (see Item 22 and Item 10 of Section II below), the additional information sheet(s) in "c" above, and the confidential information sheet described in "a" above.

Fees

If any discharge or deposit is involved, an application fee of $100 must be submitted with this application. An additional $50 is required for each additional point of discharge or deposit.

Signature

a. If a discharge is involved, an application submitted by a corporation must be signed by the principal executive officer of that corporation or by an official of the rank of corporate vice president or above who reports directly to such principal executive officer and who has been designated by the principal executive officer to make such applications on behalf of the corporation. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor. Other signature requirements are discussed in the pamphlet.

b. If no discharge is involved, an application may be signed by the applicant or his authorized agent.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate.

G F Schlaudecker
Signature of Applicant

18 U.S.C. Section 1001 provides that:

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

FOR CORPS OF ENGINEERS USE ONLY

Acronym name of applicant

Date received, form not complete — — — — — — —
Date received, form complete but without certificate — — — — — — —
Date received, form complete — — — — — — —
Date of Cert./Ltr. — — — — — — —
day mo yr

Arc discharge structures
Major? ☐ Minor? ☐ N/A? ☐

Date sent to EPA, form not complete — — — — — — —
Date sent to EPA, NOAA, D/I, AEC, FPC in complete form — — — — — — —
day mo yr

ENG FORM 4315
MAY 71

160774

PART B SIC 493

(Office use only)

Discharge Serial No.
000205 - 003

:-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

ARAMETER ND CODE	Intake: UNTREATED INTAKE WATER (1)	Intake: TREATED INTAKE WATER (2)	Discharge: MAXIMUM CONCENTRATION (3)	Discharge: MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	Discharge: MAXIMUM POUNDS PER DAY (5)	Discharge: DAILY AVG. CONCENTRATION (6)	Discharge: AVERAGE POUNDS PER DAY (7)	Discharge: SAMPLE TYPE (8)	Discharge: SAMPLE FREQUENCY (9)	Discharge: METHOD OF ANALYSIS (D) (10)	Discharge: CONTINUOUS MONITORING (F) (11)
ALCIUM-TOTAL 0916											
ROMIUM-TOTAL	< 0.01	<0.0100	0.600	2.5190	2.5190	0.4667	1.566	A	Q	ES	A
OTAL											
OPPER-TOTAL 1042											
ION-TOTAL 1045											
EAD-TOTAL 1051											
AGNESIUM-TOTAL 0927											
ANGANESE-TOTAL 1055											
ERCURY-TOTAL 1900											
OLYBDENUM-TOTAL 1032											

FORM

PART B

(Office use only)

Discharge Serial No.
000205 - 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake	Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	DAILY AVG. CONCENTRATION (5)	AVERAGE POUNDS PER DAY (6)	MAXIMUM POUNDS PER DAY (7)	SAMPLE FREQUENCY (8)	SAMPLE TYPE (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING (11)
CALCIUM-TOTAL 00916	35	35	16	57.577	57.577	13.667	39.6175	A	O	ES	A
CHROMIUM-TOTAL 01034	< 0.01	< 0.01	0.10	0.3599	0.3599	0.0400	0.1160	A	O	ES	A
COBALT-TOTAL 01037	W < 0.01										
COPPER-TOTAL 01042	0.01	< 0.01	0.300	1.0796	1.0796	0.1733	0.5025	A	O	ES	A
IRON-TOTAL 01045	0.1	0.06	3.0	10.7957	10.7957	1.5667	4.5415	A	O	ES	A
LEAD-TOTAL 01051	< 0.01	< 0.01	< 0.01	< 0.0360	< 0.0360	< 0.0100	< 0.0290	A	O	ES	A
MAGNESIUM-TOTAL 00927	3.0	7.6	22	79.1684	79.1684	11.3333	32.8535	A	O	ES	A
MANGANESE-TOTAL 01055	< 0.01	< 0.01	.3000	1.0796	1.0796	0.2200	0.6377	A	O	ES	A
MERCURY-TOTAL 71900	< 0.5 ppb	< 0.5 ppb	< 0.5 ppb	< 1.8 ppb	< 1.8 ppb	< 0.5 ppb	< 1.4 ppb	A	O	AA (F)	A
MOLYBDENUM-TOTAL 01062	W < 0.01										

PART B

(Office use only)

Discharge Serial No.
000205 - 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake	Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (D) (10)	CONTINUOUS MONITORING (11)
CHLORIDE 00940	21	20	1,760	6,33347	6,33347	1,15333	4,21298	A	O	S	A
CYANIDE 00720	0.063	0.0111	0.430	1.5474	1.5474	0.2420	0.7015	A	O	S	A
FLUORIDE 00951	0.15	1.4	0.520	1.8713	1.8713	0.2910	0.8436	A	O	S	A
ALUMINUM-TOTAL 01105	0.06	0.06	5.60	20.1520	20.1520	2.667	7.7302	A	O	ES (F)	A
ANTIMONY-TOTAL 01097	<0.05	< .01	< .100	<0.3599	<0.3599	< 0.1000	<0.2899	A	O	ES	A
ARSENIC-TOTAL 01002	< 0.1	< .10	< .10	< 0.3599	< 0.3599	<0.1000	<0.2899	A	O	ES	A
BARIUM-TOTAL 01007	W <0.01										
BERYLLIUM-TOTAL 01012	W <0.01										
BORON-TOTAL 01022	W 0.04										
CADMIUM TOTAL 01027	< 0.05	< 0.05	< 0.050	< 0.1799	<0.1799	< 0.0500	< 0.1449	A	O	ES	A

NC FORM

PART B

(Office use only)

Discharge Serial No. 000205-002

-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Parameter and Code	Intake: Untreated Intake Water (1)	Intake: Treated Intake Water (2)	Discharge: Maximum Concentration (3)	Discharge: Maximum Pounds per Day per Process Unit (4)	Discharge: Maximum Pounds per Day (5)	Discharge: Daily Avg. Concentration (6)	Discharge: Average Pounds per Day (7)	Sample Frequency (8)	Sample Type (9)	Method of Analysis (D) (10)	Continuous Monitoring (11)
HLORIDE 0940	21	20	100	183.7215	183.7215	73.33	86.1322	A	O	S	A
Y[redacted] 0720	0.063	0.0111	15	27.5582	27.5582	8.2567	9.6977	A	O	S	A
LUORIDE 0951	0.15	1.4	7.8	14.3303	14.3303	3.4667	4.0717	A	O	S	A
LUMINUM-TOTAL 1105	0.06	0.06	1.60	2.9395	2.9395	0.8333	0.9788	A	O	ES (F)	A
NTIMONY-TOTAL 1097	< 0.05	< 0.01	< 0.1	< 0.1837	< 0.1837	< 0.100	< 0.1175	A	O	ES	A
RSENIC-TOTAL 1002	< 0.01	< 0.10	< 0.1837	< 0.1837	< 0.1837	< 0.1000	< 0.1175	A	O	ES	A
ARIUM-TOTAL 1007	< 0.01	< 0.01	0.8000	1.4698	1.4698	0.6000	0.7047	A	O	ES	A
ERYLLIUM-TOTAL 1012	W < 0.01										
ORON-TOTAL 1022	W 0.04										
ADMIUM TOTAL 1027	< 0.05	< 0.05	< 0.0500	< 0.0919	< 0.0919	< 0.0500	< 0.0587	A	O	ES	A

INTERNAL ONLY

Toxics Summary Report
Ashtabula Problem Area

February 1981

David R. Barna
Donald F. Easterling

United States Environmental Protection Agency
Region V
Surveillance and Analysis Division
Eastern District Office
Westlake, Ohio

II. FINDINGS AND CONCLUSIONS

A. Ambient Environmental Problems

1. Contaminated Fish Flesh

a. Various studies over the years have shown that fish collected in the Ashtabula River and Fields Brook contain extremely complex bioaccumulative organic compounds. Relative to other fish sampled and analyzed in major United States watersheds, a 1976 study by ERL - Duluth showed the Ashtabula River fish to contain the greatest variety of chlorinated organics of all rivers studied. In addition to PCB's, 19 separate organochlorine compounds were identified in composite whole fish samples.

b. The bioaccumulative organics which have been detected in fish flesh analyses in the greatest concentrations include the following priority pollutants:

- hexachlorobenzene
- hexachlorobutadiene

c. Other organics identified in significant amounts include other chlorinated benzenes and styrenes.

d. Notwithstanding variability in fish sampling and accumulation of organics among fish species, follow-up studies have substantiated the presence of significant amounts of bioaccumuable chlorinated organics in Ashtabula River and Fields Brook fish.

e. Additional studies are being conducted under a grant to the University of Wisconsin from the U.S. EPA ERL - Duluth to investigate variability of organic contamination within a fish population.

2. Contaminated Sediments

a. Ashtabula River and Fields Brook sediments have been sampled on several occasions - June and September of 1979, and September 1980. Both core and surface dredge samples have been obtained. Sediments are also contaminated with a variety of toxic organic compounds as well as mercury, heavy metals, and other polychlorinated organics in high concentrations.

b. A recent investigation (September 1980) focused primarily on Field's Brook and tributary sediments. With respect to metals, zinc, mercury, lead and copper were identified in the greatest concentrations. The largest zinc concentration in the study (3600 µg/g) was found at the mouth of a tributary entering Fields Brook from the south near Route 11.

The two core samples (taken at Fields Brook near State Road and on the tributary entering Fields Brook from the north between State Road and Route 11) contained priority pollutants in significant quantities. These compounds included trichloro-[illegible]ethane, tetrachloroethylene, and 1,1,2,2-tetrachloroethane in the greatest amounts. The dredge samples at the other sites also exhibited volatile priority pollutants but in lesser concentrations.

In this study, only one sample was found to contain PCB (Aroclor 1248).

Information on specific manufacturing processes has been requested through a 308 ter, since the company would not provide this proprietary information during the pection. However, it is known that products produced over the last year include thylester monochloroacetate, a liquid polymer resin, phenol derivatives, and ustrial slimicides and metal coatings.

NPDES Compliance

The sampling and analyses of plant effluent indicated that NPDES permit itations was achieved. Also, a review of recent self-monitoring data showed no eedances of permit conditions.

Toxicity Evaluation - Static Bioassays & Organic Chemical Analyses

Static bioassays were conducted on fish and daphnia. The results of the bioassays cated the presence of toxicants, since 100% fish and daphnia mortality occurred at end of 24 hours of exposure. An algal bioassay was also performed which showed % inhibition of algal growth.

Regarding the presence of organic chemicals in the effluent, a total of 14 organic ipounds were detected. Carbon tetrachloride at 2.0 mg/l was the chemical ected at the highest concentration.

Ames Test

The Ames test involves exposing special strains of bacteria to concentrated ion of the wastewater sample. Changes in genetic structures of the bacteria are evaluated and compared to normal, predictable rates of change. Changes, or rtants, as they are called, occur at a rate greater than 2.5 times the normal or ground rate indicates the presence of mutagenic/carcinogenic compounds. Results ie Ames test on the semi-work effluent sample was negative.

b. SCM Corporation - Chemical Metallurgical Division - Ashtabula, Ohio (Appendix, Attachment 12).

The SCM Ashtabula plant produces titanium dioxide by processing impure titanium as through the chloride process.

NPDES Compliance

The results of the compliance sampling inspection revealed SCM to be within ES permit limitations, with minor deficiencies in sample handling and analyses. a review of past self-monitoring data indicates that SCM has had difficulty ing its pH limits.

During the survey, the SCM discharge raised copper and dissolved solids entrations above Ohio Water Quality Standards. The dissolved solids loading to s Brook was found to be 35,608 lbs/day.

Toxicity Evaluation - Static Bioassays & Organic Chemical Analyses

The results of the static bioassays showed SCM effluent to be toxic to daphnia g 48 exposure, but not toxic to fish (fathead minnows) during a 96 hour ure p

Rill #1

A Report on the Acute Toxicity of Effluent from SCM Corporation Outfall 001 to *Daphnia pulex*

Report Number 81-191-NEDO

Biomonitoring Section

Ohio Environmental Protection Agency

160187

V 012 MTB 5-1-81

SCM GLIDDEN PIGMENTS
CHEMICAL/METALLURGICAL
DIVISION OF SCM CORPORATION

2900 MIDDLE ROAD, P. O. BOX 310, ASHTABULA, OHIO 44004 (216) 998-1825

MAY 1, 1981

MR. MARK T. BAUMGARDNER
STATE OF OHIO
ENVIRONMENTAL PROTECTION AGENCY
NORTHEAST DISTRICT OFFICE
2110 EAST AURORA ROAD
TWINSBURG, OHIO 44087

SUBJECT: DISCHARGE MONITORING REPORT (DMR)
LABORATORY OH0000523

DEAR MR. BAUMGARDNER:

THIS IS IN RESPONSE TO THE USEPA NOTIFICATION THAT THE ANALYSIS RESULTS FOR TRACE METALS OF THE DMR WERE NOT ACCEPTABLE. REVIEW BY THE LABORATORY IMMEDIATELY DISCLOSED THAT WE REPORTED THE RESULTS IN MILLIGRAMS PER LITER AS COMPARED TO MICROGRAMS PER LITER. IT WAS ALSO NOTED THAT THE DECIMAL POINT WAS DROPPED IN REPORTING OUR RESULTS.

METAL	RESULTS REPORTED	ACTUAL TEST RESULTS (MG/L)	SHOULD HAVE REPORTED (UG/L)
CHROMIUM	106	1.06	1060
COPPER	53	.53	530
IRON	185	1.85	1850
ZINC	176	1.76	1760

OBVIOUSLY, THESE TWO ERRORS LED TO NOT ACCEPTABLE RESULTS. BUT AFTER CORRECTING THE ERRORS, ALL TRACE METALS FALL WITHIN THE ACCEPTANCE LIMITS.

VERY TRULY YOURS,

SCM CORPORATION
CHEMICAL/METALLURGICAL DIVISION

T. C. Gillen

T. C. GILLEN, PLANT MANAGER

M. F. Wetzel

M. F. WETZEL
SR. DIVISION PROJECT ENGINEER

MFW/JAG

CC: MR. DAVID A. PAYNE
QA COORDINATOR (WATER)
QA OFFICE, S&A DIV. - USEPA
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

T. C. GILLEN
W. P. HARDEE
E. G. ESTABROOK
F. TYNESKI, JR.

160207

E 3/3 Hidden Durkee Div
SCM

X

DATE 030481 PAGE 2733

NPDES LABORATORY PERFORMANCE EVALUATION REPORT DATE: 3/ 4/81

STUDY NUMBER N01

LABORATORY: OH0000523

PARAMETER	V P	REPORTED VALUE	TRUE VALUE	ACCEPTANCE LIMITS	WARNING LIMITS	PERFORMANCE EVALUATION
TRACE METALS IN MICROGRAMS PER LITER:						
CHROMIUM		1060	1130.	846.-1343.	908.-1281.	NOT ACCEPTABLE
COPPER		530	521.	438.-593.	457.-573.	NOT ACCEPTABLE
IRON		1850	1960.	1726.-2188.	1784.-2131.	NOT ACCEPTABLE
ZINC		1760	1750.	1561.-1919.	1605.-1874.	NOT ACCEPTABLE
PH-UNITS		7.3	7.40	7.22-7.60	7.27-7.55	ACCEPTABLE
DEMANDS IN MILLIGRAMS PER LITER:						
5 DAY BOD		53.2	67.2	39.6-94.7	46.4-87.9	ACCEPTABLE
OTHER PARAMETERS IN MILLIGRAMS PER LITER:						
NON-FILTERABLE RESIDUE		42.9	44.2	32.5-46.1	34.1-44.5	ACCEPTABLE

A+B+C
Reporting error
all ok
MTD 7/2/81

160195

84

OHIO ENVIRONMENTAL PROTECTION AGENCY
MODIFICATION OF NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM (NPDES) PERMIT

ISSUE DATE: April 28, 1977 EXISTING PERMIT NO: OH 0000523

EFFECTIVE DATE: July 5, 1977 APPLICATION NO: E 313 *BX

ENTITY NAME: SCM Corporation

FACILITY LOCATION: Glidden-Durkee Division
2900 Middle Road
Ashtabula, Ohio

In accordance with Rule 3745-33-06 of the Ohio Administrative Code (formerly Ohio EPA Regulation EP-31-06), the above referenced NPDES permit is hereby modified as follows:

Page 2 - Modified Effluent Limitations Table.

Attached is the modified page to the NPDES permit. (M2)

All terms and conditions of the existing permit not recommended for modification by this document will remain in effect. Further, any existing term or condition which this modification will change will remain in effect until any legal restraint to the imposition of this modification has been resolved. Any term or condition which this modification will change shall supersede, on the date this modification is effective, the existing respective term or condition of the permit.

When this modification is effective, the OEPA permit number will be changed to E 313 *BD. The application number will change to OH 0000523.

Ned E. Williams

Ned E. Williams, P.E.
Director

OEPA-NPDES-38
1/12/77

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting until September 1, 1978 the permittee is authorized to discharge from outfall(s) serial number(s) 001

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS kg/day (lbs/day) Daily Avg	Daily Max	Other Units (Specify) Daily Avg	Daily Max	MONITORING REQUIREMENTS Measurement Frequency	Sample Type
Flow (MGD)	-	-	-	-	Continuous	Recording
TSS	33(72)	70(154)	8.0 mg/l	17 mg/l	2xMonthly	Composite
TDS	21000(46200)	23800(532[illegible])	5000 mg/l	5700 mg/l	2xMonthly	Composite
Chromium	0.25(0.54)	0.42 (0.9)	0.06 mg/l	0.1 mg/l	2xMonthly	Composite
Copper	0.25(0.54)	0.42 (0.9)	0.06 mg/l	0.1 mg/l	2xMonthly	Composite
Zinc	0.25(0.54)	0.42 (0.9)	0.06 mg/l	0.1 mg/l	2xMonthly	Composite
Chlorine Residual	N/A	N/A	0.1 mg/l	0.3 mg/l	2xMonthly	Grab
Temperature	N/A	N/A	N/A	N/A	2xMonthly	Record of Max.

*See Part III

2. The pH shall not be less than 6.0 nor greater than 9.0 and shall be monitored continuous recording.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s): prior to final discharge.

sherwin williams chemicals

P. O. Box 310
2900 Middle Road
Ashtabula, Ohio 44004
Phone: 216-998-1825

MARCH 5, 1973

MR. A. H. MANZARDO, CHIEF PERMIT BRANCH
ENVIRONMENTAL PROTECTION AGENCY, REGION V
UNITED STATES OF AMERICA
1 NORTH WACKER DRIVE
CHICAGO, ILLINOIS 60606

REFERENCE: N.P.D.E.S. APPLICATION
No. OH 070 0X2 000205

REVISION OF APPLICATION
CORPS OF ENGINEERS DISCHARGE PERMIT
REFERENCE NUMBER 000205
ASHTABULA PLANT
SHERWIN-WILLIAMS CHEMICALS DIVISION
THE SHERWIN-WILLIAMS COMPANY
P. O. BOX NO. 310
ASHTABULA, OHIO 44004

DEAR MR. MANZARDO:

ATTACHED TO THIS LETTER ARE THE REVISIONS TO THE REFERENCED ORIGINAL APPLICATION FOR A CORPS OF ENGINEERS DISCHARGE PERMIT. THE REVISIONS ARE THOSE DISCUSSED JANUARY 3, 1973, IN A PHONE CONVERSATION BETWEEN MR. F. C. GAUGUSH, THE SHERWIN-WILLIAMS COMPANY, AND MR. RONALD TURNER, U.S.E.P.A., WITH A SUBSEQUENT CONFIRMING LETTER FROM MR. G. F. SCHLAUDECKER, GROUP VICE-PRESIDENT, CHEMICALS, THE SHERWIN-WILLIAMS COMPANY, TO MR. A. H. MANZARDO, CHIEF, PERMIT BRANCH, U.S.E.P.A.

BASIS FOR THE REVISIONS ARE EVENTS OCCURRING AFTER THE FILING OF THE ORIGINAL APPLICATION FOR FOUR DISCHARGE PERMITS. THREE OF THE FOUR ORIGINAL DISCHARGES ARE NO LONGER IN EXISTENCE, BEING ELIMINATED, WHICH LEAVES ONLY DISCHARGE SERIAL No. 000205-001, TiDox(R) OPERATION. ELIMINATION OF THE THREE DISCHARGE PERMITS CHANGES THE WATER BALANCE INTO AND FROM THE PLANT SITE.

ORIGINAL DISCHARGE, SERIAL NUMBER 000205-002, FOR THE CHEMICALS OPERATION IS NO LONGER IN EXISTENCE, AS A RESULT OF PHASING OUT THE CHEMICALS OPERATION ON THE PLANT SITE.

DISCHARGES IDENTIFIED IN THE ORIGINAL APPLICATION AS DISCHARGE SERIAL NUMBERS 000205-003 AND 000205-004, POWER HOUSE DISCHARGE AND COOLING WATER DISCHARGE RESPECTIVELY, NO LONGER ARE EFFLUENT FROM THE PLANT SITE. AN IMPROVEMENT PROJECT FOR THE WASTE WATER TREATING FACILITIES (COMPLETED IN THE THIRD QUARTER OF 1972) NOW CONTAINS THE DISCHARGES ON THE PLANT SITE.

160755

FORM APPROVED
OMB NO. 49-R 0408

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

APPLICATION FOR PERMIT TO DISCHARGE OR WORK IN NAVIGABLE WATERS AND THEIR TRIBUTARIES

SECTION I. GENERAL INFORMATION

1. State	Application Number (to be assigned by Corps of Engineers)			
O H	Div.	Dist.	Type	Sequence No.

2. Name of applicant and title of signing official: THE SHERWIN-WILLIAMS COMPANY; GROUP VICE PRESIDENT, CHEMICALS, G. F. SCHLAUDECKER

3. Mailing address of applicant:
THE SHERWIN-WILLIAMS COMPANY
101 PROSPECT AVE., N.W.
P. O. BOX NO. 6027
CLEVELAND, OHIO 44101

4. Name, address, telephone number and title of applicant's authorized agent for permit application coordination and correspondence:
G. F. WYMAN, PLANT MANAGER
SHERWIN-WILLIAMS CHEMICALS DIVISION
P. O. BOX NO. 310
ASHTABULA, OHIO 44004
PHONE: 216-993-1025

NOTE TO APPLICANT: Refer to the pamphlet entitled "Permits for Work and Structures in and for Discharges or Deposits into Navigable Waters" before attempting to complete this form.

Required Information

a. All information contained in this application will, upon request, be made available to the public for inspection and copying. A separate sheet entitled "Confidential Answers" must be used to set out information which is considered by the applicant to constitute trade secrets or commercial or financial information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential treatment can be considered only for that information for which a specific written request of confidentiality has been made on the attached sheet. However, in no event will identification of the contents and frequency of a discharge be recognized as confidential or privileged information.

b. The applicant shall furnish such supplementary information as is required by the District Engineer in order to evaluate fully an application.

c. If additional space is needed for a complete response to any item on this form, attach a sheet entitled "Additional Information." Indicate on that sheet the item numbers to which answers apply.

d. Drawings required by items 20 and 21 should be attached to this application. Other papers which must be attached to this application include, if applicable, copies of a water quality certification or a written communication which describes water quality impact (see Item 22 and Item 10 of Section II below), the additional information sheet(s) in "c" above, and the confidential information sheet described in "a" above.

Fees

If any discharge or deposit is involved, an application fee of $100 must be submitted with this application. An additional $50 is required for each additional point of discharge or deposit.

Signature

a. If a discharge is involved, an application submitted by a corporation must be signed by the principal executive officer of that corporation or by an official of the rank of corporate vice president or above who reports directly to such principal executive officer and who has been designated by the principal executive officer to make such applications on behalf of the corporation. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor. Other signature requirements are discussed in the pamphlet.

b. If no discharge is involved, an application may be signed by the applicant or his authorized agent.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate.

Signature of Applicant
G. F. SCHLAUDECKER, GROUP VICE PRESIDENT

18 U.S.C. Section 1001 provides that:

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

FOR CORPS OF ENGINEERS USE ONLY

Acronym name of applicant

Are discharge structures: Major? ☐ Minor? ☐ N/A? ☐

Date received, form not complete — — — — — —
Date received, form complete but without certificate — — — — — —
Date received, form complete — — — — — —
Date of Cert./Ltr. — — — — — —
day mo yr

Date sent to EPA, forms not complete — — — — — —
Date sent to EPA, NOAA, DI, AEC, FPC in complete form — — — — — —
day mo yr

ENG FORM 4345
MAY 71

160157

PART B

(Office use only)

Discharge Serial No. 000205-001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake	Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING (11)
CHLORIDE 00940	75	69	1,314	107	7,622	1,167	6,769	CONT	DYLY	STD MTHD	ABS
CYANIDE 00720	W < 0.1	< 0.1	< 0.1	< 0.01	< 0.58	< 0.1	< 0.58	"	"	"	"
FLUORIDE 00951	0.30	0.30	1.40	0.11	8.12	1.16	6.73	"	"	"	"
ALUMINUM-TOTAL 01105	W 855	215	320	< 1	2	293	2	"	"	"	"
ANTIMONY-TOTAL 01097	138	122	458	< 1	3	433	3	"	"	"	"
[redacted]-TOTAL [redacted]	23	19	31	< 1	< 1	[redacted]	< 1	"	"	"	"
BARIUM-TOTAL 01007	W < 10							COMP	"	"	"
BERYLLIUM-TOTAL 01012	W < 10							"	"	"	"
BORON-TOTAL 01022	W 40							"	"	"	"
CADMIUM-TOTAL 01027	W < 50	< 50	< 50	< 0.1	< 0.1	< 50	< 0.1	"	"	"	"

ENG FORM JUN 71 4345-1

160762

PART B

(Office use only)

Discharge Serial No. 000205-001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake	Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING (11)
CALCIUM-TOTAL 00916	W 49.3	32.1	25.2	2.1	146.2	23.8	138.1	CONT	DYLY	STD MTHD	ABS
CHROMIUM-TOTAL 01[illegible]	12	7	74	< 1	< 1	46	< 1	CONT	"	"	"
COBALT-TOTAL 01037	W < 10							COMP	"	"	"
COPPER-TOTAL 01042	13	13	32	< 1	< 1	25	< 1	CONT	"	"	"
IRON-TOTAL 01045	1,133	84	297	< 1	2	271	2	CONT	"	"	"
LEAD-TOTAL 01051	W < 10	< 10	< 10	< 1	< 1	< 10	< 1	COMP	"	"	"
MAGNESIUM-TOTAL 00927	W 8	5	6	< 1	34	5	29	CONT	"	"	"
MANGANESE-TOTAL 01055	W 52	5	10	< 1	< 1	9	< 1	CONT	"	"	"
MERCURY-TOTAL 71900	W < 0.5	< 0.5	< 0.5			< 0.5		COMP	"	"	"
MOLYBDENUM-TOTAL 01032	W < 10							COMP	"	"	"

ENG FORM JUN 71 4345-1

In conjunction with a special study of Fields Brook and entities that discharge into it, grab samples were taken from a total of 16 sites for static screening bioassays. The intention of the study was to sample as many sites as possible in one day to determine if a toxicity problem existed at any site. It was practical to use only Daphnia pulex as the test organisms under these conditions.

A grab sample of effluent from outfall 001 of the SCM Corporation was collected and used in a 48-hour static screening bioassay with D. pulex as the test organism. Details of the test may be found on the attached bioassay report form. **The sample was acutely toxic to D. pulex. All of the daphnids exposed to the [redacted] were rendered immobile during the test.**

These screening bioassays were utilized to determine if an effluent was acutely toxic to the test organism and indicate if additional screening bioassays using D. pulex and the fathead minnow, Pimephales promelas, should be conducted. Based upon the results of this screening bioassay further screening bioassays involving both D. pulex and P. promelas should be conducted.

A Report on the Acute Toxicity of

Effluent from [redacted] 001

[redacted]

Report Number 81-191-NEDO

Biomonitoring Section

Ohio Environmental Protection Agency

SAT

OhioEPA Inter-Office Communication

TO: Fields Brook File DATE: April 20, 1981

FROM: Kelvin F. Rogers; IWW/NEDO

SUBJECT: Preliminary Report on the Intensive Fields Brook Screening Bioassay Program

On April 6, 1981, grab wastewater samples were obtained from twelve industrial discharge sites in Fields Brook, Ashtabula, Ohio. The samples were collected by personnel from the Northeast District Office of the Ohio EPA. Samples from four in-stream stations were also taken. Duplicate samples from each of the sixteen sites were analyzed for total residual chlorine (TRC), pH, and total dissolved solids (TDS). Forty-eight hour static screening bioassays with Daphnia pulex were performed on the twelve industrial site samples and the D.S. Tributary. For the three Fields Brook in-stream sites, 48 hour static screening Daphnia pulex and fathead minnow (Pimephales promelas) bioassays were run. The results of these tests are attached. For information on the bioassay procedure, refer to my IOC to C. Webster dated January 23, 1981.

A water/wastewater sample that produces over 20% mortality or immotility in aquatic organi is considered toxic. The results from these screening bioassays indicate that there does not appear to be any acute toxic effects on Fields Brook from the industrial dischargers. Our office will be collecting montly samples from the three Fields Brook in-stream station in order to document this condition. It should be noted that the screening bioassays only measure short-term acute toxicity. Long term exposure effects are still unknown.

Those entities which were found to have toxic effluents as a result of this study will be the subject of further testing and bioassay work.

KFR:psj

FIELDS BROOK BIOASSAY RESULTS

A. Forty-eight static screening *Daphnia pulex*

STATION	24 HOUR % Immotility	48 HOUR % Immotility	pH (S.U.)	TDS (mg/l)	TRC (mg/l)
Control	0	10	---	--	<0.02
[illegible]	[illegible]	100	7.6	3454	<0.02
Olin	20	80	8.1	2514	<0.02
General Tire	10	30	7.3	970	<0.02
G & W 001	0	0	7.7	388	<0.02
Detrex Runoff	10	10	7.8	352	<0.02
G & W 002	100	100	7.6	5262	<0.02
Fields Brook-State Road	10	20	7.6	2676	<0.02
RMI-Sodium	0	0	8.2	1284	<0.02
iamond Shamrock	0	0	7.7	320	<0.02
Detrex 002	20	30	9.6	220	<0.02
Combined Sewer	0	0	8.2	1060	<0.02
RMI-Extrusion	70	70	8.0	322	0.02
[illegible]ibutary	100	100	4.8	4570	<0.02
RMI-Metals	0	0	8.9	522	<0.02
Fields Brook-S.R. 11	0	0	7.6	1614	<0.02
Fields Brook-E. 15th Street	0	0	7.9	1626	<0.02

B. Forty-eight hour static screening fathead minnow (*Pimephales promelas*)

STATION	RESULTS
Control	No mortality after 48 hours
Fields Brook-State Road	No mortality after 48 hours
Fields Brook-S.R. 11	No mortality after 48 hours
Fields Brook-E. 15th Street	No mortality after 48 hours

OhioEPA Inter-Office Communication

TO: IWW & Surveillance Groups DATE: June 10, 1981

FROM: Kelvin Rogers - NEDO Bioassay Coordinator KFR

SUBJECT: Fields Brook Bioassay Program - Phase II

The Phase I portion of this program, the intensive screening bioassay survey, has been completed (see the attached results). The industrial dischargers which did not pass the screening bioassays will be subject to further investigation regarding the toxicity of their effluent. The people assigned to the problem companies should make arrangements for further bioassay and chemical sampling at these companies. A review of the problem entities and proposals for the next step in characterizing the toxicity of their effluents follows:

1) RMI Extrusion Plant 001. Further study has already been done on this facility. The toxicity found during the screening bioassays was determined to be caused by relatively high levels of residual chlorine already present in their intake water - which is city drinking water.

2) Gulf and Western 002 ($TiCl_4$ Plant). Toxicity is probably attributed to high TDS. A full scale bioassay to determine the EC50 of the wastewater should be the next step. Also, chemical sampling to attempt to determine what components of TDS are the primary toxicants should be performed in conjunction with the bioassay.

3) SCM Corporation 001. Toxicity probably attributed to high TDS levels. Same follow-up as for G & W 002.

4) Olin Corporation 001. Toxicity attributed to possible organic contaminants. A full scale bioassay to determine EC50 should be performed, along with general chemical analyses to verify that common pollutants are not the major toxicants. Selected parameters should also be measured in conjunction with the bioassay sampling.

5) General Tire and Rubber Company 001. As this station caused fairly low Daphnia immotility (30%), a second Daphnia screening bioassay should be performed to verify that this is a normal condition. Selected chemical parameters should also be measured as a check for possible toxicants.

6) Detrex Chemicals 002. Same follow-up as for General Tire.

7) Diamond Shamrock Tributary. Toxicity attributed to coal pile runoff from CEI facility. Investigation should be made into proposed treatment for this wastewater source. Further bioassay work may be necessary, as pollutants from other sites may be entering this stream.

SCM PIGMENTS
SCM CORPORATION

2426 MIDDLE ROAD, PLANT 2, P. O. BOX 160, ASHTABULA, OHIO 44004 (216) 997-5501

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 24, 1986

Mr. William Miller
Division of Industrial Wastewater
Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

Dear Mr. Miller:

An excursion with respect to lead concentration and loading occurred at Outfall 002, Permit Number 3IE000017 on March 5, 1986. [redacted]

The maintaining of higher pH levels in the 3rd and 4th stage of the neutralization system has had a positive effect but it's not the entire answer. The question that still remains to be answered is why after so many years with no lead that we are experiencing problems now.

Envirolab is investigating this problem from their end. Envirolab has sent samples to other labs to confirm their results and have found there are discrepancies. Envirolab has indicated to us that there is a possibility that something in the effluent samples is causing interference with their analytical procedures.

Sincerely,

R. Shimko

R. Shimko
TiCl4 Unit Superintendent

kr

cc: D. A. Towner - SCM II, Ashtabula
A. C. Steinbronn - SCM II, Ashtabula

RECEIVED
MAR 27 1986
OHIO EPA-N.E.D.O.

SCM PIGMENTS
SCM CHEMICALS
DIVISION OF SCM CORPORATION

MIDDLE ROAD, PLANT 2, P. O. BOX 160, ASHTABULA, OHIO 44004 (216) 997-5501

Certified Mail NO. P09 3943920
Return Receipt Requested

October 2, 1984

Mr. William Miller
Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

Dear Mr. Miller:

Excursions with respect to TDS and lead loading occurred on Outfall 3IE00017002 on September 12, 1984.

The dissolved solids loading was 63,536 kg/day compared to a limit of 53,900 kg/day. The concentration was 6,670 mg/l, well below the daily limit; however, coupled with a high flow of 2.5 MGD this concentration resulted in a loading excursion.

The lead loading was 1.7 kg/day versus a permit limit [redacted] This result is highly questionable. The lead concentration in Outfall [redacted] is normally <0.05 mg/l. On September 12, it was 0.18 mg/l. There is no reason why it should be that high since lead is not found in the raw materials used in this plant, and an analytical error or sample contamination is therefore suspected.

Sincerely,

AC Steinbronn
by KH Kirk

A. C. Steinbronn
TiCl4 Unit Superintendent

kr

RECEIVED
OCT 3 - 1984
OHIO ENVIRONMENTAL PROTECTION AGENCY
N. E. D. O.

SCM PIGMENTS
SCM CORPORATION

2426 W. [illegible] ROAD, PLANT 2, P. O. BOX 150, ASHTABULA, OHIO 44004 (216) 997-5501

Certified Mail
Return Receipt Requested

January 8, 1986

Mr. William Miller
Division of Industrial Wastewater
Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio 44087

Dear Mr. Miller:

An excursion with respect to lead concentration and loading occurred at Outfall 002, Permit Number 3IE00017 on December 25, 1985.

The lead concentration was 0.26 mg/l [illegible] 1.6 kg/day versus the permit limits of [illegible] 1.5 kg/day.

In my letter dated 12/26/85, I mentioned that I was in the process of pulling samples to identify possible sources of lead in the plant. Based on the results I have obtained, two sources have tentatively been identified. I am continuing to investigate this matter to confirm the initial data that I have received.

Very truly yours,

Rodney Shimko /RS/

Rodney Shimko
$TiCl_4$ Unit Superintendent

/e

cc: A. C. Steinbronn - SCM Pigments, Ashtabula II

RECEIVED
JAN - 9 1986
OHIO EPA-N.E.D.O

SCM PIGMENTS
SCM CORPORATION

2426 MIDDLE ROAD, PLANT 2, P. O. BOX 160, ASHTABULA, OHIO 44004 (216) 997-5501

Certified Mail P09 3943924
Return Receipt Requested

December 26, 1985

RECEIVED
DEC 30 1985
OHIO EPA-N.E.D.O.

Mr. William Miller
Division of Industrial Wastewater
Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

Dear Mr. Miller:

An excursion with respect to lead concentration and loading occurred at Outfall 002, Permit Number 3IE00017 on December 4, 1985.

The lead concentration was 0.25 mg/l and the loading was 2.05 kg/day versus the permit limits of 0.2 mg/l and 1.5 kg/day.

I can not offer an explanation for the excursions at this time but I am in the process of pulling samples to identify possible sources of lead in the plant. I will inform you of the results as I obtain them.

Sincerely,

R. Shimko

Rodney Shimko
TiCl4 Plant Superintendent

cc: D. A. Towner - SCM Pigments, Ashtabula
A. C. Steinbronn - SCM Pigments, Ashtabula

116

SCM PIGMENTS
SCM CHEMICALS
DIVISION OF SCM CORPORATION

2426 MIDDLE ROAD, PLANT 2, P. O. BOX 169, ASHTABULA, OHIO 44004 (216) 997-5551

March 12, 1985

Mr. William Miller
Ohio Environmental Protection Agency
2110 East Aurora Road
Twinsburg, OH 44087

Dear Mr. Miller:

An excursion with respect to chromium loading occurred on Outfall 002 on February 27, 1985.

[redacted] Since both the pH and iron concentration were normal on that particular day, there is no explanation for the higher than normal chromium concentration which resulted in the excursion.

Sincerely,

A. C. Steinbronn
TiCl4 Unit Superintendent

kr

RECEIVED
MAR 14 1985
OHIO EPA-N.E.D.O

121306

SCM PIGMENTS
ASHTABULA PLANT II
ASHTABULA, OHIO

QUARTERLY REPORT TO OHIO EPA
SOURCE B004 COAL QUALITY

	JULY	AUGUST	SEPTEMBER
BF-101 Coal Boiler Operating Hours	672.0	645.5	604.5
Total Coal Burned, Tons	1287.6	743.9	1039.6
Average Ash Content, %	7.26	7.07	6.94
Average Sulfur Content, %	1.44	1.55	1.12
Average Heat Content, BTU/Lb.	13740	13731	13886
Average SO_2 Emission Rate, lb SO_2 /10^6 BTU	1.99	2.14	1.53

R. L. LAMBERT/kr/
NOVEMBER 14, 1985

112

MONTH/YEAR October, 1985

Excess Emission Report

Monitored Source * [redacted]

OPACITY LIMIT Per 3745-17-07

Company Name [redacted] II

Location ASHTABULA, OHIO

Date	Start **	End	% Opacity AVG.	% Opacity MAX.	Cause	Corrective Action Taken
10/09	0540	0545	96	96	Blew Soot ✓	None
10/09	0730	0745	50	70	Sheared stoker pin ✓	Replaced pin
10/09	1925	1935	96	96	Blew Soot ✓	None
10/09	2115	2120	25	31	Sheared stoker pin ✓	Replaced pin
10/10	0550	0555	96	96	Blew Soot ✓	None
10/10	1630	2010	30	56	Poor coal quality ✓	Adjusted Air/Fuel
10/11	0425	0430	96	96	Blew Soot ✓	None
10/11	2205	2210	96	96	Blew Soot ✓	None
10/11	2220	2230	26	36	Pull ash ✓	None
10/12	0540	0550	26	40	Pull ash ✓	None
10/12	2130	2135	96	96	Blew Soot ✓	None
10/13	0510	0515	96	96	Blew Soot ✓	None
10/13	1740	1745	70	88	Sheared stoker pin ✓	Replaced pin
10/13	2135	2140	96	96	Blew Soot ✓	None
10/14	0435	0440	98	98	Blew Soot ✓	None
10/14	0440	0450	30	52	Pull ash ✓	None
10/14	1025	1040	60	78	Sheared stoker pin ✓	Replaced pin

Notes: * Identification of monitored source. Separate sheet for each unless a single monitor serves more than one.
** Start and end times (24-hour clock) of six minute exceedances, or consecutive multiples thereof.

Also report the start up and shutdown times for the monitored source(s) on this or a separate sheet.

061810

117

MONTH/YEAR December, 1985

Excess Emission Report

Monitored Source * BF-101 COAL BOILER

OPACITY LIMIT Per 3745-17-07

Company Name SCM PIGMENTS - PLANT II

Location ASHTABULA, OHIO

Date	Start **	End	% Opacity AVG.	% Opacity MAX.	Cause		Corrective Action Taken
12/10	2125	2130	98	98	Blew soot	✓	None
12/11	0455	0500	98	98	Blew soot	✓	None
12/11	2055	2100	98	98	Blew soot	✓	None
12/12	0450	0455	98	98	Blew soot	✓	None
12/12	2120	2125	98	98	Blew soot	✓	None
12/13	0450	0455	98	98	Blew soot	✓	None
12/13	0850				Collectors Off Line	✓	[redacted]
12/14		1200			Collectors On Line	✓	
12/14	1935	1945	98	98	Blew soot	✓	None
12/15	0600	0605	98	98	Blew soot	✓	None
12/15	2020	2025	98	98	Blew soot	✓	None
12/16	0525	0530	98	98	Blew soot	✓	None
12/16	1750	1825	30	46	Pull ash	✓	None
12/16	2030	2035	98	98	Blew soot	✓	None
12/17	0540	0545	98	98	Blew soot	✓	None
12/17	2045	2050	98	98	Blew soot	✓	None
12/18	0515	0520	98	98	Blew soot	✓	None

Notes: * Identification of monitored source. Separate sheet for each unless a single monitor serves more than one.

** Start and end times (24-hour clock) of six minute exceedances, or consecutive multiples thereof.

Also report the start up and shutdown times for the monitored source(s) on this or a separate sheet.

06/819

118

SCM CHEMICALS DIVISION
DIVISION OF SCM CORPORATION

299 PARK AVENUE, NEW YORK, NEW YORK 10171-0161

STEVEN J. SALTZMAN
STAFF ATTORNEY

(212) 752-2700

September 24, 1985

RECEIVED
SEP 27 1985
OHIO EPA-N.E.D.O.

Ohio Environmental Protection Agency
2110 East Aurora Road
Twinsburg, OH 44087-1969

Re: O.E.P.A. Permit to Install No. 02-1545
Premise No. 0204010193, Facility at
2426 Middle Road, Ashtabula, Plant No. 2

Gentlemen:

Please be advised that, as part of a corporate reorganization, the assets of the business operating under the above referenced permit or license have been transferred to a new corporation, ABC Chemicals Inc. We hereby request that you change your records to reflect this change in corporate ownership.

However, please note that the operation and management of the above-referenced facility is expected to be unchanged.

Very truly yours,

SCM CORPORATION

By: Steven J. Saltzman

062315

119

OK
2/8/84

SCM CHEMICALS
DIVISION OF SCM CORPORATION

3901 GLIDDEN ROAD, BALTIMORE, MARYLAND 21226 (301) 355-3600

STUART G. BRESLOW
STAFF ATTORNEY

February 2, 1984

Division of Air Pollution Control
Northeast District Office
Ohio EPA
2110 E. Aurora Road
Twinsburg, Ohio 44087

Attention: Mr. Dennis Bush

Re: Acquisition of G+W TiO_2 Facility

Dear Mr. Bush:

This is to confirm for your records that SCM Corporation has acquired the titanium dioxide and titanium tetrachloride manufacturing facility located at [redacted], Inc. This was accomplished through a purchase agreement in which SCM purchased the assets from Gulf + Western. [redacted]ve [redacted]te of this sale was November 1, [redacted].

SCM will continue to operate the facility under the air quality permits that are currently in force.

I trust that this letter will be sufficient to enable you to issue these permits in the name of SCM Corporation. If you need any additional information regarding this matter, please contact me.

Very truly yours,

Stuart G. Breslow

SGB:ltc

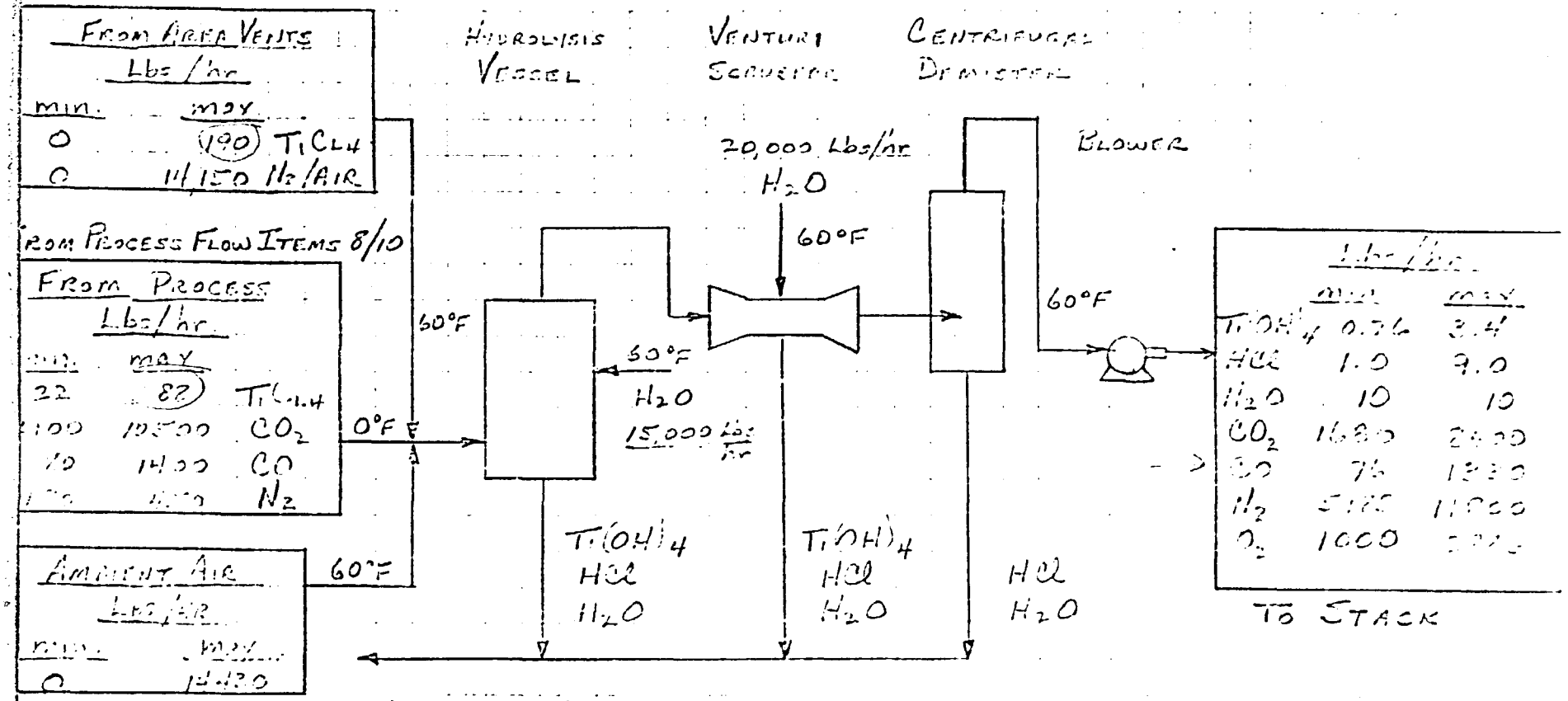
cc: D. Towner

RECEIVED
FEB 8 - 1984
OHIO ENVIRONMENTAL PROTECTION AGENCY
N.E.D.O.

076574

$TiCl_4$ Process - Scrubbing System

See Notes on attached page



Water to Waste Treatment System

To Water Treatment

min	lbs/hr	max	avg
13.2	$Ti(OH)_4$	166	
16	HCl	205	
35,000	H_2O	35,000	

$\frac{54.2}{12.4} = 12.40$ TPY

Total Allowable Emission Weight = 40.[illegible] Lbs/hr

Total Uncontrolled Emission Weight = 12.4 Lbs/hr.

5[illegible]

120

FOR OFFICIAL USE ONLY
Premise No. ____/____/____/____
Source No. ____/____

DATA SHEET
CONTROL EQUIPMENT

1. Facility Name The New Jersey Zinc Co. Person to Contact D. A. Towner

Facility Address Middle Road (Street) Mailing Address P.O. Box 160 (Street)

Ashtabula (City, Village or Township) Ashtabula (County) 44004 (Zip) — Ashtabula (City) Ohio (State) 44004 (Zip)

Telephone (216) (Area Code) 997-5501 (Number)

2. Type of gas cleaning equipment (check one):
☐ Settling chamber ☐ Cyclone ☐ Multiple cyclone ☐ Electrostatic precipitator ☐ Fabric filter
☐ Absorber ☐ Incineration ☒ Wet collector, type venturi ☐ Adsorber

A separate "Data Sheet for Control Equipment" must be completed for each control device. Stack data should be shown on form AP-PS-07, "Data Sheet -- Stacks and Other Egress Points".

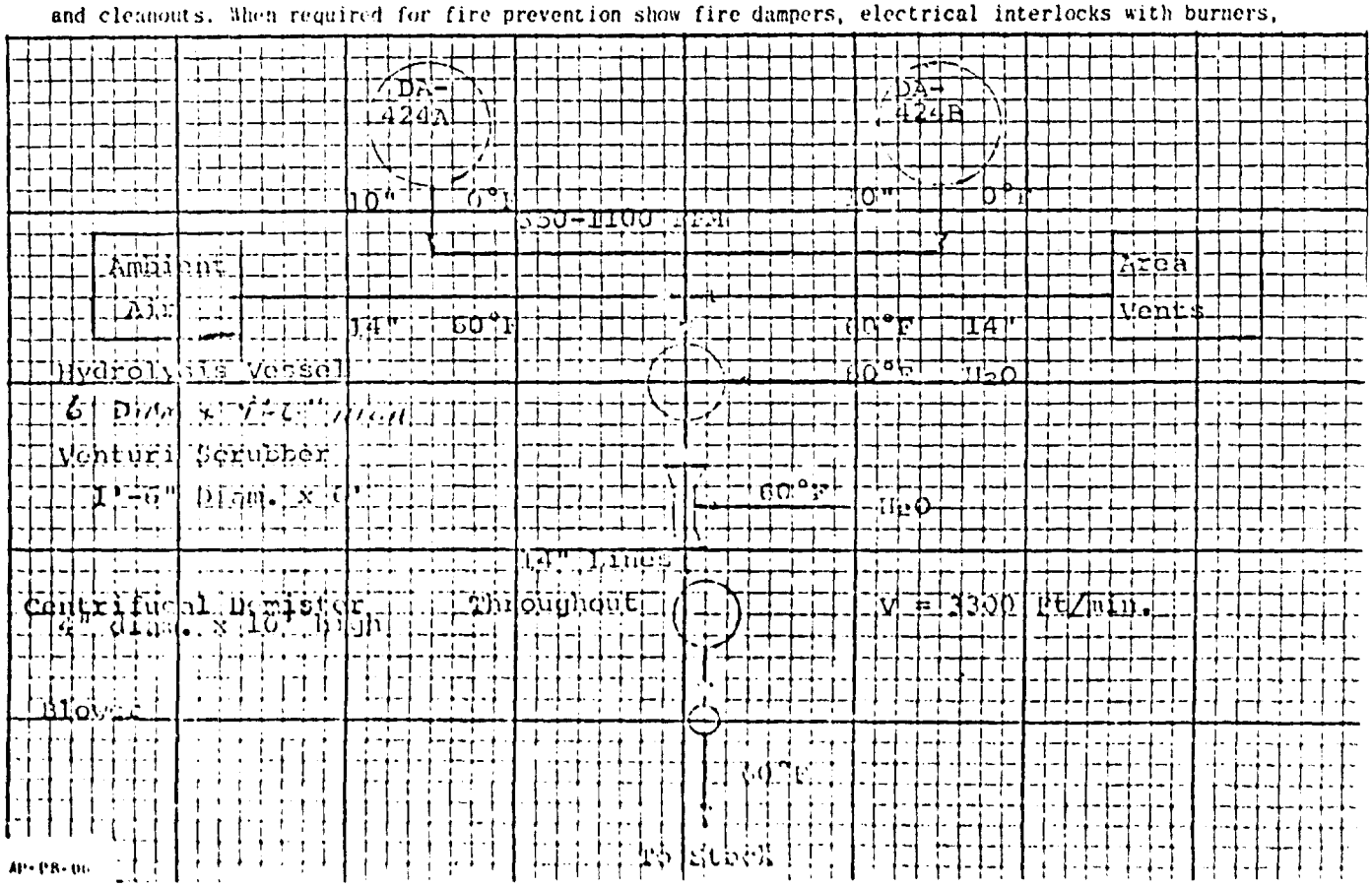
3. Manufacturer Polycon, Inc. Model No. 1203 FRP & 1505 FRP Year installed 1973
4. Your identification $TiCl_4$ Scrubber Sys. Pollutant(s) controlled $TiCl_4$, HCl
5. Design efficiency 96% Pressure drop across collector 45 in. H_2O
6. Efficiency (operating - if known) _____ Controlled pollutant emission rate (if known) 12.4 lbs/hr
7. Total installed capital equipment cost $50,000

FAN DATA

8. Type: ☐ Axial ☐ Centrifugal RPM 3600 HP 75 Static pressure 60" H_2O
9. Volume 4000 ACFM at 60 °F. No. of fans in system 1

CAPTURE AND TRANSPORT DATA

10. Ductwork detail: Draw a plan view of the source equipment and air cleaning equipment. Indicate transport velocity in actual feet per minute, total system resistance in inches of water, and gas moisture content and temperature. Include such other pertinent information as: dimensions, elbows, duct material, dampers and cleanouts. When required for fire prevention show fire dampers, electrical interlocks with burners,



AP-PS-06

07070

12

G+W Natural Resources Group
GULF + WESTERN INDUSTRIES
Chemicals Division - Titanium

P.O. Box 160
Ashtabula, Ohio 44004
(216) 997-5501

REGISTERED MAIL
RETURN RECEIPT REQUESTED

February 21, 1977

Mr. Don Heuer
Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

Dear Mr. Heuer:

The enclosed Renewal Application for a Permit to Operate an Air Contaiminant Source has been made out in the name of G+W Natural Resources Group - Titanium. [redacted] name change from The New Jersey Zinc Company, [redacted] in [redacted]. ?

Very truly yours,

F. R. Mohrmann
Plant Manager

kr

070758

122

TITANIUM PIGMENTS DIVISION

GW The New Jersey Zinc Company

A GULF + WESTERN COMPANY

P. O. Box 160, Ashtabula, Ohio 44004 (216) 997-5501 NJZ

November 16, 1973

The New Jersey Zinc Company
Ashtabula, Ohio

Titanium Dioxide Unit Air Permit Variance Application

[redacted] Ohio.

The facility, subject of this permit application, is engaged in the production of titanium dioxide by the chloride process. In this process, titanium tetrachloride is burned with oxygen to produce pigmentary titanium dioxide.

During the past year NJZ has installed scrubbing equipment for control of emissions. Installation followed the compliance time schedule filed with this permit application through Milestone 3 - "Initiation of on-site construction and installation of emission control equipment".

The completion of Milestone 4 - "Completion of on-site construction and installation of emission control equipment" was delayed because of delivery problems with the process gas blower. This blower, a speciality item, was manufactured by the Buffalo Forge Company, Buffalo, New York, the only supplier available which makes the equipment. Final delivery of the equipment and completion of construction was accomplished on September 21, 1973 approximately eleven weeks past the timetable milestone date. In the interim a less reliable process gas blower was installed and the system was operated.

Since installing the system and running preliminary testing programs we have noted:

1. a dramatic visual improvement in plant effluent gas. With the exception of very humid days there is no perceptible plume when the scrubber is operating.

2. Efficiency of removal of pollutants is less than predicted by the equipment manufacturer and not high enough to insure compliance with state standards.

3. operational problems with the equipment.

070780

,23

0204010200

THE SHERWIN-WILLIAMS CO.

A. D. CHILDS
ASSISTANT VICE PRESIDENT AND
GENERAL COUNSEL

EXECUTIVE OFFICES
101 PROSPECT AVE. N.W.
CLEVELAND, OHIO 44115

October 11, 1974

Mr. David Woodring, Section Chief
Ohio Environmental Protection Agency
North Eastern District Office
2110 East Aurora Road
Twinsburg, Ohio 44087

Re: Transfer to SCM Corporation of
Permits to Operate numbers
0204010200 B001
0204010200 B002
0204010200 P001
0204010200 P002

Dear Mr. Woodring:

[redacted] Sherwin-Williams' Titanium [redacted].

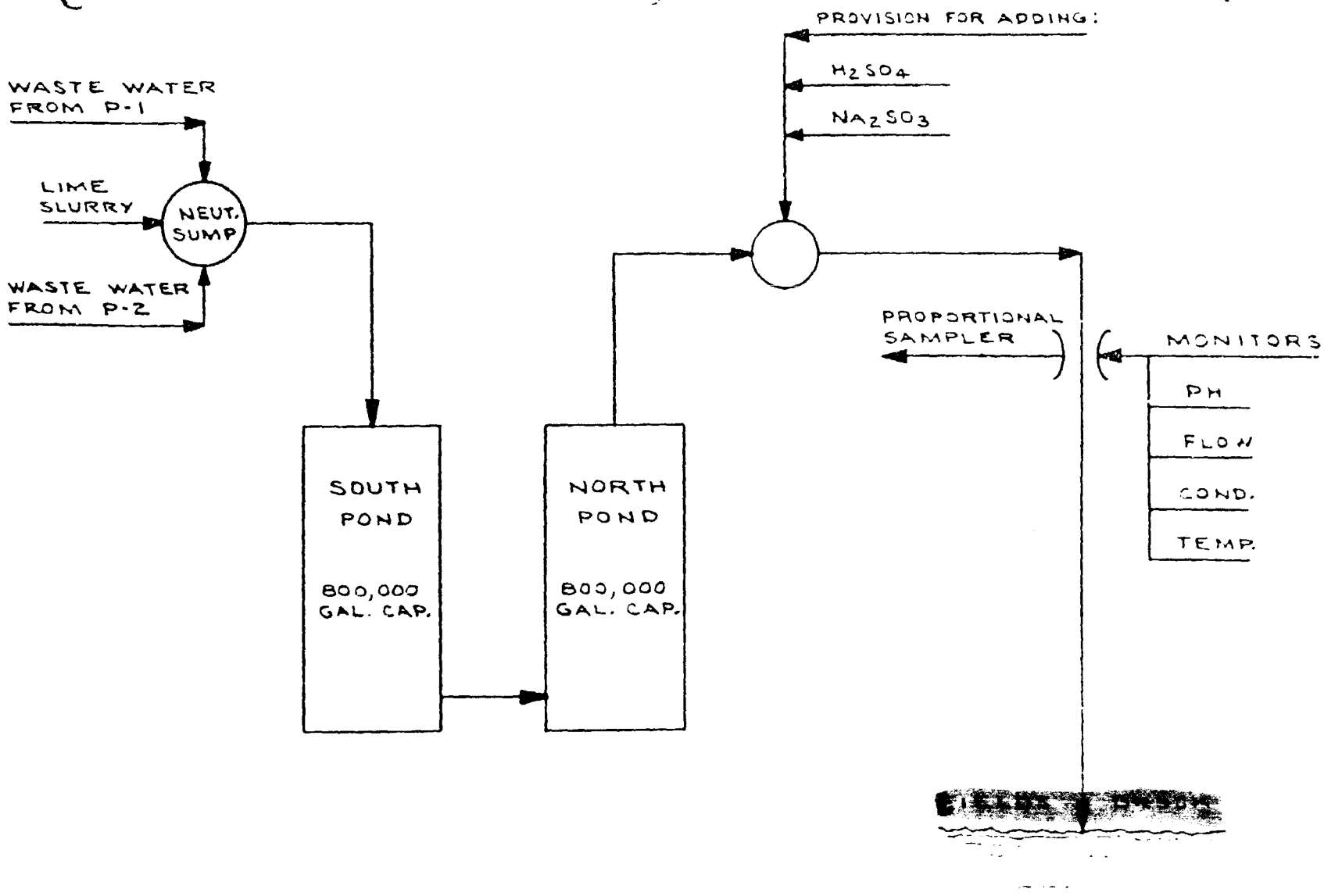
Pursuant to Section 3704.03 (G) O.R.C. and Ohio Environmental Protection Agency Regulation EP-32-02 (D)(3) and in accordance with your conversation October 9, 1974 with Charles G. Bretz, Jr., notice is hereby given of the transfer, effective this date, of the subject Permits to Operate to SCM Corporation.

Enclosed is the acceptance by SCM of the transfer of these permits and of their assumption of all duties and conditions thereunder.

Very truly yours,

ADC/fh

08/603



WASTE WATER TREATMENT SYSTEM

DATE: [illegible]
BY: D.O.K.

081637

124

Ohio Environmental Protection Agency
Application for Modification of Ohio NPDES Permit

For Agency Use	Application Number: OH-0000523
	Date Received: 76 10 01 (Year Month Day)

1. Number of permit for which modification is being requested OH-0000523

2. Name of organization responsible for facility Glidden-Durkee, Div. of SCM Corporation

3. Address, location, and telephone number of facility producing discharge:

   A. Name Glidden-Durkee, Division of SCM Corporation

   B. Mailing Address:

      1. Street Address P. O. Box 310

      2. City Ashtabula

      3. State Ohio 4. Zip Code 44004

   C. Location:

      1. Street 2900 Middle Road

      2. City Ashtabula 3. County Ashtabula

   D. Telephone No. 216 (Area Code) 998-1825

4. Describe in detail the provision(s) of the permit the applicant wishes to modify.

Parameter	Avg. Kg/day	Max. Kg/day	Avg. mg/l	Max. mg/l
Total Suspended Solids	23	50	8	17
Total Dissolved Solids	15,000	17,000	5,000	5,700
Metals (Cu, Cr, Zn)(each)	0.14	0.28	0.06	0.1

We wish to modify these requirements.

5. Describe in detail the reason a modification is desired. (See Regulation EP-31-06 for grounds for modification.)

The production facility is being upgraded to maximize the potential capacity of the existing process units. This is being done by adding ancillary equipment to "debottleneck" the existing facilities. This added capacity will raise the volume of the discharge. This will increase the daily loading. It is requested that the permit be revised as follows, based on a 1.1 MGD flow:

Parameter	Avg. Kg/day	Max. Kg/day	Avg. mg/l	Max. mg/l
Suspended Solids	33	70	8	17
Dissolved Solids	21,000	23,800	5,000	5,700
Copper	.25	.42	0.06	0.1
Zinc	.25	.42	0.06	0.1
Chromium	.25	.42	0.06	0.1

6. Name of receiving water or waters Field's Brook

(2)

SCM CHEMICALS DIVISION
DIVISION OF SCM CORPORATION
299 PARK AVENUE, NEW YORK, NEW YORK 10171-0161

STEVEN J. SALTZMAN
STAFF ATTORNEY

(212) 752-2700

September 24, 1985

Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087-1969

Re: OEPA Permit No. 0204010200P001
Facility at 2900 Middle Road,
Ashtabula, Plant No. 1

Gentlemen:

Please be advised that, as part of a corporate reorganization, the assets of the business operating under the above-referenced permit or license have been transferred to a new corporation, ABC Chemicals Inc. We hereby request that you change your records to reflect this change in corporate ownership.

However, please note that the operation and management of the above-referenced facility is expected to be unchanged.

effective date
Sept 13, 1985

Very truly yours,

SCM CORPORATION

By: Steven J. Saltzman

RECEIVED
SEP 26 1985
OHIO EPA-N.E.D.O.

081671

126

FOR OFFICIAL USE ONLY
Premise No. 03-09-01-0200
Source No. 5/009

DATA SHEET
STACKS AND OTHER EGRESS POINTS

1. Facility Name Sherwin-Williams Chemicals Div. Ashtabula Plant Person to Contact G. F. Wyman

Facility Address 2900 Middle Road (Street) Mailing Address P. O. Box 310 (Street)

Ashtabula Township (City, Village or Township) Ashtabula (County) 44004 (Zip) Ashtabula (City) Ohio (State) 44004 (Zip)

Telephone 216 (Area Code) 998-1825 (Number)

2. Type: X Round ☐ Rectangular - top inside dimension(s) (L & W or Diam.) 60" x 63'0

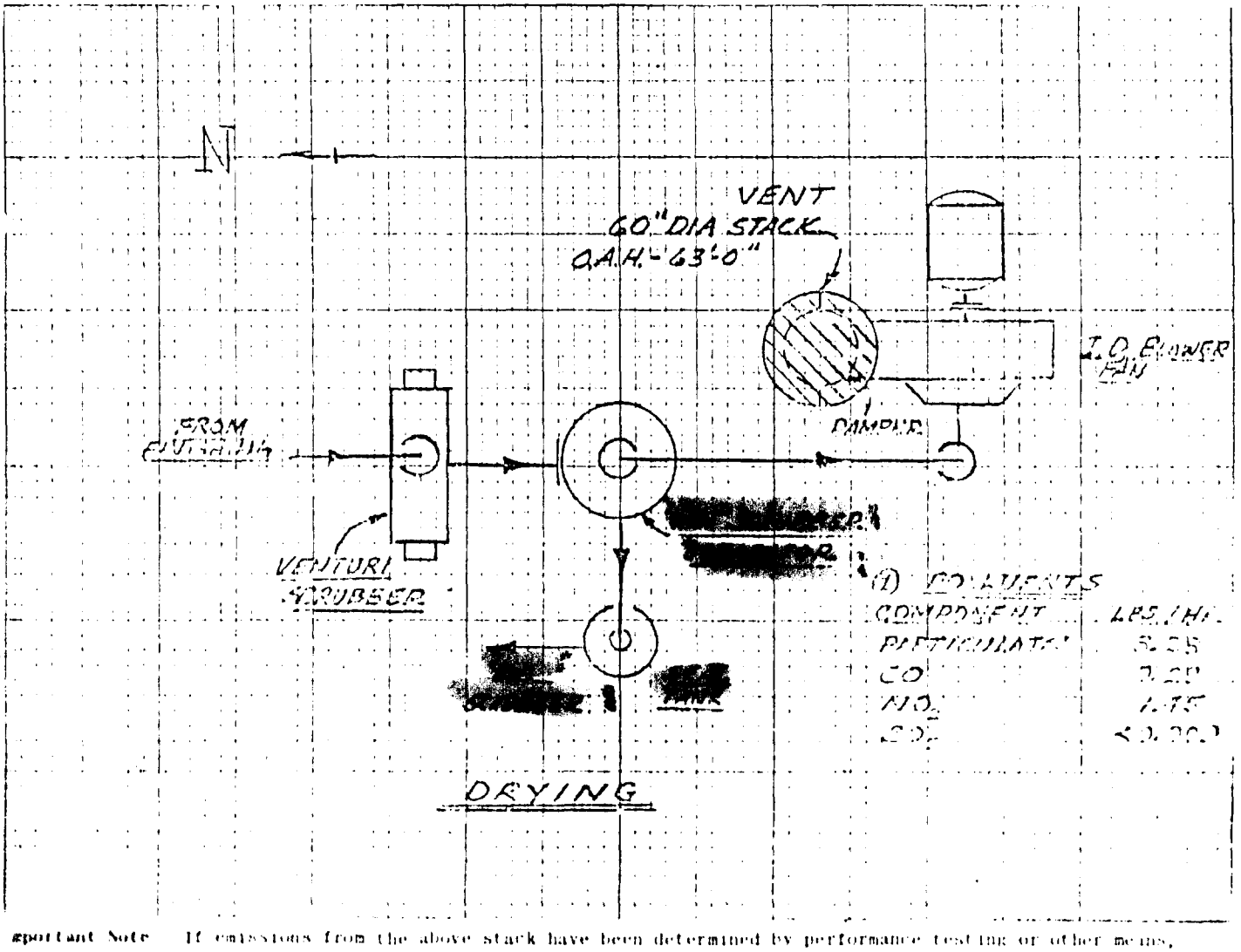
3. Height: Above roof - ft. Above ground 63'0" ft.

4. Exit gas: Temp. 138 °F. Volume 21,500 ACFM Velocity 1100 feet per minute

5. Continuous monitoring equipment: ☐ Yes X No. If yes, indicate: Type

Manufacturer Newark Welding and Fabrication Make or model None Pollutant See Below (1)

6. Draw a flow diagram in plan view of the source equipment, control equipment and stacks. If more than one source or control device discharges into this stack show all connections.



Important Note If emissions from the above stack have been determined by performance testing or other means, include such data and supporting calculations with this data sheet.

AP-PS-01

126

FOR OFFICIAL USE ONLY
Permit No. 03-04/01/0200
Source No. N/001

PERMIT APPLICATION
INCINERATOR

1. Facility Name Sherwin-Williams Chemicals Div. Ashtabula Plant Person to Contact G. F. Wyman

Facility Address 2900 Middle Road (Street) Mailing Address P. O. Box 310 (Street)

Ashtabula Township (City, Village or Township) Ashtabula (County) 44004 (Zip) Ashtabula (City) Ohio (State) 44004 (Zip)

Telephone 216 (Area Code) 998-1825 (Number)

2. This application is submitted for:
   - [X] Permit to operate an existing source
   - [ ] Permit to construct a new source or modify an existing source
   - [ ] Variance from regulation(s) _____ for _____ months
3. Check-list of information to accompany this application:
   - [ ] Plans and drawings
   - [ ] Emission tests or calculations
   - [ ] Process flow diagram
   - [ ] Compliance time schedule
   - [ ] Construction schedule
   - [ ] Additional information
4. Source of combustible waste:
   - [ ] Hospital, number of beds _____
   - [ ] Apartment, number of units _____
   - [ ] Institution, number of rooms _____
   - [ ] Industrial process, describe _____
   - [X] Other, describe Office and lunchroom waste paper.
5. Incinerator located: [X] Indoors [ ] Outdoors [ ] Charged indoors, unit outdoors
6. Manufacturer Sargent, Inc. Make or model H 9 G
7. Rated capacity 99 lb./hr. Year installed 1969 Your identification Office Incinerator
8. Type of incinerator [X] Single chamber [ ] Multiple chamber
9. Method of charging waste: [ ] Chute fed [ ] Flue fed [X] Direct fed [ ] Other. If other, describe:
10. Type of draft: [ ] Forced [X] Induced [ ] Natural [ ] Starved air [ ] Overfire air jets, capacities _____
11. If liquid incinerator, type of atomization _____
12. Type of flue damper: [ ] Barometric [X] Butterfly [ ] Guillotine [ ] Sliding [ ] None
13. Adjustable air ports: [X] Yes [ ] No
14. Burner input (BTU/hr.): Primary 150,000 Secondary _____
15. Secondary burner ignition: [ ] Manual (timer) [ ] Automatic (charging door switch)
16. Secondary burner temperature control: [ ] Yes Lower limit _____ °F [X] No
17. Type of refractory: [ ] Firebrick [X] Castable Pyrometric cone equivalence _____
18. Primary chamber dimensions (inches) Length 2'9" Width 2'4" Height 2'6"
19. Secondary chamber dimensions (inches) Length _____ Width _____ Height 22'4" 10"Ø stack
20. Describe provisions for combustion or tempered make-up air none

OPERATING SCHEDULE AND AMOUNT OF WASTE INCINERATED

21. Normal operating schedule: hrs./day 2 days/wk. 5 wks/yr. 52
22. Percent annual incineration by season: Winter 25% Spring 25% Summer 25% Fall 25%
23. Quantity of waste burned (lbs./hr): Average 7.5 Maximum 99
24. Type of waste (see instructions) paper Heat content of waste 8500 BTU/lb.
25. Type of fuels used: [X] Natural gas [ ] Oil [ ] LP gas [ ] None
26. Amount of fuel used per year 78,000 cu.ft. Burner manufacturer/model Eclipse Fuel Engineering Co. Rockford, Ill. DaS-3
27. Type of charging: [ ] Continuous [ ] Intermittent [X] Batch
28. Percent projected annual increase in incineration 0

Important Notes If emissions from this source have been determined by source tests, material balances or emission factors, include such data and supporting calculations with application.

A waste analysis **must** accompany all incinerator permit applications.

A detailed drawing of the incinerator showing all dimensions (inside and out) **must** accompany this application. Indicate position of charging doors, burners and any auxiliary equipment.

081753

127

sherwin williams chemicals

P. O. Box 310
2900 Middle Road
Ashtabula, Ohio 44004
Phone: 216-998-1825

February 7, 1973

Mr. Howard Scott
Ohio Department of Health
Northeast District Office
Air Pollution Unit
1931 Bailey Road
Cuyahoga Falls, Ohio, 44221

Re: [redacted]
Sherwin-Williams Chemicals
Ashtabula Plant

Dear Mr. Scott:

Subject emission occurred on Friday, February 2, from 1430 to 1615 hours as a result of an abnormal process condition. Emission point was the bottom of the spray condenser in the TIDOX(R) Plant from which fine solids were discharged. Solids were air borne in a cloud approximately seventy-five feet in width and thirty feet in height. The fallout [redacted] Composition of the dust cloud was substantially coke with small quantities of rutile ore dust and ferric chloride. Color of the cloud was black.

Operations reported an abnormal condition described as above-normal solids carry-over from the spray condenser to the downstream condenser train. This was detected by routine tests, and a decision was made to shut down the operation at 0840 hours. It was suspected that a restriction in the spray condenser tank had occurred and resulted in solids accumulation in the tank.

Subsequent investigation disclosed a restriction in the discharge star valve which could not be removed without opening up the system. A side port was removed from the spray condenser and the solids flowed out immediately in an uncontrolled manner. Location of the port is approximately thirty feet above the ground, and, with a light wind blowing, the very fine particles formed a dust cloud.

The type of condition encountered is a rare occurrence and one with which operations has very limited experience. Control

08198

efforts were discussed, but none were immediately practical within the time period available and without risk of injury to operating personnel.

The problem is recognized as one of significance. Immediate action has been taken to initiate the design of equipment which will permit control of such a discharge if the need occurs.

Yours very truly,

SHERWIN-WILLIAMS CHEMICALS

G. F. Wyman

G. F. Wyman
Plant Manager

GFW/am

08/980

Index No. = 100 + Tab No.

Union Carbide		TWMIC Index
UC-101	Outfalls 001, 002, 003 to Lake Erie	1977
UC-102	Outfalls to Lake Erie	1979
UC-103	Elkem Metals - to Lake Erie	1985
UC-104	Outfalls 001 - 005 to Lake [illegible]	1971
UC-105	Five outfalls to Lake Erie	1972
UC-106	Wastewater schematic	NPDES Permit
UC-107	001 Discharge Permit Level Cyanide 93 lbs/day avg. 186 " " max.	1976-77
UC-108	CN at 32 lbs./day (permit 16)	1977
UC-109	CN limited to 8.8 kg/day	1979
UC-110	CN reported as 10.9 lbs/day and 0.76 mg/L	1979
UC-111	CN reported as 2.79 kg/day	1983
UC-112	$CHCl_3$ in outfall 001	1981
UC-113	As in runoff at 37 ug/L Contents and mpas of sludge ponds	1981
UC-114	Engineering Science Report of Waste Disposal Problems 1. Site history and organization 2. Leachate to groundwater connection 3. Sludge to leachate connection 4. As at 1.00 mg/L in groundwater	1980

Union Carbide (continued)		TWMIC Index
UC-115	Insurance and Sale to L-Tec	1985
UC-116	L-Tec Permit/Map/Data Cr at 54 ug/g in sludge Pb at 1.3 " " " " Ni at 258 " " " " Ni at 3 mg/L in leachate	1985
UC-117	Elkem surface drainage and process waste to Lake Erie	1985

UNION CARBIDE

UNION CARBIDE CORPORATION
METALS DIVISION
P. O. BOX 40, ASHTABULA, OHIO 44004

October 12, 1977

Technical Records Section
Ohio EPA
P. O. Box 1049
Columbus, Ohio 43216

Gentlemen:

Attached hereto are the reports of the Fluid Waste Disposal System of Union Carbide Corporation, Ashtabula Township, for the month of September, 1977.

As you are aware, we put our new system into operation on the 29th of August and since we have not received new forms from you covering the revised permit conditions, we reported on the old forms and included an additional form for our new outfall #002. The only new parameters we failed to meet were the pH on #002 and #003 the first week of the month. We had some start-up problems with our acid treatment equipment and the pH was 9.4 and 9.2, respectively, that week; but it has been within specifications since. [redacted] timing problem.

We are also enclosing Forms T-40 for the Federal EPA report as requested by Mr. T. A. Romine in his letter of September 27, 1977. We have attempted to present the data in the form agreed to in telephone conversations between your Mr. Bush of the Twinsburg Office and our Chief Chemist, Mr. J. T. Waller. If any of this information is unclear, or not in the form you desire, please contact either Mr. Waller or myself and we will either redo it or attempt to explain what we have done in this report.

Very truly yours,

R. C. Mills

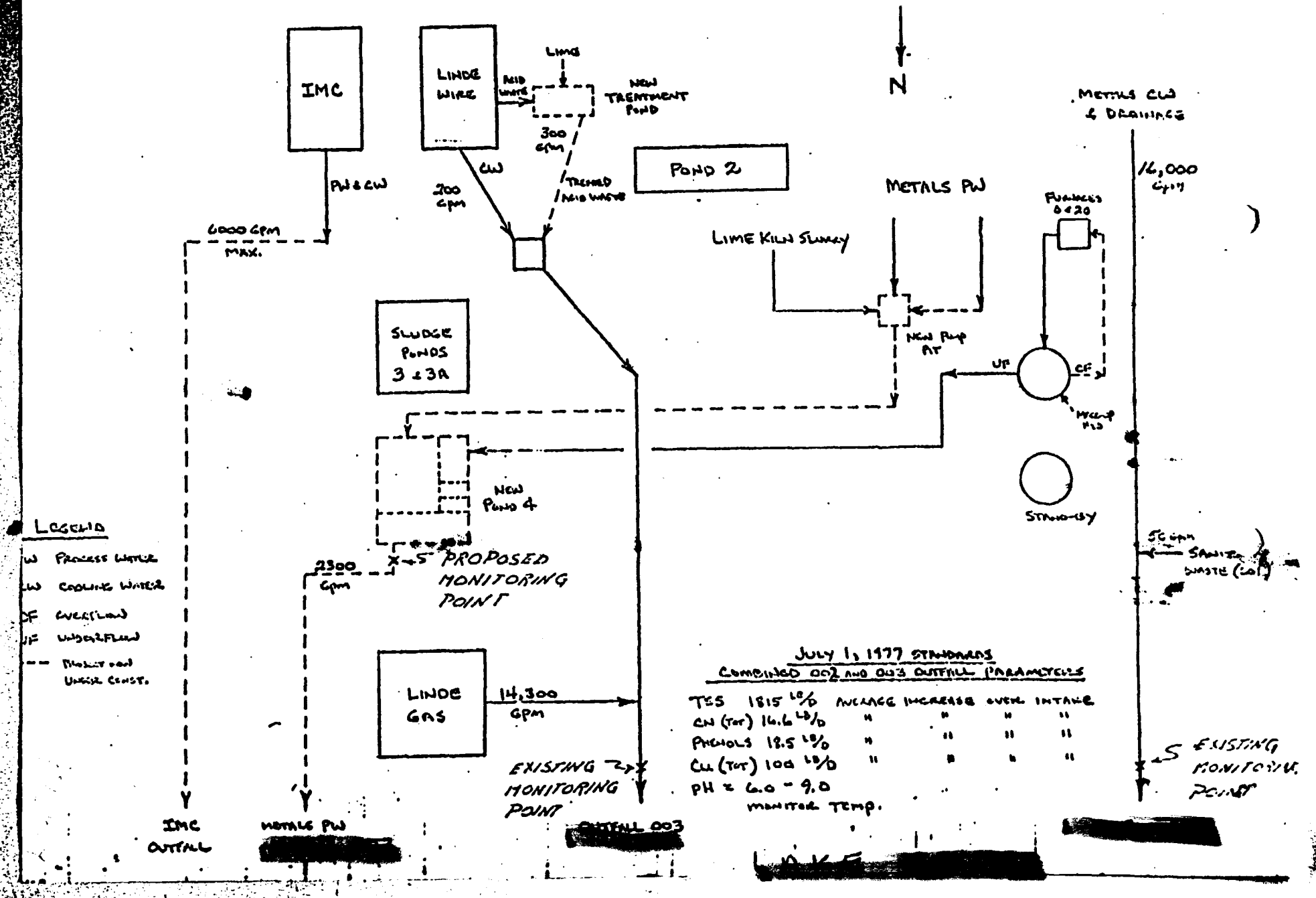
R. C. Mills
Supt. - Environmental Affairs

RCM:jt
Attachments

cc: Mr. W. Bush
Ohio EPA
Northeast District Office
2110 E. Aurora Rd.
Twinsburg, Ohio 44087

PERMITS AND COMPLIANCE
'77 OCT 14 AM 9 39
RE

PROPOSED FACILITIES CHANGE FOR JULY 1, 1977 COMPLIANCE



[redacted]

UNION CARBIDE

UNION CARBIDE CORPORATION
METALS DIVISION
P.O. BOX 40, ASHTABULA, OHIO 44004

May 15, 1979

Mr. W. Bush, P. E.
Northeast District Office OEPA
2110 E. Aurora Road
Twinsburg, Ohio 44087

Dear Bill:

SUBJECT: OEPA Compliance Evaluation Inspection Report for Ashtabula Complex

We have received the subject report dated April 17, 1979, under the cover letter from Mr. D. C. Hasbrouck and find several statements about the process which need clarification and correction.

Under the Summary recommendations, we intend to institute Item 2 as standard procedure when freezing weather interferes with the proper functioning of our automatic sampling equipment. We have attempted several schemes for keeping the automatic samplers operational during the sub-freezing weather period but so far we have been unable to eliminate icing in the intake sample lines.

In the report itself, there are several corrections and starting with Page 3 I have rewritten the report incorporating the changes and additions. The sketch accompanying the report is essentially correct although Ponds 4C South and 4C North are of equal size. I also added the location of the flash mix tank in the west end of Pont 4C South.

I trust that these corrections are understandable, but if you need further clarification, please contact me.

Very truly yours,

R. C. Mills

R. C. Mills

RCM/jai

Attachment

VMTO 5/18/79

INDUSTRIAL PROCESSES DESCRIPTION

Overview of Operations

The Ashtabula Complex of the Union Carbide Corporation can be divided into [redacted] Each division has its own corporate management. The Linde Division can be further subdivided into the [redacted]. Ea[redacted] discharge [redacted] Both divisions are discharging under one NPDES permit of the Metals Division since wastes from all sources were previously combined before being discharged into the lake. Each division now discharges through its own outfall after the 1977 Waste Water Plant installation and is described below.

Metals Plant

The Metals Plant has the largest production facilities at the Ashtabula Complex. The plant produces various ferroalloys used by many of the basic segments of the automobile industry. At the time of inspection, the plant was close to full production and was operating around the clock, seven days a week. Products include ferroalloys, calcium carbide, and lime. Basic raw materials consist of quartz and gravel, scrap steel, coke, limestone and coal.

Submerged electric arc furnaces are used to produce ferroalloys. Raw materials are continuously fed into the active areas of the furnace, which are usually around the electrodes. Depending upon the composition desired, products are removed by "tapping" the furnace every one or two hours.

H&C
8-16-85
WTB

04/NE

OEPA Permit No. [redacted]

Application No. OH0000027

Effective Date: [redacted]

Expiration Date: [redacted]

OHIO ENVIRONMENTAL PROTECTION AGENCY

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq. hereinafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

[redacted]

is authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge from the wastewater treatment works located

at Lake Road East, Ashtabula, Ohio

and discharging to [redacted]

in accordance with the conditions specified in Parts I, II and III of this permit.

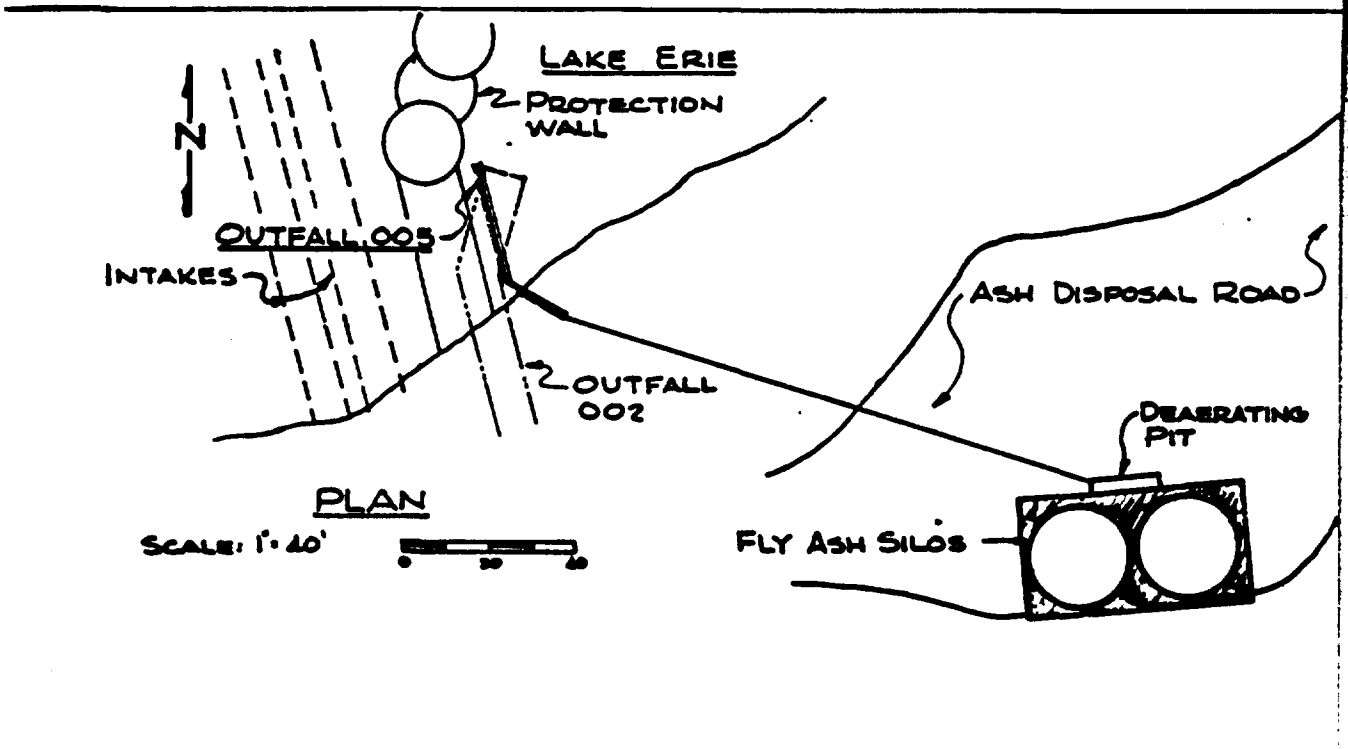
This permit is conditioned upon payment of applicable fees as required by Section 3745.11 of the Ohio Revised Code.

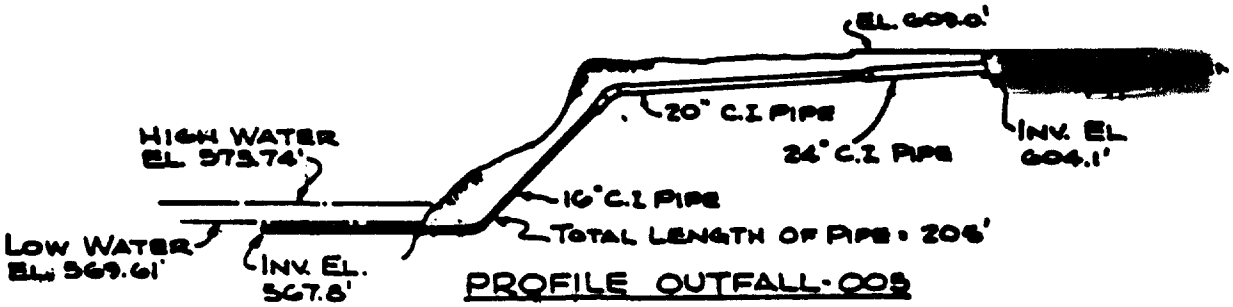
This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Warren W. Tyler
Director

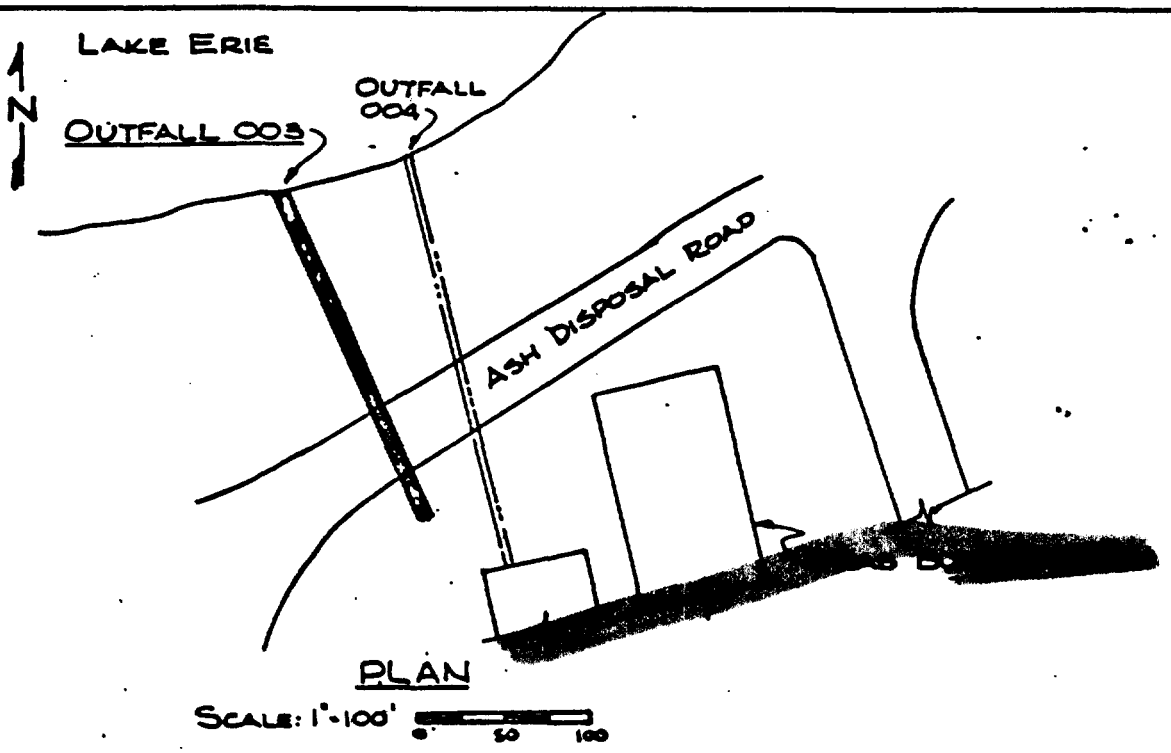
RECEIVED
AUG 2 1985
OHIO EPA-N.E.D.O.

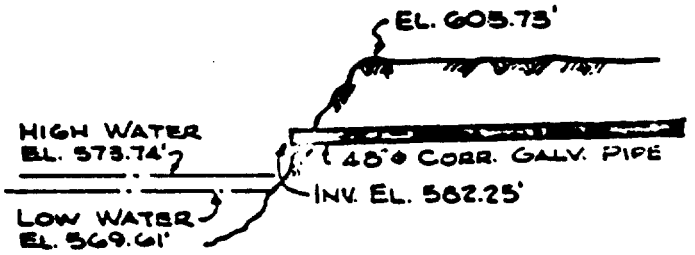
Form EPA 4428





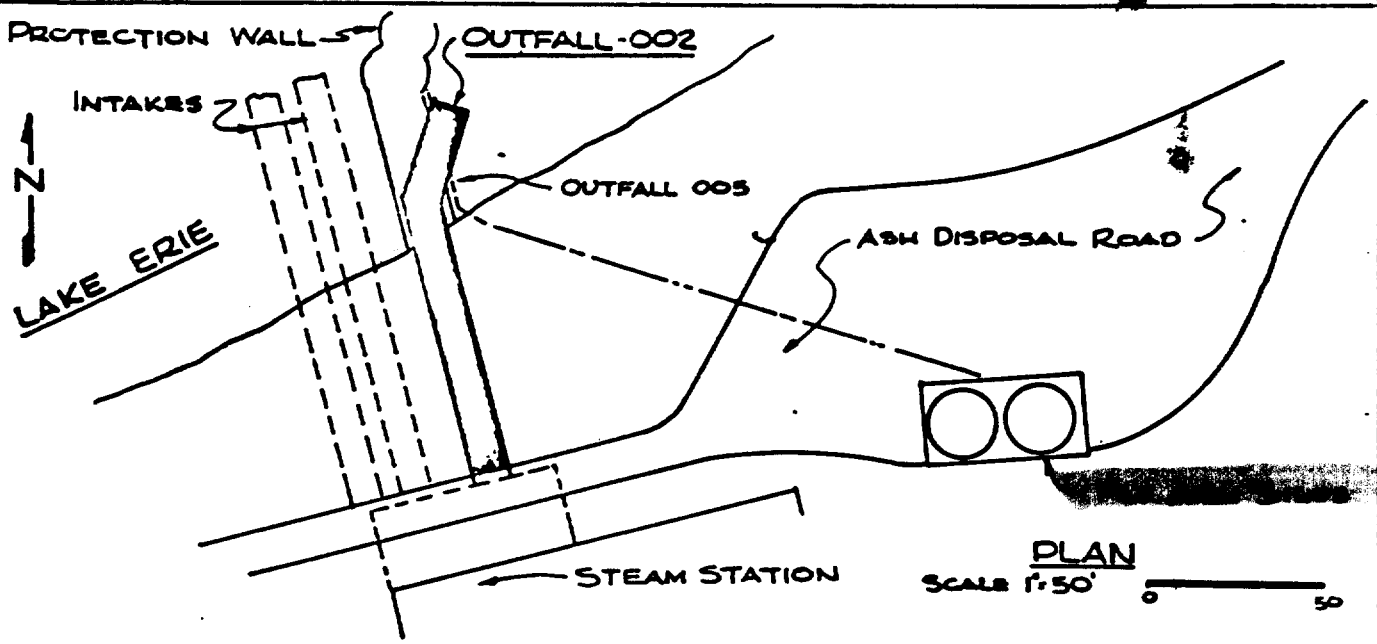
EXISTING OUTFALLS 001-005
UNION CARBIDE CORP
FERROALLOYS DIV.
ASHTABULA PLANT
COUNTY OF ASHTABULA
STATE OF OHIO
DATE: 6-11-71 SHEET 5 of 5

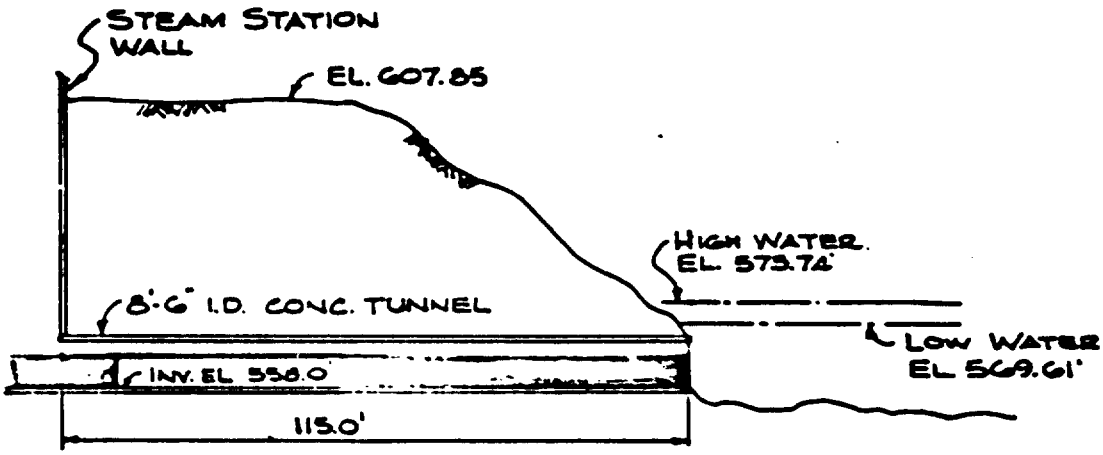




PROFILE OUTFALL 003

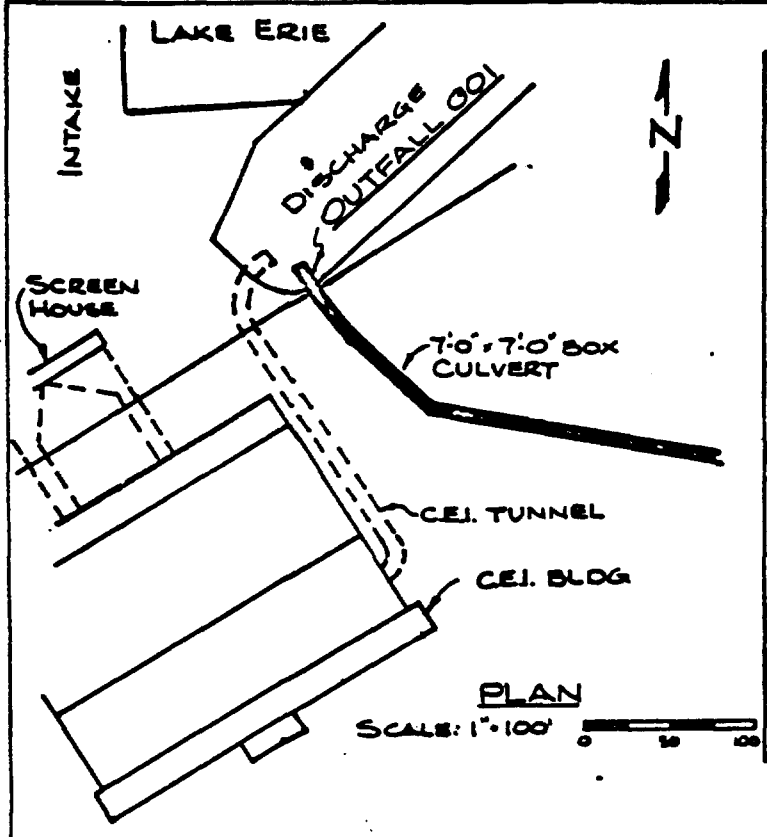
EXISTING OUTFALLS 001-005
UNION CARBIDE CORP
FERROALLOYS DIV.
ASHTABULA PLANT
COUNTY OF ASHTABULA
STATE OF OHIO
DATE: 6-11-71 SHEET 3 OF 5

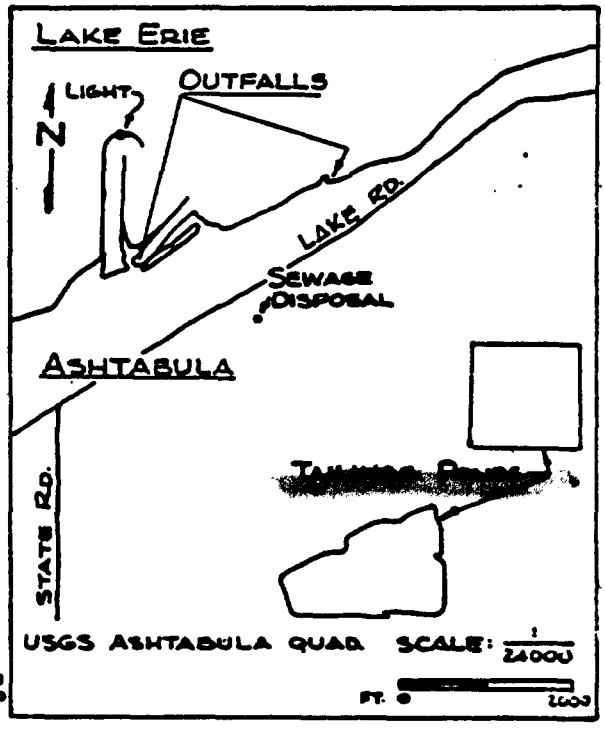


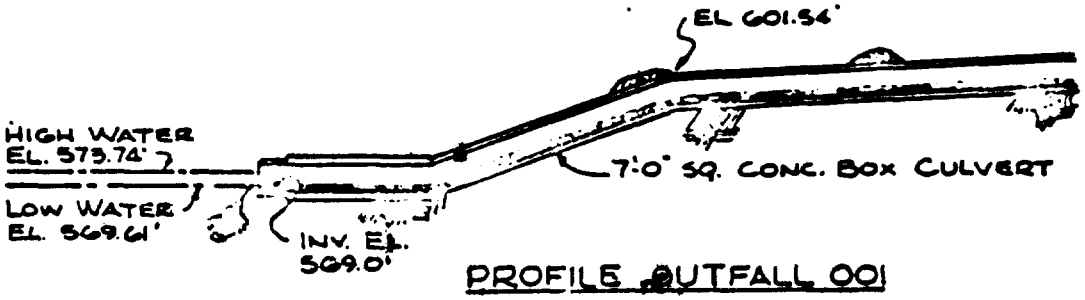


PROFILE OUTFALL-002

EXISTING OUTFALLS 001-005
UNION CARBIDE CORP
FERROALLOYS DIV.
ASHTABULA PLANT
COUNTY OF ASHTABULA
STATE OF OHIO
DATE: 6-11-71 SHEET 2 of 5







PROFILE OUTFALL 001

EXISTING OUTFALLS 001-005
UNION CARBIDE CORP
FERROALLOYS DIV.
ASHTABULA PLANT
COUNTY OF ASHTABULA
STATE OF OHIO
DATE: 6-11-71 SHEET 1 of 5

UNION CARBIDE

UNION CARBIDE CORPORATION
FERROALLOYS DIVISION
137 47TH STREET, P.O. BOX 97, NIAGARA FALLS, N.Y. 14302
TELEPHONE: 716-285-3311
CABLE: "NIAEC" NIAGARA FALLS (USA)

ENGINEERING DEPARTMENT

February 3, 1972

State of Ohio Department of Health
450 East Town Street
P. O. Box 118
Columbus, Ohio 43216

Attn.: Mr. James F. Shea, Engineer

Subj.: Corps of Engineers Water Discharge Application

Gentlemen:

In answer to your letter to our Ashtabula, Ohio Plant, dated January 24, 1972, we are enclosing copies of the Corps of Engineers Water Discharge Application, Application No. 000009.

The application includes Eng. Form 4345, Section I and Eng. Form 4345-1, Section II, Part A and Part B, together with maps showing the plan and [redacted] outfalls.

Very truly yours,

F. D. Tillson

FDTillson:fhr
Enc.

cc: Messrs. J.P.Trunzo + E.W. Kantz
R.A.Person + C.R. Allenbach
J.A.Perez + G.B. Matthews
J.S. Whitaker

N336 + A

Permit No. _____
Application No. OH 070 0X2 2 000009

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et. seq; the "Act"),

The Union Carbide Corporation
Ferroalloys Division & Linde Division

is authorized to discharge from a facility located at

Ashtabula, Ohio

to receiving waters named

[redacted]

in accordance with effluent limitations monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

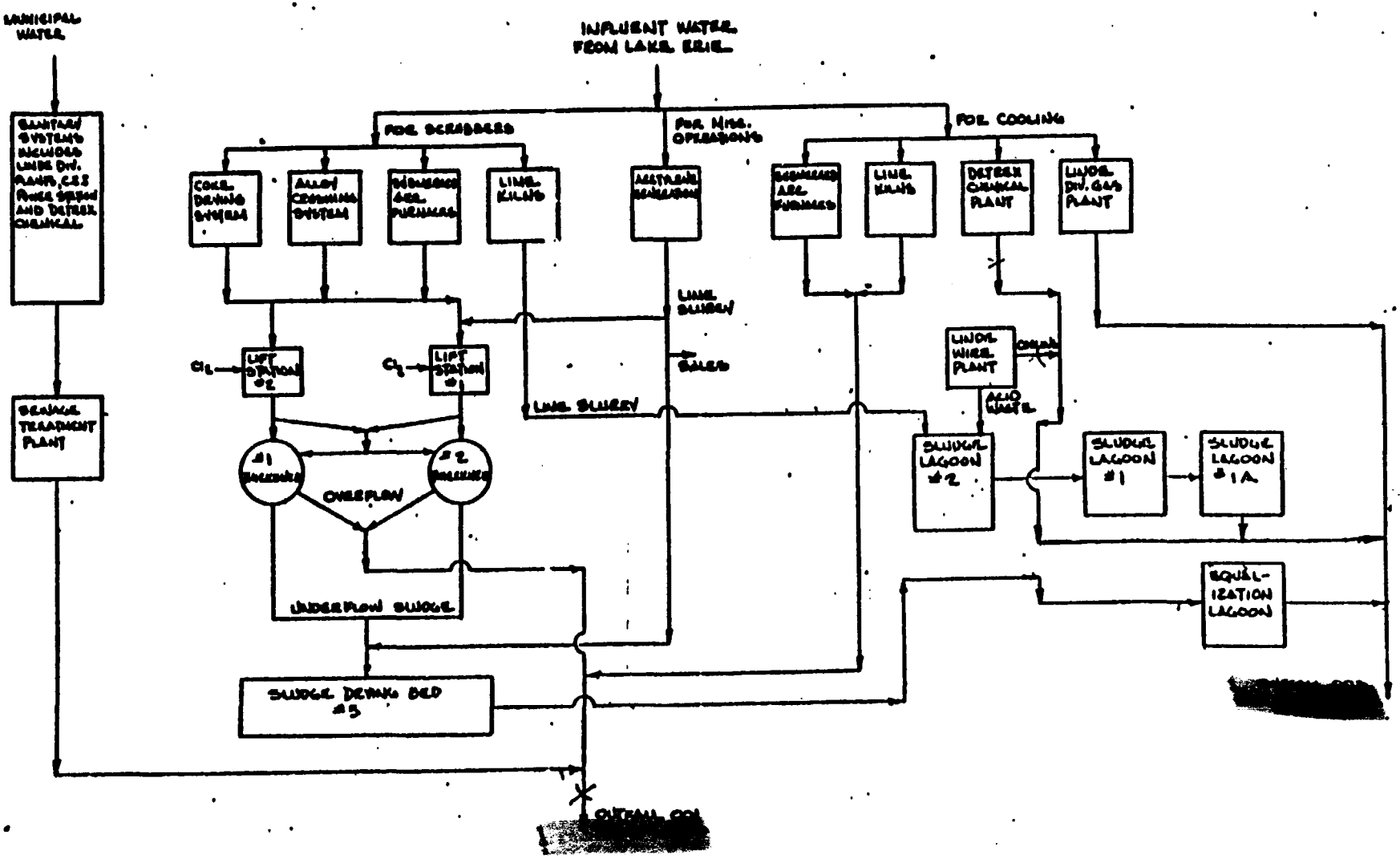
This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight, three years from effective date.

Signed this day of

Union Carbide

ASHTABULA WATER AND WASTE WATER SYSTEM



N 336 *AX

vsm

RE

OhioEPA

OEPA Permit No. N 336 *AD

Application No. OH 0000027

OHIO ENVIRONMENTAL PROTECTION AGENCY

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et. seq; the "Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Chapter 6111),

UNION CARBIDE CORPORATION
FERRO ALLOYS DIVISION AND
LINDE DIVISION

is authorized to discharge from a facility located at

Lake Road East
Ashtabula, Ohio

to receiving waters named Lake Erie

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on March 21, 1975

This permit and the authorization to discharge shall expire at midnight, October 15, 1979. Permittee shall not discharge after the above date of expiration. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Ned E. Williams

Ned E. Williams, P.E.
Director

OEPA-NPDES-7
4-1-74

162512

OEPA Permit No. N 336 *AD

OEPA-NPDES-7

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning March 21, 1975 and lasting until June 30, 1977, the permittee is authorized to discharge from outfall(~~s~~) serial number(~~s~~) 001

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS (lbs/day)		Other Units (Specify)		MONITORING REQUIREMENTS	
	Daily Avg	Daily Max	Daily Avg	Daily Max	Measurement Frequency	Sample Type
Flow-M^3/day (MGD)	-	-	-	-	Weekly	24 hr.total
Total Suspended Solids	(20,000)	(60,000)	-	-	Weekly	24 hr.Composite
Total Cyanide	(93)	(186)	-	-	Weekly	24 hr.Composite
Hexavalent Chromium (mg/l)	-	-	-	-	Monthly	24 hr. Composite
Total Chromium (mg/l)	-	-	-	-	Monthly	24 hr.Composite
Total Manganese (mg/l)	-	-	-	-	Monthly	24 hr.Composite
Phenolics (mg/l)	-	-	-	-	Monthly	24 hr.Composite
Temperature (°F)	-	-	-	-	Weekly	Grab

2. The pH shall not be less than 6.0 nor greater than 10.0 and shall be monitored by a weekly grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s): prior to discharge to Lake Erie in the CEI discharge channel, at the culvert.

16R513

Union Carbide Corporation
Metals Division
Technology Department-Engineering
Niagara Falls, New York

S.E.P. No. 76-5

File 11025

SCOPE ENGINEERING DESIGN MEMORANDUM

PROJECT: EFFLUENT TREATMENT FACILITIES, ASHTABULA, OHIO

BY: E.E. Falk

DATE: May 18, 1976

DESIGN MEMO NO. 1
Revision 0
Subject: Project Objective and Scope Schedule

1.0 SCOPE

The objective of this project is to bring the Ashtabula, Ohio Plant effluent into compliance with NPDES permit limitations which become effective July 1, 1977. Treatment processes for suspended solids, cyanide, phenol and pH adjustment will be required.

2.0 INTRODUCTION

All Ashtabula plant manufacturing process contact wastewaters (except lime kiln scrubber water and acetylene generator slurry) are routed via a system of sewers and lift stations to two thickeners for removal of suspended solids. Additionally, chlorine is added at the two lift stations to provide for cyanide destruction. Thickener overflow is routed via outfall 001 to Lake Erie.

Separate sewer systems within the plant carry non-contact cooling water and storm drainage waters. These sewers combine with the treated process wastes prior to discharge from outfall 001.

Waste treatment thickener underflow, lime kiln scrubber water and acetylene generator slurry are sent to a system of sludge ponds adjacent to the plant for additional solids removal. In addition, the lime kiln wastes are combined with Linde Wire Plant acid wastes for pH adjustment purposes. Pond effluents are then combined with Linde Wire Plant and Sobin/Detrex Chemical Plant ditch wastes, mixed, equalized, allowed to settle further and discharged via outfall 003. A Linde Gas Plant located near the Lake also discharges non-contact cooling water into this outfall sewer prior to discharge.

The Ashtabula, Ohio Plant NPDES permit imposes strict limitations on total suspended solids (TSS), cyanide (CN) and phenolic compounds beginning July 1, 1977. Based on current effluent quality, treatment processes achieving average reductions of about 85% of present TSS discharges and 50% of the present CN and phenols discharges will be required to meet these new standards.

162458

TABLE I

ASHTABULA EFFLUENT FACILITIES S.E.P.

COMPARISON OF ASHTABULA PROCESS EFFLUENT WITH 1977 OEPA PERMIT REQUIREMENTS

POLLUTANT PARAMETER	COMBINED OUTFALLS 1975 PLANT EFFLUENT DATA(1)		COMBINED OUTFALLS 1977 OHIO EPA REQUIREMENTS	
	NET AVG LB/DAY	NET MAX LB/DAY	NET AVG LB/DAY	NET MAX LB/DAY
Total Suspended Solids (TSS)	8,300	36,700	1,815	3,630
[redacted]	32.0	[redacted]	[redacted]	[redacted]
Phenolics	31.7	138	18.5	26.7
Hexavalent Chromium (Cr^{+6})	0	0	1.8	3.6
Total Chromium (Cr)	0	79.6	18.5	37.0
Total Manganese (Mn)	89	278	189	378
Total Copper (Cu)	128	408	100	300
pH	8.1 - 8.4	10.1	6.0 Min	9.0 Max

(1) Data calculated from 1975 EPA monitoring reports and inlet water analyses

16 24 58

fmr 7-10-79
B. Bush

JW - 04

Application No.: OH0000027

OEPA Permit No.: N336*ED

Effective Date:

National Pollutant Discharge Elimination System (NPDES) Permit Program

P U B L I C N O T I C E

NPDES Permit Renewal to Discharge to State Waters

Ohio Environmental Protection Agency
P.O. Box 1049
361 East Broad Street
Columbus, Ohio 43216
614-466-4891

Public Notice No. OEPA-79-07-017
Date of Issue of Public Notice: July 12, 1979

Name and Address of Applicant: Union Carbide Corporation, Metals Division, P.O. Box-40, Ashtabula, Ohio 44004

Name and Address of Facility where Discharge Occurs: Union Carbide Corporation, Metals Division, Lake Road East, Ashtabula Township, Ashtabula County, Ohio

Receiving Water: Lake Erie

This applicant is a manufacturer of ferroalloys, lime, and calcium carbide and has 2 existing discharge points. The current operations of this discharger result in an average effluent flow of 26,000,000 gallons per day. Key parameters to be limited in the permit are as follows: Total Suspended Solids, Total Cyanide, Biochemical Oxygen Demand.

162899

OEPA N336*ED

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfalls: N336001. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

EFFLUENT CHARACTERISTIC			DISCHARGE LIMITATIONS(1)			
			Concentration Other Units(Specify)		Loading kg/day	
REPORTING Code	UNITS	PARAMETER	30 day	Daily	30 day	Daily
50050	MGD	Flow	-	-	-	-
00530	mg/l	Suspended Solids Total	-	-	523	995
00720	mg/l	Total Cyanide	-	-	[illegible]	8.8
32730	ug/l	Total Phenolics	-	-	7.1	10.3
50060	mg/l	Chlorine Res. Total	-	-	-	-

2. The pH (Reporting Code 00400) shall not be less than 6.5 S.U. nor greater than 9.0 S.U. and shall be monitored weekly by grab sample.

(1) Net increase over intake

ATTACHMENT II & IIIa

162405

7805 - 7909 750321

MONTHLY REPORT FORM

AGENCY COPY

791015

Ohio EPA

NAME, ADDRESS, CITY, COUNTY, ZIP	STATION CODE	DATE (MONTH, YEAR) REPORTED	PAGE	PRINTING DATE	APPLICATION NO.
UNION CARBIDE CORPORATION METALS DIVISION	N336001	FEB., 1979	1 OF 1	12/20/78	OH0000027

P O BOX 40
ASHTABULA 44004 ASHTABULA

SAMPLING STATION DESCRIPTION
001 AT SETTLING POND OVERFLOW-PRIOR ENTERING CULVER

IN(1)—ENTER 1 FOR CONTINUOUS, 2 FOR COMPOSITE, 3 FOR GRAB SAMPLE
IN(2)—ENTER FREQUENCY OF SAMPLING

REPORTING LAB: UNION CARBIDE - METALS

ANALYST: G. BANDE

ENTER ANALYSIS PERFORMED AND CODE NO AT RIGHT

(1)	3	3	3**2	3**2	1	3**2				
(2)	1	1	1	1	1	1				
	WATER TEMP. C	PH S.U.	RESIDUE T. NFLT MG/L	C[illegible]	CONDUIT FLOW MGD	PHENOLS UG/L				
	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE	REPORTING CODE
DAY	00010	00400	00530	00720	50050	32730				
01										
02										
03										
04										
05										
06										
07										
08										
09	+1°	6.6	14	.34	2.16					
10										
11										
12										
13	+1°	6.9	3	.76	2.37					
14										
15										
16										
17										
18										
19										
20										
21										
22	+1°	5.9	12	.42	2.448	1000				
23										
24										
25										
26										
27	+1°	6.6	26	.60	2.736					
28						272				
29										
30										
31										
TOTAL	4	26	55	2.12	9.714	1272				
AVG	1	6.5	13.75	.53	2.4285	636				
MAX	1	6.9	26	.76	2.736	1000				
MIN	1	5.9	3	.34	2.16	272				

ADDITIONAL REMARKS

**Samples taken during the first half of February were grab samples due to weather conditions.
Automatic samplers would not function.

16234

IN REPORTING CODES MUST BE EXPLAINED
NOTE THIS FORM MUST BE TYPED

DATE REPORT COMPLETED	SIGNATURE OF REPORTER	TITLE OF REPORTER
3/7/79		CHIEF CHEMIST

HG

INDUSTRIAL COMPLIANCE EVALUATION INSPECTION REPORT

for

Union Carbide Corporation
Ashtabula Complex
Metals Division
P.O. Box 40
Ashtabula, Ohio 44004

OEPA NPDES Permit No. N 336 *DD
USEPA NPDES Permit No. OH 0000027

By
Mark T. Baumgardner
and
Bill Bush, P.E.

Ohio EPA, Northeast District Office
Office of Wastewater
Industrial Wastewater Group
April 17, 1979

162317

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

PERMITTEE NAME: UNION CARBIDE CORPORATION
METALS DIVISION

ADDRESS: LAKE ROAD EAST - BOX 40
ASHTABULA, OHIO - 44004

PHONE: 216-997-6141

COMMENTS

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
011	N 336 DD	001			

REPORTING PERIOD FROM 719 012 011 (YEAR MO DAY) TO 719 012 218 (YEAR MO DAY)

PARAMETER		QUANTITY MINIMUM	AVERAGE	MAXIMUM	UNITS	MO EX	CONCENTRATION MINIMUM	AVERAGE	MAXIMUM	UNITS	MO EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow 50050	REPORTED	2.16	2.4285	2.736	MGD							1/7	24
	PERMIT CONDITION											1/7	24
Tot.Susp.Solids 00530	REPORTED	59	287	594	LBS/DAY		3	13.75	26	MG/L		1/7	Comp.
	PERMIT CONDITION											1/7	Comp.
Total Cyanide 00720	REPORTED	6.1	10.9	15	LBS/DAY		.34	.53	.76	MG/L		1/7	Comp.
	PERMIT CONDITION											1/7	Comp.
Phenol. 32730	REPORTED	6.2	12.9	20.4	LBS/DAY		272	636	1000	UG/L		2/30	Comp.
	PERMIT CONDITION											1/30	Comp.
Temperature 00010	REPORTED	1	1	1	°C							1/7	Gr.
	PERMIT CONDITION											1/7	Gr.
pH 00400	REPORTED					1	5.9	6.5	6.9	pH	1	1/7	Gr.
	PERMIT CONDITION						6.0	---	9.0			1/7	Gr.
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE
Lopuszynski, T. W. (LAST FIRST MI)	Plant Manager (TITLE)	719 013 017 (YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

T.W. Lopuszynski

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

HG

NATIONAL POLLUTAN. SCHARGE ELIMINATION SYSTEM COMMENTS

DISCHAR IONITORING REPORT

PERMITTEE NAME: UNION CARBIDE CORPORATION
METALS DIVISION

ADDRESS: LAKE ROAD EAST - BOX 40
ASHTABULA, OHIO - 44004

PHONE: 216-997-6141

COMMENTS

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
01	N 336 DD	001 003			

THESE ARE TOTAL NET VALUES FOR 001 & 003 BASED ON 801.

REPORTING PERIOD FROM 719 012 01 (YEAR MO DAY) TO 719 012 218 (YEAR MO DAY)

PARAMETER		QUANTITY MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX.	CONCENTRATION MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow 001 003	REPORTED	2.16 21.312	2.4285 21.312	2.736 21.312									
50050	PERMIT CONDITION				MGD								
Tot.Susp.Solids	REPORTED	-132	1795	4568.6		1	2 -1	5.5 9.5	6 25		1		
00530	PERMIT CONDITION	---	1815	3630	LBS/DAY					MG/L			
Total Cyanide	REPORTED	6.1	10.9	15			.34	.53	.76				
00720	PERMIT CONDITION	---	16.6	33.2	LBS/DAY					MG/L			
Copper	REPORTED	.36	.36	.36			2	2	2				
01042	PERMIT CONDITION	---	100	300	LBS/DAY					UG/L			
Phenol.	REPORTED	6.2	12.9	20.4			272	636	1000				
32730	PERMIT CONDITION	---	18.5	26.7	LBS/DAY					UG/L			
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE
Lopuszynski, T. W. (LAST FIRST MI)	Plant Manager (TITLE)	719 013 017 (YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

T.W. Lopuszynski

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

HG

PAGE 7 OF 9

623358

NATIONAL POLLUTANT / ...RGE ELIMINATION SYSTEM COMMENTS

DISCHARG... ..ONITORING REPORT

PERMITTEE NAME:

ADDRESS:

PHONE:

COMMENTS

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
OH	N-336-ED 31N00036001	001			

REPORTING PERIOD FROM 83 12 01 (YEAR MO DAY) TO 83 12 31 (YEAR MO DAY)

PARAMETER		QUANTITY MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	UNITS	CONCENTRATION MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	UNITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow 50050	REPORTED	2.448	2.556	2.664	MGD					1/7	24
	PERMIT CONDITION									1/7	24
Tot. Susp. Solids 00530	REPORTED	-1138	-573	-171	KG/D	-116	-59.25	-18	Mg/L	1/7	Comp.
	PERMIT CONDITION		523	925						1/7	Comp.
Total Cyanide 00720	REPORTED	2.04	2.79	3.53	KG/D	.22	.25	.37	Mg/L	1/7	Comp.
	PERMIT CONDITION		4.8	8.8						1/7	Comp.
Phenols 32730	REPORTED	.31	1.95	6.82	KG/D	32	195	676	Ug/L	1/7	Comp.
	PERMIT CONDITION		7.1	10.3						1/7	Comp.
Chlor. Tot. Res. 50060	REPORTED				Mg/L	1.62	1.62	1.62	Mg/L	1/30	Gr
	PERMIT CONDITION									1/30	Gr
pH 00400	REPORTED					6.4	7.0	7.8		1/7	Gr
	PERMIT CONDITION					6.0		9.0		1/7	Gr
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE
Ritter, R. C., Jr.	Plant Manager	84 01 04
LAST FIRST MI	TITLE	YEAR MO DAY

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

INDUSTRIAL COMPLIANCE SAMPLING EVALUATION INSPECTION REPORT

Elkem Metals Company
Lake Road, East
Ashtabula, Ohio 44004

Ohio EPA Permit No. 3IN00036*ED
U.S. EPA No. OH0000027

Prepared By

William T. Bush
Chemical Engineer
Division of Water Pollution Control
Industrial Wastewater Group
Northeast District Office
September 13, 1984

162173

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

December 28, 1981

CSI - Union Carbide Corporation, Metals Division (now El Kem Metals), Ashtabula, Ohio NPDES Permit No. OH0000027

Donald F. Easterling
THRU: A.R. Wirklhofer, Director, EDO

Bill Muno, 5EWHME

On April 28-29, 1981 EDO personnel conducted a compliance sampling inspection at the subject facility. The attached inspection report includes laboratory analysis results for organics, but does not include metals data. These data will be forwarded when they become available. Please note the following:

A. Sample analysis and review of company self monitoring data indicates compliance with NPDES permit limits.

B. Sample analysis indicates trace amounts of phenol, acrylonitrile, benzene, and chloroform in Outfall 00A.

C. Ground water monitoring data obtained from a May 1980 ground water investigation report conducted by Engineering Science indicates leachate containing ammonia, sulfate, and metals from ponds 3 and 3A is entering and contaminating local shallow ground water. The company has closed and capped pond 3, and constructed a ground water collection trench around ponds 3 and 3A. Leachate is presently collected and pumped to pond 4 for treatment.

Attachments

DFE/dn:cak:12/4/81

CONCURRENCES

SYMBOL		EDO						
SURNAME	DFE	[illegible]						
DATE	12-28-81	12/29/81						

TABLE 3

UNION CARBIDE CORPORATION - ASHTABULA, OHIO

GROUNDWATER SAMPLING RESULTS

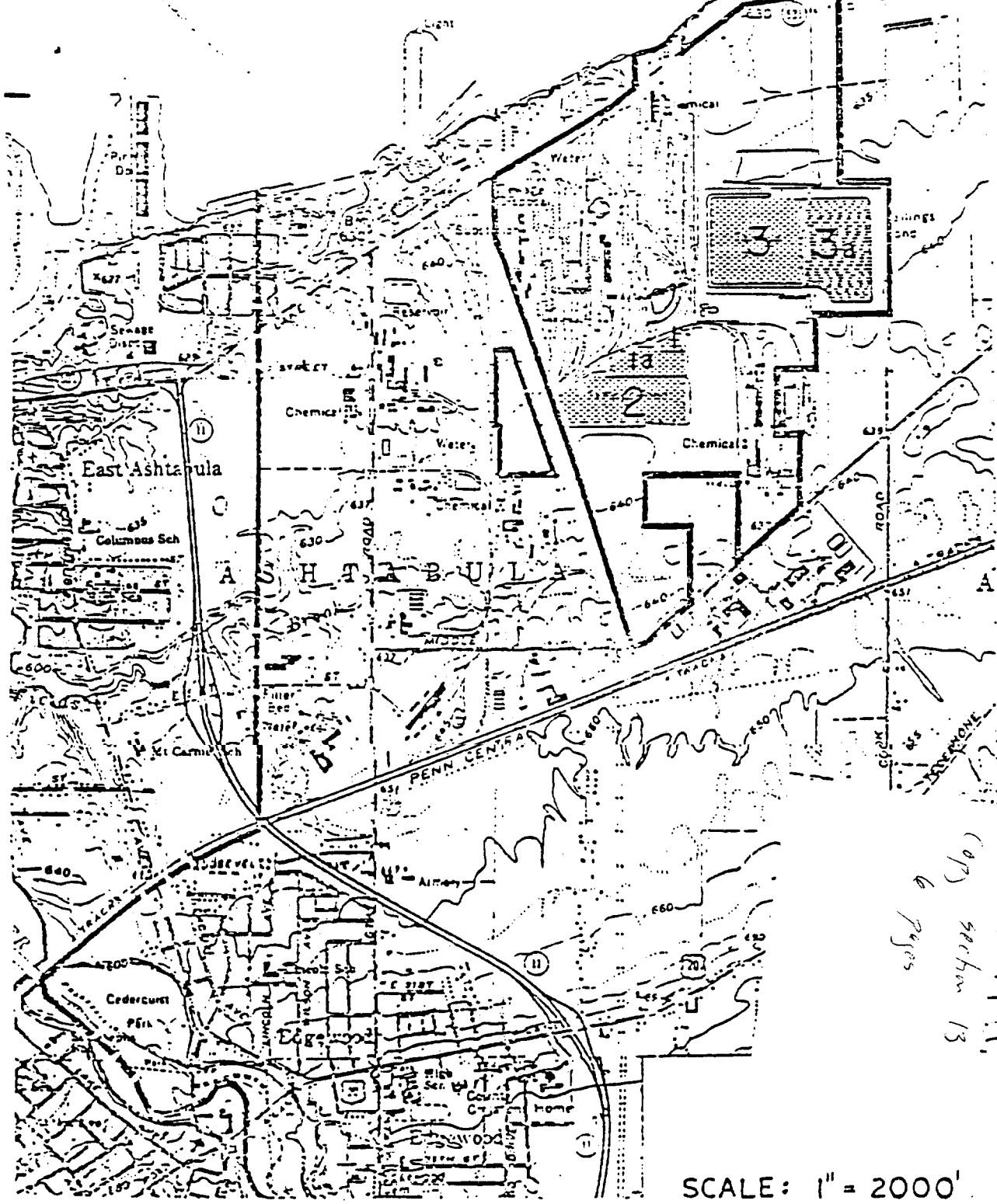
AVERAGES

PARAMETER	SAMPLING WELL 104	101	102	103	105	105A	WATER QUALITY STANDARD
Cond-mmho/cm	1137	6250*	1300	2700	2850*	1750	1200
Al-mg/l	20.9	2.88	100	13.2	23.7	6.5	
As-mg/l	0.70	0.021	1.00	0.054	0.43	0.12	0.05
Ba-mg/l	0.25	0.60	5.8	0.72	0.79	0.22	1.0
Ca-mg/l	99	114	193	378	445*	290	
Cd-mg/l	0.0025	0.0025	0.0075	0.0025	0.0025	0.0	0.01
Cr-mg/l	0.056	0.04	0.178	0.0625	0.13	0.04	0.05
Cu-mg/l	0.050	0.036	0.063	0.070	0.150	0.060	1.0
Cl-mg/l	143	2273*	88	39	115	120	250
Fe-mg/l	17.5	2.42	97	49	80	3.3	
Mn-mg/l	1.08	0.178	6.2	0.158	1.52	1.45	0.05
Na-mg/l	148	644	223	146	194	198	
Hg-mg/l	0.0006	0.0002	0.0009	0.0005	0.0098	0.015	0.002
Se-mg/l	0.015	0.015	0.011	0.010	0.011	0.010	0.010
Pb-mg/l	0.050	0.125	0.360	0.050	0.040	0.025	0.05
Zn-mg/l	0.04	0.11	0.19	0.35	0.33	3.85	5.0
SO_4-mg/l	142	77	307	86	1137	795	250
NH_3-N mg/l	0.17	5.0*	103.6*	6.6	0.10	0.10	
NO_3-N mg/l	1.10	0.58	1.25	1.11	0.60	0.30	10.0
KN-N mg/l	1.04	0.64	17.5*	5.0	0.80	0.90	
CN-mg/l	0	0.010	0.005	0.016	0.002	0	
Phenol-mg/l	0.055	0.009	0.212	0.192	0.058	0	0.001
COD-mg/l	144	104	161	720	133	642	

*-Significant
from 104 Average
@95% level

FIGURE 2

UNION CARBIDE CORPORATION
ASHTABULA, OHIO FACILITIES
EXISTING SLUDGE PONDS,
MARCH, 1980



ENGINEERING-SCIENCE ES

Trash, paper, cardboard, wood pallets, scrap steel drums, fiber drums, plastic spools wood spools, etc. - hauled to landfill by company truck	350 NT/year

METALS PLANT - Lake Road East

Sl[redacted] pipe- line	28,365 NT/year
Scrap metal shot from furnaces - hauled to landfill via company truck	650 NT/year
Trash, paper, cardboard, wood pallets, scrap steel drums. plastic spools, wood spools, miscellaneous dusts, etc. - hauled to landfill via company truck	1,050 NT/year
Used motor oil, gear oil, etc hauled off-site by Laskin Oil of Jefferson, Ohio	20,000 gal/year
Scrap cast iron from tapping pots and chills- sold to scrap dealers for recycling	300 NT/year
Light steel plate, pipe etc. from maintenance jobs - sold to highest scrap bidder	800 NT/year

I trust that this is the type of information you require, but if you desire any further data, I shall be glad to obtain it for you.

Very truly yours,

R. C. Mills

R. C. Mills
Superintendent of
Environmental Affairs

RCM/ml

METALS DIVISION
P.O. BOX 67, ASHTABULA, OHIO 44004

May 21, 1979

Ms. Deborah J. Berg, R.S.
Environmental Scientist
Office of Land Pollution Control
Northeast District Office
2110 E. Aurora
Twinsburg, Ohio 44087

SUBJECT: OEPA Solid Waste Inventory

Dear Ms. Berg:

In reply to your letter of April 17, 1979 regarding the subject inventory, we wish to furnish you with the following information. As your office is aware, there are three Union Carbide plants using the same solid waste disposal site and I shall treat them separately as to the waste they generate.

LINDE GAS PLANT - Lake Road East

Scrap paper, trash, etc., hauled off-site by N.E. Sanitation Co.	21 cu yd/week
Scrap vermiculite insulation - hauled to landfill by company truck	25,000 lb/year
Used motor oil - hauled off-site by Popular Oil Co., Jefferson, Ohio	3,600 gal/year

LINDE WIRE PLANT - Middle Road

Steel wire scrap sold to various scrap dealers	1,100,000 lb/year
Steel wire scrap hauled to landfill via company truck	275,000 lb/year
Mill scale from mechanical descaling hauled to land fill via company truck	250,000 lb/year
Mill scale and pickle liquor sludge from acid pickling [illegible] to waste water settling ponds	250,000 lb/year

Therefore, we believe that 1) you have ample authority to interpret the Ohio EPA rules to allow disposal of lime, coke dust and silica collected from Elkem's baghouses during maintenance into Pond 5A, and 2) it is logical and efficient to continue to regulate this disposal under Elkem's NPDES permit. We request written authorization to do this.

As you can see by our letterhead, we are now Elkem Metals Company instead of Union Carbide Metals. Therefore, none of the Linde Wire or Linde Gas plant trash, including welding wire residues, is being accepted on our disposal site.

After you have had a chance to digest this letter, we would be pleased to meet with you and discuss the situation in more detail. Perhaps you would like to visit the plant so that you can see the work which has been accomplished on our lagoons. This can be arranged so that we can proceed in a mutually agreeable manner.

Very truly yours,

R. C. Mills

R. C. Mills
Supt. - Environmental Affairs

cc: Melinda Becker

e	Weather Condition	Sample Point	Ph	OC Temp.	Mg/L CN	Ug/L Phenol	Mg/L Chloride	Mg/L NH_3-N	Mg/L Pb	[redacted]
81		R.Rd.N*	7.2	16	AA	12	140	4.0	.13	[redacted]
		R.Rd.S**	8.0	14	AA	24	166	6.0	.033	[redacted]
'81		R.Rd.N	7.2	6	AA	12	173	1.1	.066	[redacted]
		R.Rd.S	6.8	7	AA	16	131	.6	.10	[redacted]
81		RRN	7.2	9	AA	14	106	2.5	.066	[redacted]
		RRS	8.0	7	AA	24	121	4.0	.13	[redacted]
81	Rained all nite 4/22/81 very heavy	RRN	7.8	13	AA	4	96	3.7	.066	[redacted]
		RRS	8.2	15	AA	8	112	3.8	.033	[redacted]
1	Construction started on south side of 3A	RRN	7.2	9	AA	AA	86	2.6	.027	[redacted]
		RRS	8.6	11	AA	16	85	.2	.022	[redacted]
1	Construction still going on	RRN	7.1	10	AA	16	83	2.4	.040	.011
		RRS	6.6	12	AA	10	87	1.4	.011	<.010
								1.3 not filtered		
	Construction still going on	RRN	7.8	11	AA	28	97	3.1	.027	.026
		RRS	7.8	11	AA	8	123	.4	.006	<.010
	Construction still going on	RRN	8.4	9	AA	24	105	4.1	.017	.010
		RRS	8.1	9	AA	16	121	1.0	.033	<.010

1 Road North
1 Road South

TABLE 11

UNION CARBIDE CORPORATION - ASHTABULA, OHIO

GROUNDWATER SAMPLING RESULTS

AVERAGES

PARAMETER	SAMPLING WELL 104	101	102	103	105	105A	WATER QUALITY STANDARD
Cond-mmho/cm	1137	6250*	1300	2700	2850*	1750	1200
Al-mg/1	20.9	2.88	100	13.2	23.7	6.5	
[illegible]-mg/1	0.70	0.021	1.00	0.054	[illegible]	[illegible]	[illegible]
Ba-mg/1	0.25	0.60	5.8	0.72	0.79	0.22	1.0
Ca-mg/1	99	114	193	378	445*	290	
Cd-mg/1	0.0025	0.0025	0.0075	0.0025	0.0025	0.0	0.01
Cr-mg/1	0.056	0.04	0.178	0.0625	0.13	0.04	0.05
Cu-mg/1	0.050	0.036	0.063	0.070	0.150	0.060	1.0
Cl-mg/1	143	2273*	88	39	115	120	250
Fe-mg/1	17.5	2.42	97	49	80	3.3	
Mn-mg/1	1.08	0.178	6.2	0.158	1.52	1.45	0.05
Na-mg/1	148	644	223	146	194	198	
Hg-mg/1	0.0006	0.0002	0.0009	0.0005	0.0098	0.015	0.002
Se-mg/1	0.015	0.015	0.011	0.010	0.011	0.010	0.010
Pb-mg/1	0.050	0.125	0.360	0.050	0.040	0.025	0.05
Zn-mg/1	0.04	0.11	0.19	0.35	0.33	3.85	5.0
SO_4-mg/1	142	77	307	86	11[illegible]		[illegible]
NH_3-N mg/1	0.17	5.0*	103.6*	6.6	0.		
NO_3-N mg/1	1.10	0.58	1.25	1.11	0.		0
KN-N mg/1	1.04	0.64	17.5*	5.0	0.		
CN-mg/1	0	0.010	0.005	0.016	0.[illegible]		
Phenol-mg/1	0.055	0.009	0.212	0.192	0.[illegible]		001
COD-mg/1	144	104	161	720	1		

*-Significant
from 104 Average
@95% level

5.4.4. Leachate Control and Monitoring

Leachate is currently being produced by Pond 3 - and 3A is [illegible] the upper groundwater strata. We recommend that a leachate collection system be constructed consisting of a perforated open joint curtain drain and an impervious clay barrier. The leachate collected by this system should be pumped to Pond 4B for treatment in the existing Metals Division Wastewater System prior to discharge to Lake Erie.

A number of additional monitoring wells, as shown on the plans, should be installed for long-term monitoring of the site as required by EPA regulations.

5.4.5. Dust and Runoff Control

The berm and contents of Pond 3 are comprised of fine grain materials which have the potential to create a dust problem under certain weather conditions (i.e. very hot and dry). In order to minimize the generation of dust we recommend that:

1) The roadway areas be constructed of large (#4) crushed limestone with an emulsion surface treatment.

2) The remainder of the berm and final cover area be sown with a grain seed mixture meeting Ohio Department of Transportation (ODOT) specification 659. This practice will provide a cover for the fill area and also serve to moderate the errosive effects of surface water run-off. In addition, sewage sludge if available will be applied to aid fertilization.

5.4.6. Long Term Dike Modifications

Due to the nature of the initial construction of the dikes additional soil borings and water level monitoring data will be collected in the Pond 3A berm area prior to any additional construction to increase capacity in Pond 3A. Additional stability analysis of any modifications will be completed prior to actual construction.

5.4.1. Combustible Wastes

These wastes should be segregated from the remainder of the solid waste produced at the Ashtabula Complex and hauled off-site by a private hauler. This is a continuation of the practice recommended in the short-term plan.

5.4.2. Non-Combustible Wastes

In the same manner as described in the short-term plan these wastes should be deposited in prepared cells on top of Pond 3. The wastes should be compacted daily and a clay cover one foot thick should be placed on each cell after filling. These cells should be constructed starting at the northwest corner of Pond 3 in a checkerboard fashion so as to effectively cap and seal the disposal area and direct runoff away from the wastes. Detail cross-sections and layouts are shown on the accompanying plans.

The clay material needed for cover is available directly north of Pond 3 and west of Pond 4. This area can also be used to stockpile additional clay material provided by outside sources.

5.4.3. Wastewater Sludge

The Metals Division Wastewater Sludge will continue to be deposited in Pond 3A. As shown on the detailed plans, it will be necessary to raise the dike around Pond 3A as the level of fill material increases. The ultimate level shown on the plans allows for greater than 20 years of operations at the existing sludge generation rates. A clay cap one foot thick should be placed on the fill area after it reaches the ultimate level.

The Linde Welding Products sludge should be dewatered and then deposited in a clay lined landfill located west of Linde's complex and south of Pond 2. The cells should be constructed using the existing grade as bottom and a dike above grade for the sidewalls. The dewatered sludge should then be deposited inside the dike and a clay cap applied at least once a week.

Since none of this material is being transported from the site it will not presently be necessary to comply with the EPA manifest system regulations currently in effect.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Very few baseline data describing the local conditions in the Ashtabula area are available. Engineering-Science has, conducted as careful and thorough an analysis as possible, and reached the following major conclusions concerning the conditions of the Ashtabula Industrial Complex.

1. [redacted] appears to be migrating through the containment dike into the local groundwater. Apparently ammonia contained in the fly ash is being leached by the highly alkaline lime waste in the fill.

2. This leachate appears to be affecting only the groundwater in the upper stratum and not that in the deeper strata.

3. The leachate will continue to contaminate the underlying groundwater even if all disposal in Ponds 3 and 3A is stopped.

   [The ponds contain sufficient water (22 ft pressure head) to produce leachate long after operations there are shut down. This problem is compounded by the effects of normal precipitation which can contribute at least 8 inches of net head on the Pond 3-3A area (58 acres) per year. This translates to 38.6 acre-ft of water for percolation or leachate at equilibrium. The result is about 12 million gallons of leachate flow per year].

4. The sludges produced by the Metals Division and the Linde Welding Products Division have very different chemical characteristics. The NPDES permits for the two facilities reflect these differences, as should the respective short and long term disposal plans.

5.2. Recommendations

The recommendations which follow are divided into short term (approximately one year) and long term (greater than one year) time

A large portion of the solid waste from the plant is now collected at a transfer station in the plant and taken to the Geneva landfill.

Several of the other wastes are baghouse [redacted] dust and sili[redacted] and sent via our wastewater system [redacted]. The Pond 4 sludge is periodically dredged and put [redacted] 3A. Dredging of the sludge and use of Pond 3A for sludge disposal was analyzed during our NPDES permit application review and is covered under our NPDES permit No. N336*ED, Application No. OH 0000027. See Exhibit A.

The Geneva landfill is reluctant to take these wastes because they tend to cause a dust problem at the landfill. We intend to dispose of them in Pond 3A, and believe that this should be allowed under the terms of Elkem's NPDES permit.

As I have already described, the lime, coke dust and silica are normally part of the wastewater stream, and comprise a major fraction of the sludge deposited in Pond 3A. This will continue to be the normal method of disposal. Elkem will haul these wastes directly to Pond 3A only when they are collected during maintenance of the baghouses, the slurry system, or other related equipment. No solid wastes other than those described will be put in Pond 3A.

We believe that the Ohio EPA has the authority to interpret its rules to allow this method of disposal under Elkem's NPDES permit, without requiring Elkem to undergo the expense and effort to license Pond 3A as a solid waste disposal facility. The basic rule exempting ponds and lagoons regulated under Ohio's Water Pollution Control Act, ORC Chapter 6111, from duplicative regulation under the Solid Waste Disposal Act states:

> "These Chapters 3745-27 and 3745-37 shall not apply to . . . (H) pond or lagoon operations regulated under ORC Chapter 6111."
> (OAC 3745-27-03)

The Ohio EPA clearly has the authority to include sludge disposal lagoon operations in the relevant NPDES permit.

> "The Director may include in an Ohio NPDES permit any other terms or conditions he finds reasonable and appropriate for the prevention and abatement of pollution."
> (OAC 3745-33-05(B))

Indeed, it would be illogical to do otherwise. And, in Elkem's NPDES permit, Pond 3A is regulated as a sludge disposal lagoon.

Using Pond 3A to receive baghouse dust collected during maintenance, where that dust ordinarily would be a component of the waste treatment sludge, is merely a logical extension of the function of the plant's wastewater treatment system. This dust should be treated the same, whether it arrives in the sludge via Pond 4, or directly into Pond 3A.

is considering both effective and potential federal regulations in the development of the disposal plan for Union Carbide. While the final RCRA regulations have yet to be published, it is anticipated that they will not differ significantly from the State of Ohio requirements on most major issues.

This report presents Engineering-Science's analysis of the facility's operation based on extensive tests and examinations, all described herein. The thrust of this work has been related to groundwater quality and management. This document provides Union Carbide with a detailed program for resolving both short term and long term waste disposal questions for the Ashtabula complex and constitutes a facility plan conforming to Ohio regulations.

[redacted] THE SITE

Union Carbide Corporation has operated an industrial complex on a 673 acre site located in Ashtabula Township, Ashtabula County, Ohio since World War II. The site is roughly bordered by Lake Erie on the north, State Road on the west, Middle Road on the south, and the extension of Cook Road on the east (see Figure 1). Three divisions of Union Carbide have facilities located at this site, the [redacted]ufactures ferro alloys, calcium carbide and lime; [redacted] Division which operates a tonnage air reduction plant; [redacted] which manu[redacted].

Most of the liquid and solid wastes generated by on-site operations have been handled on-site. Over the years sludge ponds (see Figure 2) have been developed for disposal of solid and semi-solid wastes. These ponds also contain solids removed from the wastewater treatment systems, as well as a variety of other waste materials generated by the plant's operation over the years.

2.1. Present Disposal Practices

Of the five ponds shown on the map (Figure 2), three have been abandoned as active waste disposal areas. These abandoned ponds are

REPORT OF REVIEW OF THE SHORT AND LONG TERM SOLID WASTE DISPOSAL

MANAGEMENT PLANS FOR THE UNION CARBIDE CORPORATION

ASHTABULA, OHIO COMPLEX

1. INTRODUCTION

1.1. Background

In June of 1979 the Ohio Environmental Protection Agency (Ohio EPA) contacted the Union Carbide Corporation (UCC) regarding the solid waste disposal practices at their Ashtabula, Ohio Industrial Complex. This complex includes three facilities: the UCC Metals Division, the Linde Welding Products Division and the Linde Air Products Division. All three of these divisions generate wastes which are disposed both on and off site.

The Ohio EPA informed UCC that under the Ohio Revised Code, Section 3734 and under the Ohio EPA Regulations, published in Section 3745-27 of the Ohio Administrative Code, the Corporation is required to submit a Solid Waste Disposal Facility Plan for the Ashtabula complex for state approval. Later Ohio EPA conducted a site visit of the Ashtabula complex and reported that the disposal area was in a state of disarray.

In response to the State of Ohio requirements, Union Carbide contracted with Engineering-Science, Ltd. (ES) to investigate the Ashtabula Complex's current solid waste disposal practices and to develop a short and long term management plan which will satisfy Ohio's environmental requirements.

Engineering-Science is also tracking the development of the U.S. EPA's Resource Conservation and Recovery Act (RCRA) requirements and

LINDE
UNION CARBIDE

Union Carbide Corporation
Linde Division
Old Ridgebury Road
Danbury, Conn 06817

bcc: N. E. Bolton
C. L. Dudnick
A. R. Fritz

June 17, 1985

Mr. Thomas Crepeau
Ohio Environmental Protection Agency
Div. of Solid and Hazardous Waste Management
361 E. Broad Street
Columbus, Ohio 43216

Re: Ashtabula, Ohio Welding Material Facility, RCRA ID #OHD000821454

Dear Mr. Crepeau:

Union Carbide Corporation (Union Carbide) and L-Tec Company (L-Tec), a New York limited partnership having an office at c/o Integrated Resources, Inc., 666 Third Avenue, New York, New York 10017, are entering into an agreement pursuant [redacted] materials plant. The closing is expected to occur around June 28, 1985.

As required by applicable regulations, L-Tec, under separate cover, is transmitting to you a revised RCRA Part A application in order to obtain transfer of interim status under RCRA. Please be advised that Union Carbide will continue to comply with the financial assurance requirements of the Ohio Hazardous Waste Management Regulations until advised by the Ohio Environmental Protection Agency that L-Tec has demonstrated compliance with those requirements and that Union Carbide is released from liability for those requirements.

I would appreciate your sending to me at the address noted above the notification that Union Carbide is released from liability for the financial requirements.

Very truly yours,

Lawrence E. Barron

Lawrence E. Barron
Associate Director
Safety, Health &
Environmental Affairs

LEB/mbb

cc: L-Tec Company
Willkie Farr & Gallagher
RCRA Activities (Region V) - Chicago
Debbie Tegtmeyer 10/22/85

[redacted] FILE FDL

February 24, 1984

STATE CENTS

State of Ohio
Ohio EPA
Division of Hazardous Materials Management
361 East Broad Street
Columbus, Ohio 43215

Attention: Ms. Deborah Tegtmeyer

RE: Liability Insurance for Ohio
Hazardous Waste TSD Facilities

Dear Ms. Tegtmeyer:

Please refer to letter dated January 11, 1984 sent to several of the Ohio Union Carbide locations by Mr. Charles J. Wilhelm. We understand that a representative from [redacted] subsequently communicated directly with you by telephone, and that you agreed to a time extension in the filing date for the revised insurance certification.

In accordance with Mr. Wilhelm's request, enclosed are three insurance certificates indicating Union Carbide's coverage for "sudden accidental occurrences" to a combined limit (primary and excess) of $1,000,000 each occurrence with a $2,000,000 annual aggregate and for "non-sudden accidental occurrences" indicating a limit of liability of $3,000,000 each occurrence with a $6,000,000 annual aggregate. You will note these certificates are applicable to the following locations in the State of Ohio:

Location Address	EPA ID#
11709 Madison Ave., Lakewood, OH 44] / (Electronics)	OHD-000821470
River Road, Marietta, OH 45750	OHD-077479467
Lake Road East, Ashtabula, OH 44004	OHD-000821454
20575 Center Ridge Road, Rocky River, OH 44116	OHD-000821421
Town Street, Fostoria, OH 44830	OHD-004167219
11709 Madison Ave., Lakewood, OH 44107 (Carbon Products)	OHD-004167383
12900 Snow Road, Parma, OH 44130	OHD-003926748

Potential Hazardous Waste Site
Preliminary Assessment

Elkem Metals Company
Lake Road - East
Ashtabula, Ohio
OHD 004 171 039

Elkem Metals Company is a 673 acre industrial complex located in Ashtabula, Ashtabula County, Ohio. The site is roughly bordered by Lake Erie on the north, and is located in an industrial area that is one of the largest and most diversified concentrations of chemical plants in Ohio.

Elkem (formerly Union Carbide - Metals Division) purchased the facility from Union Carbide in 1981, and continues to implement the same processes Union Carbide - Metals Division initiated in 1943. Elkem is a manufacturer of ferro alloys, lime, and calcium carbide, which uses the raw materials limestone, iron, various alloys, and coke.

Surface drainage and process wastewater flows into Lake Erie through two NPDES permitted outfalls. Various excursions have been reported, including carbide furnace scrubber effluent, iron, manganese, nickel, suspended solids, phenol, acrylonitrile, benzene, chloroform, and pH violations. Prior to 1977, wastewaters from Union Carbide's Linde Division, which includes Linde Welding Materials (Wire) Plant and Linde Gas Plant, were combined with Union Carbide's - Metals Division wastewaters before lake discharge via outfalls.

Most of the liquid and solid wastes generated by on-site operations have been landfilled on-site. Sludge ponds were developed for these solid and semi-solid wastes and others (wastewaters). Since 1943, the Elkem site has used mine sludge ponds. (Ponds 1, 1A, 2, 3, 3A, 4A, 4B, 4C, and 4D). Waste from three facilities (Union Carbide - Metals Division, Linde Welding Plant, and Linde Gas Plant) used Ponds 1, 1A, 2, 3, and 3A for disposal. Since the 1981 Elkem acquisition, Elkem no longer accepts the Linde Division waste. At present, Ponds 1, 1A, 2, and 3 have been abandoned as active waste disposal areas. Pond 3 was constructed in 1956 as a wastewater lagoon, contains 1% to 2% carbide shot waste, and was closed and clay-capped in 1981. Pond 3A was constructed in 1967, diked, and used for wastewater treatment sludge (from Pond 4 series) baghouse dusts and metal shot. The carbide shot is no longer landfilled, but is being recycled in furnaces on-site. The Pond 4 series is used for wastewater treatment and holds cyanide and phenolic wastewaters. In 1980, Elkem's monitoring wells indicated release of leachate into the shallow ground water. Reports indicated leachate containing ammonia, sulfate, and metals, is migrating from ponds 3 and 3A. A ground water collection trench has since been constructed around ponds 3 and 3A.

Elkem no longer needs a RCRA permit as carbide shot is now considered a non-hazardous waste.

Due to low population potentially affected for water route, a low priority is recommended for FIT/State activities.

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Due to low population potentially affected for water route, a low priority is recommended for FIT/State activities.

RESOURCE CONSERVATION
AND
RECOVERY ACT

PART B
PERMIT APPLICATION

PREPARED FOR

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION V

AND

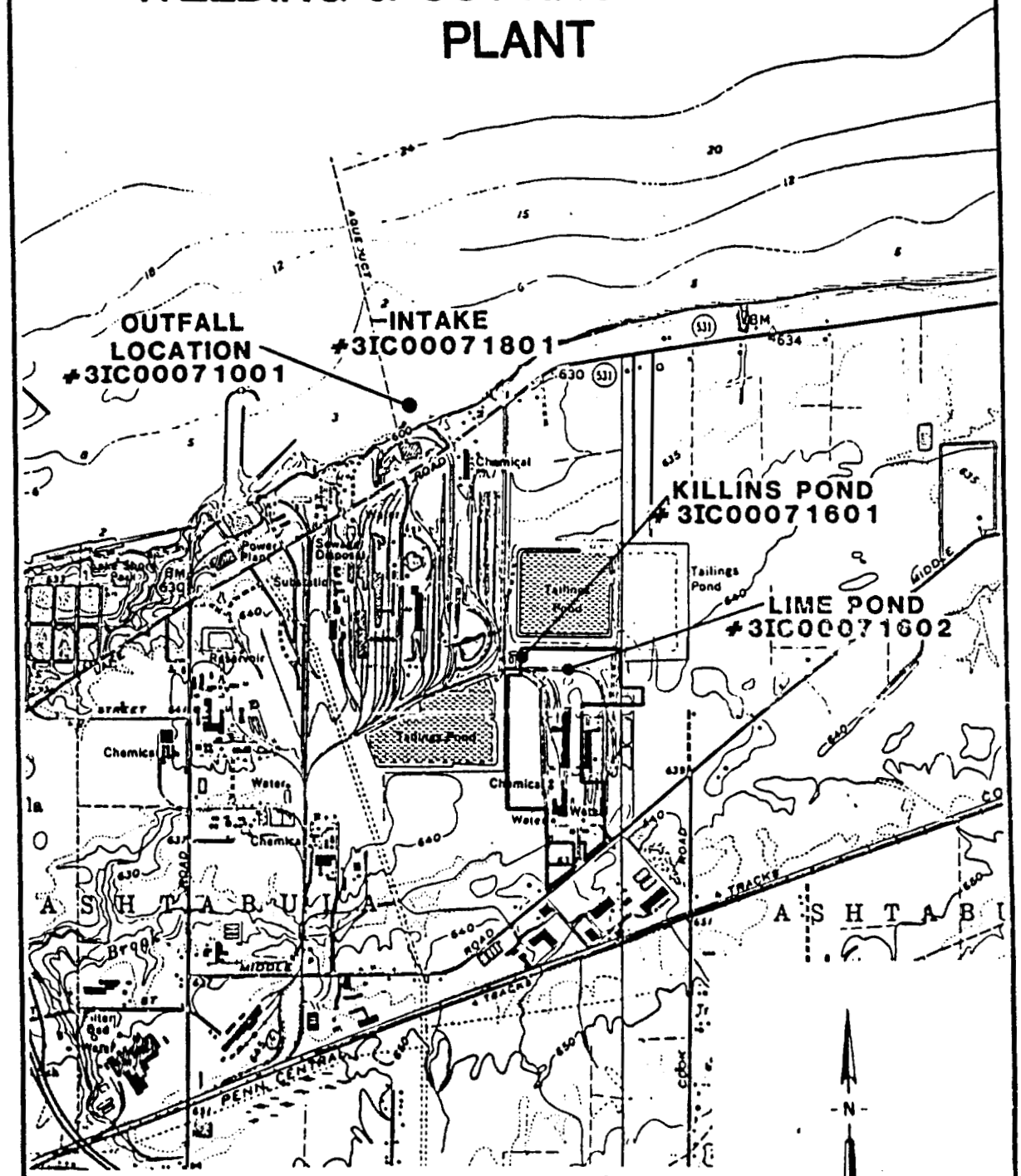
OHIO ENVIRONMENTAL PROTECTION AGENCY

L-TEC
WELDING & CUTTING SYSTEMS

ASHTABULA, OHIO

RECEIVED
DEC 13 1985
OHIO EPA-N.E.D.O.

L-TEC
WELDING & CUTTING SYSTEMS PLANT



LATITUDE 41°54' 00" LONGITUDE 080°45' 11"

SOURCE: USGS MAP SERIES V852

SCALE 0 2000 FEET

B.3 WASTE ANALYSIS PLAN

B.3.1 Analysis Parameters with Rationale

The analysis parameters for the dewatered sludge are EP toxicity, corrosivity, hexavalent chromium, nickel, lead and cyanide. These parameters are used because the presence of these compounds in the waste is EPA's rationale (Refer to Section B.2) for the lime stabilized sludge being listed as a hazardous waste F006 and K062. Iron and copper levels will also be analyzed since the levels are characteristically high.

B.3.2 Test Methods for Analyzing Parameters

The test method for analyzing the parameters as proposed by U.S. EPA SW-846 are the following:

Method 1310 EP Toxicity
Method 9040 Corrosivity
Method 7420 [redacted]
Method 7196 [redacted]
Method 7520 [redacted]
Method 9010 [redacted]
Method 7210 Copper

B.3.3 Procedure for Collecting Representative Samples

The lime stabilized sludge is generated as a precipitate resulting from lime neutralization of the electroplating baths, rinse water, and pickle liquor wastewater. The neutralized wastewater is fed by gravity to a settling pond or clarifier (proposed) and the suspended solids are allowed to settle. The settled solids are then transferred to a sludge thickening tank prior to dewatering by recessed plate pressure filtration. The sludge is expected to be homogeneous and grab samples of the filter cake from a minimum four pressure filtration runs is expected to be representative of the dewatered sludge.

B.3.4 Frequency of Analysis

The dewatered sludge will be sampled each time major changes in the composition of the wastewater results due to process operation changes.

TABLE B.1
LIME STABILIZED WASTE PICKLE LIQUOR SLUDGE AND LEACHATE ANALYSIS

Sludge Analysis

ES Sample I.D.	Client I.D.	Total Metals (ug/g wet) As	Ba	Cd	Cr	Hg	[illegible]	Se	Ag	[illegible]	pH S.U.	Ignitability °F	Reactivity ug/g	Oil & Grease ug/g	TOC %	Moisture %
4314	Location 1 12:20 pm 11-18-83	28	<20	0.2	[illegible]	0.09	[illegible]	<1	<0.3	[illegible]	8.7	>212	<0.1	670	1.2	72
4346	Location 2 3:15 pm 12-8-83	21	<20	0.2	[illegible]	0.07	15	<1	<0.3	141	10.3	>212	<0.1	201	0.89	80
4315	Location 3 12:30 pm 11-18-83	24	<20	0.1	[illegible]	0.03	20	<1	<0.3	147	8.7	>212	<0.1	2210	0.81	76
4316	Location 4 12:10 pm 11-18-83	27	<20	0.4	[illegible]	0.06	18	<1	<0.3	153	11.6	>212	<0.1	730	0.98	75
4317	Location 5 2:10 pm 11-18-83	35	<20	0.2	[illegible]	0.12	25	<1	<0.3	215	9.0	>212	<0.1	1770	1.0	64
4318	Location 6 2:30 pm 11-18-83	37	<20	0.2	[illegible]	0.07	16	<1	<0.3	258	8.7	>212	<0.1	1100	1.1	76
4319	Location 7 1:30 pm 11-18-83	38	<20	0.2	[illegible]	0.09	23	<1	<0.3	224	10.0	>212	<0.1	1770	1.5	67
4320	Location 8 11:25 am 11-18-83	35	<20	0.2	[illegible]	0.06	113	<1	<0.3	166	9.5	>212	<0.1	1240	1.2	71

EP Leachate Analysis (mg/l)

		As	Ba	Cd	Cr	Hg	Pb	Se	Ag	[illegible]	pH S.U.
4367	Composite	<0.1	<1	<0.01	<0.05	0.003	0.8	<0.05	<0.05	[illegible]	9.8

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OHD 004 171 039

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Elkem no longer needs a RCRA permit as carbide shot is now considered a non-hazardous waste.

Due to low population potentially affected for water route, a low priority is recommended for FIT/State activities.

030663

117

OhioEPA

September 13, 1985

Elkem Metals Company
Lake Road East
P.O. Box 40
Ashtabula, Ohio 44004

Dear Concerned Party:

Ohio EPA has completed the enclosed preliminary assessment as part of our ongoing process to identify and remedy hazardous materials problems in Ohio. We are providing you with a copy of this information because of your identified owner and/or operator status.

Ohio EPA will ultimately screen (or "preliminarily assess") over 800 sites included on U.S. EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list of 22,000+ sites nationwide. This screening is based upon readily available information, and is used to prioritize sites for additional investigation as outlined in the National Contingency Plan. (See 40 CFR Part 300) The Unregulated Sites staff conduct additional activities based upon the priority assigned in the preliminary assessment (none, low, medium, high). A site inspection with sampling sufficient to characterize the site may follow the preliminary assessment. Actions subsequent to the site inspection - if warranted - include Superfund listing and remedial actions.

The preliminary assessments are put in our files when they are completed and sent to U.S. EPA. We are giving you this information to better enable you to address any possible inquiries from the public. We welcome any additional information or comments and ask that you contact the Unregulated Sites staff at the following offices:

Central	Columbus	614/462-6733 or 462-8934
Northeast	Twinsburg	216/425-9171
Southwest	Dayton	513/449-6357
Northwest	Bowling Green	419/352-8461
Southeast	Logan	614/385-8501

You might also wish to contact our Public Interest Center at 1-614-466-8508.

Sincerely,

Steven H. White

Steven H. White, Chief
Division of Solid & Hazardous Waste Management

RECEIVED
SEP 17 1985
OHIO EPA-N.E.D.O.

cc: NEDO

State of Ohio Environmental Protection Agency
361 E. Broad St., Columbus, Ohio 43216-1049, (614) 466-8565

030661

02 04 01 0003

SN 16544.010

Test Number FA-7

Union Carbide Corporation

Ferroalloys Division

Ashtabula, Ohio

by

T. E. Eggleston/R. N. Allen

June 1972

Resources Research, Inc.
A Subsidiary of TRW Inc.
Westgate Park
7600 Colshire Drive
McLean, Virginia 22101

Contract Number CPA 70-81

64621

SUMMARY OF RESULTS

(Part 2 - Furnace No. 13)

Shown below, in Table 6, are the results and averages of testing emissions from Furnace 13, along with corresponding collection efficiency, using the complete EPA sample train.

TABLE 6

Overall Summary of Emissions and Collection Efficiency

Date	Run No.	Location	Filterable Particulate lbs/hr	Total Particulate lbs/hr	Average Total lbs/hr.	Percent Efficiency
2/22/72	One	Hood	* 65.4	69.0		
2/23/72	Two	Hood	46.5	57.9	63.2	None
2/23/72	Three	Hood	49.9	68.5		
2/23/72	One	Scrubber	——	0.577		
2/24/72	Two	Scrubber	——	0.423	0.488	99.9
2/24/72	Three	Scrubber	——	0.464		
2/23/72	One	Tapping	52.4	53.6		
2/24/72	Two	Tapping	47.2	50.2	49.7**	None
2/24/72	Three	Tapping	44.4	45.2		
2/24/72	One	Scrubber Water	——	[illegible]		
2/24/72	Two	Scrubber Water	——	[illegible]	689.2	——
2/24/72	Three	Scrubber Water	——	[illegible]		

* Three of four ducts sampled, NOT USED in averages.
** Tapping continuously.

UNION CARBIDE CORPORATION

Source Name		New Source #	Existing Source #
Plant Roadways & Parking Areas		F001	App. M1-1
Aggregate Storage Piles		F002	App. M1-2
Raw Material Handling, Crushing, & Screening		F003	P023 and App. M1-3 pg. 1
Coke Dryers		P901	P006
Lime Plant	Kiln	P009	P009
	Kiln	P010	P010
	Lime Sizing (bldg. 131)	P902	P008 and App. M3, App. M1-3 pgs. 11 & 12, App. M14 pgs. 4 & 11
Alloy Mix		P903	App. M1-3 pgs. 13-20
Carbide Mix		P904	P003, P004, P007 and App. M1-3 pg. 10, App. M14 pg. 13
[redacted]	Furnace #20	P905	P021 and App. M14 pgs. 2, 22, 23
	Furnace #21	P906	P014, P018, and App. M14 pgs. 3, 24, 25
	Furnace #0	P907	P013, P019, and App. M14 pgs. 2, 15, 16, & 17
	Furnace #2	P020	P020
[redacted]	Furnace #10	P908	P016 and App. M14 pgs. 2, 18, 19
	Furnace #14	P909	P015 and App. M14 pgs. 2, 20, 21
Alloy Crushing	Bldg. 11A	P910	P011, P012, and App. M14 pgs. 32-34
Alloy Crushing (C4P)	Bldg. 57A	P911	P024 and App. M1-3 pgs. 5 & 6, App. M14 pgs. 35 & 36
Carbide Crushing & Packing		P912	P001, P002, and M1-3 pgs. 2, 3, 4, 7, 8, 9, M14 pgs. 27-31

1979 PROCESS DATA
UNION CARBIDE METALS PROCESSES

PREMISE PERMIT NUMBER 0204010003

PROCESS NUMBER	DESCRIPTION	PRODUCTION N.T.	PRODUCT	HOURS OPERATED	% OPERATING TIME
P001	C1P Department	74965.38	CaC_2	2920/Yr.	100%
P002	CP Department	7847.43	CaC_2	2920/Yr.	100%
P003	[redacted] -	[redacted]	[redacted]	7298.75/Yr.	83.3%
P004	[redacted] - Fine Mix	[redacted]	Coke & Lime	4672.6/Yr.	53.3%
P006	Dryers - Coke System	40713.39	Dried Coke	8760/Yr.	30% (Est.)
P007	Lime Mix - Building 10X	37490.90	Lime	8760/Yr.	---
P008	Lime Sizing - Building 131	18611.27	Lime	8760/Yr.	---
P009	#3 Lime Kiln	35980.99	Lime	2553.95/Yr.	29.2%
P010	#2 Lime Kiln	70018.76	Lime	5655.82/Yr.	64.6%
P011	Crushers & Screens - Building 11A	87351.61	Ferro-Silicon	6240/Yr.	100%
P012	McLanahan - MgFeSi Crusher - Building 11A	28617.28	Ferro-Silicon	6240/Yr.	100%
P013	#2 Ladle Treating Station	~~1129.70~~	FeSi	Unavailable	---
P014	#1 Ladle Treating Station	46244.24	FeSi	Unavailable	---
P015	#14 Furnace	47057.00	CaC_2	7298.75/Yr.	83.3%
P016	#13 Furnace	27982.00	CaC_2	4672.6/Yr.	53.3%
P018	#23 Furnace	76746.00	FeSi	7885.04/Yr.	90.0%
P019	#0 Furnace	11790.00	FeSi	2991.65/Yr.	34.2%
P021	#20 Furnace	68625.00	FeSi	7314.30/Yr.	83.5%
P023	Raw Material Crusher	No Operations in 1979			
P024	Alloy Sizing	61091.96	FeSi	4160/Yr.	---
R001	Drum Shop - Spray Booth	53574.00 2693.00	Drums Gallons Sprayed	450 Hrs/Yr. (Sporadic Operation)	
P020	#2 Furnace	No Operations in 1979			

RCMills/hg
June 2, 1980

Fugitive dust emission data: Emissions from aggregate storage piles have been determined and such data is included with this appendix: [] yes [X] no

If yes, check method: [] source sampling
[] emission factor
[] other (describe) _____

9. Completed by W R Pirth; Date 4/30/81

Official Use Only

Premise No. _____
Source No. _____
Application No. _____

(1) ASHTABULA

APPENDIX M1-2

GENERAL FUGITIVE DUST EMISSION SOURCES:

AGGREGATE STORAGE PILES

1. Description of materials stored:

Type of Material Stored	S[redacted]	Material Silt Content (wt. %)	Material Moisture Content (wt. %)	Average Pile [redacted]	Average Storage Du[redacted]
Quartz	7	0%	Less than 5%	3440	120
Coal	8	[redacted] below 1/4"	3% to 4%	1270	75
Coke	12	5% below 1/4"	15%	560	30
Scrap Steel	7	Not App.	Less than 1%	3000	60
Wood Chips	1	0%	15%	3900	45

2. Meteorological data at or near storage pile area:

a. No. of dry days (< 0.01 inch of precipitation) per year ____ days
b. Percentage of time wind speed exceeds 12 miles per hour _____%
c. Mean wind speed _____ miles per hour
d. Source of meteorological data _____

3. Load-in activities:

a. Method of load-in:
[] mobile conveyor/stacker (continuous load-in)
[] stationary conveyor/stacker (continuous load-in)
[] front-end loader (batch load-in)
effective loader capacity _____ cubic yards
[X] other (describe) Dump trucks. Clammed from RailCars. Bottom Discharged from Rail Cars

b. Material load-in rate:

Type of Material Stored	Load-in Rate (max. tons/hour)	Load-in Rate (tons/year)
Quartz	30	261,000
Coal	100	108,000
Coke	100	91,800
Scrap Steel	260	7,960
Wood Chips	50	31,200
Limestone	81	134,450

3. Ferroalloy furnace process data:

a. Furnace ID	0	13	14	20
b. Year installed	1950	1953	1953	1965
c. Furnace manufacturer	UCC	UCC	UCC	UCC
d. Type of ferroalloy produced (75% ferro-silicon, etc.)	50% FeSi	CaC_2	CaC_2	50% FeSi
e. Type of process used (electric smelting furnaces, electrolyte process, vacuum process, etc.)	Electric Submerged Arc Smelt.	Electric Submerged Arc Smelt.	Electric Submerged Arc Smelt.	Electric Submerged Arc Smelt.
f. Type of furnace (semi-enclosed, etc.)	Semi-Covered	Semi-Covered	Semi-Covered	Semi-Covered
g. Maximum furnace design melt rate (tons/hour)	9.14	11.50	11.50	21.64
h. Maximum hourly melt rate (tons/hour)	9.14	11.50	11.50	21.64
i. Annual melt rate (tons/year)	80,066	100,464	100,464	189,047
j. Normal operating schedule:				
hours/day	24	24	24	24
days/week	7	7	7	7
weeks/year	52	52	52	52
k. Percent annual production:				
winter	25%	25%	25%	25%
spring	25%	25%	25%	25%
summer	25%	25%	25%	25%
fall	25%	25%	25%	25%
l. Maximum design quantity of metal tapped (tons/hour)	4.34	8.25	8.25	11.38
m. Maximum hourly tapping rate (tons/hour)	4.34	8.25	8.25	11.38
n. Maximum hourly casting rate (tons/hour)	4.34	8.25	8.25	11.38

4. Product crushing and screening process data:

a. List primary process equipment _____

b. Equipment manufacturer _____

c. Year installed _____

d. Maximum design input capacity _____ tons/hour

e. Maximum hourly input rate _____ tons/hour

f. Annual input rate _____ tons/year

g. Normal operating schedule: _____ hours/day _____ days/week _____ weeks/year

h. Percent annual production: winter _____ spring _____ summer _____ fall _____

(2)

U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION V
SURVEILLANCE AND ANALYSIS DIVISION
MICHIGAN-OHIO DISTRICT OFFICE

Compliance Monitoring Field Report

1. Permittee Identification

Union Carbide Corporation
Metals Division (formerly Ferroalloys Division)
Lake Road East
Ashtabula, OH 44004
216-997-6141

Mailing Address

P.O. Box 40
Ashtabula, OH 44004

Receiving Stream - Lake Erie

NPDES Permit Number - OH0000027

OEPA Permit Number - N 336 *AD

Responsible Official - J. A. Perez, Plant Manager

2. Date of Reconnaissance Inspection - February 4, 1976

3. Participants

Union Carbide Corp.

C. R. Allenbach, Manager, Environmental Affairs (Corporate)
E. E. Falk, Design Engineer (Corporate)
W. C. Miller, Environmental Engineer (Corporate)
C. B. Matthews, Supt., Engineering & Maintenance (Plant)
J. T. Waller, Chief Chemist (Plant)

Ohio EPA - NEDO

Russell Hart
Willard Samkow

USEPA

Martin G. Trembly (Author)

4. Objective

This reconnaissance inspection was conducted to assess compliance with NPDES Permit Number OH0000027 (OEPA Permit Number N 336 *AD), and to conduct a SPCC plan check at this facility.

08732

5. Summary of Findings and Conclusions

The subject facility, a producer of ferroalloys, calcium carbide, acetylene, and acetylene black, discharges to Lake Erie through two outfalls, numbered 001 and 003. Over 50 mgd of wastewater is discharged by this facility and adjacent Linde Division Gas and Wire plants.

This inspection revealed that Union Carbide is in substantial compliance with the terms of NPDES Permit Number OH0000027, with three exceptions. Excursions beyond the total copper limitation of Outfall 003 have been traced to process load changes and have been dealt with through in-plant piping modifications. The second point of non-compliance with permit conditions concerns the use of a non-approved method of analysis for BOD_5.

Finally, the company has fallen behind its prescribed schedule for treatment improvements, due partly to cold weather effluent sampling delays and partly to curtailed plant operations. General plans, where required on September 15, 1975, were instead submitted on October 7, 1975. As a result of the above further delays, detail plans, which were to be submitted by February 15, 1976, are now expected no earlier than late April 1976.

It should also be mentioned that the company's sampling point for their Outfall 001 is located such that Lake Erie water may dilute discharged pollutants and thus bias discharge data.

6. Description of Permittee

A. Description of Facility

The Ferroalloys facility is a producer of 50 percent ferrosilicon with magnesium and manganese, and other ferroalloys using 50 percent ferrosilicon as a base alloy. Auxiliary products are calcium carbide, lime, acetylene, and acetylene black for use in battery electrodes. Annual production is in the range of 144,000 tons of ferroalloys and 124,300 tons of calcium carbide.

Basic raw materials in the ferroalloys furnaces include quartz and gravel, scrap steel, and coal and coke, along with small amounts of previous melts. The carbide furnaces consume lime and coke. Raw water for process applications is now purchased by contract agreement from CEI, [redacted] Electric power is also bought from CEI.

Acetylene is formed by reacting calcium carbide with water to produce the gas. The lime slurry resulting from this reaction is transported to sludge drying bed #3. The production of acetylene black is done in an oxygen-deficient burner, and the product is air-transported to a baghouse, in which the product is removed. Compression and bagging of product is also a dry process.

Dust scrubber systems also exist in the coke drying and alloy crushing areas. Wastewater from these systems also passes through the thickeners to sludge drying bed #3.

Non-contact cooling water from the electric furnaces and the lime kilns is discharged directly through outfall 001. Total water use for all purposes in the Ferroalloys plant is about 30 mgd.

Since MODO's last visit to this facility in January 1974, an old ferroalloy furnace, #23, has been modernized as an open furnace. Exhaust gases are cooled in an outdoor heat exchanger and are filtered through a baghouse. Dry dust from this baghouse and the secondary hood baghouses of the other furnaces is slurried and pumped to sludge drying beds #3 and 3A.

C. Waste Treatment Facilities

Scrubber water from the furnaces, the coke drying area, and the alloy crushing system is sent to either of two lift stations, at which chlorine gas is added to remove cyanide. Cyanide is found, largely in the carbide furnaces, as calcium cyanide. Also, small amounts are generated through a reaction of nitrogen, carbon dioxide, and heat in the electric furnace area.

The lift stations pump scrubber water to either of two clarifier-thickeners. Overflow from these thickeners is discharged through outfall 001. [redacted] Since bed #3 has filled with solids, most removal of suspended solids from thickener sludge is accomplished in bed #3A, which is an addition to bed #3 on its east side. Recently, the company had noted that most sludge pumped to the beds flowed to one side of bed #3A; coincidentally, this happened to be the same side as the overflow. Therefore, in November 1975 the company excavated a 15-foot ditch in bed #3 which [redacted] end of bed #3A. Since the overflow is in the southeast corner of bed #3A, more complete settling is theoretical[redacted].

Lime slurry withdrawn from the acetylene generation facility bypasses the thickeners and is pumped directly to bed #3. Lime-laden scrubber water from the lime kilns is sent to lagoon #2, into which the Linde Welding Materials Plant pumps waste pickle acids.

P015 [redacted] 14 Carbide Fee
[redacted] " "

8/1/75
DJH

Annual prod. [redacted]
Emissions with new controls -

~~63,500 T/Y × 230 #/T × .01 2000 = 730 TPY~~
~~UNCONTR EMISSIONS (99% EFFY)~~

if uncontrolled Emissions = 112.9 #/HR
and 99% E, E = ~~[illegible]~~ 112.9 × .01 ~~[illegible]~~
E/HR = 1.13 #/HR
E/YR = 1.13 × 24 × 7 × 52 ÷ 2000 = [redacted]

CA04010003

UNION CARBIDE CORPORATION - FERROALLOYS DIVISION
ASHTABULA, OHIO MANUFACTURING COMPLEX

Sulfur Oxides Emissions Reduction History
and Estimated Future Reduction

[redacted]

[redacted]		Ohio Regulation
Capacity operation, using Ohio Coal	[redacted]	
1969, Actual		
1970, Actual		
1971, Actual		
1972, Estimate	39,000	
1973, Estimate	36,000	
1974, Estimate	30,000	
1975, Estimate	0*	9,500**

*Based on discontinuance of Power Station operation
**Capacity operation

138

UNION CARBIDE

UNION CARBIDE CORPORATION

FERROALLOYS DIVISION

P. O. BOX 40, ASHTABULA, OHIO 44004

November 10, 1970

Mr. Howard Scott
Air Pollution Engineer
Northeast District Office
Ohio Department of Health
1931 Bailey Road
Cuyahoga Falls, Ohio 44221

Dear Mr. Scott:

The Ashtabula Plant of the Ferroalloys Division of Union Carbide is returning the Air Contamination Emission Survey data requested by Mr. J. A. Wunderle via letter of October 9, 1970.

The forms 5675.34 page 1 and page 2 have been completed with 1969 as the base year. In addition you will note are attachments for Section II Refuse Disposal and a list of Process Emissions for Section III. A list of our Particulate Emission Sampling Points is also attached to supplement Stack Data.

Additionally we are enclosing a diagram of our plant layout depicting the emission points, a description of submerged arc furnace emission control, and a drawing of our typical covered furnace with scrubber.

Should additional information be required, we shall be pleased to cooperate.

Respectfully yours,

J. A. Perez

J. A. Perez
Plant Manager

700 TON - 10% OF PART EMISSION
[illegible] FOR POSITIVE DUST

JAP/ml
Attachments

051741

02040100003

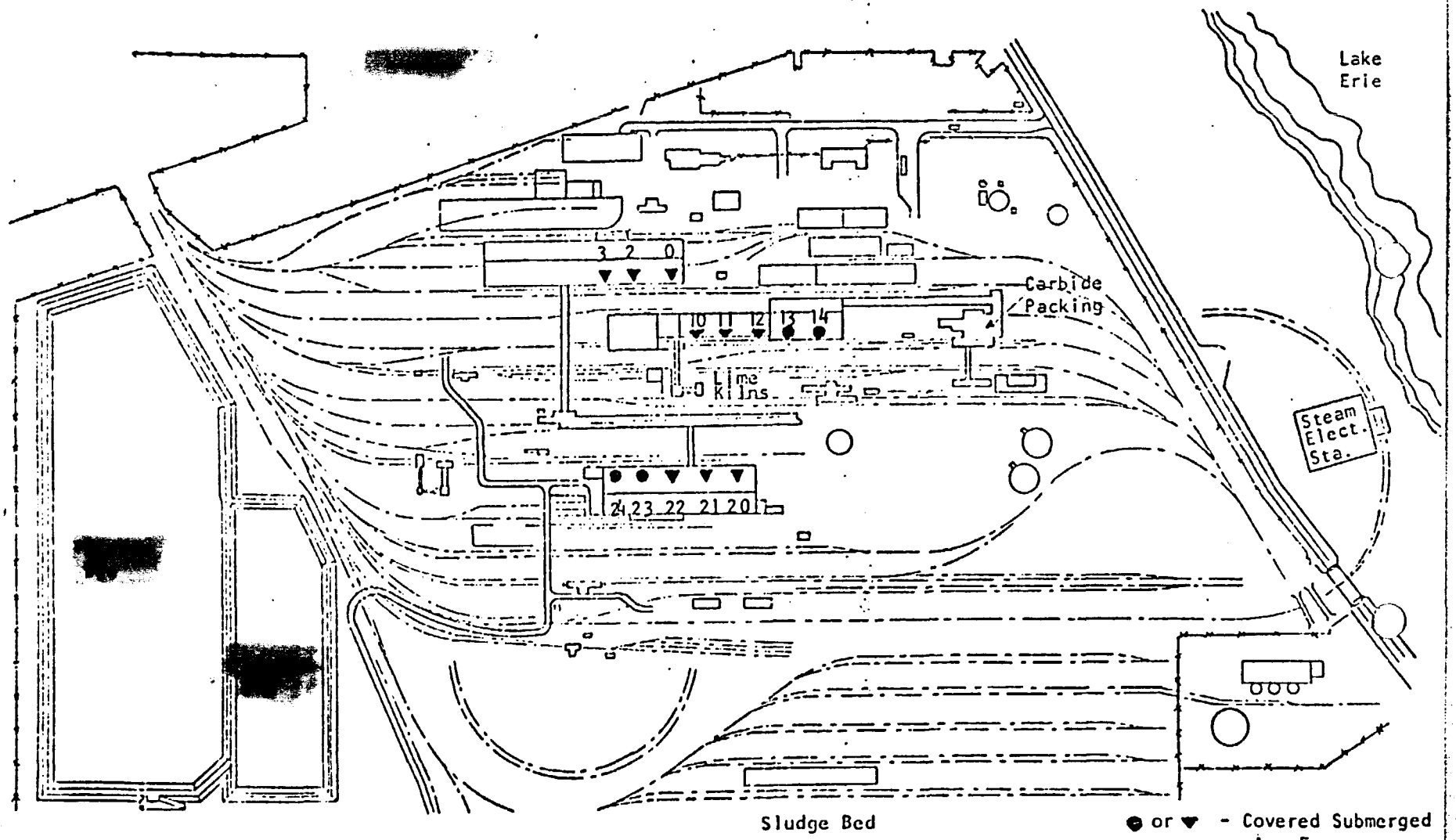


FIGURE I
UNION CARBIDE CORPORATION
FERROALLOYS DIVISION
ASHTABULA, OHIO

GENERAL LAYOUT

02738

SECTION II - REFUSE DISPOSAL

A	B	C
Waste Material		
Type	Amount per Year (Tons)	Method of Disposal
Fly ash and cinder	157,435-167,233	Landfill
Slag	25,025	Landfill
Lime hydrate in slurry form	63,240	Sludge Pond
Metal oxides and carbonaceous material in slurry form	22,600	Sludge Pond
Coke dust in slurry form	300	Sludge Pond
Misc. refuse - garbage, bricks, furnace digout, etc.	2,000	Sludge Pond

COMPLIANCE INSPECTION FORM

PREMISE NO. 0204 0/0003 SOURCE NO. P015

DATE PERMIT EFFECTIVE 1/5/79 INSPECTION DATE 6/10/80

SOURCE DESCRIPTION Furnace #14 - CaC_2 Electric Submerged Arc Furnace

LAST INSPECTION DATE

TYPE OF COMPLAINTS DURING PAST 12 MONTHS

VISIBLE EMISSIONS NOTED? NO READINGS ATTACHED?

PROCESS OR FUEL RATE AT TIME OF INSPECTION

ODORS NOTED? NO

GENERAL CONDITION OF CONTROL EQUIPMENT

VIOLATIONS NOTED? NO EXPLAIN

FOLLOW-UP INSPECTION REQUIRED? NO NEXT INSPECTION DATE One Year

SOURCE BELIEVED TO BE IN COMPLIANCE? Yes

EMERGENCY ACTION PLAN REVIEWED WITH ENTITY ON THIS SOURCE?

COMMENTS Grouped w/ P016 (Shared Baghouse)

051884

COMPLIANCE DATA SHEET

PREMISE NO. 6204010003 SOURCE NO. P015

OPERATING SCHEDULE 24 hr/d 7 d/wk 52 wks/yr

ANNUAL PRODUCTION OR FUEL USAGE (indicate units) 47,057 tons/ 1979

FUEL ANALYSIS _____ %A _____ %S _____ BTU/____

CONTROL EQUIPMENT & EFFICIENCY Baghouse-Scrubber 99+ %

Pollutant Type	Potential T/Yr	Allowable T/Yr	Actual T/Yr	Emission Calculation Method
TSP	2927 TPY (802.1 #/hr)	770 TPY (21.1 #/hr)	24.4 TPY (6.7 #/hr)	Company Submission

(show calculations on back)

Have any changes been made since last data submittal?

i.e. Flowrate
Stack Height - Plume Rise
Stack Temperature

COMMENTS Grouped w/ P016

03585

COMPLIANCE INSPECTION FORM

PREMISE NO. 0260401003 SOURCE NO. P016

DATE PERMIT EFFECTIVE 1/5/79 INSPECTION DATE 6/10/80

SOURCE DESCRIPTION Furnace #13 - CaC2 Electric Submerged Arc Furnace

LAST INSPECTION DATE

TYPE OF COMPLAINTS DURING PAST 12 MONTHS

VISIBLE EMISSIONS NOTED? No READINGS ATTACHED?

PROCESS OR FUEL RATE AT TIME OF INSPECTION

ODORS NOTED? NO

GENERAL CONDITION OF CONTROL EQUIPMENT

VIOLATIONS NOTED? No EXPLAIN

FOLLOW-UP INSPECTION REQUIRED? No NEXT INSPECTION DATE One Year

SOURCE BELIEVED TO BE IN COMPLIANCE? Yes

EMERGENCY ACTION PLAN REVIEWED WITH ENTITY ON THIS SOURCE?

COMMENTS Grouped w/ P015 (Shared Baghouse)

COMPLIANCE DATA SHEET

PREMISE NO. 0310100013 SOURCE NO. [redacted]

OPERATING SCHEDULE 24 hr/d 7 d/wk 52 wks/yr

ANNUAL PRODUCTION OR FUEL USAGE (indicate units) 27,982 tons - 1979

FUEL ANALYSIS _____ %A _____ %S _____ BTU/_____

CONTROL EQUIPMENT & EFFICIENCY Baghouse - Scrubber 99+ %

Pollutant Type	Potential T/Yr	Allowable T/Yr	Actual T/Yr	Emission Calculation Method
TPY	1874 TPY (862.1 #/hr)	49.3 TPY (21.1 #/hr)	[redacted] (0.) #/hr)	Company submission

(show calculations on back)

Have any changes been made since last data submittal?

i.e. Flowrate
Stack Height - Plume Rise
Stack Temperature

COMMENTS Grouped w/ P015

For Official Use Only

Premise No. ___/___/___/___
Source No. ___/___
Application No. ___/___

APPENDIX A, PROCESS

PROCESS DATA

1. Name of process Furnace 14 Fine Mix Feed
2. End product of this process Coke & Lime Fines
3. Primary process equipment Dust Collectors, Piping, etc.

   Your identification Fine Mix Feed System Year Installed 1962
4. Manufacturer UCC Make or model UCC Design
5. Capacity of equipment (lbs./hr): Rated 3150 Max. 3450
6. Method of exhaust ventilation: [X] Stack [ ] Window fan [ ] Roof vent [ ] Other, describe

   Are there multiple exhausts? [ ] Yes [ ] No

OPERATING DATA

7. Normal operating schedule: 24 hrs./day, 7 days/wk., 52 wks./year.
8. Percent annual production (finished units) by season:
   Winter 25 Spring 25 Summer 25 Fall 25
9. Hourly production rates (lbs.): Average 3150 Maximum 3450
10. Annual production (indicate units) 1979 - 9967.6 tons
    Projected percent annual increase in production ___
11. Type of operation: [X] Continuous [ ] Batch
12. If batch, indicate Minutes per cycle ___ Minutes between cycles ___
13. Materials used in process:

List of Raw Materials	Principal Use	Amount (lbs./hr.)
Coke Fines	Feed to CaC2 Furnaces	2025
Lime Fines	Feed to CaC2 Furnaces	1125

14. A PROCESS FLOW DIAGRAM MUST BE INCLUDED WITH THIS APPENDIX. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials including airborne contaminants and other waste materials. Label the process equipment and control equipment.

041746

FURNACE NO. 14 - FINE MIX FEED

Process weight = 3150 lbs./hr. = 1.6 NT/hr.

Compliance Emission = $4.1\ (1.6)^{0.67}$ = 5.6 lbs./hr.

Emission Estimate

Basis: Bag collector efficiency at 99.5%
Target receiver efficiency at 97%

Material to bag collector
= 0.03 (3150) = 94.5 lbs./hr.

Emission from bag collector
= 0.005 (94.5) = 0.47 lbs./hr.

Emission from both bag collectors
= 2(0.47) = 0.94 lbs./hr.

Union Carbide - Supplement I (Air Reels) TWMIC Index

UC-118 "Surface impoundments thought to be leaking into the ground water. 1985
--Located in the Field's Brook watershed.
--CN,Cr, and Ni in surface impoundment.
--Groundwater well locations mapped out.
--Groundwater contours and gradients.
--Surface water elevations and contours; westerly drainage.

UC-119 Lead (Pb) in groundwater. 1982
--Map showing high barrier to flow at the north end of a northly sloping surface.

Well No.	Pb(mg/L) (MCL = 0.05 mg/L)
105A	0.14
201	0.08
202	0.18
203	0.08

--EP Tox results on sludge show Pb, Cr, and CN at "non-toxic" levels.

UC-120 Lead (Pb) at 0.4, 0.5, and 0.8 mg/L in leachate. 1982

UC-121 Metals leaching from Ponds 3 and 3A to groundwater. 1981

UC-122 Mercury (Hg) at 0.015 mg/L in Well 105A. 1981

UC-123 Estimated annual wastes, by classs: 1980

Code	Tons (tpy)
F007	48,789
F009	"
K062	195,000

UC-124 Lead (Pb) at 0.12 and 0.14 mg/L in groundwater Well 213 and 214, respectively. 1984

UC-125 TCE (Trichloroethylene) at 168 ppb in groundwater. 1983

UC-126 Lead (Pb) at 0.13 - 0.18 mg/L in various wells. 1983

UC-127 Lead (Pb) at 0.08 - 0.14 mg/L in Well 105A. 1982

UC-128 Furnace 14 has scrubber pits and process waste. 1973

UC-129 Furnace 14 scrubber collects coke and lime fines; 94.5 lbs/hr waste dust collected; coke to lime lime fine ratio 2:1. 1962(Installed)

UC-130 Furnace 13 scrubs from 546 to 810 lbs/hr particulate. 1972

UC-131 Six (6)furnaces listed on plant site: 2 carbide and 4 alloy, at least two of which scrub coke fines. (Namely, # 13 and 14) 1981

UC-132	Furnace #	Operated	Producing	1980
	13	4673 hrs/y	5750 N.T.coke & lime fines.	
	14	7299 "	9968 " " " "	

UC-133 Eight (8) coal piles, 1270 tons each, stored 75 days. 1981
Twelve(12) coke " , 560 " " , " 30 "

UC-134 Furnaces 13 and 14 installed in 1953. 1981?

UC-135 Union Carbide formely owned CEI's Power Plant C; scrubber water sludge dries in Beds 3 and 3A; Bed 3A overflows in southeast corner; area covered by beds is 25.95 acres. (Not known how long these conditions persisted.) 1976

UC-136 Furnaces 13 & 14 produce 63,500 TPY emissions, of which 5.7 TPY is uncontrolled. 1975

UC-137 Power Station emissions 45,000 - 85,000 TPY. cal972

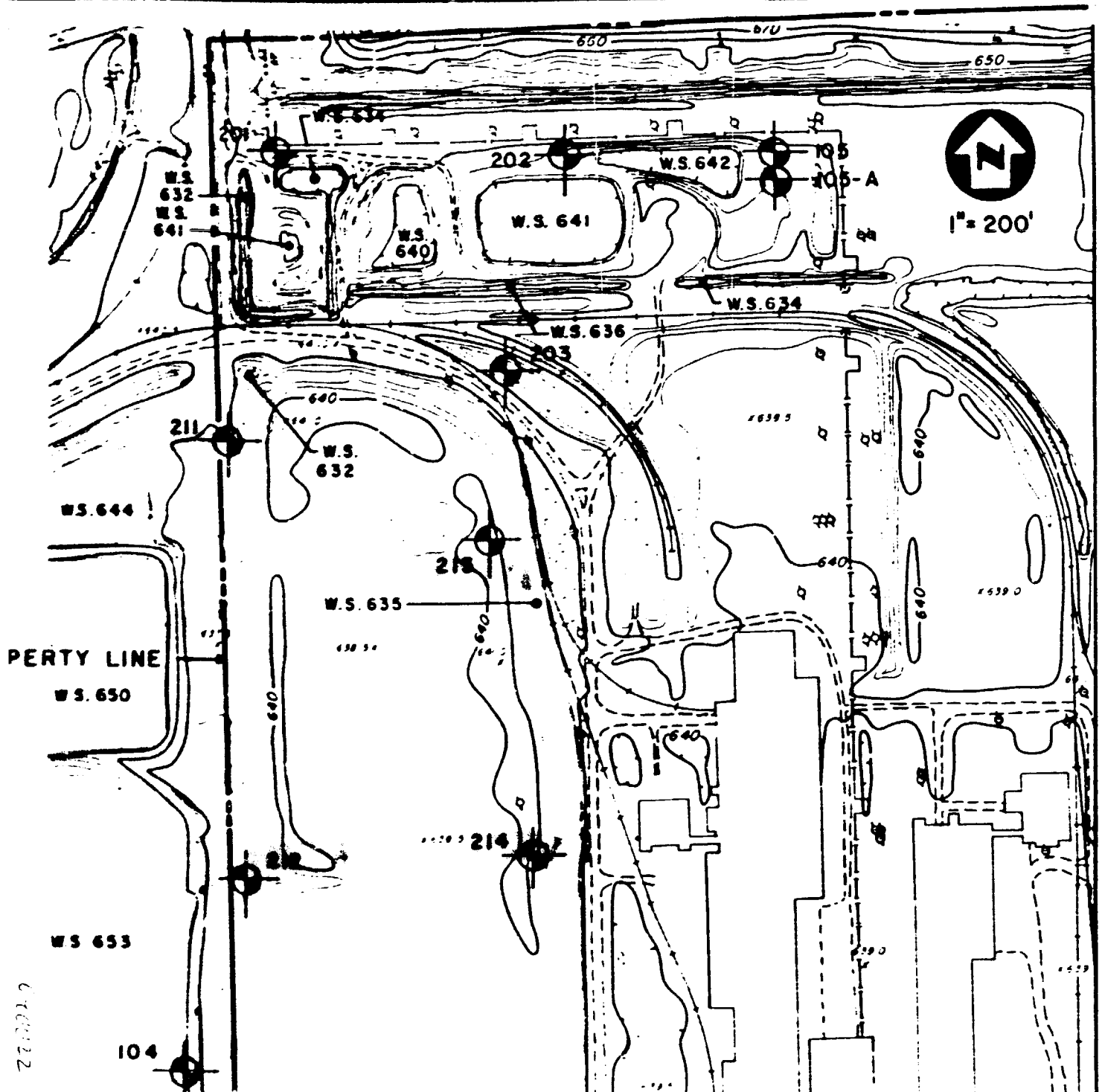
UC-138 (a) Map showing "sludge beds" on southern perimeter of property -- runoff direction? 1970

(b) 157,735 - 167,233 tons per year of fly ash and cinders "landfilled" and 300 tons per year coke dust put into "sludge ponds."

UC-139 Baghouse-scrubber from P015 (Furnace 14) collects 24.4 TPY in 1979; 1979

Baghouse-scrubber from P016 (Furnace 13) collects 15.6 TPY in 1979.

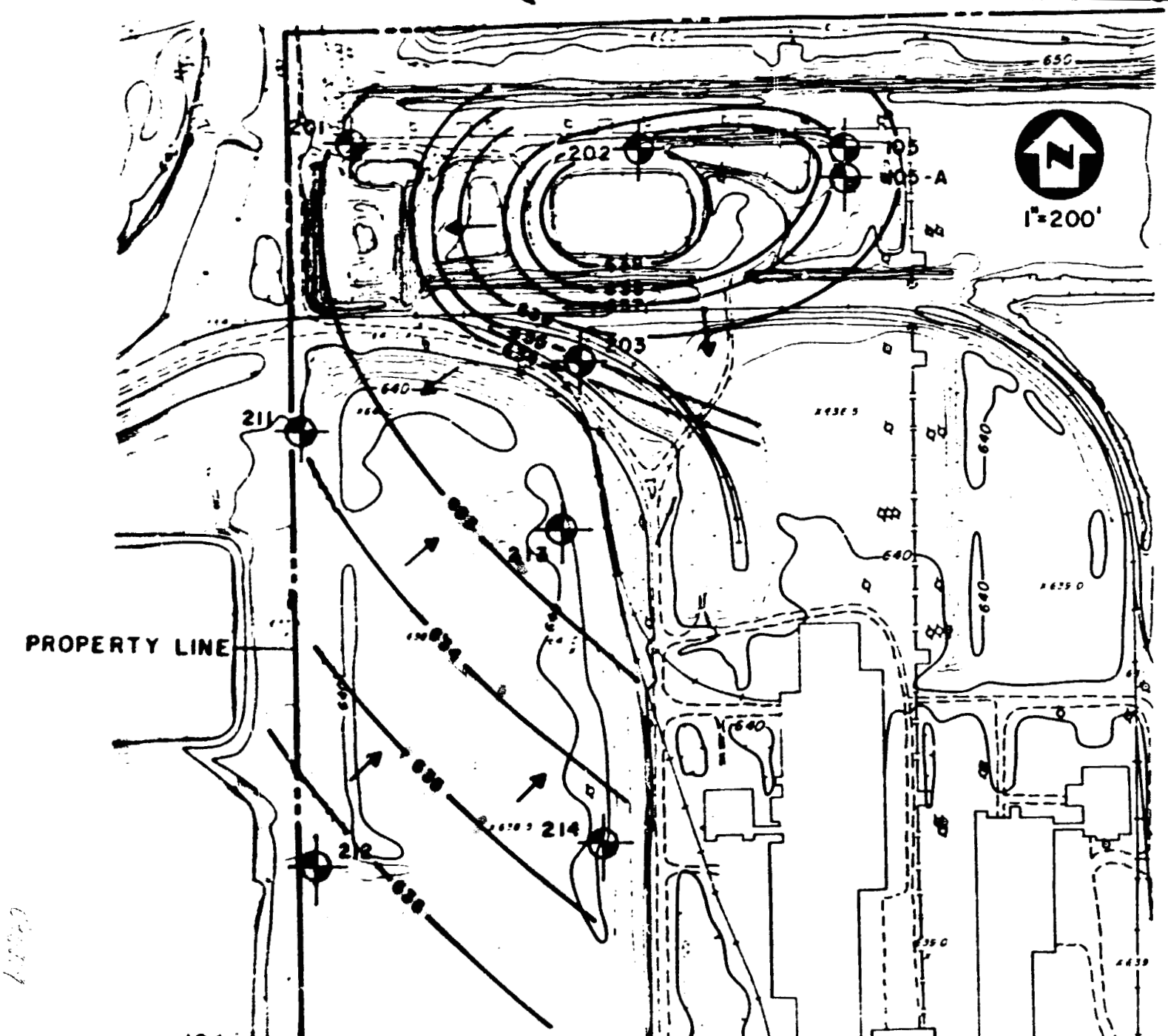
UC-140 Sludge drying area maps south of UC plant; date uncertain. 19--



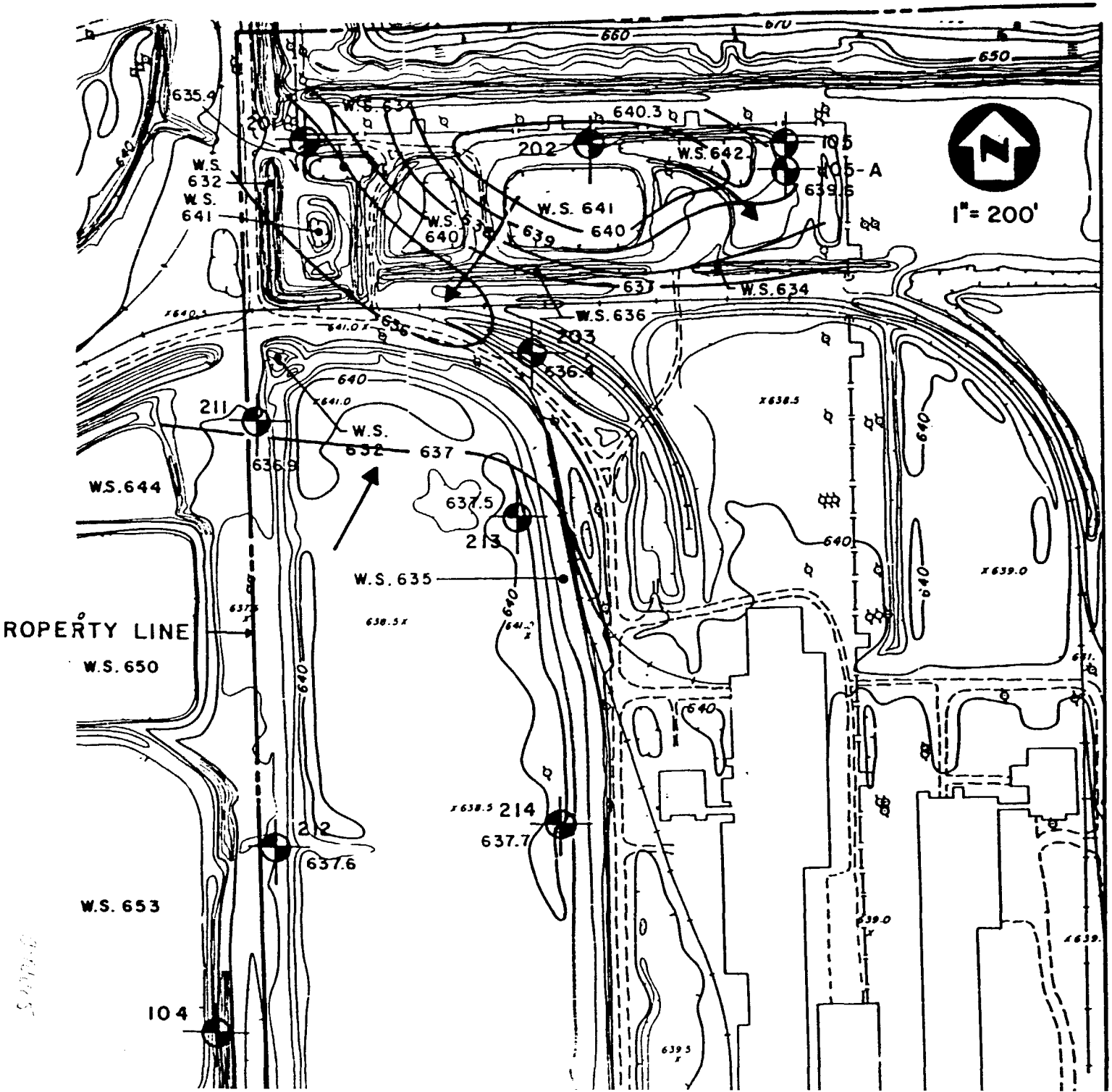
RECEIV
JUN 8 1
Ohio Environ
PROTECTION
N.E.D.

WATER SURFACE ELEV

LINDE DIV
WELDING MATER



GROUNDWATER
3rd QUARTER (AUG
1983



LEGEND:

203 — WE

636.4 — EL

MONITORIN
LOCATION

DECEMBER 1984

GROUNDWATER EL

LINDE I

WELDING MA

ASHTAB

115

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	D000821454

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [ ] A. SOLID
- [ ] B. POWDER, FINES
- [x] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [x] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS 83

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [x] A. TOXIC
- [x] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [x] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [x] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	✓		Individual waste quantities not given on 103e
BAS	BASES	2250	cubic ft	form. The given figure seems to be
MES	HEAVY METALS			somewhat understated.

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently used CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
ACD	Cyanide	151-50-8	Surface impoundment / landfill	unknown	
ACD	Hydrochloric Acid	7647-01-0	Surface impoundment / landfill	unknown	
ACD	Sulfuric Acid	7664-93-9	Surface impoundment / landfill	"	
ACD	Chlorine	7782-50-5	Surface impoundment / landfill	"	
MES	Copper oxide	7440-50-8	Surface impoundment / landfill	"	
SOL	Phenol	108-95-2	Surface impoundment / landfill	"	
MES	Chromium	7440-47-3	Surface impoundment / landfill	"	
MES	Nickel	7440-02-0	Surface impoundment / landfill	"	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA 103e form submitted by Union Carbide June 1981

Remedial Investigation Report on the Field Brook Site by Ecology & Environment March, 1985

Report on Proposed Installation of Additional Wastewater Facilities at Union Carbide Welding Met'ls Plant. June 1980

EPA FORM 2070-12 (7-81)

C 70 ...

Union Carbide - Linde Welding Materials Plant
Middle Road
Ashtabula, Ohio 44004

OHD 000-821-454

This site is an approximately 100 acre facility which operates as a manufacturer of welding materials. It has been in operation since 1963. It is located roughly 1500 feet west of the intersection of Cook Road and Middle Road in Ashtabula, Ashtabula County. The site is in a highly industrialized area and is located near other industrial plants including Acme Scrap Metals, Detrex Chemical, Diamond Shamrock, Gulf and Western, and Reactive Metals, Inc. (RMI). There is a Union Carbide Gas Production Plant immediately north of the Welding Materials Plant. The site is located in the Fields Brook Watershed.

The present waste treatment process includes 1 mixing tank, 1 neutralizing tank, and 4 settling basins. The mixing and neutralizing tanks are covered by NPDES and the 4 surface impoundments are covered by RCRA. The surface impoundments are thought to be leaking into the ground water system. This is the second set of lagoons that Union Carbide has utilized at this site and they are planning to construct a third set. Monitoring wells have been placed in the area set aside for the new lagoons, but new upgradient wells will have to be drilled as all the new wells showed the presence of solvents (i.e. chlorobenzene). Origin of the solvents has yet to be determined.

Fish and sediment samples taken from Fields Brook in 1983 and 1984 revealed the presence of several volatile organic compounds (1,1,2,2-tetrachloroethane, tetrachloroethane, trichlorethene). Previous sampling indicated the presence of PCB's. The U.S. EPA placed Fields Brook on the National Priority List.

Since the surface impoundments are covered by RCRA permits, and as there is presently a monitoring well program ongoing at the site, a low priority for FIT activities is recommended at this time. State activities should be coordinated with the ongoing NPL project. (Medium priority for State activity.)

Ohio EPA

September 13, 1985

L-Tec Company, Inc.
(Re Union Carbide)
Middle Road
Ashtabula, Ohio 44004

Dear Concerned Party:

Ohio EPA has completed the enclosed preliminary assessment as part of our ongoing process to identify and remedy hazardous materials problems in Ohio. We are providing you with a copy of this information because of your identified owner and/or operator status.

Ohio EPA will ultimately screen (or "preliminarily assess") over 800 sites included on U.S. EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list of 22,000+ sites nationwide. This screening is based upon readily available information, and is used to prioritize sites for additional investigation as outlined in the National Contingency Plan. (See 40 CFR Part 300) The Unregulated Sites staff conduct additional activities based upon the priority assigned in the preliminary assessment (none, low, medium, high). A site inspection with sampling sufficient to characterize the site may follow the preliminary assessment. Actions subsequent to the site inspection - if warranted - include Superfund listing and remedial actions.

The preliminary assessments are put in our files when they are completed and sent to U.S. EPA. We are giving you this information to better enable you to address any possible inquiries from the public. We welcome any additional information or comments and ask that you contact the Unregulated Sites staff at the following offices:

Central	Columbus	614/462-6733 or 462-8934
Northeast	Twinsburg	216/425-9171
Southwest	Dayton	513/449-6357
Northwest	Bowling Green	419/352-8461
Southeast	Logan	614/385-8501

You might also wish to contact our Public Interest Center at 1-614-466-8508.

Sincerely,

Steven H. White, Chief
Division of Solid & Hazardous Waste Management

RECEIVED
SEP 17 1985
OHIO EPA-N.E.D.O.

cc: NEDO

State of Ohio Environmental Protection Agency
361 E. Broad St., Columbus, Ohio 43216-1049, (614) 466-8565

040004

EXHIBIT 7

DELISTING PETITION ANALYSES, 24 JUNE 1981

	% Solids	Cd	Cr	Pb	CN
SAMPLE #3879 SE					
Filter Cake Sludge	31	<2 µg/g	0.04 mg/g	<0.03 mg/g	<3 µg/g
Sample from EP Extraction	<0.001	<0.05 mg/L	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L
SAMPLE #3880 NE					
Filter Cake Sludge	22	<4 µg/g	0.04 mg/g	<0.02 mg/g	<5 µg/g
Sample from EP Extraction	<0.001	<0.05 mg/L	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L
SAMPLE #3881 SW					
Filter Cake Sludge	22	<5 µg/g	0.07 mg/g	<0.03 mg/g	15 µg/g
Sample from EP Extraction	<0.001	<0.05 mg/L	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L
SAMPLE #3882 NW					
Filter Cake Sludge	29	<3 µg/g	0.04 mg/g	<0.02 mg/g	12 µg/g
Sample from EP Extraction	<0.001	<0.5 mg/L	<0.1 mg/L	<0.1 mg/L	<0.1 mg/L

Each filter cake sample was subjected to a full component analysis and to an EP leachate analysis. All samples were analyzed for the following components:

Total Solids
Cadmium
Chromium
Total Cyanides
Lead

Test results appear in Exhibit 7. These results are entirely consistent with the previous data presented in Exhibit Nos. 3, 4, 5 and 6. The following relevant conclusions can be drawn from this data:

a) The chrome and lead concentrations of the EP leachates, as well as the concentrations of the other toxic species, are well below the limits given in §261.24, Table I of the federal hazardous waste regulations.

b) The total cyanide concentrations of the filter cake samples are sufficiently low to label them non-toxic in any context.

Following EPA's rationale in setting the limits given in §261.24, Table I, a hypothetical cyanide limit of one hundred times the drinking water standard (0.2 mg/l), equal to 20 mg/l, could be established. Since the Extraction Procedure results in essentially a 20:1 dilution of any soluble, leachate component of the original sample, a cyanide concentration of 20 x 20 mg/l = 400 ppm (or μg/g) could be established as the hypothetical maximum concentration limit for cyanide in the filter cake. The data in Exhibit 7 show that the cyanide concentration of the solid filter cake is well below 400 μg/g for all samples.

SUMMARY AND CONCLUSIONS

It has been the intent of this petition to prove that although the raw spent pickle liquor (K062) and electroplating wastes (F007) generated at Union Carbide Corporation's Linde Division Plant at Ashtabula, Ohio are hazardous materials by reason of toxicity, corrosivity, and reactivity; the chemically treated, neutralized, precipitated and dewatered

* 2nd and 3rd quarter missing:
[illegible]
[illegible]

FIRST YEAR MONITORING WELL DATA

WELL NO. 233 (Upgradient ~~or downgradient~~ well)
Sampler (signature) _____

CHEMICAL CONSTITUENTS			1st Quarter Sample Date 2-8-82 Static Water Level 638.5	2nd Quarter Sample Date 5-24-82 Static Water Level *	3rd Quarter Sample Date 8-16-82 Static Water Level *	4th Quarter Sample Date 11-4-82 Static Water Level 637.3	COMMENTS
GROUP	PARAMETER	MCL					
I	Arsenic	0.05 mg/l	0.006	0.014	0.010	<0.004	If result of any one analysis is greater than MCL, it must be reported on separate list to EPA in the Quarterly Report.
	Barium	1.0 mg/l	<0.6	0.14	<0.10	<0.10	
	Cadmium	0.01 mg/l	0.01	<0.01	<0.01	<0.01	
	Chromium	0.05 mg/l	<0.05	<0.05	<0.05	<0.05	
	Fluoride	1.4-2.4 mg/l	0.23	<0.1	0.2	0.2	
	Lead	0.05 mg/l	0.08	.025	.08	0.05	
	Mercury	0.002 mg/l	0.0005	<0.0005	<0.0005	<0.0005	
	Nitrate(N)	10.0 mg/l	0.51	0.20	0.77	0.19	
	Selenium	0.01 mg/l	<0.005	<0.005	.005	<0.010	(Quarterly Report is required 15-days after analyses are completed, and reports only the results of GROUP I Analyses)
	Silver	0.05 mg/l	<0.05	<0.01	0.03	<0.01	
	Endrin	0.0002 mg/l	<0.0002	<0.0002	<0.0002	<0.0002	
	Lindane	0.004 mg/l	<0.002	<0.004	<0.004	<0.004	
	Methoxychlor	0.10 mg/l	<0.004	<0.1	<0.1	<0.1	
	Toxaphene	0.005 mg/l	<0.004	<0.005	<0.005	<0.005	
	2,4-D	0.10 mg/l	<0.004	<0.01	<0.1	<0.1	
	2,4,5-TP Silvex	0.01 mg/l	<0.004	<0.01	<0.01	<0.01	
	Radium 226	5 pCi/l	<0.6	-	-	-	
	Radium 228		<1	-	-	-	
	Gross Alpha	15 pCi/l	<2	<2	<2	<2	
	Gross Beta	50 pCi/l	44±7	<3	4±3	3±1	
	Turbidity	1 TU					
	Coliform	<1/100 ml.	770	17	<1	<1	
II	Chloride		150	110	99	51	Analyses required, but not necessary to report.
	Iron		1.1	5.0	2.3	0.04	
	Manganese		1.1	2.9	3.8	3.9	
	Phenols		0.002	0.011	0.050	<0.001	
	Sodium		190	170	170	180	
	Sulfate		1600	1300	1100	1300	

ES ENGINEERING-SCIENCE

A-15

C-1

040091

* 2nd and 3rd quarter missing:
[illegible]
[illegible]

FIRST YEAR MONITORING WELL DATA

WELL NO. 202 (~~Upgradient~~ or downgradient well)
Sampler (signature) _____

CHEMICAL CONSTITUENTS				1st Quarter Sample Date 2-9-82 Static Water Level 641.8	2nd Quarter Sample Date 5-24-82 Static Water Level *	3rd Quarter Sample Date 8-16-82 Static Water Level *	4th Quarter Sample Date 11-4-82 Static Water Level 640.2	COMMENTS
GROUP	PARAMETER	MCL						
	Arsenic	0.05	mg/l	0.009	<0.005	0.024	< 0.004	If result of any one analysis is greater than MCL, it must be reported on separate list to EPA in the Quarterly Report.
	Barium	1.0	mg/l	<0.6	0.43	0.15	< 0.10	
	Cadmium	0.01	mg/l	0.01	<0.01	<0.01	< 0.01	
	Chromium	0.05	mg/l	<0.05	<0.05	<0.05	< 0.05	
	Fluoride	1.4-2.4	mg/l	0.28	<0.1	0.3	0.3	
	Lead	**0.05**	**mg/l**	**0.18**	**< .002**	**.08**	**0.11**	
	Mercury	0.002	mg/l	0.0009	<0.0005	<0.0005	< 0.0005	
	Nitrate(N)	10.0	mg/l	0.37	0.06	0.77	< 0.1	
	Selenium	0.01	mg/l	<0.005	<0.005	.005	< 0.018	(Quarterly Report is required 15-days after analyses are completed, and reports only the results of GROUP I Analyses)
I	Silver	0.05	mg/l	<0.05	<0.01	0.05	< 0.01	
	Endrin	0.0002	mg/l	<0.0002	<0.0002	<0.0002	< 0.0002	
	Lindane	0.004	mg/l	<0.002	<0.004	<0.004	< 0.004	
	Methoxychlor	0.10	mg/l	<0.004	<0.1	<0.1	< 0.1	
	Toxaphene	0.005	mg/l	<0.004	<0.005	<0.005	< 0.005	
	2,4-D	0.10	mg/l	<0.04	<0.1	<0.1	< 0.1	
	2,4,5-TP Silvex	0.01	mg/l	<0.01	<0.01	<0.01	< 0.01	
	Radium 226	5	pCi/l	<0.6	<0.6	-	-	
	Radium 228			<1	<1	-	-	
	Gross Alpha	15	pCi/l	<2	27±16	<2	< 2	
	Gross Beta	50	pCi/l	11±5	3±2	3	< 3	
	Turbidity	1	TU					
	Coliform	<1/100	ml.	2	1	<1	< 1	
	Chloride			110	96	95	47	Analyses required, but not necessary to report.
	Iron			44	32	31	4.5	
II	Manganese			2.0	1.8	1.3	1.0	
	Phenols			0.013	0.031	0.002	0.005	
	Sodium			180	200	260	200	
	Sulfate			2100	2000	1900	2000	

ES ENGINEERING-SCIENCE

4-13

* 2nd and 3rd quarter missing:
12/1/82 - 639.1'
12/6/82 - 639.6'

FIRST YEAR MONITORING WELL DATA

WELL NO. 201 (~~Upgradient~~ or downgradient well)
Sampler (signature)_____

CHEMICAL CONSTITUENTS			1st Quarter Sample Date 2-8-82 Static Water Level 639.6	2nd Quarter Sample Date 5-24-82 Static Water Level *	3rd Quarter Sample Date 8-16-82 Static Water Level *	4th Quarter Sample Date 11-4-82 Static Water Level 636.8	COMMENTS 12-1-82 639.1
GROUP	PARAMETER	MCL					
I	Arsenic	0.05 mg/l	<0.005	<0.005	0.020	<0.004	
	Barium	1.0 mg/l	<1.0	0.64	<0.10	<0.10	
	Cadmium	0.01 mg/l	0.02	<0.01	<0.01	<0.01	
	Chromium	0.05 mg/l	<0.05	<0.05	<0.05	<0.05	
	Fluoride	1.4-2.4 mg/l	0.24	<0.1	0.2	0.2	
	Lead	**0.05 mg/l**	**0.08**	**0.067**	**.08**	**<0.05**	
	Mercury	0.002 mg/l	<0.0005	<0.0005	<0.0005	<0.0005	
	Nitrate(N)	10.0 mg/l	0.30	0.28	0.08	0.20	
	Selenium	0.01 mg/l	<0.005	0.023	.005	<0.016	
	Silver	0.05 mg/l	<0.05	<0.01	0.04	<0.01	
	Endrin	0.0002 mg/l	<0.0002	<0.0002	<0.0002	<0.0002	
	Lindane	0.004 mg/l	<0.0002	<0.004	<0.004	<0.004	
	Methoxychlor	0.10 mg/l	<0.004	<0.1	<0.1	<0.1	
	Toxaphene	0.005 mg/l	<0.004	<0.005	<0.005	<0.005	
	2,4-D	0.10 mg/l	<0.004	<0.01	<0.1	<0.1	
	2,4,5-TP Silvex	0.01 mg/l	<0.004	<0.01	<0.01	<0.01	
	Radium 226	5 pCi/l	<0.6	-	-	-	
	Radium 228		<1	-	-	-	
	Gross Alpha	15 pCi/l	<2	<2	<2	<2	
	Gross Beta	50 pCi/l	77±8	6±2	11±3	4±1	
	Turbidity	1 TU					
	Coliform	<1/100 ml.	3	<1	<1	16	
II	Chloride		77	73	110	39	Analyses required, but not necessary to report.
	Iron		0.63	7.9	4.9	0.15	
	Manganese		2.7	4.2	6.0	6.2	
	Phenols		<0.001	0.022	<0.001	0.002	
	Sodium		330	360	270	230	
	Sulfate		2200	2000	2000	2000	

ES ENGINEERING-SCIENCE

A-11

C-1

* 2nd and 3rd quarter missing:
12/1/82 - 639.5'
12/6/82 - 639.6'

FIRST YEAR MONITORING WELL DATA

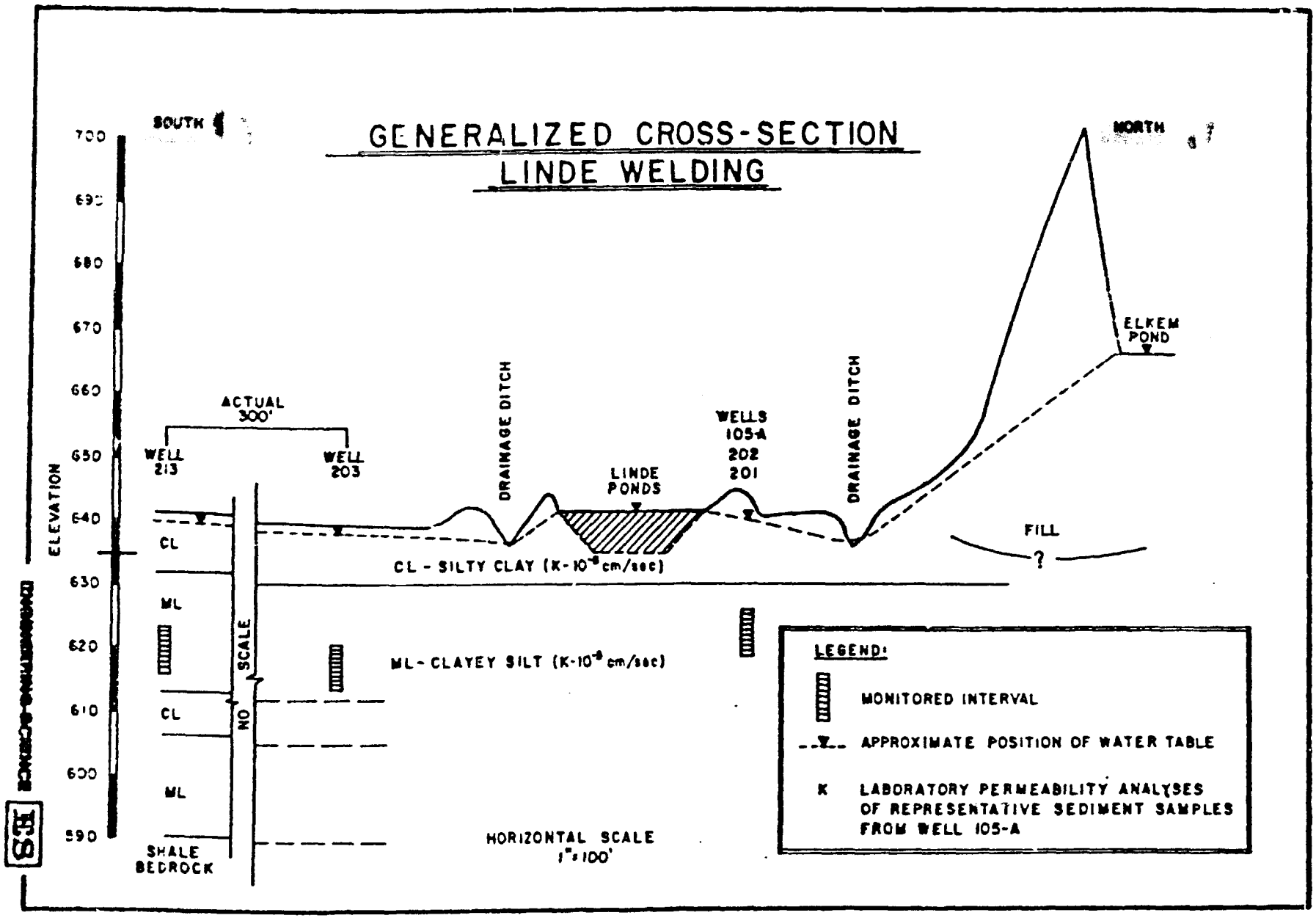
WELL NO. 105A (~~Upgradient~~ or downgradient well)
Sampler (signature)

CHEMICAL CONSTITUENTS			1st Quarter Sample Date 2-8-82 Static Water Level 641.1	2nd Quarter Sample Date 5-24-82 Static Water Level *	3rd Quarter Sample Date 8-16-82 Static Water Level *	4th Quarter Sample Date 11-4-82 Static Water Level 635.3	COMMENTS
GROUP	PARAMETER	MCL					
I	Arsenic	0.05 mg/l	<0.005	<0.005	.005	0.020	
	Barium	1.0 mg/l	<0.6	0.64	.15	<0.10	
	Cadmium	0.01 mg/l	0.02	<0.01	<0.01	<0.01	
	Chromium	0.05 mg/l	<0.05	<0.05	< .05	<0.05	
	Fluoride	1.4-2.4 mg/l	<0.2	<0.1	<0.1	0.2	
	Lead	0.05 mg/l	0.08	.017	.14	<0.05	
	Mercury	0.002 mg/l	<0.0005	0.0026	< .005	<0.0005	
	Nitrate(N)	10.0 mg/l	0.07	0.14	0.10	<0.1	
	Selenium	0.01 mg/l	<0.005	<0.005	< .05	<0.040	
	Silver	0.05 mg/l	<0.05	<0.01	0.11	<0.01	
	Endrin	0.0002 mg/l	<0.0002	<0.0002	<0.0002	<0.0002	
	Lindane	0.004 mg/l	<0.0002	<0.004	<0.004	<0.004	
	Methoxychlor	0.10 mg/l	<0.004	<0.1	<0.1	<0.1	
	Toxaphene	0.005 mg/l	<0.004	<0.005	<0.005	<0.005	
	2,4-D	0.10 mg/l	<0.004	<0.01	<0.1	<0.1	
	2,4,5-TP Silver	0.01 mg/l	<0.004	<0.01	<0.01	<0.01	
	Radium 226	5 pCi/l	<0.6	<0.6	-	-	
	Radium 228		<1	<1	-	-	
	Gross Alpha	15 pCi/l	<2	23±16	<2	<2	
	Gross Beta	50 pCi/l	<3	10±3	9±3	4±2	
	Turbidity	1 TU					
	Coliform	<1/100 ml.	510	<1	2	<1	
II	Chloride		81	94	94	93	Analyses required, but not necessary to report.
	Iron		0.48	39	< .03	0.08	
	Manganese		8.0	8.0	3.2	7.3	
	Phenols		<0.001	<0.001	0.025	<0.001	
	Sodium		190	190	190	190	
	Sulfate		1900	1800	1800	1800	

ES ENGINEERING-SCIENCE

A-9

C40085


GENERALIZED CROSS-SECTION
LINDE WELDING
SOUTH
NORTH
ELEVATION
700
690
680
670
660
650
640
630
620
610
600
590
ACTUAL 300'
WELL 213
WELL 203
DRAINAGE DITCH
LINDE PONDS
WELLS 105-A 202 201
DRAINAGE DITCH
ELKEM POND
FILL
?
CL
ML
CL
ML
SHALE BEDROCK
NO SCALE
CL - SILTY CLAY (K-10⁻⁸ cm/sec)
ML - CLAYEY SILT (K-10⁻⁶ cm/sec)
HORIZONTAL SCALE 1"=100'
LEGEND:
MONITORED INTERVAL
APPROXIMATE POSITION OF WATER TABLE
K LABORATORY PERMEABILITY ANALYSES OF REPRESENTATIVE SEDIMENT SAMPLES FROM WELL 105-A

Additionally, indicator parameters will be obtained routinely on Well 213. This will be accomplished to assure that unaffected background water quality data is being obtained. The data from Well 213 will be used in addition to data from Well 203 for development of unaffected background water quality.

INDICATOR PARAMETERS AND STATISTICAL ANALYSIS

Required first-year indicator parameters are given on the attached sheets. Initial background arithmetic mean and variance calculations are presented in the APPENDIX.

PARAMETERS ESTABLISHING GROUNDWATER QUALITY

Required first year data from Wells 105A, 201, 202 and 203 is contained in the APPENDIX.

PARAMETERS CHARACTERIZING THE SUITABILITY OF GROUNDWATER AS A DRINKING WATER SUPPLY (APPENDIX III).

Required first year data from Wells 105A, 201, 203 and 203 is contained in the APPENDIX.

The following parameters exceeded the EPA interim primary water quality standards:

1st Quarter -
- Well 105 - Pb, Total Coliform
- 201 - Pb, Gross B
- 202 - Pb
- 203 - Pb, Total Coliform

2nd Quarter -
- Well 105 - Pb, Gross α
- 201 - Pb, Se
- 202 - Pb, Gross α
- 203 - Pb, Total Coliform

3rd Quarter -
- Well 105A - Pb, Se
- 201 - Pb
- 202 - Pb
- 203 - Pb

4th Quarter -
- Well 105A - Se
- 201 - Se, Total Coliform
- 202 - Pb, Se
- 203 - None

ES ENGINEERING-SCIENCE

1982 Annual Groundwater Monitoring Report

RECEIVED
OHIO EPA
FEB 28 1983
DIV. HAZARDOUS MATERIALS MANAGEMENT

FIRST ANNUAL GROUNDWATER MONITORING REPORT

for wells # 105A, 201, 202, 203

calendar year 1982

DECEMBER 1982

UNION CARBIDE CORPORATION
LINDE WELDING MATERIALS DIVISION
ASHTABULA, OHIO

Prepared by

ENGINEERING-SCIENCE
19101 Villaview Road - Suite 301
Cleveland, Ohio 44119

HARMON ENGINEERING & TESTING
SCIENTISTS · ENGINEERS · SURVEYORS
924 GEMINI BOULEVARD/HOUSTON, TX 77058
(713) 488-9728

RECEIVED
FEB - 1 1982
Cleveland

January 29, 1982

Mr. William Sprout
U.S.E.P.A.
Office of Solid Waste (WH565)
Hazardous Waste Division
Washington, D.C. 20460

Dear Mr. Sprout:

On 12/31/81, Harmon Engineering & Testing received eight samples for analysis from Engineering Science Clevelandidentified to be from a Union Carbide, Linde Division Facility. Mr. Jerry Jacobs of E.S. has requested that we furnish E.P.A. with additional raw laboratory data.

I am therefore enclosing copies of the appropriate page from our log book, EP extraction data sheets, ASTM extraction data from the analyst's notebook, and an amended copy of our report identifying the sample source.

If we can provide you with any further assistance please feel free to call me at (713)-488-3004.

Sincerely,

HARMON ENGINEERING & TESTING

Doris Skinner

Doris Skinner
Laboratory Manager

DS:dms
Enclosure
cc: Mr. Jerry Jacobs

040643

HARMON ENGINEERING & TESTING

924 GEMINI BOULEVARD, HOUSTON, TX 77058 (713) 486-9726

LABORATORY RESULTS

Mr. Jerry Jacobs
Engineering Science Inc.
19101 Villaview, Suite 301
Cleveland, Ohio 44119

HE&T PROJECT 598-11

DATE SAMPLE RECEIVED 12/31/81

DATE DATA TRANSMITTED 1/19/82

CLIENT JOB REFERENCE "Identified as Union Carbide, Linde Div. Samples

HE&T Sample Number	Client Sample Identification	Total Cyanide ppm	Leachate Cyanide mg/L	Leachate Lead mg/L	Leachate Chromium^{+6} mg/L
H802	1	13 (81%)*	<0.1 (89%)*	---	---
H803	2	8	<0.1 (89%)*	---	---
H804	3	14	<0.1	---	---
H805	4	7	<0.1 (91%)*	---	---
H806	5	10	<0.1	0.4**	<0.1
H807	6	6	<0.1	0.8**	<0.1
H808	7	6	<0.1	0.5**	<0.1 (90%)*
H809	8	5 (83%)*	<0.1	0.5**	<0.1

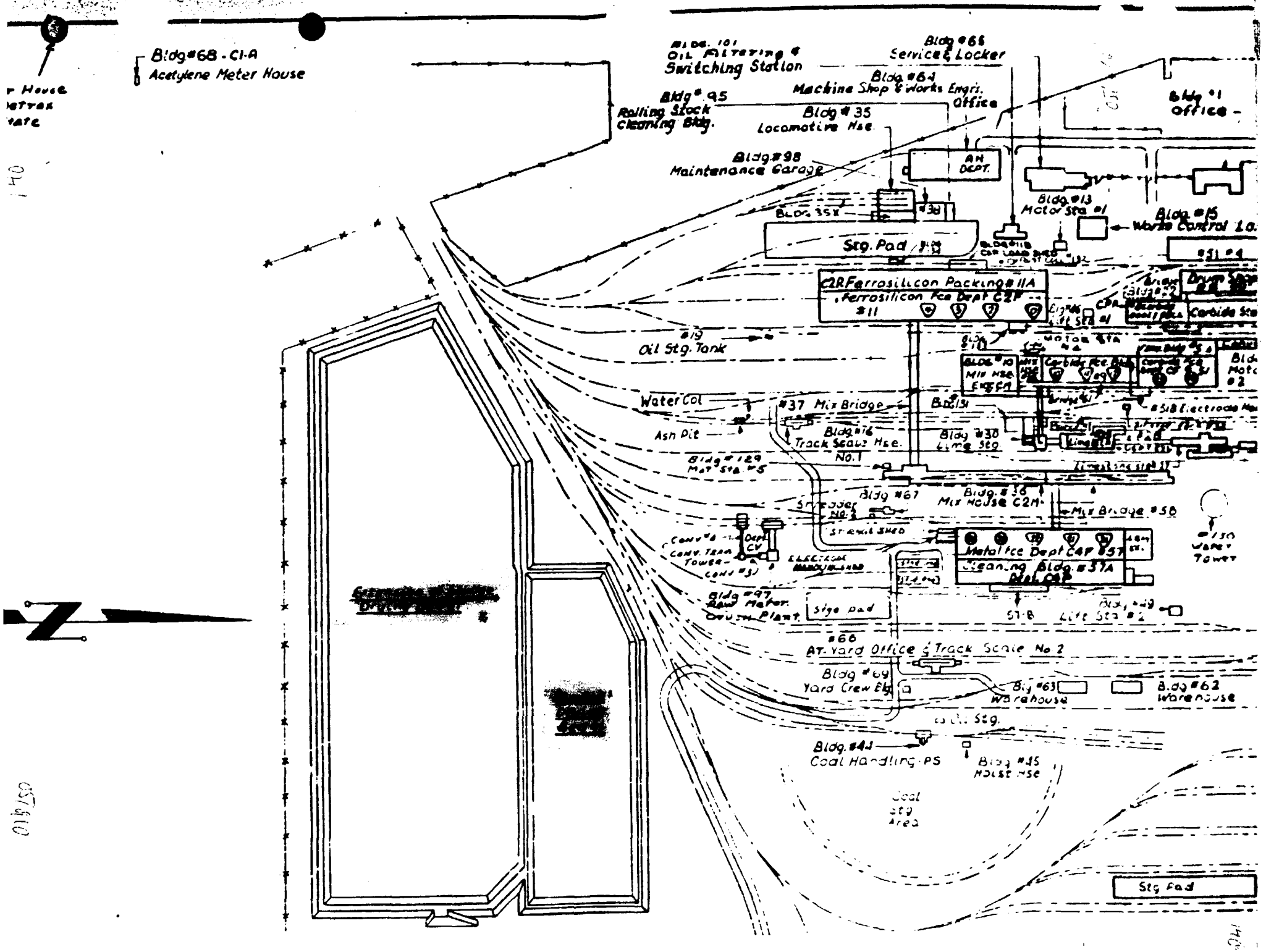
*Results in parentheses represent spike recovery.
**Lead analysis by standard addition:

HE&T Number	Sample abs.	Sample + 250ug	Sample + 500ug	Sample + 750ug
H806	0.012	0.044	0.083	0.113
H807	0.031	0.068	0.108	0.144
H808	0.017	0.055	0.090	0.125
H809	0.017	0.053	0.089	0.122

Approved for Transmittal

Doris Skinner

Laboratory Manager



Bldg #68 - C1-A
Acetylene Meter House
Bldg. 101
Oil Filtering &
Switching Station
Bldg #65
Service & Locker
Bldg #64
Machine Shop & Works Engrs.
Office
Bldg #95
Rolling Stock
Cleaning Bldg.
Bldg #35
Locomotive Hse.
Bldg #98
Maintenance Garage
AH
DEPT.
Bldg #1
Office
Bldg #13
Motor Sta #1
Bldg #15
Works Control Lo.
Bldg 35X
Stg. Pad
C2R Ferrosilicon Packing #11A
Ferrosilicon Fce Dept C2F
#11
Carbide Sta
#19
Oil Stg. Tank
Motor Sta
Bldg #10
Mix Hse
Water Col
#37 Mix Bridge
Ash Pit
Bldg #16
Track Scale Hse.
No. 1
Bldg #30
Lime Stg
Bldg #129
Mot Sta #5
Bldg #67
Bldg #36
Mix House C2M
Mix Bridge #58
Shredder
No. 2
Metal Fce Dept C4F #57
Cleaning Bldg #37A
Dept C4F
#130
Water
Tower
Conv #4
Conv. Tran
Tower
Conv #3
Dept
CV
Bldg #97
Raw Meter
Crush Plant
Stge pad
57-B
Lift Sta #2
#66
AT Yard Office & Track Scale No 2
Bldg #69
Yard Crew Bldg
Bldg #63
Warehouse
Bldg #62
Warehouse
Oil Stg.
Bldg #44
Coal Handling PS
Bldg #45
Hoist Hse
Coal
Stg
Area
Stg Pad

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

M

DATE: December 28, 1981

SUBJECT: CSI - Union Carbide Corporation, Metals Division (now El Kem Metals), Ashtabula, Ohio NPDES Permit No. OH0000027

FROM: Donald F. Easterling
THRU: A.R. Winklhofer, Director, EDO

TO: Bill Muno, 5EWHME

On April 28-29, 1981 EDO personnel conducted a compliance sampling inspection at the subject facility. The attached inspection report includes laboratory analysis results for organics, but does not include metals data. These data will be forwarded when they become available. Please note the following:

A. Sample analysis and review of company self monitoring data indicates compliance with NPDES permit limits.

B. Sample analysis indicates trace amounts of phenol, acrylonitrile, benzene, and chloroform in Outfall 001.

C. Ground water monitoring data obtained from a May 1980 ground water investigation report conducted by Engineering Science indicates leachate containing ammonia, sulfate, and metals from ponds 3 and 3A is entering and contaminating local shallow ground water. The company has closed and capped pond 3, and constructed a ground water collection trench around ponds 3 and 3A. Leachate is presently collected and pumped to pond 4 for treatment.

Attachments

EPA FORM 1320-6 (REV. 3-76)

TABLE 3

UNION CARBIDE CORPORATION - ASHTABULA, OHIO

GROUNDWATER SAMPLING RESULTS

AVERAGES

PARAMETER	SAMPLING WELL 104	101	102	103	105	105A	WATER QUALITY STANDARD
Cond-mmho/cm	1137	6250*	1300	2700	2850*	1750	1200
Al-mg/l	20.9	2.88	100	13.2	23.7	6.5	
As-mg/l	0.70	0.021	1.00	0.054	0.43	0.12	0.05
Ba-mg/l	0.25	0.60	5.8	0.72	0.79	0.22	1.0
Ca-mg/l	99	114	193	378	445*	290	
Cd-mg/l	0.0025	0.0025	0.0075	0.0025	0.0025	0.0	0.01
Cr-mg/l	0.056	0.04	0.178	0.0625	0.13	0.04	0.05
Cu-mg/l	0.050	0.036	0.063	0.070	0.150	0.060	1.0
Cl-mg/l	143	2273*	86	39	115	120	250
Fe-mg/l	17.5	2.42	97	49	80	3.3	
Mn-mg/l	1.08	0.178	6.2	0.158	1.52	1.45	0.05
Na-mg/l	148	644	223	146	194	198	
Hg-mg/l	0.0006	0.0002	0.0009	0.0005	0.0098	0.015	0.002
Se-mg/l	0.015	0.015	0.011	0.010	0.011	0.010	0.010
Pb-mg/l	0.050	0.125	0.360	0.050	0.040	0.025	0.05
Zn-mg/l	0.04	0.11	0.19	0.35	0.33	3.85	5.0
SO_4-mg/l	142	77	307	86	1137	795	250
NH_3-N mg/l	0.17	5.0*	103.6*	6.6	0.10	0.10	
NO_3-N mg/l	1.10	0.58	1.25	1.11	0.60	0.30	10.0
KN-N mg/l	1.04	0.64	17.5*	5.0	0.80	0.90	
CN-mg/l	0	0.010	0.005	0.016	0.002	0	
Phenol-mg/l	0.055	0.009	0.212	0.192	0.058	0	0.001
COD-mg/l	144	104	161	720	133	642	

*-Significant
from 104 Average
@95% level

I. Facility Identification

Facility

Union Carbide Corporation - Metals Division (El Kem Metals after July 1981)
Lake Road East, P.O. Box 40
Ashtabula, OH 44004
Telephone: (216) 997-6141

NPDES Permit Number: OH0000027

Ohio EPA Permit Number N336ED

Receiving Waters

Lake Erie

Responsible Official

Robert C. Mills, Superintendent, Environmental Affairs
Telephone: (216) 997-6141

II. Date of Inspection

April 28-29, 1981

III. Participants

Union Carbide Corporation

Robert C. Mills, Superintendent, Environmental Affairs
J.T. Waller, Chief Chemist

Ohio EPA

Bill Bush, Engineer

U.S. EPA

David Barna, Environmental Engineer
Donald F. Easterling, Physical Scientist, author
Philip E. Gehring, Leader, Field Support Team
Joseph S. Good, General Mechanic
Roland J. Hartranft, Engineering Technician

IV. Objective

The inspection was conducted to determine the subject facility's compliance with NPDES permit requirements.

V. Description of Facility

A. Facility

The Ferroalloys facility employs about 750 people on a round-the-clock schedule. Major products include 50 percent ferrosilicon with magnesium and manganese, and other ferro-alloys using 50 percent ferrosilicon as a base alloy. Auxiliary products are calcium carbide and lime. Total production for 1980 was 167,155 tons of ferroalloys and 69,449 tons of calcium carbide.

Continued from page 2.

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

-0404

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W 1	W DUP 2 DUP

DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F006	48	T	S04 D80	
2	F007	48,789	T	T02	
3	F008	48	T	S04 D80	
4	F009	48,789	T	T02	
5	K062	195,000	T	T02 S04 D80	
6					
7					
8					
9					
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22					
23					
24					
25					
26					

HAZARADOUS WASTE FACILITY APPROVAL BOARD
DEC 28 1981
ENTERED BOARD'S JOURNAL

EPA Form 3510-3 (8-80)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT 004

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

A. FIRST	B. SECOND
7 3315 (specify) STEEL WIRE DRAWING	7 3486 (specify) FLUX-CORED WIRE (FILLED TUBING
C. THIRD	**D. FOURTH**
7 3471 (specify) SIC 3471 ELECTOPLATING, STEEL WIRE	7 3398 (specify) METAL HEAT TREATING

VIII. OPERATOR INFORMATION

A. NAME: 8 UNION CARBIDE CORP LINDE DIV

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

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other", specify.)*
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC *(other than federal or state)*, O = OTHER *(specify)*: P (specify) N.A.

D. PHONE *(area code & no.)*: A 216 997 6141

E. STREET OR P.O. BOX: PO BOX 710 MIDDLE ROAD

F. CITY OR TOWN	G. STATE	H. ZIP CODE
8 ASHTABULA	OH	44004

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

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
9 N OH006 789	9 P N.A.
B. UIC *(Underground Injection of Fluids)*	**E. OTHER** *(specify)*
9 U N.A.	9 0 204010077 (specify) OHIO AIR CONTAMINANT
C. RCRA *(Hazardous Wastes)*	**E. OTHER** *(specify)*
9 R	9 N.A. (specify) N.A.

XI. MAP

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

XII. NATURE OF BUSINESS *(provide a brief description)*

STEEL WIRE DRAWING OF CARBON STEEL AND ALLOY STEEL WELDING WIRE, EITHER COPPER CLAD OR BARE; AND ROLL FORMING AND DRAWING OF FLUX CORED WELDING WIRES.

HAZARADOUS WASTE FACILITY
APPROVAL BOARD
DEC 28 1981
ENTERED BOARD'S JOURNAL

XIII. CERTIFICATION *(see instructions)*

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

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
~~I. R. MacLean~~ O. P. JOHNSON Vice President, Linde Division	O P Johnson	11-17-80

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (8-80) REVERSE

7/18

Kemron
Kemron Environmental Services

SAMPLE SOURCE

DRINKING WATER PARAMETERS	WELL 213	WELL 214	DATE/TIME/ANALYST
Arsenic, Total (mg/l As)	0.018	0.022	7/4/0800/SV
Barium, Total (mg/l Ba)	< 0.1	< 0.1	6/28/1215/SV
Cadmium, Total (mg/l Cd)	0.02	0.02	6/28/1010/SV
Chromium, Total (mg/l Cr)	< 0.05	< 0.05	6/28/1100/SV
Lead, Total (mg/l Pb)	**0.12**	**0.14**	6/28/0930/SV
Mercury, Total (mg/l Hg)	< 0.0005	< 0.0005	7/18/1000/BY
Selenium, Total (mg/l Se)	0.072	0.067	7/6/0800/SV
Silver, Total (mg/l Ag)	< 0.01	0.01	6/28/1125/SV
Fluoride (mg/l F)	0.29	0.16	7/11/1100/RS
Nitrate (mg/l N)	0.40	0.10	6/28/1000/SV
Endrin (mg/l)	< 0.0002	< 0.0002	6/29/1000/BY
Lindane (mg/l)	< 0.004	< 0.004	6/29/1000/BY
Methoxychlor (mg/l)	< 0.1	< 0.1	6/29/1000/BY
Toxaphene (mg/l)	< 0.005	< 0.005	6/29/1000/BY
2, 4-D (mg/l)	< 0.1	< 0.1	6/29/0800/BY
2,4,5-TP (Silvex-(mg/l)	< 0.01	< 0.01	6/29/0800/BY

C70365

Kemron
Kemron Environmental Services

GROUNDWATER MONITORING REPORT

For Union Carbide Corporation
P.O. Box 710
Ashtabula, OH 44004
Attn: J. Griswold

Report Date 7/17/84
Collected By U. C. C.
Date Collected/Received See Below
Purchase Order No. 826-65611

SAMPLE IDENTIFICATION

SAMPLE SOURCE	DATE COLLECTED	DATE RECEIVED	LABORATORY DATA NUMBER
Well 213	6/26/84	6/27/84	84-3641
Well 214	6/26/84	6/27/84	84-3642

2nd quarter 1984

David L. Bumgarner
Regional Manager

Received 7-24-84
dh

IHI-KEMRON

GC/MS FRACTION VOLATILE COMPOUNDS (cont/d)

(All Concentrations ppb)

COMPOUND	9/27/83	1/17/84 #202	1/17/84 #213
22V. Methylene Chloride		< 10	< 10
23V. 1,1,2,2-Tetrachloroethane		< 10	< 10
24V. Tetrachloroethylene		< 10	< 10
25V. Toluene	108	< 10	< 10
26V. 1,2-Trans-Dichloroethylene		< 10	< 10
27V. 1,1,1-Trichloroethane		< 10	< 10
28V. 1,1,2-Trichloroethane		< 10	< 10
29V. Trichloroethylene	188	< 10	< 10
30V. Trichlorofluoromethane		< 10	< 10
31V. Vinyl Chloride		< 10	< 10

RECEIVED
FEB 27 1984
OHIO ENVIRONMENTAL PROTECTION AGENCY
N.E.D.O.

CC: JHJ
L BERG ✓
RTN: ARF

HI-KEMRON

901 Highland Avenue, Williamstown, WV 26187 (304) 375-5800

KM-26-0010-84
February 17, 1984

TOH's

Union Carbide Corporation
Linde Division
Middle Road
Ashtabula, OH 44004

Attn: Jim Griswald

Dear Mr. Griswald:

Enclosed are the volatile organic analysis results on samples you sent to KEMRON on January 18, 1984. The report, however, is incomplete in that results are not yet available on the Lime Pond sample. A final completed report will be forthcoming as soon as I receive the additional data.

Thank you for your continued patience.

Sincerely,

B. J. Anderson

B. J. Anderson
Laboratory Manager

/ty

Enc.

did Kemron also do
Sept 27th GC analysis
& which well

RECEIVED
FEB 27 1984
OHIO ENVIRONMENTAL
PROTECTION AGENCY
N.E.D.O.

040799