

Detroit  
Edison

Douglas R. Gipson  
Senior Vice President  
Nuclear Generation

Fermi 2  
6400 North Dixie Highway  
Newport, Michigan 48166  
(313) 586-6249

April 20, 1994  
NRC-94-0022

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

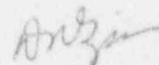
Reference: Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43

Subject: Submittal of Fermi 2 NPDES Permit

In accordance with Section 3.2 of the Fermi 2 Environmental Protection Plan, please find enclosed a copy of Detroit Edison's application for renewal of NPDES Permit No. MI0037028 for Fermi 2.

If you should have any questions regarding this report, please contact Kathleen M. Shields, Environmental Engineer at (313) 586-5577.

Sincerely,



Enclosure

cc: T. G. Colburn  
J. B. Martin  
M. P. Phillips  
K. R. Riemer  
Region III

9404290263 940420  
PDR ADDCK 05000341  
P PDR

COO1

# SECTION I

EPA I.D. NUMBER

PERMIT NUMBER

MI 0 03 70 2 8

APPLICATION FOR DISCHARGE PERMIT IS:

MODIFICATION ☐ EXISTING ☐ NEW ☐ INCREASED USE ☐ REISSUANCE ☒

SEE INSTRUCTIONS ON REVERSE SIDE

ITEM 1

PHYSICAL LOCATION ADDRESS AND INFORMATION

A. PARENT COMPANY/DEPT./OWNER THE DETROIT EDISON COMPANY	
B. DIV./BUREAU NUCLEAR GENERATION	
C. PLANT OR FACILITY FERMI 2 PP	E. STANDARD INDUSTRIAL CLASSIFICATION (REFER TO TABLE III) 4911
D. TYPE OF FACILITY NUCLEAR POWER PL	
F. STREET NUMBER 6400	G. STREET NAME DIXIE HWY
H. CITY NAME NEWPORT	I. ZIP CODE MI 48166
J. TOWNSHIP FRENCHTOWN	K. COUNTY (REFER TO TABLE I) MONROE CO. NUMBER 58
L. NAME OF AUTHORIZED CONTACT PERSON ARTHUR HEIDRICH JR	M. TITLE ADMIN WATER
N. TELEPHONE NUMBER 313 237 7021	O. ADDRESS (IF DIFFERENT FROM ABOVE) 2000 SECOND 485 WCB
P. CITY NAME DETROIT	Q. STATE MI
R. ZIP CODE 48226	S. TYPE OF TREATMENT FACILITY (REFER TO TABLE I) 4A 1V 1E 2E 2K
T. PROGRAM FOR EFFECTIVE RESIDUALS MANAGEMENT DATE SUBMITTED <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N.A. DATE IMPLEMENTED	U. BACK-UP POWER SOURCE <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N.A.
V. POLLUTION INCIDENT PREVENTION PLAN DATE SUBMITTED 1/80 <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N.A. DATE IMPLEMENTED 1/80	W. NUMBER OF EMPLOYEES 1000
X. TYPE OF DISCHARGE GROUNDWATER <input type="checkbox"/> SURFACE WATER <input checked="" type="checkbox"/> BOTH <input type="checkbox"/>	Y. DO YOU HAVE A CERTIFIED OPERATOR? OPERATOR'S NAME SEE ATTACHED S.S.# FACILITY # 581017915 CERTIFICATION # MI

ITEM 2

MAILING ADDRESS OF APPLICANT

A. NAME FRANK E. AGOSTI
B. NAME THE DETROIT EDISON COMPANY
C. STREET ADDRESS OR POST OFFICE BOX 2000 SECOND AVE 2427 WCB
D. CITY NAME DETROIT
E. STATE MI
F. ZIP CODE 48226

REQUIRED SIGNATURE

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

SIGNATURE OF APPLICANT

SIGNATURE: *Frank E. Agosti* DATE: 3-31-74  
NAME: Frank E. Agosti Sr. Vice Pres. Int. Power Supply

SIGNATURE OF LOCAL GOVERNMENTAL REPRESENTATIVE (SEE NOTE ON REVERSE SIDE)

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_



FERMI 2 ENERGY CENTER

SECTION 1 (Y)

CERTIFIED OPERATOR

LICENSED WASTE WATER TREATMENT OPERATORS

<u>NAME</u>	<u>CERTIFICATION</u>	<u>S.S. #</u>
John M. Yokom	W2727	373-72-1276
Daryll J. Grimes	W2718	364-72-1129
Kathleen M. Shields	W3557	363-62-3634

## SECTION I

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE**ITEM  
3**SOURCE  
OF  
WATER  
SUPPLY

A. MUNICIPAL

NAME

NONE

QUANTITY (MAX.)

GALLONS/DAY

B. SURFACE WATER INTAKE

NAME OF WATERWAY

LAKE ERIE

QUANTITY (MAX.)

7,000,000

GALLONS/DAY

C. PRIVATE WELL

QUANTITY (MAX.)

NONE

GALLONS/DAY

D. OTHER

SPECIFY

QUANTITY (MAX.)

GALLONS/DAY

**ITEM  
4**FACILITY  
WATER  
USAGEA. PROCESS WATER (INCLUDING CONTACT  
COOLING WATER)

QUANTITY (MAX.)

1,033,680

GALLONS/DAY

B. NONCONTACT COOLING WATER

QUANTITY (MAX.)

5,863,800

GALLONS/DAY

C. SANITARY WATER

QUANTITY (MAX.)

6,000

GALLONS/DAY

D. OTHER

SPECIFY

QUANTITY (MAX.)

GALLONS/DAY

**ITEM  
5**CRITICAL  
MATERIALS  
&  
PRIORITY  
POLLUTANTS  
USED  
•  
STORED  
•  
PRODUCEDREFER  
TO  
TABLES  
IV & V

UNITS CODE

1 POUNDS  
2 GALLONS  
3 CUBIC  
YARDS  
4 TONSMATERIAL  
1

NAME OF SUBSTANCE

Sodium Hypochlorite 16%

PARAMETER NUMBER

CLASIS014

QUANTITY

121,900

UNITS  
L/YEARMATERIAL  
2

NAME OF SUBSTANCE

Chromium Compounds

PARAMETER NUMBER

CLASIS015

QUANTITY

12

UNITS  
L/YEARMATERIAL  
3

NAME OF SUBSTANCE

Cadmium Compounds

PARAMETER NUMBER

CLASIS013

QUANTITY

0.3

UNITS  
L/YEARMATERIAL  
4

NAME OF SUBSTANCE

Cobalt Compounds

PARAMETER NUMBER

CLASIS016

QUANTITY

0.3

UNITS  
L/YEARMATERIAL  
5

NAME OF SUBSTANCE

Copper Compounds

PARAMETER NUMBER

CLASIS017

QUANTITY

2

UNITS  
L/YEARMATERIAL  
6

NAME OF SUBSTANCE

Mercury Compounds

PARAMETER NUMBER

CLASIS021

QUANTITY

40

UNITS  
L/YEARMATERIAL  
7

NAME OF SUBSTANCE

Nickel Compounds

PARAMETER NUMBER

CLASIS022

QUANTITY

1

UNITS  
L/YEAR

## SECTION 1

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
3SOURCE  
OF  
WATER  
SUPPLY

MUNICIPAL

NAME

LAKESIDE

QUANTITY (MAX.)

GALLONS/DAY

B. SURFACE WATER INTAKE

NAME OF WATERWAY

LAKE ERIE

QUANTITY (MAX.)

GALLONS/DAY

C. PRIVATE WELL

QUANTITY (MAX.)

GALLONS/DAY

D. OTHER

SPECIFY

QUANTITY (MAX.)

GALLONS/DAY

ITEM  
4FACILITY  
WATER  
USAGEA. PROCESS WATER (INCLUDING CONTACT  
COOLING WATER)

QUANTITY (MAX.)

GALLONS/DAY

B. NONCONTACT COOLING WATER

QUANTITY (MAX.)

GALLONS/DAY

C. SANITARY WATER

QUANTITY (MAX.)

GALLONS/DAY

D. OTHER

SPECIFY

QUANTITY (MAX.)

GALLONS/DAY

ITEM  
5CRITICAL  
MATERIALS  
&  
PRIORITY  
POLLUTANTS  
USED  
•  
STORED  
•  
PRODUCEDMATERIAL  
1

NAME OF SUBSTANCE

Silver Compounds

PARAMETER NUMBER

CLASS 024

QUANTITY

UNITS  
/YEARMATERIAL  
2

NAME OF SUBSTANCE

Zinc Compounds

PARAMETER NUMBER

CLASS 027

QUANTITY

UNITS  
/YEARMATERIAL  
3

NAME OF SUBSTANCE

Toluene

PARAMETER NUMBER

00108883

QUANTITY

UNITS  
/YEARMATERIAL  
4

NAME OF SUBSTANCE

P-Xylene

PARAMETER NUMBER

01330207

QUANTITY

UNITS  
/YEARMATERIAL  
5

NAME OF SUBSTANCE

Hydrazine

PARAMETER NUMBER

00302012

QUANTITY

UNITS  
/YEARMATERIAL  
6

NAME OF SUBSTANCE

Asbestos

PARAMETER NUMBER

01332214

QUANTITY

UNITS  
/YEARMATERIAL  
7

NAME OF SUBSTANCE

PARAMETER NUMBER

QUANTITY

UNITS  
/YEAR

UNITS CODE

1 POUNDS

2 GALLONS

3 CUBIC  
YARDS

4 TONS

REFER  
TO  
TABLES  
IV & V

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
6

DESCRIPTION

AND

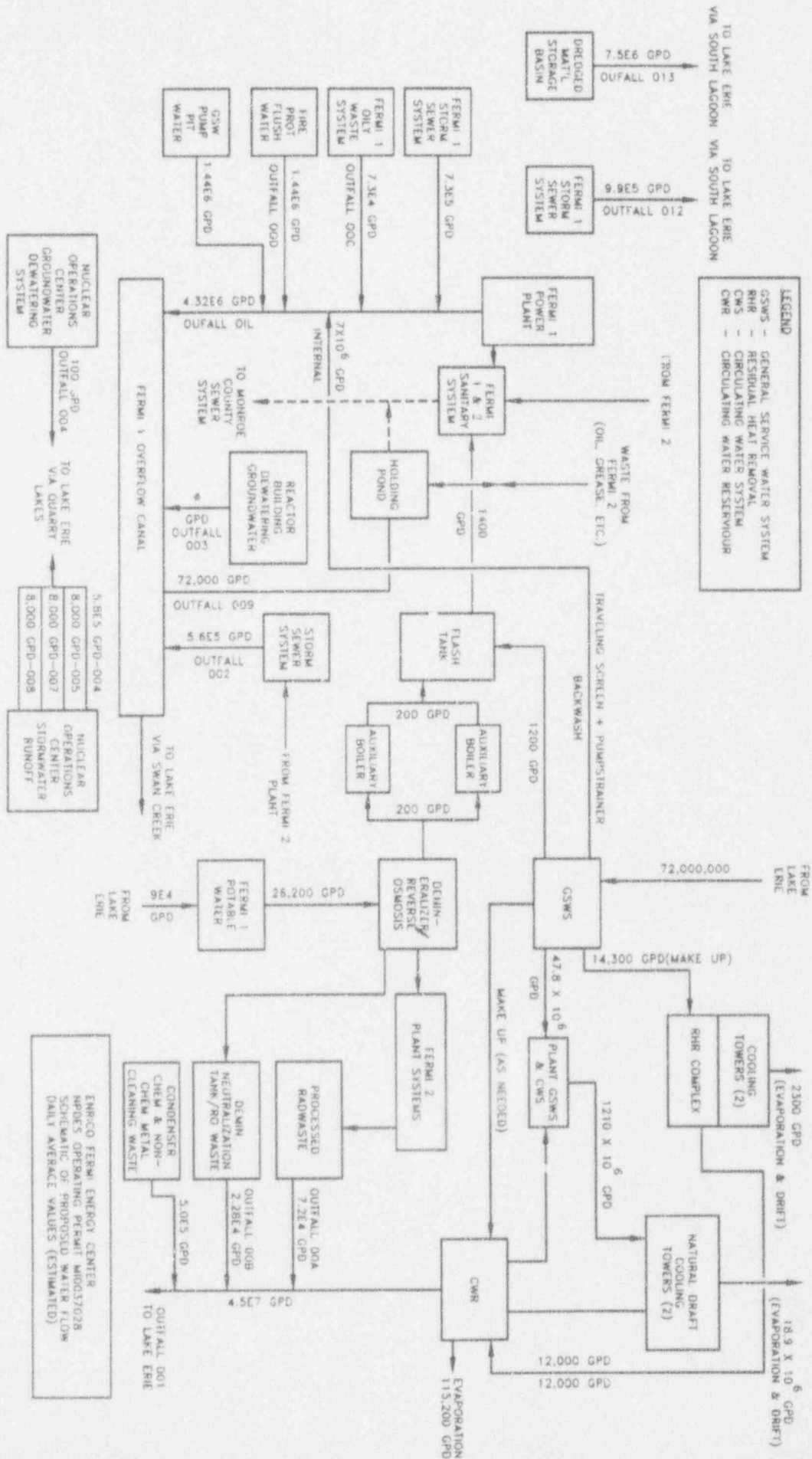
DIAGRAM

- A. PROVIDE A BRIEF DESCRIPTION AND LINE DIAGRAM SHOWING THE WATER FLOW THROUGH YOUR FACILITY FROM INTAKE TO DISCHARGE. SHOW ALL OPERATIONS CONTRIBUTING WASTEWATER, INCLUDING PROCESS AND PRODUCTION AREAS, SANITARY FLOWS, COOLING WATER, AND STORMWATER RUNOFF. YOU MAY GROUP SIMILAR OPERATIONS INTO A SINGLE UNIT. THE WATER BALANCE SHOULD SHOW AVERAGE FLOWS. SHOW ALL SIGNIFICANT LOSSES OF WATER TO PRODUCTS, ATMOSPHERE, AND DISCHARGE. YOU SHOULD USE ACTUAL MEASUREMENTS WHENEVER AVAILABLE; OTHERWISE USE YOUR BEST ESTIMATES.

SEE ATTACHMENT

TO LAKE ERIE  
VIA SOUTH LAGOON

**LEGEND**  
GSWS - GENERAL SERVICE WATER SYSTEM  
RHR - RESIDUAL HEAT REMOVAL  
CWS - CIRCULATING WATER RESERVOIR  
CWR - CIRCULATING WATER RESERVOIR



# INPUTS INTO NPDES OUTFALLS



SECTION I

PERMIT  
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SEE INSTRUCTIONS  
ON REVERSE SIDE

ITEM  
7

A. PROVIDE A MAP OF THE TREATMENT FACILITY LOCATION, SHOWING THE LOCATION OF THE DISCHARGE POINT(S) AND OTHER INFORMATION REQUESTED ON REVERSE SIDE OF PAGE.

SEE ATTACHMENT

LOCATION

MAP

FIGURE 1

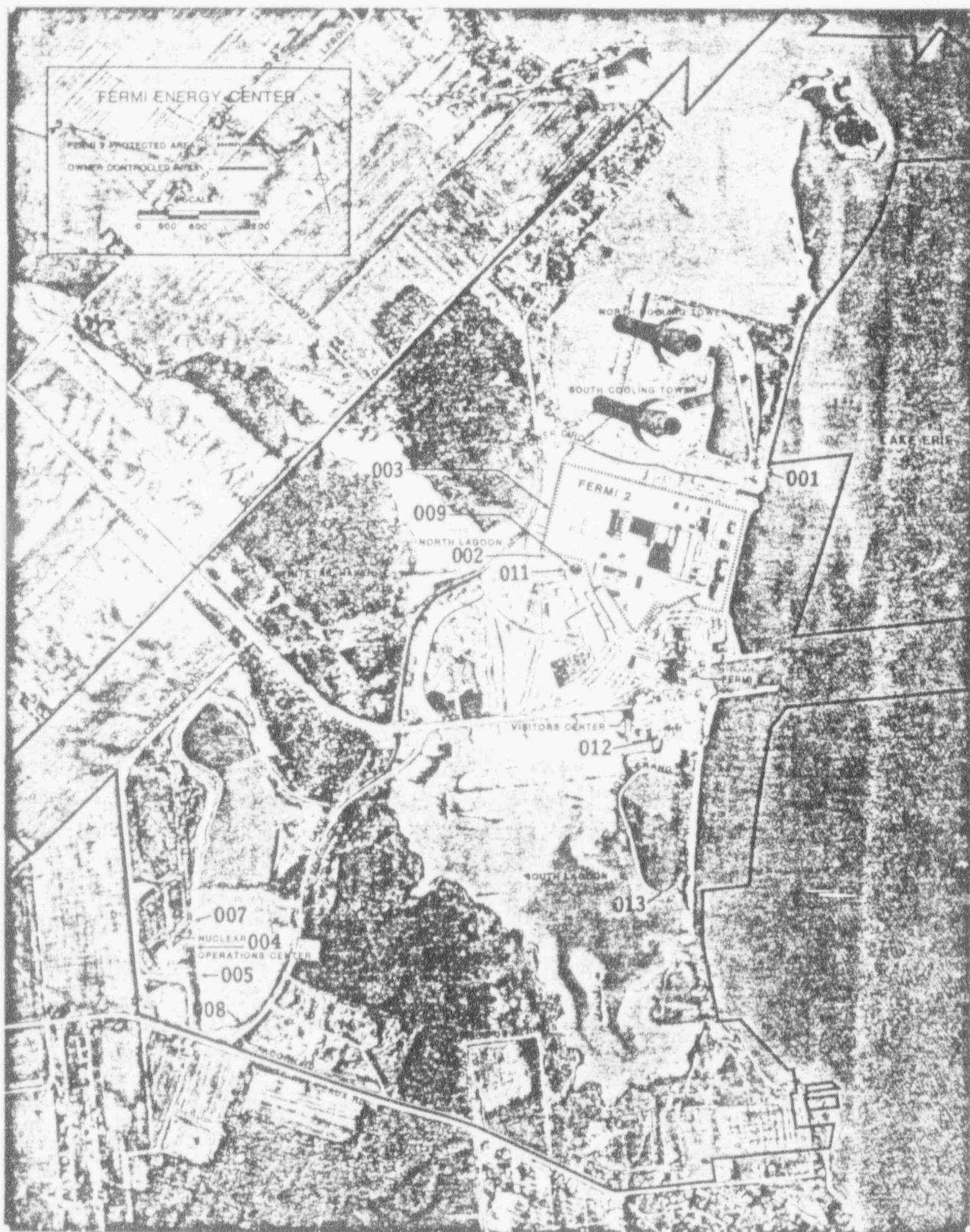
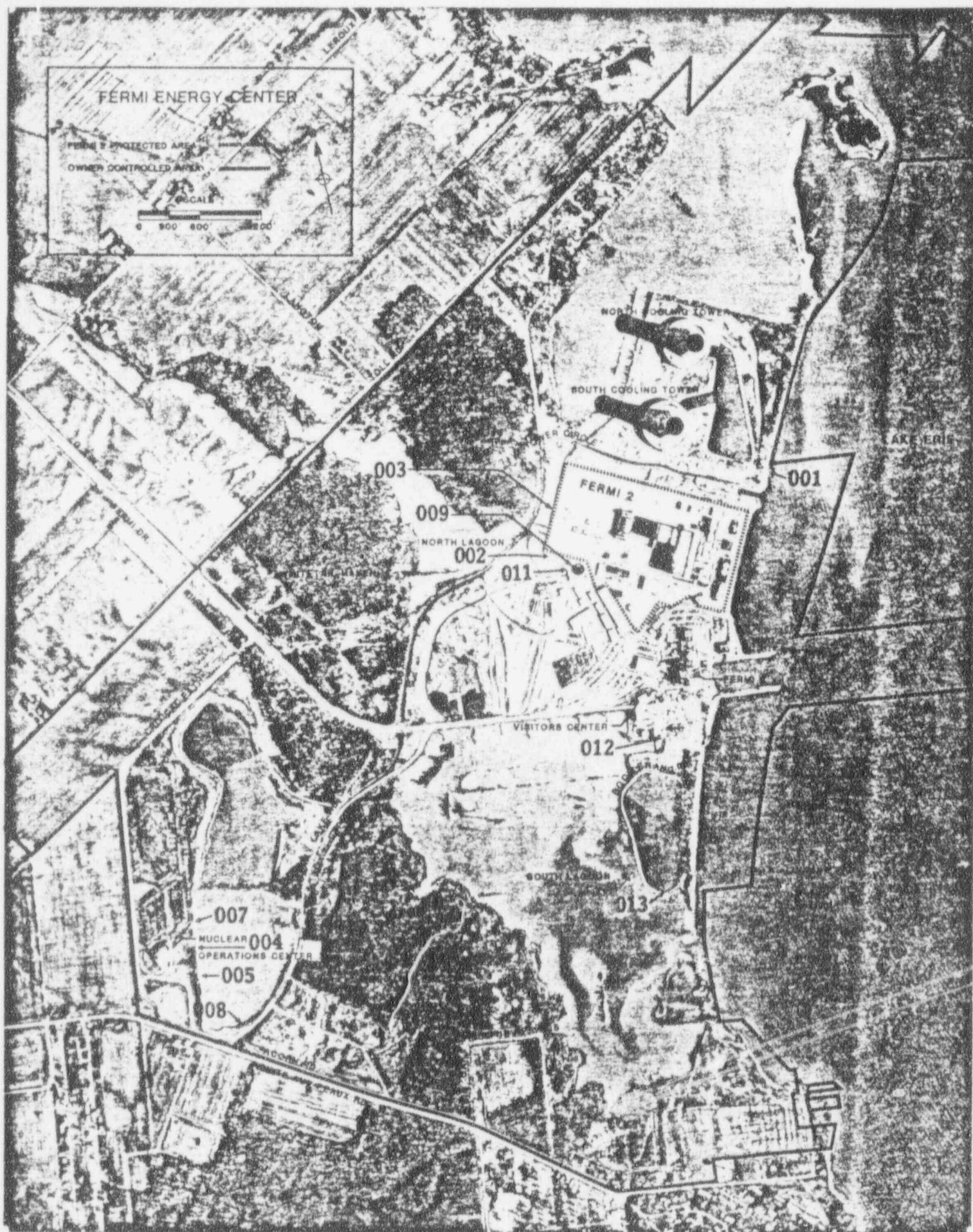


FIGURE 1





## SECTION I

PERMIT  
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SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
8CONCENTRATED  
ANIMAL  
FEEDING  
OPERATION

A. DO YOU OPERATE A CONCENTRATED ANIMAL FEEDING FACILITY? (IF NO CONTINUE TO ITEM 10)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
B. NUMBER OF ACRES USED FOR CONFINEMENT FEEDING?	_____. _____. _____. ACRES	
C. IF THERE IS OPEN CONFINEMENT, HAS A RUNOFF DIVERSION AND CONTROL SYSTEM BEEN CONSTRUCTED? (IF NO, CONTINUE TO ITEM 9)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
D. WHAT IS THE DESIGN BASIS FOR THE CONTROL SYSTEM? CHECK ONE OF THE FOLLOWING AND ENTER NUMBER OF INCHES OF RAIN?	<input type="checkbox"/> 10 YEAR, 24 HOUR STORM      _____. _____. INCHES <input type="checkbox"/> 25 YEAR, 24 HOUR STORM      _____. _____. INCHES <input type="checkbox"/> OTHER (SPECIFY)      _____. _____. INCHES	
TYPE _____		
E. WHAT IS THE NUMBER OF ACRES OF CONTRIBUTING DRAINAGE?	_____. _____. _____. ACRES	
F. WHAT IS THE DESIGN SAFETY FACTOR FOR THIS CONTROL SYSTEM?	_____	

ITEM  
9TYPE  
&  
NUMBER  
OF  
ANIMALS  
IN  
OPEN  
AND  
HOUSED  
CONFINEMENT

TYPE 1	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 2	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 3	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 4	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 5	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 6	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 7	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____
TYPE 8	A. LIST TYPE OF ANIMAL.	_____
	B. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN OPEN CONFINEMENT.	_____
	C. GIVE THE NUMBER OF THIS TYPE OF ANIMAL IN HOUSED CONFINEMENT.	_____

## SECTION I

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SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
10AQUATIC  
ANIMAL  
PRODUCTION  
FACILITYA. DO YOU OPERATE AN AQUATIC ANIMAL PRODUCTION FACILITY?  
(IF NO, CONTINUE TO ITEM 12)☐ YES☒ NOB. INDICATE THE TOTAL NUMBER OF PONDS, RACEWAYS AND SIMILAR  
STRUCTURES AT YOUR FACILITY.

\_\_\_\_\_, PONDS

\_\_\_\_\_, RACEWAYS

\_\_\_\_\_, OTHER

SPECIFY \_\_\_\_\_

C. INDICATE IN WHICH CALENDAR MONTH MAXIMUM FEEDING OCCURS.

\_\_\_\_\_

D. ENTER THE TOTAL NUMBER OF POUNDS OF FOOD FED DURING THIS  
MONTH?

\_\_\_\_\_ POUNDS

ITEM  
11SPECIES  
OF  
AQUATIC  
ANIMALS  
PRODUCED  
AT THIS  
FACILITYSPECIES 1  
A. IS THIS SPECIE A WARM OR COLD WATER SPECIE?☐ WARM☐ COLD

B. GIVE THE NAME OF THIS SPECIE.

\_\_\_\_\_

C. ENTER THE TOTAL HARVESTABLE WEIGHT OF THIS SPECIE  
PRODUCED BY THIS FACILITY PER YEAR IN POUNDS.

\_\_\_\_\_ POUNDS

D. ENTER THE MAXIMUM WEIGHT PRESENT FOR THIS SPECIE WHICH  
WOULD REPRESENT YOUR NORMAL OPERATION.

\_\_\_\_\_ POUNDS

SPECIES 2  
A. IS THIS SPECIE A WARM OR COLD WATER SPECIE?☐ WARM☐ COLD

B. GIVE THE NAME OF THIS SPECIE.

\_\_\_\_\_

C. ENTER THE TOTAL HARVESTABLE WEIGHT OF THIS SPECIE  
PRODUCED BY THIS FACILITY PER YEAR IN POUNDS.

\_\_\_\_\_ POUNDS

D. ENTER THE MAXIMUM WEIGHT PRESENT FOR THIS SPECIE WHICH  
WOULD REPRESENT YOUR NORMAL OPERATION.

\_\_\_\_\_ POUNDS

SPECIES 3  
A. IS THIS SPECIE A WARM OR COLD WATER SPECIE?☐ WARM☐ COLD

B. GIVE THE NAME OF THIS SPECIE.

\_\_\_\_\_

C. ENTER THE TOTAL HARVESTABLE WEIGHT OF THIS SPECIE  
PRODUCED BY THIS FACILITY PER YEAR IN POUNDS.

\_\_\_\_\_ POUNDS

D. ENTER THE MAXIMUM WEIGHT PRESENT FOR THIS SPECIE WHICH  
WOULD REPRESENT YOUR NORMAL OPERATION.

\_\_\_\_\_ POUNDS

SPECIES 4  
A. IS THIS SPECIE A WARM OR COLD WATER SPECIE?☐ WARM☐ COLD

B. GIVE THE NAME OF THIS SPECIE.

\_\_\_\_\_

C. ENTER THE TOTAL HARVESTABLE WEIGHT OF THIS SPECIE  
PRODUCED BY THIS FACILITY PER YEAR IN POUNDS.

\_\_\_\_\_ POUNDS

D. ENTER THE MAXIMUM WEIGHT PRESENT FOR THIS SPECIE WHICH  
WOULD REPRESENT YOUR NORMAL OPERATION.

\_\_\_\_\_ POUNDS

SPECIES 5  
A. IS THIS SPECIE A WARM OR COLD WATER SPECIE?☐ WARM☐ COLD

B. GIVE THE NAME OF THIS SPECIE.

\_\_\_\_\_

C. ENTER THE TOTAL HARVESTABLE WEIGHT OF THIS SPECIE  
PRODUCED BY THIS FACILITY PER YEAR IN POUNDS.

\_\_\_\_\_ POUNDS

D. ENTER THE MAXIMUM WEIGHT PRESENT FOR THIS SPECIE WHICH  
WOULD REPRESENT YOUR NORMAL OPERATION.

\_\_\_\_\_ POUNDS

SPECIES 6  
A. IS THIS SPECIE A WARM OR COLD WATER SPECIE?☐ WARM☐ COLD

B. GIVE THE NAME OF THIS SPECIE.

\_\_\_\_\_

C. ENTER THE TOTAL HARVESTABLE WEIGHT OF THIS SPECIE  
PRODUCED BY THIS FACILITY PER YEAR IN POUNDS.

\_\_\_\_\_ POUNDS

D. ENTER THE MAXIMUM WEIGHT PRESENT FOR THIS SPECIE WHICH  
WOULD REPRESENT YOUR NORMAL OPERATION.

\_\_\_\_\_ POUNDS



## SECTION I

PERMIT  
NUMBER

MI0037028

ITEM  
12

MAILING

LIST

OF

ADJACENT

PROPERTY

OWNERS

LIST NAME AND MAILING ADDRESS OF ALL PROPERTY OWNERS ADJACENT TO THE TREATMENT FACILITY AND OR DISCHARGE/DISPOSAL AREA.

58-07-852-001-00

BERNS LOUIS & CLARA  
4720 LONG RD  
NEWPORT

MI 48166

58-07-852-013-00

GERF & LONNY & LINDA  
4334 LONG DR  
NEWPORT

MI 48166

58-07-852-002-00

QUALEY JOHN & CAROL  
4730 LONG RD  
NEWPORT

MI 48166

58-07-852-014-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-852-004-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-852-015-00

CITY OF MONROE  
120 E FIRST ST  
MONROE

MI 48161

58-07-852-005-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-852-018-00

LONG EST SUMMER RESORT ASSOC  
TREAS  
4802 LONG RD  
NEWPORT

MI 48166

58-07-852-006-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-852-019-00

LONG EST SUMMER RESORT ASSOC  
TREAS  
4802 LONG RD  
NEWPORT

MI 48166

58-07-852-008-00

FELC ELEANOR  
4772 LONG DR  
NEWPORT

MI 48166

58-07-028-508-20

FRENCHTOWN CHARTER TOWNSHIP  
WATER TOWER  
2744 VIVIAN RD  
MONROE

MI 48161

58-07-852-009-00

LITTEL THOMAS & ANNA  
4802 LONG ST  
NEWPORT

MI 48166

58-07-028-508-10

FRENCHTOWN CHARTER TOWNSHIP  
FIRE HALL #1  
2744 VIVIAN RD  
MONROE

MI 48161

58-07-852-010-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-028-509-00

CITY OF MONROE  
WATER WORKS  
120 E FIRST ST  
MONROE

MI 48161

58-07-852-011-00

LANE EDWARD J  
2040 GRINDLEY PARK ST  
DEARBORN

MI 48124

58-07-893-001-00

STATE OF MICHIGAN  
P O BOX 30028  
LANSING

MI 48933

58-07-852-012-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-893-076-00

STATE OF MICHIGAN  
P O BOX 30028  
LANSING

MI 4890

ITEM  
12MAILING  
LIST  
OF  
ADJACENT  
PROPERTY  
OWNERS

LIST NAME AND MAILING ADDRESS OF ALL PROPERTY OWNERS ADJACENT TO THE TREATMENT FACILITY AND OR DISCHARGE/DISPOSAL AREA.

58-07-892-577-00

STATE OF MICHIGAN  
P O BOX 30028  
LANSING

MI 48933

58-07-530-051-00

SISUNG BEATRICE  
5701 POST RD R 2  
NEWPORT

MI 48166

58-07-892-601-00

STATE OF MICHIGAN  
PO BOX 30028  
LANSING

MI 48909

58-07-530-049-00

SISUNG BEATRICE  
5701 POST RD R 2  
NEWPORT

MI 48166

58-07-020-503-00

MORRIS RONALD & VERA LTHL  
4911 CATHERINE ST  
DEARBORN HTS

MI 48125

58-07-530-050-00

SISUNG BEATRICE  
5701 POST RD  
NEWPORT

MI 48166

58-07-528-013-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-530-032-00

FIX BERNICE  
6394 LEROUX RD  
NEWPORT

MI 48166

58-07-529-011-00

MASSFRANT RANDY  
4001 TOLL RD  
NEWPORT

MI 48166

58-07-530-050-10

SISUNG BEATRICE RUTH  
6377 LEROUX RD  
NEWPORT

MI 48166

58-07-529-010-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-530-501-00

DETROIT EDISON CO  
2000 SECOND AVE  
DETROIT

MI 48226

58-07-529-015-00

FIX BERNICE  
6394 LEROUX RD R 2  
NEWPORT

MI 48166

58-07-530-017-00

LADDON VALARIAN & SHIRLEY  
6445 LEROUX RD R 2  
NEWPORT

MI 48166

58-07-529-015-10

HOLMES JIMMY & REBECCA  
4200 LANSTON RD  
NEWPORT

MI 48166

58-07-924-001-00

HAFFLEY THOMAS & TERESA  
3054 GRANDVIEW DR  
MONROE

MI 48161

58-07-529-015-20

NEWPORT BEACH MARINA, LTD  
13205 E FOURTEEN MILE RD  
STERLING HEIGHTS

MI 48312

58-07-924-001-10

HAFFLEY THOMAS & TERESA  
3054 GRANDVIEW DR  
MONROE

MI 48161

58-07-529-018-00

FIX HOWARD & ABINA TRUSTEES  
NEWPORT BEACH MARINA, LTD (C)  
13205 E FOURTEEN MILE RD  
STERLING HEIGHTS

MI 48312

58-07-924-010-00

BELED ROBERT & LUANA  
23067 ERBETT  
TAYLOR

MI 48180

## SECTION I

PERMIT  
NUMBER

MI0037028

LIST NAME AND MAILING ADDRESS OF ALL PROPERTY OWNERS ADJACENT TO THE TREATMENT FACILITY AND OR DISCHARGE/DISPOSAL AREA.

ITEM  
12

MAILING

LIST

OF

ADJACENT

PROPERTY

OWNERS

58-07-924-015-00

LAFEN LEON  
FOLEY FRANCIS & CHRISTINE (C)  
6376 STERLING DR  
NEWPORT MI 48166

58-07-887-003-00

VARNEY SHIRLEY  
6098 POINTE AUX PEAUX RD  
NEWPORT MI 48166

58-07-827-002-00

LEICER ELIZABETH & DONALD  
1160 SHERIDAN #315  
PLYMOUTH MI 48170

58-07-887-005-00

VARNEY SHIRLEY  
6098 POINTE AUX PEAUX RD  
NEWPORT MI 48166

58-07-827-005-00

MOODY LLOYD B JR & JEAN B  
6233 HIGHLAND  
NEWPORT MI 48166

58-07-887-006-00

YOUNG LOWELL & ALICE  
6060 POINTE AUX PEAUX RD  
NEWPORT MI 48166

58-07-827-007-00

EDWY LARRY & ROBIN  
6211 HIGHLAND  
NEWPORT MI 48166

58-07-887-007-00

YOUNG LOWELL & ALICE  
6060 POINTE AUX PEAUX RD  
NEWPORT MI 48166

58-07-827-003-00

MASSERANT JEROME & JANIS  
6255 HIGHLAND DR  
NEWPORT MI 48166

58-07-887-008-00

YOUNG LOWELL & ALICE  
6060 POINTE AUX PEAUX RD  
NEWPORT MI 48166

58-07-827-010-00

STYLES ELEANOR  
6191 HIGHLAND BLVD  
NEWPORT MI 48166

58-07-887-009-00

LALONDE KETH & KIMBERLY  
4790 N LAKE DR  
NEWPORT MI 48166

58-07-827-012-00

DRUMMOND DONALD & PATRICIA  
4148 POINTE AUX PEAUX RD  
NEWPORT MI 48166

58-07-887-010-00

LALONDE KETH & KIMBERLY  
4790 N LAKE DR  
NEWPORT MI 48166

58-07-827-020-00

LACHET MARIE  
6220 HIGHLAND  
NEWPORT MI 48166

58-07-887-257-10

MAST PETER & KATHERINE  
2630 WOODSIDE DR  
FORT LAUDERDALE FL 33312

58-07-827-021-00

VERNETTE RONALD & CHRISTINE  
6202 HIGHLAND  
NEWPORT MI 48166

58-07-782-001-00

GEMM APALTI O F  
1140 RIVER FOREST  
POINT MI 48132

58-07-887-002-00

FRANCISCO JAMES A & VIRGINIA  
7358 CHIPPEWA II  
MONROE MI 48161

58-07-782-002-00

SCOTT ROBERT & BETH  
6090 POINTE AUX PEAUX  
NEWPORT MI 48166

## SECTION I

PERMIT  
NUMBER

MI0037028

ITEM  
12MAILING  
LIST  
OF  
ADJACENT  
PROPERTY  
OWNERS

LIST NAME AND MAILING ADDRESS OF ALL PROPERTY OWNERS ADJACENT TO THE TREATMENT FACILITY AND OR DISCHARGE/DISPOSAL AREA.

58-07-789-003-00	58-07-789-213-00
SQUIRE ROBERT & BETH 5820 POINTE AUX PEAUX NEWPORT	MURDOCH JOSEPH 4521 DEWEY RD NEWPORT
MI 48166	MI 48166
58-07-789-004-00	58-07-789-214-00
MIDDLETON DONALD & JOAN 5838 POINTE AUX PEAUX NEWPORT	DASSIS NABIH & JULIET 647 JOHN ROLFE DR MONROE
MI 48166	MI 48161
58-07-789-005-00	58-07-789-215-00
MIDDLETON DONALD & JOAN 5838 POINTE AUX PEAUX RD NEWPORT	DASSIS NABIH & JULIET 647 JOHN ROLFE MONROE
MI 48166	MI 48161
58-07-789-007-00	
MIDDLETON DONALD & JOAN 5838 POINTE AUX PEAUX RD NEWPORT	
MI 48166	
58-07-789-008-00	
NETT FERNAND 12771 HARTIS CAPLETON	
MI 48117	
58-07-789-023-00	
PALAZZO A SALVATORE LOCKWOOD HAROLD & LINDA 4128 10TH STREET NEWPORT	
MI 48166	
58-07-789-026-00	
CARLOW SAM & NETTIE 20007 HOLIDAY RD GROSSE POINTE WOODS	
MI 48236	
58-07-789-029-00	
CARLOW SAM & NETTIE 20007 HOLIDAY RD GROSSE POINTE WOODS	
MI 48236	
58-07-789-176-00	
DASSIS NABIH & JULIET 647 JOHN ROLFE MONROE	
MI 48161	
58-07-789-176-00	
DASSIS NABIH & JULIET 647 JOHN ROLFE MONROE	
MI 48161	

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
1DISCHARGE  
LOCATION\*  
SCHEDULE\*  
FLOW  
RATEWASTEWATER  
TYPE CODE1 CONTACT  
COOLING2 NONCONTACT  
COOLING

3 PROCESS

4 SANITARY

5 STORMWATER

UNIT CODE

1 MGY

2 MGD

3 GPD

OUTFALL NUMBER

0,0,1

A. LOCATION OF DISCHARGE

S.E. &amp; S.W. 1/4 SECTION 16, TOWN 16S, RANGE 10E

B. NAME OF RECEIVING WATER (IE. GROUNDWATER OR NAME OF SURFACE WATER)

LAKE ERIE

C. DO YOU DISCHARGE SEASONALLY?  
(IF NO, CONTINUE TO E)☐

YES

☒

NO

D. IF YES, LIST DISCHARGE PERIODS

MO. / DAY

MO. / DAY

THROUGH

THROUGH

THROUGH

THROUGH

THROUGH

THROUGH

E. LAND APPLICATION RATE

IN./HR.

HR./DAY

IN./WK.

☒

F. TYPE OF WASTEWATER DISCHARGE

3 2

WASTEWATER TYPE CODE

5

G. DISCHARGE SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

24

DAY/YEAR

365

H. DISCHARGE FLOW RATE

TOTAL YEARLY

1,646,000

UNIT CODE

1

DAILY MINIMUM

0

2

DAILY MAXIMUM

4,509,400

2

I. THE MAXIMUM DISCHARGE FLOW RATE TO BE AUTHORIZED IN PERMIT.

AUTHORIZED

4,509,400

UNIT CODE

2

J. MAXIMUM DESIGN DISCHARGE FLOW RATE.

DESIGN

4,509,400

UNIT CODE

2

A. DO YOU USE WATER TREATMENT ADDITIVES TO TREAT YOUR DISCHARGE?  
(IF NO, CONTINUE TO ITEM 3)☒

YES

☐

NO

B. NAME, FUNCTION, AND CHEMICAL COMPOSITION  
OF THESE ADDITIVES.

SEE ATTACHED

NAME

FUNCTION

C. NAME AND ADDRESS OF MANUFACTURERS  
OF THESE ADDITIVES.

SEE ATTACHED

D. EXPECTED DISCHARGE CONCENTRATION OF ADDITIVES.

MINIMUM

UNITS  
CODE

AVERAGE

UNITS  
CODE

MAXIMUM

UNITS  
CODE

ADDITIVE NAME

ADDITIVE NAME

SEE ATTACHED

ADDITIVE NAME

E. DO YOU TREAT THE DISCHARGE TO REMOVE ADDITIVES?

☒

YES

☐

NO

F. WHAT IS THE REMOVAL EFFICIENCY AND DISCHARGE FREQUENCY?

REMOVAL

DISCHARGE FREQUENCY

HRS./DAY

DAYS/WK.

ADDITIVE NAME

ADDITIVE NAME

SEE ATTACHED

ADDITIVE NAME

G. AS AN ATTACHMENT TO THIS APPLICATION PROVIDE SPECIFIC MAMMALIAN OR AQUATIC TOXICOLOGICAL DATA OR REFERENCE WHICH ARE AVAILABLE AND INFORMATION ON THE RATE OF DEGRADATION OF THE PRODUCTS FOR EACH ADDITIVE.

ITEM  
2WATER  
TREATMENT  
ADDITIVES

UNITS CODE

1 Mg/l

2 Ug/l



MI0037028

Outfall 001

## SECTION II, ITEM 2.C.

Chemical Additive	Supplier
Sodium Hypochlorite	High-Po-Chlor Inc.
Calcium Hypochlorite	High-Po-Chlor Inc.
BCDMH	Betz Industrial
	Buckman Laboratories
Sodium Bromide	Betz Industrial
	Buckman Laboratories
HEDP	Betz Industrial
	Buckman Laboratories
Sulfuric Acid	Coulton Chemical
Sodium Hydroxide	Jones Chemicals Inc.

## Supplier Addresses

High-Po-Chlor Inc.  
36801 Wabash  
Romulus, MI 48714

Betz Industrial  
4636 Somerton Rd.  
Trevose, PA 19053

Buckman Laboratories  
1256 N. McLean Blvd.  
Memphis, TN 38108

Coulton Chemical  
6600 Sylvania Ave  
Sylvania, OH 43560

Jones Chemicals Inc.  
18000 Payne Ave.  
Riverview, MI 48192

SECTION II ITEM 2B

<u>NAME</u>	<u>FUNCTION</u>
Sodium Hypochlorite	Biocide
BCDMH (1-Bromo-3-Chloro-5,5-Dimethylhydantoin)	Biocide
Sodium Bromide	Biocide
Calcium Hypochlorite	Biocide
Betz Clem Trol CT-1	Biocide
Sulfuric Acid	pH Adjustment
Sodium Hydroxide	pH Adjustment
Betz Powerline 3461	Scale Inhibitor
Betz Powerline 865	Scale Inhibitor
HEDP [Phosphoric Acid, (1-Hydroxyethylidene) - Bis (HEDP)]	Scale Inhibitor
Betz Powerline 3690	Deposit Control Agent
Buckman DMAD	Deposit Control Agent
Betz Foam Trol	Defoaming Agent

MI0037028

## SECTION II, ITEM 2 D.

Additive Name	Minimum	Units Code	Average	Units Code	Maximum	Units Code
Sodium Hypochlorite	0	1	0.1 *	1	0.2 *	1
Calcium Hypochlorite	0	1	0.1 *	1	0.2 *	1
Sodium Bromide	0	1	0.1 *	1	0.2 *	1
BCDMH	0	1	0.1 *	1	0.2 *	1
Betz Clam-Trol CT-1	0	1	0.08	1	0.08 **	1
Betz Powerline 3461	0	1	6	1	20	1
Betz Powerline 865	0	1	180	1	200	1
HEDP	0	1	50	1	100	1
Betz Powerline 3690	0	1	10	1	15	1
Buckman DMAD	0	1	0.5	1	1.0	1
Betz Foam-Trol 229	0	1	0.5	1	5	1

\* Discharge time limited to 120 minutes in the current permit.

\*\* Detection level 0.1 mg/l

## SECTION II, ITEM 2 F.

Additive Name	% Removal	Hours/Day	Days/Week
Sodium Hypochlorite	100	24	7
Calcium Hypochlorite	100	24	7
Sodium Bromide	100	24	7
BCDMH	100	24	7
Betz Clam-Trol CT-1	100	+	++

+ Reservoir treated as a entire batch prior to discharge.

++ May be performed up to 6 times per year

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
3PROCESS  
STREAMS  
CONTRIBUTING  
TO  
OUTFALL  
DISCHARGEUNITS CODE  
POUNDS  
GALLONS  
CUBIC  
YARDS  
TONS  
MGY  
MGD  
GPDTIME  
HOUR  
DAY  
WEEK  
MONTH  
YEAR

OUTFALL NUMBER

0001

PROCESS  
1A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

001A RADWASTE 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 24 DAYS/YEAR 365

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY 2628 5

DAILY MINIMUM 0 7

DAILY MAXIMUM 72000 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
2A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

00B DEMIN WST 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 24 DAYS/YEAR 365

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY 832 5

DAILY MINIMUM 0 7

DAILY MAXIMUM 22800 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
3A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

CHEM METALL CLIN 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 24 DAYS/YEAR 110

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY 5 5

DAILY MINIMUM 0 7

DAILY MAXIMUM 500000 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
4A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

NON CHEM METAL 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 24 DAYS/YEAR 110

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY 5 5

DAILY MINIMUM 0 7

DAILY MAXIMUM 500000 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
5A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

RO WASTE 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 10 DAYS/YEAR 365

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY 329 5

DAILY MINIMUM 0 7

DAILY MAXIMUM 9000 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
4GROUNDWATER  
DISCHARGE  
INFORMATION

OUTFALL NUMBER

0,0,1

- A. IS THE DISCHARGE FROM THIS OUTFALL DIRECTED TO THE GROUND OR GROUNDWATER? (IF NO, CONTINUE TO ITEM 5)
- B. HAS A HYDROGEOLOGICAL STUDY OR ITS EQUIVALENT BEEN PERFORMED OR IS THERE SUFFICIENT CURRENT HYDROGEOLOGICAL INFORMATION AVAILABLE AS REQUIRED BY THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES OF AUGUST 14, 1980 R. 323.2207 (PAGE 45) FOR THIS EXISTING OR PROPOSED DISCHARGE? IF YES ATTACH A COPY OF THE REPORT.
- C. ARE YOU REQUESTING AN EXEMPTION FROM SUBMITTING A HYDROGEOLOGICAL REPORT UNDER RULE R. 323.2207 (10) (PAGE 45) OR FROM GROUNDWATER MONITORING REQUIREMENTS UNDER RULE R. 323.2206 (5) (PAGE 42) OF THE PART 22 RULES. IF YES, ATTACH DOCUMENTS AND EXPLANATION TO DEMONSTRATE THAT YOUR DISCHARGE WOULD QUALIFY FOR AN EXEMPTION.
- D. ARE YOU REQUESTING A VARIANCE FROM RULE 323.2205 (PAGE 45) (NONDEGRADATION) OF THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES? IF YES, ATTACH SUCH DOCUMENTS AS NECESSARY TO DEMONSTRATE THE NEED FOR A VARIANCE IN TERMS OF THE CRITERIA SPECIFIED IN RULE 323.2210 (PAGE 42) OF THE PART 22 RULES.
- E. LIST ALL CHEMICAL SUBSTANCES WHICH ARE IN MICHIGAN'S CRITICAL MATERIALS REGISTER TABLE IV (PAGE 6) AND/OR U.S. EPA'S PRIORITY POLLUTANT LIST TABLE V (PAGE 7) OR ANY OTHER SUBSTANCES WHICH ARE OR MAY BECOME INJURIOUS TO THE DESIGNATED USES OF THE GROUNDWATER OR TO THE PUBLIC HEALTH THAT ARE DISCHARGED OR EXPECTED TO BE DISCHARGED TO THE GROUNDWATER BY THIS FACILITY. ESTIMATE THE FINAL EFFLUENT CONCENTRATION AND RECORD ALL DATA IN ITEM 7 OF SECTION II IN THIS BOOKLET.

☐ YES ☒ NO☐ YES ☐ NO☐ YES ☐ NO☐ YES ☐ NO☐ NOT APPLICABLE/BE LIEVED ABSENT☐ PRESENT, DATA PROVIDED IN ITEM 7

THE APPLICANT MAY BE REQUIRED TO DO ADDITIONAL WASTE ANALYSES.

ITEM  
5EXPECTED  
WASTEWATER  
CHARAC-  
TERISTICS

## UNITS CODE

Mg/l  
1 Ug/l  
3 COUNTS  
100 ml  
1 S.U.  
5 °F  
6 LBS DAY

## A. DISCHARGE CHARACTERISTICS

## CONCENTRATION

UNITS CODE # ANALYSES SAMPLE TYPE

\*BOD<sub>5</sub> (FIVE DAY BIOCHEMICAL OXYGEN DEMAND)

\*COD (CHEMICAL OXYGEN DEMAND)

\*TOD (TOTAL ORGANIC DEMAND)

\*AMMONIA NITROGEN (AS N)

\*TOTAL SUSPENDED SOLIDS

TOTAL PHOSPHORUS (AS P)

TOTAL RESIDUAL CHLORINE

DISSOLVED OXYGEN

\*PH

FECAL COLIFORM BACTERIA

\*TEMPERATURE (SUMMER)

\*TEMPERATURE (WINTER)

## B. OTHER WASTEWATER CHARACTERISTICS

OIL &amp; GREASE

## SAMPLE

## TYPE

1 GRAB  
2 24 HOUR  
COMPOSITE

\*REQUIRED INFORMATION FOR SURFACE WATER DISCHARGES.

NOTE: SEE ATTACHMENT



## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

0,0,1

ITEM  
6PRIORITY  
POLLUTANTS  
AND  
ADDITIONAL  
INFORMATION  
FOR  
SURFACE  
WATER  
DISCHARGE  
ONLY

OUTFALL NUMBER

THE FOLLOWING REQUESTED INFORMATION MUST BE ADDRESSED BY ALL SURFACE WATER DISCHARGERS.  
NOTE! NEW USE DISCHARGERS SHALL PROVIDE EXPECTED VALUES FOR THE QUANTITATIVE AND QUALITATIVE INFORMATION REQUESTED BELOW.A. IS THIS FACILITY A PRIMARY INDUSTRY? (REFER TO TABLE 1A PAGE 41)  
(IF NO, GO TO E) (IF YES, GO TO B)☒ YES ☐ NOB. INDICATE TYPE OF PRIMARY INDUSTRY AS LISTED IN TABLE 1A PAGE 41  
(CONTINUE WITH C.)

SITE AM, I, E, I, C, I, P

C. DOES THIS OUTFALL DISCHARGE CONTAIN ANY PROCESS WASTEWATER?  
(IF NO, GO TO E) (IF YES, GO TO D)☒ YES ☐ NOD. INDICATE WHICH GC/MS FRACTIONS MUST BE TESTED FOR.  
(REFER TO TABLE 1A PAGE 41)NOTE! FOR EACH GC/MS FRACTION CHECKED, EACH SPECIFIC ORGANIC TOXIC POLLUTANT WITHIN EACH FRACTION MUST BE ANALYZED FOR (SEE TABLE 11A PAGE 47). IN ADDITION, ALL PRIMARY INDUSTRY APPLICANTS WITH A PROCESS WASTEWATER DISCHARGE MUST PROVIDE QUANTITATIVE DATA FOR EACH TOXIC POLLUTANT IN TABLE 11A PAGE 43.RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.  
(CONTINUE WITH E-K BELOW)☒ VOLATILE  
☐ BASE/NEUTRAL  
☒ ACID  
☐ PESTICIDEE. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE THAT ANY POLLUTANT LISTED IN TABLE 11A AND 11A PAGES 42-43 IS DISCHARGED FROM ANY OUTFALL, THE QUANTITATIVE DATA MUST BE PROVIDED.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT  
☐ PRESENT/DATA IS ATTACHEDF. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE ANY POLLUTANTS LISTED IN TABLE 11A PAGE 42 ARE DISCHARGED FROM ANY OUTFALL, THE APPLICANT MUST DESCRIBE REASONS FOR THE POLLUTANT BEING PRESENT AND PROVIDE ANY AVAILABLE QUANTITATIVE DATA.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT  
☐ PRESENT/DATA IS ATTACHED

G. ALL SURFACE WATER DISCHARGE APPLICANTS (PRIMARY AND SECONDARY INDUSTRIES) WHO:

USES OR MANUFACTURES 2, 4, 5 - TRICHLOROPHENOXY ACETIC ACID (2, 4, 5-T);  
2, 4, 5 - TRICHLOROPHENOXY PROPANOIC ACID (SILVEX); 2, 4, 5, TRP;  
2, 4, 5 - TRICHLOROPHENOXY ETHYL 2, 2-DICHLOROPROPYATE (ERBON); O,  
O-DIMETHYL O-(2, 4, 5-TRICHLOROPHENYL) PHOSPHORIC ACID (PONNEL);  
2, 4, 5-TRICHLOROPHENOL (TOP); OR HEXACHLOROCYCLOHEPTADIENE (HCPD) (ALL DATA FOR THE ABOVE MUST BE GENERATED USING STANDARD ANALYTICAL CALIBRATION PROCEDURES) ORKNOWS OR HAS REASON TO BELIEVE THAT TCDD IS OR MAY BE PRESENT IN THEIR DISCHARGE. MUST REPORT QUALITATIVE DATA, GENERATED WHICH USED A SCREENING PROCEDURE NOT CALIBRATED WITH ANALYTICAL STANDARDS, FOR 2, 3, 7, 8 - TETRACHLORODIBENZO-P-DIOXIN (TCDD). RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.☒ NOT APPLICABLE/BELIEVED ABSENT  
☐ PRESENT/DATA IS ATTACHED

H. IF THE SURFACE WATER DISCHARGE APPLICANT KNOWS OR HAS REASON TO BELIEVE THAT BIOLOGICAL TOXICITY TESTS WERE MADE IN THE LAST THREE (3) YEARS ON ANY OF THE APPLICANT'S DISCHARGES OR ON A RECEIVING WATER IN RELATION TO A DISCHARGE, PROVIDE THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE  
☐ APPLICABLE/SEE ATTACHED

I. IF A CONTRACT LABORATORY OR CONSULTING FIRM PERFORMED ANY OF THE ANALYSES REQUIRED BY THIS APPLICATION, PROVIDE THE NAME AND ADDRESS OF EACH LABORATORY OR FIRM AND THE ANALYSES PERFORMED AS AN ATTACHMENT OF THIS APPLICATION.

☐ NOT APPLICABLE  
☒ APPLICABLE/SEE ATTACHED

J. DO YOU DISCHARGE ANY OTHER TOXIC OR INJURIOUS CHEMICAL SUBSTANCES NOT LISTED IN TABLES 11A PAGE 42 AND 11A THROUGH 11A PAGES 42-43. IF YES, THEN IDENTIFY THE CHEMICAL SUBSTANCES AND ESTIMATE THE FINAL EFFLUENT CONCENTRATIONS. SUBMIT THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE  
☐ APPLICABLE/SEE ATTACHEDNational Environmental Testing, Inc.  
Auburn Hills Division  
1700 Harmon road  
Auburn Hills, MI 48326Tel: (810) 391-2050  
Fax: (810) 391-9698  
(800) 526-4951

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
7CRITICAL  
MATERIALS  
•  
TOXIC  
POLLUTANTS  
•  
HAZARDOUS  
SUBSTANCES  
IN  
DISCHARGE

CUTFALL NUMBER

0.0.1

A. USE THIS DATA SHEET TO RECORD INFORMATION AS REQUIRED IN: (CHECK APPROPRIATE BOX FOR WHICH INFORMATION THIS DATA SHEET REPRESENTS.)

- ☐ 1. SECTION II, ITEM 4-E. GROUNDWATER DISCHARGE INFORMATION (PAGE 55)
- ☐ 2. SECTION II, ITEM 6. PRIORITY POLLUTANTS IN SURFACE WATER DISCHARGE (PAGE 57)
- ☐ 3. B. BELOW: CRITICAL MATERIALS (TABLE IV) IN SURFACE WATER DISCHARGE (PAGE 39)

B. LIST ANY CRITICAL MATERIAL (TABLE IV PAGE 6) NOT ADDRESSED IN SECTION II ITEM 6 PRIORITY POLLUTANTS WHICH YOU KNOW OR HAVE REASON TO BELIEVE TO BE PRESENT IN THE DISCHARGE. SEE REVERSE SIDE OF THIS PAGE FOR FURTHER DIRECTIONS.

☒ NOT APPLICABLE☐ APPLICABLE (SEE BELOW)

## UNITS CODE

- 1 Mg/l
- 2 Ug/l
- 3 LBS DAY
- 4 KG DAY

## SAMPLE TYPE

- 1 GRAB
- 2 74 HR COMP

MATERIAL	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
MATERIAL 1	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 2	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 3	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 4	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 5	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 6	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 7	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 8	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			

ADDITIONAL PAGES OF THIS ITEM 7 ARE ATTACHED FOR THE REST OF THE CRITICAL MATERIALS AND/OR PRIORITY POLLUTANTS REQUIRED TO BE REPORTED.

☐ YES  
☐ NO

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19047  
BETZ MATERIAL SAFETY DATA SHEET  
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : SLIMICIDE C-78P

(PAGE 1 OF 3)  
EFFECTIVE DATE 07-26-89  
PRINTED: 3-SEP-1989  
REV: SEC. 3

PRODUCT APPLICATION : SOLID MICROBIAL CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----  
INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC  
PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS  
LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE  
AND CHRONIC HAZARDS OF THIS FORMULATION.

1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN\*\*\*CAS#16079-88-2; OXIDIZER; EYE AND  
SKIN IRRITANT; PEL: NONE; TLV: NONE.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: 5% DISP. (APPROX.)	4.7	ODOR: HALOGEN
FL. PT. (DEG. F):	>200 SETA (CC)	SP. GR. (70F) OR DENSITY: 65 LBS. CU. FT.
VAPOR PRESSURE (MMHG):	NA	VAPOR DENSITY (AIR=1): NA
VISC CPS 70F:	NA	% SOLUBILITY (WATER): 1
EVAP. RATE: NA	WATER=1	APPEARANCE: WHITE
PHYSICAL STATE:	GRANULES	FREEZE POINT (DEG. F): NA

-----SECTION 3-----REACTIVITY DATA-----

STABLE. OXIDIZER. SLOWLY RELEASES HALOGEN GASES WHEN CONTAMINATED WITH  
MOISTURE. MAY REACT WITH ALKALIES, ACIDS, ORGANICS OR REDUCING AGENTS. DO  
NOT CONTAMINATE. BETZ TANK CLEAN-OUT CATEGORY 'B'.

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

EFFECTIVE DATE 07-26-89

PRODUCT: SLIMICIDE C-78P

## -----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

MODERATELY IRRITATING. MAY BE CORROSIVE IN CONTACT WITH MOIST SKIN.

ACUTE EYE EFFECTS \*\*\*

SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

DUSTS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE REDNESS OR ITCHING OF SKIN.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS \*\*\*

MAY BE TOXIC IF ORALLY INGESTED.

## -----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CLOTHING. WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FOR 15 MIN. IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA. APPLY NECESSARY FIRST AID TREATMENT. IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

## -----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. SPILLED MATERIAL WHICH CAN NOT BE RECOVERED FOR RE-USE, SHOULD BE PLACED IN A WASTE DISPOSAL CONTAINER AND DISPOSED OF IN AN APPROVED PESTICIDE LANDFILL. SEE PRODUCT LABEL STORAGE AND DISPOSAL INSTRUCTIONS. PRODUCT RELEASES CHLORINE WHEN WET. SPILL RESIDUE MAY BE NEUTRALIZED WITH 3% HYDROGEN PEROXIDE SOLUTION.

DISPOSAL INSTRUCTIONS\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS) -

DISPOSE OF IN APPROVED PESTICIDE FACILITY OR ACCORDING TO LABEL INSTRUCTIONS

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE).  
FLOOD WITH WATER. USE OF CO2 OR FOAM MAY NOT BE EFFECTIVE.



## BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

EFFECTIVE DATE 07-26-89

PRODUCT: SLIMICIDE C-78P

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----  
 USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE  
 RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.  
 VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION TO MAINTAIN DUST CONCENTRATIONS BELOW THE EXPOSURE  
 LIMIT OF 10MG/M3(PEL/TLV) FOR NUISANCE DUSTS.

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,  
 USE RESPIRATOR WITH ORGANIC VAPOR, ACID GASSES & DUST/MIST CARTRIDGES

RECOMMENDED SKIN PROTECTION\*\*\*

GAUNTLET-TYPE NEOPRENE GLOVES, CHEMICAL RESISTANT APRON

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*

AIRTIGHT CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----  
 STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS &amp; PAILS CLOSED WHEN NOT IN USE.

KEEP DRY. DO NOT STORE AT HIGH TEMPERATURE OR NEAR OXIDIZABLES OR  
 COMBUSTIBLES

HANDLING INSTRUCTIONS\*\*\*

GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE

SPECIFIC- OXIDIZER. AVOID ALL CONTACT WITH REDUCING AGENTS, OILS, GREASES,  
 ORGANICS AND ACIDS.

\*\*\*\*\*  
 THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD  
 HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)  
 \*\*\*\*\*

## APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE  
 EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.  
 ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...FIFRA(40CFR):EPA REG.NO. 5785-65-3876

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE  
 IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD CLASSIFICATION: OXIDIZER

...DOT SHIPPING DESIGNATION IS: UN1479 OXIDIZER, N.O.S.

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO  
 CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND FIRE

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 1 ; SPECIAL - OXY ; PE - C

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVÖSE, PA. 19047

9/15/89      PRODUCT: SLIMICIDE C-78P  
                 AQUATIC TOXICOLOGY

DAPHNIA MAGNA

0% MORTALITY:      MG/L  
48 HR. LC50:      0.5 MG/L

RAINBOW TROUT

0% MORTALITY:      MG/L  
96 HR. LC50:      0.9 MG/L

FATHEAD MINNOW

0% MORTALITY:      MG/L  
96 HR. LC50:      2.3 MG/L

9/15/89      MAMMALIAN TOXICOLOGY

ORAL LD50 -NO DATA

DERMAL LD50 -NO DATA

SKIN IRRITATION SCORE-NO DATA

EYE IRRITATION SCORE-NO DATA

INHALATION-NO DATA



## AQUATIC TOXICITY PROFILE

BUCKMAN LABORATORIES INTERNATIONAL, INC.

Bulab 6040

8/26/92

### Bulab 6040

#### Introduction

The active ingredient in this product, Sodium bromide (NaBr), is a commonly used precursor to hypobromous acid (HOBr) in cooling water systems. When mixed with chlorine or a hypochlorite species, the bromide ion (Br<sup>-</sup>) is converted to hypobromous acid, which is preferred to hypochlorous acid due to lower environmental impact and greater efficacy.

#### Active Ingredient:

Sodium Bromide ..... 40% by wt.

#### Aquatic Toxicity Information<sup>1</sup>:

The following studies were conducted on Hypobromous acid, which is the active biocide which will be encountered in the aqueous setting. All values are concentrations of hypobromous expressed as bromine.

24 hour LC50 - <i>Daphnia magna</i>	1.05 mg/L
48 hour LC50 - <i>Daphnia magna</i>	0.71 mg/L
96 hour LC50 - Bluegill sunfish	0.52 mg/L
96 hour LC50 - Rainbow trout	0.23 mg/L
96 hour LC50 (flow through) - Sheepshead minnow	0.19 mg/L
96 hour LC50 (flow through) - Mysid shrimp	0.17 mg/L
96 hour EC50 (flow through) - Eastern oyster	0.52 mg/L

<sup>1</sup>All environmental toxicity data for this product are the property of Great Lakes Chemical Corporation.



### Environmental Toxicity Information<sup>2</sup>

The following studies were conducted on hypochlorous acid or hypobromous acid, which are the active biocide which will be encountered in the aqueous setting.

Chlorine®
$$\underline{\text{Cl}_2 + \text{NaBr}^{\text{d}}}$$

<sup>2</sup>All environmental toxicity data for this product are the property of Great Lakes Chemical Corporation.

<sup>3</sup> Toxicity values based on the microequivalent total residual oxidants per liter (ueq TRO/L) or the amount of

<sup>d</sup> When applied with chlorine, sodium bromide is oxidized by hypochlorous acid to hypobromous acid and sodium chloride.

				<p>The information on this Data Sheet reflects the latest toxicological information and data that we have on this product. However, no representation or warranty of any kind, express or implied, is made as to this Data Sheet or the contents hereof, and no such warranty shall be implied by law.</p> <p>The exclusive remedy against Buckman Laboratories International, Inc. for any cause of action relating to this Data Sheet is a claim for damages not to exceed any price paid for the Data Sheet, without regard to whether</p>
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Chlorine<sup>5</sup>

Cl<sub>2</sub> + NaBr<sup>6</sup>

96 Hr LC50 (flow through) - Silverside	4.03	143	0.82	65
96 Hr LC50 (intermittent) - Silverside	5.44	193	4.31	344
96 Hr LC50 (flow through) - Mysid shrimp	1.75	62	1.16	92
96 Hr LC50 (intermittent) - Mysid shrimp	5.92	210	4.60	367
96 Hr EC50 (flow through) - Mysid shrimp*	<0.59	<21	0.62	<50

<sup>5</sup> Toxicity values based on the microequivalent total residual oxidants per liter (ueq TRO/L) or the amount of

<sup>6</sup> When applied with chlorine, sodium bromide is oxidized by hypochlorous acid to hypobromous acid and sodium chloride.

The information on this Data Sheet reflects the latest toxicological information and data that we have on this product. Any use of this product or method or application which is not described in the Product Data Sheet is the responsibility of the user.

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19047  
BETZ MATERIAL SAFETY DATA SHEET  
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : CLAM-TROL CT-1

(PAGE 1 OF 3)  
EFFECTIVE DATE 05-18-89  
PRINTED: 3-SEP-1989  
REV: SEC.3

PRODUCT APPLICATION : WATER-BASED MICROBIAL CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----  
INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC  
PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS  
LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE  
AND CHRONIC HAZARDS OF THIS FORMULATION.

ETHYLENE GLYCOL\*\*\*CAS#107-21-1; LIVER, KIDNEY AND BLOOD TOXIN; CNS  
DEPRESSANT; ANIMAL TERATOGEN (HIGH ORAL DOSES); PEL/TLV: 50PPM-C.

ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE\*\*\*CAS#68424-85-1; CORROSIVE (EYES);  
PEL: NONE; TLV: NONE.

ISOPROPYL ALCOHOL\*\*\* (IPA); CAS#67-63-0; FLAMMABLE LIQUID; CHRONIC  
OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY TOXICITY;  
PEL/TLV: 400PPM (500PPM-STEL).

DODECYLGUANIDINE HYDROCHLORIDE\*\*\* (DGH); CAS#13590-97-1; CORROSIVE; PEL: NONE;  
TLV: NONE.

ETHYL ALCOHOL\*\*\* (ETHANOL); CAS#64-17-5; FLAMMABLE; MAY CAUSE DEFATTING  
DERMATITIS, DIZZINESS AND HEADACHE; PEL: 1000PPM; TLV: 1000PPM.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 5.3	ODOR: MILD
FL. PT. (DEG. F): 116	SETA (CC)	SP. GR. (70F) OR DENSITY: 1.022
VAPOR PRESSURE (MMHG): 23		VAPOR DENSITY (AIR=1): >1
ISC CPS 70F: 23		% SOLUBILITY (WATER): 100
VAP. RATE: <1	ETHER=1	APPEARANCE: COLORLESS
PHYSICAL STATE: LIQUID		FREEZE POINT (DEG. F): <-30

-----SECTION 3-----REACTIVITY DATA-----

STABLE, MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE BETZ TANK  
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

EFFECTIVE DATE 05-18-89

PRODUCT: CLAM-TROL CT-1

## -----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

CORROSIVE TO SKIN. POTENTIAL SKIN SENSITIZER

ACUTE EYE EFFECTS \*\*\*

CORROSIVE TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

VAPORS, GASES, MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER

RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE \*\*\*

PROLONGED OR REPEATED OVEREXPOSURES MAY CAUSE: TISSUE NECROSIS; BLOOD CELL DAMAGE OR IMPAIR BLOOD CELL FUNCTION; REPRODUCTIVE SYSTEM TOXICITY; SKIN SENSITIZATION.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

INHALATION OF VAPORS/MISTS/AEROSOLS MAY CAUSE EYE, NOSE, THROAT AND LUNG IRRITATION; SKIN CONTACT MAY CAUSE SEVERE IRRITATION OR BURNS.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS \*\*\*

MAY BE TOXIC IF ORALLY INGESTED.

## -----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT \*\*\*

REMOVE CLOTHING. WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FOR 15 MIN. IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT \*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE \*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA. APPLY NECESSARY FIRST AID TREATMENT. IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION \*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

## -----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS \*\*\*

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE CONTAMINATED ABSORBENT SHOULD BE CONSIDERED A PESTICIDE AND DISPOSED OF IN AN APPROVED PESTICIDE LANDFILL. SEE PRODUCT LABEL STORAGE AND DISPOSAL INSTRUCTIONS.

REMOVE IGNITION SOURCES. FLUSH AREA WITH WATER. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS \*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS) -

DISPOSE OF IN APPROVED PESTICIDE FACILITY OR ACCORDING TO LABEL INSTRUCTIONS

FIRE EXTINGUISHING INSTRUCTIONS \*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER



BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

EFFECTIVE DATE 05-18-89

PRODUCT: CLAM-TROL CT-1

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,

USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE & DUST/MIST PREFILTER

RECOMMENDED SKIN PROTECTION\*\*\*

GAUNTLET-TYPE RUBBER GLOVES, CHEMICAL RESISTANT APRON

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES. FACE SHIELD

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

STORE IN COOL VENTILATED LOCATION. STORE AWAY FROM OXIDIZERS

HANDLING INSTRUCTIONS\*\*\*

GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE

SPECIFIC- COMBUSTIBLE. DO NOT USE AROUND SPARKS OR FLAMES. BOND CONTAINERS

DURING FILLING OR DISCHARGE WHEN PERFORMED AT TEMPERATURES AT OR

ABOVE THE PRODUCT FLASH POINT.

\*\*\*\*\*

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD

HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

\*\*\*\*\*

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...FIFRA(40CFR):EPA REG.NO. 3876-145

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE

IDENTIFICATION NUMBER IS: D001=IGNITABLE; D002=CORROSIVE

...DOT HAZARD CLASSIFICATION: CORROSIVE TO SKIN, COMBUSTIBLE

...DOT SHIPPING DESIGNATION IS: UN1760 CORROSIVE LIQUID, N.O.S.

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: ETHYLENE GLYCOL(107-21-1) , 21.0-30.0% ;

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE), DELAYED(CHRONIC) AND FIRE

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

VFPA/HMIS : HEALTH - 3 ; FIRE - 2 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - D



BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19047

9/15/89      PRODUCT: CLAM-TROL CT-1  
                 AQUATIC TOXICOLOGY

RAINBOW TROUT

0% MORTALITY: 10      MG/L  
96 HR. LC50:      14.7 MG/L

DAPHNIA MAGNA

0% MORTALITY: 0.16      MG/L  
48 HR. LC50:      0.4 MG/L

FATHEAD MINNOW

0% MORTALITY: 1.55      MG/L  
96 HR. LC50:      3.0 MG/L

9/15/89      MAMMALIAN TOXICOLOGY

ORAL LD50 -NO DATA

DERMAL LD50 -NO DATA

SKIN IRRITATION SCORE-NO DATA

EYE IRRITATION SCORE-NO DATA

INHALATION-NO DATA

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19053  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : POWERLINE 3461

(PAGE 1 OF 3)  
EFFECTIVE DATE: 03-18-93  
PRINTED: 03-18-93

PRODUCT APPLICATION: WATER-BASED DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

POLYEPOXYSUCCINIC ACID, DISODIUM SALT\*\*\*CAS# 109578-44-1; CORROSIVE;  
PEL: NOT DETERMINED; TLV: NOT DETERMINED

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS (APPROX.)	12.6	ODOR:	SLIGHT
FL. PT. (DEG. F):	> 200 P-M (CC)	SP. GR. (70F):	1.246
VAPOR PRESSURE (mmHG):	~ 18.0	VAPOR DENSITY (AIR=1):	> 1.00
VISC cps 70F:	26	% SOLUBILITY (WATER):	100.0
EVAP RATE:	< 1.00 (ETHER=1)	APPEARANCE:	YELLOW TO AMBER
PHYSICAL STATE:	LIQUID	FREEZE POINT (DEG. F):	27.00

-----SECTION 3-----REACTIVITY DATA-----

STABLE. MAY REACT WITH ACIDS. DO NOT CONTAMINATE. BETZ TANK CLEAN-OUT  
CATEGORY 'C'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT : POWERLINE 3461

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

CORROSIVE TO SKIN

ACUTE EYE EFFECTS \*\*\*

CORROSIVE TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

PROLONGED OR REPEATED CONTACT MAY CAUSE TISSUE NECROSIS AND/OR DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

PRE-EXISTING SKIN, LUNG AND EYE CONDITIONS

SYMPTOMS OF EXPOSURE \*\*\*

CAUSES SEVERE IRRITATION, BURNS OR TISSUE ULCERATION WITH SUBSEQUENT SCARRING.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT \*\*\*

REMOVE CLOTHING. WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FOR 15 MIN. IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA. APPLY NECESSARY FIRST AID TREATMENT. IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE, AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.  
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE) PROPER FIRE EXTINGUISHING MEDIA:  
DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT : POWERLINE 3461

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE  
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.  
VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,  
USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION\*\*\*

GAUNTLET-TYPE NEOPRENE GLOVES, CHEMICAL RESISTANT APRON  
WASH OFF AFTER EACH USE REPLACE AS NECESSARY.

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES. FACE SHIELD

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS\*\*\*

KEEP CONTAINERS CLOSED WHEN NOT IN USE.

DO NOT FREEZE. IF FROZEN, THAW AND MIX COMPLETELY PRIOR TO USE

HANDLING INSTRUCTIONS\*\*\*

ALKALINE. CORROSIVE (SKIN/EYES). DO NOT MIX WITH ACIDIC MATERIAL.

\*\*\*\*\*  
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD  
\*\*\*\*\*

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE  
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.  
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY  
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE  
IDENTIFICATION NUMBER IS: D002=CORROSIVE (SKIN, PH)

...DOT HAZARD/UN#/ER GUIDE# IS : CORROSIVE TO SKIN/UN1760/#60

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE (ACUTE); DELAYED (CHRONIC)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 3; FIRE - 1; REACTIVITY - 0; SPECIAL - COR; PE - D

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA 19053

PRODUCT: POWERLINE 3461

AQUATIC TOXICOLOGY

Fathead Minnow

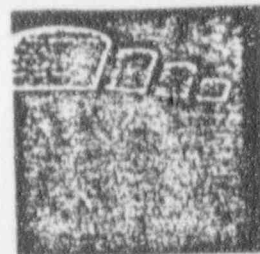
96 hour LC50: 1550 MG/L

No effect level: 1290 MG/L

Daphnia magna

48 hour LC50: 1520 MG/L

No effect level: 880 MG/L



# product facts

## BETZ® 860 DEPOSIT REMOVAL PRODUCT

- Excellent for removal of calcium carbonate scale from cooling water systems.
- Also effective on calcium phosphate deposits.
- Can clean cooling systems of these deposits on-line eliminating production downtime.

### DESCRIPTION AND USE

Betz 860 is a unique trade secreted material designed to remove calcium carbonate and/or calcium phosphate deposits from industrial and power cooling water systems. These deposits, which contribute to lost heat transfer or reduced water velocity, can be removed safely and easily, thus aiding in restoring a cooling system to its normal operating conditions.

Betz 860 is designed as a one-time supplement to normal cooling water system treatment. It is not applicable as a continuous cooling system treatment product.

### TREATMENT AND FEEDING REQUIREMENTS

This product is designed to be used in two distinct manners:

1. Recirculating through a cooling water system.
2. Fill and soak for large industrial and power equipment.

The product is not designed for small industrial heat exchangers due to packaging restrictions.

Dosage - Proper treatment levels of Betz 860 depend on the thickness of the calcium carbonate and/or calcium phosphate deposit and the size of the system. Feed of the product is not based on system or equipment water

volume. Betz will provide control parameters and monitoring guidelines for specific applications.

Feed Point - Betz 860 should be fed to the cooling tower basin if being utilized in a recirculating cooling system or to the makeup or recirculation pumps if cleaning large individual pieces of equipment (i.e.; power plant condenser).

System Parameters - Betz 860 can be fed to all cooling water systems except those containing galvanized material.

### GENERAL PROPERTIES

Appearance	yellow to dark brown liquid
Density 70 °F(21 °C)	9.14 pounds per gallon
Flash Point (closed cup)	>200 °F(93 °C)
Freeze Point	26 °F(-3 °C)
Initial Crystallization	80 °F(27 °C)
pH (undiluted)	1.4
(5% solution)	2.3
Pour Point (ASTM)	31 °F(-1 °C)
Specific Gravity 70 °F(21 °C)	1.098
Viscosity 100 °F(38 °C)	9.0 CPS

### PACKAGING INFORMATION

Betz 860 is a liquid material available only in bulk shipment quantities.

### SAFETY PRECAUTIONS

Material Safety Data Sheets containing detailed information relative to this product are available upon request.



BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19053  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : BETZ 860

(PAGE 1 OF 3)  
EFFECTIVE DATE 02-05-92  
PRINTED: 2-Jul-1992

REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : CONDENSER CONDITIONING COMPOUND.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----  
INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC  
PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS  
LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE  
AND CHRONIC HAZARDS OF THIS FORMULATION.

TRADE SECRET INGREDIENT(122);NUISANCE DUST;POSSIBLE EYE IRRITANT;  
PEL/TLV:NUISANCE DUST. NOTE:MANUFACTURER'S RECOMMENDED EXPOSURE  
LIMIT:10MG/M3. TSNR 125438 - 5214P  
TRADE SECRET INGREDIENT(E195);EYE IRRITANT;PEL:NONE;TLV:NONE. TSNR 125438  
- 5118P

TRADE SECRET INGREDIENT(222);OXIDIZER;CORROSIVE;PULMONARY DAMAGE;DENTAL  
EROSION;PEL/TLV:5MG/M3(10MG/M3-STEL). TSNR 125438 - 5238P

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 1.4	ODOR: ACID
FL.PT.(DEG.F): >200	P-M(CC)	SP.GR.(70F)OR DENSITY: 1.098
VAPOR PRESSURE(mmHG): 18		VAPOR DENSITY(AIR=1): <1
VISC cps70F: ND		%SOLUBILITY(WATER): 100
EVAP.RATE: <1	ETHER=1	APPEARANCE: YELLOW TO DARK BROWN
PHYSICAL STATE: LIQUID		FREEZE POINT(DEG.F): 26

-----SECTION 3-----REACTIVITY DATA-----

STABLE.MAY REACT WITH ORGANICS OR ALKALINE MATERIALS.DO NOT  
CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'D'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: BETZ 860

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS \*\*\*

SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

VAPORS, GASES, MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER  
RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

PROLONGED OR REPEATED EXPOSURE MAY CAUSE LUNG DAMAGE AND/OR MAY CAUSE  
PRIMARY IRRITANT DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

INHALATION MAY CAUSE IRRITATION OF RESPIRATORY TRACT; SKIN CONTACT MAY  
CAUSE ITCHING AND/OR REDNESS.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS \*\*\*

MAY BE TOXIC IF ORALLY INGESTED OR INHALED.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF  
SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A  
PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE  
FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE  
CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB  
ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE  
CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL,  
SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.  
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD  
SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY  
SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A  
PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT  
PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING  
APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA:  
DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: BETZ 860

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----  
USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE  
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.  
VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS  
RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,  
USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION\*\*\*

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----  
STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

USE APPROVED CONTAINERS ONLY.STORE IN COOL,WELL-VENTED  
AREA.CONTACT WITH METALS MAY RELEASE FLAMMABLE HYDROGEN GAS.

HANDLING INSTRUCTIONS\*\*\*

CONTAINS AN OXIDIZER. AVOID ALL CONTACT WITH REDUCING AGENTS,  
OILS, GREASES, ORGANICS AND ACIDS.

\*\*\*\*\*  
THIS MSDS WAS WRITTEN TO COMPLY WITH THE (SHA HAZARD COMMUNICATION STANDARD  
\*\*\*\*\*

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE  
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.  
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

5,466 GALLONS DUE TO (222);9,111 GALLONS DUE TO (122)

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE  
IDENTIFICATION NUMBER IS: D002=CORROSIVE (PH,STEEL)

...DOT HAZARD/UN#/ER GUIDE# IS: CORROSIVE TO STEEL UN1760/#60

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: TRADE SECRET--(222)INORGANIC ACID ;

...SARA SECTION 313 CHEMICALS: TRADE SECRET--(222)INORGANIC ACID , 2.0-5.0% ;

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - B

ACUTE EFFECTS OF  
BETZ 865  
ON THE RAINBOW TROUT, *Oncorhynchus mykiss*

(In Accordance with a Modification of Method EPA/600/4-90/027)

FINAL REPORT

AUTHOR

York Terrell

PERFORMING LABORATORY

Aqua Survey, Inc.  
499 Point Breeze Road  
Flemington, New Jersey 08822

LABORATORY PROJECT ID

BR93-2183B

JOB #: 93-100

STUDY SPONSOR

Betz Laboratories, Inc.  
200 Witmer Road  
Horsham, PA 19044

STUDY COMPLETION DATE

April 21, 1993



Acute Effects of Betz 865  
on the Rainbow Trout, *Oncorhynchus mykiss*

# ABSTRACT

The acute toxicity of the test substance Betz 865 to the Rainbow trout, *Oncorhynchus mykiss* was determined in a 96-hour, static daily renewal aquatic effects test. A total of 20 trout were exposed to each of 5 test substance concentrations. Tests were performed in replicates of two (10 trout per replicate). Exposure concentrations used throughout this report and in all endpoint calculations are based on the nominal concentration of the active test substance. The 96-hour, mean exposure concentrations were 313, 625, 1250, 2500 and 5000 mg I/L. Replicate results were pooled.

Trout used for this test were approximately 20-30 days of age at the start of the test. Water used as diluent water was moderately hard laboratory fresh water (with a hardness of 72 mg/L as CaCO<sub>3</sub>). The test temperature was  $12 \pm 1^{\circ}\text{C}$ . The pH of the test stock solution was adjusted to the pH of the diluent water (approximately 7.9) using 1N calcium hydroxide.

During the test, 95 and 100% mortality was observed in the 2500 and 5000 mg I/L test concentrations, respectively, at the 24-hour observation period. The lone survivor in the 2500 mg I/L test concentration was observed spasmodic. At 48-hours, 100% mortality was observed in the 2500 mg I/L test concentration. No mortality or abnormality was observed in any other test concentration or diluent water control.

The 96-hour LC<sub>50</sub> value for Rainbow trout, *Oncorhynchus mykiss*, was calculated to be 1768 mg I/L (Binomial Method) with 95% confidence limits of 1250 and 2500 mg I/L. The acute No Observed Effect Concentration (NOEC) value was determined to be 1250 mg I/L.

The study results indicate that an isolated or intermittent exposure to a concentration of Betz 865, less than or equal to 1250 mg I/L, is unlikely to have an adverse effect on Rainbow trout.

It should be noted that toxicity values may vary with different species, temperatures and water qualities.





ACUTE EFFECTS OF  
BETZ 865  
ON THE CLADOCERAN, *DAPHNIA MAGNA*

(In Accordance with a Modification of Method EPA/600/4-90/027)

FINAL REPORT

AUTHOR

York Terrell

PERFORMING LABORATORY

Aqua Survey, Inc.  
499 Point Breeze Road  
Flemington, New Jersey 08822

LABORATORY PROJECT ID

BR93-2183A

JOB # 93-100

STUDY SPONSOR

Betz Laboratories, Inc.  
200 Witmer Road  
Horsham, PA 19044

STUDY COMPLETION DATE

April 21, 1993





The Acute Effects of Betz 865  
On the Cladoceran, *Daphnia magna*

# ABSTRACT

The acute toxicity of the test substance Betz 865 to the cladoceran, *Daphnia magna*, was determined in a 48-hour, static daily renewal acute effects test. A total of 20 cladocerans were exposed to each of five test substance concentrations. Tests were performed in replicates of two (10 organisms per replicate). Exposure concentrations used throughout this report and in all endpoint calculations are the nominal concentrations of the active test substance. The 48-hour mean exposure concentrations were 250, 500, 1000, 2000 and 4000 mg I/L. Replicate results were pooled.

Cladocerans used for this test were less than 24 hours of age at the start of the test. Water used as diluent water was moderately hard laboratory freshwater (with a hardness of 76 mg/L as  $\text{CaCO}_3$ ). The test temperature was  $25 \pm 1^\circ\text{C}$ . The pH of the test stock solution was adjusted to the pH of the diluent water (approximately 7.6) using 1N calcium hydroxide.

During the test, some organisms were observed quiescent in the 2000 mg I/L test concentration at 24 hours. Mortality ranged from 15% in the 250 mg I/L test concentration to 100% in the 2000 and 4000 mg I/L test concentrations. Some organisms (both dead and alive) in all test concentrations were observed entrapped in what appeared to be precipitation from calcium hydroxide used to adjust the pH of the test stock solution. This suggests that some of the mortality observed in this test may have been the results of mechanics as well as toxicity. No mortality or abnormality was observed in the diluent water control.

The 48-hour  $\text{EC}_{50}$  value for the cladoceran, *Daphnia magna* was calculated to be 1040.9 mg I/L (Trimmed Spearman-Kärber Method) with associated 95 percent confidence limits of 780.7 and 1388.0 mg I/L. No acute No Observed Effect Concentration (NOEC) value was observed.

These study results indicate that an isolated or intermittent exposure to a concentration of Betz 865 equal to 1040.9 mg I/L is likely to be lethal to 50% of the cladoceran, *Daphnia magna*.

It should be noted that toxicity values may vary with different species, temperatures and water qualities.



BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19053  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

(PAGE 1 OF 3)

EFFECTIVE DATE: 10-02-92

PRINTED: 10-02-92

PRODUCT : POWERLINE DEFO3 PROPOSED

FOR PROPOSAL USE ONLY

REVISIONS TO SECTIONS: 1&amp;4

PRODUCT APPLICATION: WATER-BASED DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS-(HEDP) \*\*\*CAS# 2809-21-4; EYE IRRITANT; PEL: NONE; TLV: NONE;

Final physical properties have not been determined as yet on this custom product. However, this MSDS is representative of the ingredients and safety precautions. When final properties are complete, a new MSDS will be prepared.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

TH: AS IS (APPROX.) < 1.0	ODOR: MILD
FL. PT. (DEG. F): > 200 P-M (CC)	SP. GR. (70F): 1.406
VAPOR PRESSURE (mmHG): ~ 18.0	VAPOR DENSITY (AIR=1): < 1.00
VISC cps 70F: 80	% SOLUBILITY (WATER): 100.0
EVAP RATE: < 1.00 (ETHER=1)	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID	FREEZE POINT (DEG. F): < -30.00

-----SECTION 3-----REACTIVITY DATA-----

STABLE. MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE BETZ TANK  
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

## BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT : POWERLINE DEF03 PROPOSED

## -----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

MAY CAUSE MODERATE IRRITATION TO THE SKIN

ACUTE EYE EFFECTS \*\*\*

SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE REDNESS OR ITCHING OF SKIN, IRRITATION AND/OR TEARING OF EYES (DIRECT CONTACT).

## -----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT \*\*\*

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

## -----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.  
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT  
PRODUCT (AS IS) -  
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA:  
DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

## BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT : POWERLINE DEPO3 PROPOSED

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----  
USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE  
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.  
VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,  
USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION\*\*\*

RUBBER GLOVES

WASH OFF AFTER EACH USE REPLACE AS NECESSARY.

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----  
STORAGE INSTRUCTIONS\*\*\*

KEEP CONTAINERS CLOSED WHEN NOT IN USE.

USE APPROVED CONTAINERS ONLY. STORE IN COOL, WELL-VENTED AREA. CONTACT WITH  
METALS MAY RELEASE FLAMMABLE HYDROGEN GAS.

HANDLING INSTRUCTIONS\*\*\*

ACIDIC. DO NOT MIX WITH ALKALINE MATERIAL.

\*\*\*\*\*  
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD  
\*\*\*\*\*

## APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE  
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.  
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE  
IDENTIFICATION NUMBER IS: D002-CORROSIVE (PH, STEEL)

...DOT HAZARD/UN#/ER GUIDE# IS : CORROSIVE TO STEEL/UN1760/#60

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE (ACUTE)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 2; FIRE - 1; REACTIVITY - 0; SPECIAL - CORR; PE - B

BETZ LABORATORIES  
4635 SOMERTON ROAD , TREVOSE, PA 19053

PRODUCT: POWERLINE DEF03 PROPOSED

AQUATIC TOXICOLOGY

Daphnia magna (Data generated on similar product)

NOTE: Due to the acidic nature of the test solutions, pH  
was adjusted to levels commonly encountered in treatment water

48 Hour Static Screen

No effect level: 500 MG/L

Fathead Minnow (Data generated on similar product)

NOTE: Due to the acidic nature of the test solutions, pH  
was adjusted to levels commonly encountered in treatment water

48 Hour Static Screen

No effect level: 500 MG/L

MAMMALIAN TOXICOLOGY

NO DATA AVAILABLE

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19047  
BETZ MATERIAL SAFETY DATA SHEET  
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : POWERLINE 3690

(PAGE 1 OF 3)  
EFFECTIVE DATE 06-09-89  
PRINTED: 3-SEP-1989  
REV: SEC. 2&3

PRODUCT APPLICATION : WATER-BASED DEPOSIT CONTROL AGENT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----  
INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC  
PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS  
LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE  
AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 12.5	ODOR: SLIGHT
FL. PT. (DEG. F):	>200 SETA (CC)	SP. GR. (70F) OR DENSITY: 1.02
VAPOR PRESSURE (MMHG):	18	VAPOR DENSITY (AIR=1): <1
VISC CPS 70F:	30	% SOLUBILITY (WATER): 100
EVAP. RATE:	<1 ETHER=1	APPEARANCE: COLORLESS
PHYSICAL STATE:	LIQUID	FREEZE POINT (DEG. F): 31

-----SECTION 3-----REACTIVITY DATA-----

STABLE. MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE. BETZ TANK  
CLEAN-OUT CATEGORY 'A'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.



BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE 3690

EFFECTIVE DATE 06-09-89

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS \*\*\*

MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.  
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

EFFECTIVE DATE 06-09-89

PRODUCT: POWERLINE 3690

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----  
USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE  
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.  
VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION  
RECOMMENDED RESPIRATORY PROTECTION\*\*\*  
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,  
USE A RESPIRATOR WITH DUST/MIST FILTERS.  
RECOMMENDED SKIN PROTECTION\*\*\*  
RUBBER GLOVES  
WASH OFF AFTER EACH USE. REPLACE AS NECESSARY  
RECOMMENDED EYE PROTECTION\*\*\*  
SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----  
STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.  
REASONABLE AND SAFE CHEMICAL STORAGE  
HANDLING INSTRUCTIONS\*\*\*  
GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE  
SPECIFIC- ALKALINE. DO NOT MIX WITH ACIDIC MATERIAL.

\*\*\*\*\*  
THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD  
HAROLD M. WERSH (ENVIRONMENTAL INFORMATION COORDINATOR)  
\*\*\*\*\*

APPENDIX: REGULATORY INFORMATION  
THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE  
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.  
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY  
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:  
NOT APPLICABLE  
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE  
IDENTIFICATION NUMBER IS: D002=CORROSIVE  
...DOT HAZARD CLASSIFICATION: NOT APPLICABLE  
...DOT SHIPPING DESIGNATION IS: NOT APPLICABLE

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO  
CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS  
...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS  
...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS  
...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312  
...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS  
NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ALK ; PE - B

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVÖSE, PA. 19047

9/15/89      PRODUCT: POWERLINE 3690  
                 AQUATIC TOXICOLOGY

DAPHNIA MAGNA

0% MORTALITY: 500      MG/L  
48 HR. SCR.

RAINBOW TROUT

0% MORTALITY: 1000      MG/L  
48 HR. SCR.

9/15/89      MAMMALIAN TOXICOLOGY

ORAL LD50 -NO DATA

DERMAL LD50 -NO DATA

SKIN IRRITATION SCORE-NO DATA

EYE IRRITATION SCORE-NO DATA

INHALATION-NO DATA



**Buckman Laboratories**

**INDUSTRIAL WATER TREATMENT DIVISION**

# DISPERSANTS

## BULAB® 8007

W61W

- Penetrant and dispersant for microbial and organic deposits
- Effective film-forming organic corrosion inhibitor
- Effective component of alkaline and acidic cleaning and descaling formulations

### General

Bulab 8007 is a liquid penetrant and dispersant used in the treatment of industrial and commercial cooling water systems. Its unique properties make Bulab 8007 a highly versatile product.

When the product is used as a biodispersant with microbicides, more effective microorganism control is achieved. Bulab 8007 effectively prevents the deposition of organic fouling materials (such as oils and greases) in circulating water systems. It also forms a thin film on metal surfaces that helps prevent corrosion.

Since it is an unusually effective penetrant and dispersant, Bulab 8007 is particularly useful as a component of alkaline and acidic industrial cleaning solutions. Its foam- and corrosion-inhibiting properties are valuable benefits of its use in shutdown cleaning procedures.

### Product Data

Appearance:	Clear brown liquid
Odor:	Slight fatty odor
pH (100 ppm in water):	No effect on pH of water
Flash point (Tagliabue closed-cup method):	Above 135 °C (275 °F)
Density at 25 °C (77 °F):	0.90 g/mL (7.5 lb/U.S. gal)
Approximate volume per kg:	1110 mL
Approximate volume per pound:	505 mL

### Dosage and Feeding

The specific dosage level of Bulab 8007 will vary depending on the system operating conditions and the particular benefit desired.

Bulab 8007 can be used as received. For best distribution, the product should be added to the system at a point of good agitation.

Your Buckman representative will recommend the most effective treatment program for your specific needs.

### Storage and Handling

Bulab 8007 is available in nonreturnable drums or bulk containers. Materials of construction suitable for storing and handling Bulab 8007 include ferrous metals, Penton, polypropylene, molded nylon, and Teflon. In the concentrated form, the product can have an adverse effect on rubber, polyvinyl chloride, acrylics, and certain other plastics. Bulab 8007 is relatively unaffected by extreme temperatures.

Improper handling of this product can be injurious to workers. Observe all safety precautions shown on the label and in the Material Safety Data Sheet.

Seller warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions. Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty. The exclusive remedy against seller shall be a claim for damages not to exceed the purchase price of the product, without regard to whether such a claim is based upon breach of warranty or tort. Printed in U.S.A. (12/90)

Buckman Laboratories in Argentina, Australia, Austria, Belgium, Brazil, Canada, France, Germany, Japan, Mexico, Portugal, South Africa, Spain, United Kingdom, and U.S.A.



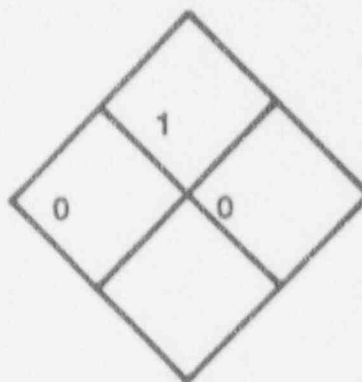
**BUCKMAN LABORATORIES, INC.**  
**MATERIAL SAFETY DATA SHEET**



**BULAB 8007**

Revision Date: 6/01/92

Buckman Laboratories, Inc.  
1256 North McLean Boulevard  
Memphis, TN 38108



Phone 1-800-BUCKMAN

24 Hour Emergency Phone  
(901) 767-2722

**SECTION 1**

**OSHA HAZARD CLASSIFICATIONS**

Nonhazardous.

**SECTION 2**

**HAZARDOUS COMPONENTS**

The components of this product comprise proprietary information.

**SECTION 3**

**PRECAUTIONARY LABEL INFORMATION**

This section not applicable to non-biocides.

**SECTION 4**

**FIRST AID INFORMATION**

**Eye exposure:** Flush immediately with copious amounts of tap water or normal saline (minimum of 15 minutes). Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.

**Skin exposure:** Wash exposed area with plenty of soap and water. Repeat washing. Remove contaminated clothing and wash thoroughly before reuse. If irritation persists consult a health care professional.

**Inhalation:** If exposure by inhalation is suspected, immediately move exposed individual to fresh air. If individual experiences nausea, headache, dizziness, has difficulty in breathing or is cyanotic, seek a health care professional immediately.

**Ingestion:** DO NOT INDUCE VOMITING. Rinse mouth with copious amounts of water or milk, first. Irrigate the esophagus and dilute stomach contents by slowly giving one (1) to two (2) glasses of water or milk. Avoid giving alcohol or alcohol related products. In cases where the individual is semi-comatose, comatose or convulsing, DO NOT GIVE FLUIDS BY MOUTH. In case of intentional ingestion of the product seek medical assistance immediately; take individual to the nearest medical facility.

**NOTE TO PHYSICIAN:** No specific antidote is known. Treat Symptoms. Medical consultation is available 24 hours



a day. Call the Buckman Center for Product Information at (901) 767-2722.

## SECTION 5

## PRIMARY ROUTES OF EXPOSURE

### 1. Effects from Acute Exposure:

**Eye exposure:** May cause mild irritation depending on the length of exposure, solution concentration and first aid measures.

**Skin exposure:** May cause mild skin irritation depending on length of exposure, solution concentration and first aid measures.

**Inhalation:** May cause irritation of mucous membranes and the lungs. Exposed individuals should be monitored for respiratory distress, bronchitis or pneumonia.

**Ingestion:** No data is available on human ingestion. Based on the components and the acute oral toxicity, no adverse effects are expected.

### 2. Effects from Chronic Exposure:

## SECTION 6

## TOXICOLOGICAL INFORMATION

**Acute effects:** Oral LD50 = 5 - 10 g/kg (female rat), 10 - 20 g/kg (male rat)

**Acute Dermal LD50:** 8,000.0 mg/kg

**Irritant effects:** None

**Sensitization effects:** None.

**Carcinogenic potential:** Not listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic; not tested by Buckman Laboratories, Inc.

**Other health effects:** None known.

## SECTION 7

## ENVIRONMENTAL TOXICOLOGICAL INFORMATION

### Acute Aquatic LC50's

96 Hr. Fathead minnow: 4.4 mg/L

96 Hr. Rainbow trout: 0.43 mg/L

## SECTION 8

## PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear amber liquid
Odor	mild
Density @ 25°C	0.9 g/mL
Flash Point	> 100°C (TCC)
Freezing Point	< 0°C
Boiling Point	> 300°F (150°C)

BULAB 8007

Page 2

Solubility ..... slightly soluble in water, soluble in many organic solvents  
pH ..... N/A  
pH (100 ppm in water) ..... 6.5 - 7.5  
Vapor Pressure ..... N/T  
o/w Partition Coefficient ..... N/T  
Oxidizing/Reducing Properties ..... Not a strong oxidizing or reducing agent

NOTE: N/A = Not Applicable, N/T = Not Tested

## SECTION 9

## FIRE AND EXPLOSION INFORMATION

Flammable limits: Not applicable.

Extinguishing media: Water fog, carbon dioxide, foam, dry chemical

Special firefighting procedures: None.

## SECTION 10

## REACTIVITY INFORMATION

Stability: stable

Incompatibility: None known.

Hazardous Decomposition Products: None known.

## SECTION 11

## HANDLING PRECAUTIONS

Rubber gloves and safety glasses or goggles are recommended.

Eye-wash fountains in the work area are recommended.

## SECTION 12

## Reserved for SATISFACTORY MATERIALS OF CONSTRUCTION

## SECTION 13

## SPILL, LEAK, AND DISPOSAL PROCEDURES

### SPILL AND LEAK RESPONSE GUIDELINES

**Important:** Before responding to a spill or leak of this product, review each section of this MSDS. Follow the recommendations given in the Handling Precautions sections. Check the Fire and Explosion Data section to determine if the use of non-sparking tools is merited. Insure that spilled or leaked product does not come into contact with materials listed as incompatible. If irritating fumes are present, consider evacuation of enclosed areas.

**Emergency Response Assistance:** Emergency technical assistance is available at any time from Buckman Laboratories, Inc., by calling (901) 767-2722.

Initially minimize area effected by the spill or leak. Block any potential routes to water systems (e.g., sewers, streams, lakes, etc.). Based on the product's toxicological and chemical properties, and on the size and location of the spill or leak, assess the impact on contaminated environments (e.g. water systems, ground, air equipment, etc.). There are no methods

available to completely eliminate any toxicity this product may have on aquatic environments. Minimize adverse effects on these environments. Buckman Laboratories, Inc. can be contacted for technical assistance. Determine if federal, state, and/or local release notification is required (see Regulatory Classifications section of this MSDS). Recover as much of the pure product as possible into appropriate containers. Later, determine if this recovered product can be used for its intended purpose. Address clean-up of contaminated environments. Spill or leak residuals may have to be collected and disposed of. Clay, soil, or commercially available absorbents may be used to recover any material that can not readily be recovered as pure product. Flushing residual material to an industrial sewer, if present at the site of a spill or leak incident, may be acceptable if authorized approval is obtained. If product and/or spill/leak residuals are flushed to an industrial sewer, insure that they do not come into contact with incompatible materials. Contact the person(s) responsible for the operation of your facility's industrial sewer system prior to intentionally flushing or pumping spills or leaks of this product to the industrial sewer.

#### DISPOSAL GUIDELINES

Note: Follow federal, state, and local regulations governing the disposal of waste materials.

Neat Product: Contact your Buckman representative or Buckman Laboratories, Inc., at (901) 278-0330.

**Contaminated Materials:** Determine if waste containing this product can be handled by available industrial effluent system or other on-site waste management unit. If off-site management is required, contact a company experienced in industrial waste management. This product is not specifically listed in 40 CFR 261 as a Resource Conservation and Recovery Act (RCRA) hazardous waste. However, spill or leak residuals may meet the criteria of a characteristic hazardous waste under this Act. Check the characteristics of the material to be disposed of and/or the physical and reactivity data given in this MSDS for the neat product.

**Container Disposal:** Empty containers, as defined by appropriate sections of the RCRA, are not RCRA hazardous wastes. However, insure proper management of any residuals remaining in container.

#### SECTION 14

#### TRANSPORTATION AND SHIPPING INFORMATION

DOT Shipping Name: NONHAZARDOUS

#### SECTION 15

#### REGULATORY INFORMATION

The following Regulations are known to apply to the use and disposal of this product. Additional Federal, State and Local regulations may also be applicable.

SARA (Superfund Amendments and Reauthorization Act):

SARA 302 Extremely Hazardous Substances List (40 CFR 300): No components of this product are listed.

SARA 312 Hazard Category: Nonhazardous.

SARA 313 Toxic Chemicals List: No Section 313 listed substances are present above de minimus levels.

CERCLA (Comprehensive Environmental Response, Compensation and Liability Act): No components of this product are listed.

RCRA (Resource Conservation and Recovery Act) Listed Hazardous Wastes: No components of this product are listed.

CWA (Clean Water Act, 40 CFR 401.15) Listed Substances: No components of this product are listed.

FDA (Food and Drug Administration): This product is approved under the following FDA (21 CFR) sections:

TSCA (Toxic Substances Control Act) Applicability: All components are listed on TSCA Inventory.

FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act): This product is not a registered pesticide.

HMIS/NPCA Ratings: Health 0; Flammability 1; Reactivity 0

HFPA Ratings: Health 0; Flammability 1; Reactivity 0

#### STATE REGULATIONS

California Proposition 65: This product has been reviewed for Prop 65 components, and the following warning applies:

WARNING: This product may contain substance(s) which are known to the State of California to cause cancer or reproductive harm.

(Contains < 150 ppb N-nitrosodimethylamine and trace amounts of residual ethylene oxide may be detectable)

Various State Right to Know Acts: Non-proprietary hazardous chemicals are listed in Section 2 of this MSDS. Should you require further information on specific proprietary chemicals or inerts please contact Buckman Laboratories' Regulatory Affairs Department.

The information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties, and handling of this product under the recommended conditions of use. Any use of this product or method of application which is not described in the Product Data Sheet is the responsibility of the user. This Material Safety Data Sheet was prepared to comply with the OSHA Hazard Communication regulations.

Buckman Laboratories, Inc. warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions.

Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty.

The exclusive remedy against seller shall be a claim for damages not to exceed the purchase price of the product, without regard to whether such a claim is based upon breach of warranty or tort.

Any controversy or claim arising out of or relating to this contract, or breach thereof, shall be settled by arbitration in accordance with the commercial arbitration rules of the American Arbitration Association, and judgement upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.



## AQUATIC TOXICITY PROFILE

BUCKMAN LABORATORIES INTERNATIONAL, INC.

bb8007.aq

March 30, 1992

### Bulab 8007

#### Ingredients:

The identity of the ingredients of this product are proprietary information of Buckman Laboratories. None of the ingredients of this product are considered to be hazardous by definition of OSHA.

#### Aquatic Toxicity Information:

##### Freshwater

48 hour LC50 - <i>Ceriodaphnia dubia</i>	7.5 mg/L
96 hour LC50 - Fathead minnow	4.4 mg/L
96 hour LC50 - Rainbow trout	5.1 mg/L

##### Estuarine/Marine

96 hour LC50 - <i>Mytilus edulis</i>	9.19 mg/L
--------------------------------------	-----------



The information on this Data Sheet reflects the latest toxicological information and data that we have on this product. However, no representation or warranty of any kind, express or implied, is made as to this Data Sheet or the contents hereof, and no such warranty shall be implied by law. The exclusive remedy against Buckman Laboratories International, Inc. for any cause of action relating to this Data Sheet is a claim for damages not to exceed any price paid for the Data Sheet, without regard to whether any such claim is based upon breach of warranty or tort.



# product facts

## BETZ FOAM-TROL® 229

- General purpose silicone emulsion
- FDA approved
- Effective over broad pH range

### DESCRIPTION AND USE

BETZ Foam-Trol 229 is a general purpose silicone emulsion antifoam/defoamer designed to control foam in waste treatment systems, gas purifying units and other chemical processes. BETZ Foam-Trol 229 may also be used to control detergent foams and soluble oil foams.

### FEEDING REQUIREMENTS

Proper treatment levels for BETZ Foam-Trol 229 depend on many factors, such as severity of the problem and conditions particular to a given installation. This product is to be used in accordance with control procedures BETZ establishes for a specific application.

BETZ Foam-Trol 229 may be fed neat (undiluted) directly from the shipping container, or diluted to a 10 percent solution. Mild agitation should be maintained for any dilution that is to be fed over a period of four hours or longer.

### SAFETY PRECAUTIONS

A Material Safety Data Sheet containing detailed information relative to this product is available upon request.

### GENERAL PROPERTIES

Appearance .....	White emulsion
Flash Point (Closed Cup) .....	>200F
Separation Temperature .....	20F
Specific Gravity (100F) .....	0.978
Viscosity (100F) .....	790 cps

### PACKAGING INFORMATION

BETZ Foam-Trol 229 is blended as a liquid, and is supplied in 55 gallon (208 liters), bung-type, non-returnable steel drums. Approximate net weight—440 pounds (200 kg) per drum.

### STORAGE

To insure maximum activity, recommended in-plant storage is one year.

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19047  
BETZ MATERIAL SAFETY DATA SHEET  
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : FOAM-TROL 229

(PAGE 1 OF 3)  
EFFECTIVE DATE 02-18-88  
REV.: SEC.2

PRODUCT APPLICATION : ANTIFOAM.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT CONTAINS NO HAZARDOUS INGREDIENTS BY OSHA REGULATIONS OR ANY STATE RIGHT-TO-KNOW REGULATIONS.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 7.4	ODOR: MILD
FL.PT.(DEG.F):	>200 SETA(CC)	SP.GR.(70F)OR DENSITY: 1.0
VAPOR PRESSURE(mmHG):	ND	VAPOR DENSITY(AIR=1): ND
VISC cps70F:	ND	%SOLUBILITY(WATER): 0
EVAP.RATE:	<1 ETHER=1	APPEARANCE: WHITE
PHYSICAL STATE:	EMULSION	FREEZE POINT(DEG.F): 17

-----SECTION 3-----REACTIVITY DATA-----

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: FOAM-TROL 229

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS \*\*\*

SLIGHTLY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

VAPORS, GASES, MISTS AND/OR AEROSOLS MAY CAUSE IRRITATION TO UPPER  
RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF  
SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A  
PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE  
FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD  
METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB  
ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE  
CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL,  
SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.  
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. IF SO, SPREAD  
SAND OR GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY  
SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A  
PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT  
PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING  
APPARATUS (FULL FACE-PIECE TYPE).

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER. FOAM OR WATER CREATE A SLIPPERY  
CONDITION. SPREAD SAND OR GRIT

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: FOAM-TROL 229

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,  
USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.

RECOMMENDED SKIN PROTECTION\*\*\*

RUBBER GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING

HANDLING INSTRUCTIONS\*\*\*

GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING, WASH BEFORE REUSE  
SPECIFIC- NORMAL CHEMICAL HANDLING

-----SECTION 9-----FEDERAL REGULATIONS-----

OSHA(29CFR)-USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTIONS  
1910.132-1910.134.

REPORTABLE QUANTITY: AS IS PRODUCT (HAZARDOUS SUBSTANCE)

TREAT AS OIL SPILL

RCRA(40CFR): IF DISCARDED, THIS MATERIAL BEARS HWI# NOT APPLICABLE

DOT(49CFR)CLASSIFICATION: NOT APPLICABLE

NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

\*\*\*\*\*

THIS DOCUMENT IS PROVIDED TO SUPPLY ALL THE INFORMATION NECESSARY TO COMPLY  
WITH OSHA HAZARD COMMUNICATIONS REGULATIONS, AND RIGHT-TO-KNOW REQUIREMENTS.  
WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO  
BE ACCURATE AS OF THE DATE HEREOF, BETZ LABORATORIES MAKES NO WARRANTY WITH  
RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

HAROLD M. HERSH  
ENVIRONMENTAL INFORMATION COORDINATOR



## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

<b>ITEM 1</b>  DISCHARGE LOCATION * SCHEDULE * FLOW RATE WASTEWATER TYPE CODE 1 CONTACT COOLING 2 NONCONTACT COOLING 3 PROCESS 4 SANITARY 5 STORMWATER UNIT CODE 1 MGY 2 MGD 3 GPD	OUTFALL NUMBER	0009					
	A. LOCATION OF DISCHARGE	N.W. & N.W. SECTION 12.1, TOWN 16.5, RANGE 10.1E					
	B. NAME OF RECEIVING WATER (IE, GROUNDWATER OR NAME OF SURFACE WATER)	S.W.A.N. CREEK					
	C. DO YOU DISCHARGE SEASONALLY? (IF NO, CONTINUE TO E)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
	D. IF YES, LIST DISCHARGE PERIODS	MO. / DAY		THROUGH		MO. / DAY	
		[ ] [ ]		[ ] [ ]		[ ] [ ]	
		[ ] [ ]		[ ] [ ]		[ ] [ ]	
		[ ] [ ]		[ ] [ ]		[ ] [ ]	
	E. LAND APPLICATION RATE	IN./HR.		HR./DAY		IN./WK.	
		[ ] [ ]		[ ] [ ]		[ ] [ ]	
F. TYPE OF WASTEWATER DISCHARGE	3 5		WASTEWATER TYPE CODE		[ ] [ ]		
G. DISCHARGE SCHEDULE (YEARLY AVERAGE)	HOURS/DAY		DAY/YEAR		[ ] [ ]		
	[ ] [ ]		[ ] [ ]		[ ] [ ]		
H. DISCHARGE FLOW RATE	TOTAL YEARLY		[ ] [ ] [ ] [ ] [ ] [ ]		UNIT CODE [ ]		
	DAILY MINIMUM		[ ] [ ] [ ] [ ] [ ] [ ]		UNIT CODE [ ]		
	DAILY MAXIMUM		[ ] [ ] [ ] [ ] [ ] [ ]		UNIT CODE [ ]		
I. THE MAXIMUM DISCHARGE FLOW RATE TO BE AUTHORIZED IN PERMIT.	AUTHORIZED		[ ] [ ] [ ] [ ] [ ] [ ]		UNIT CODE [ ]		
J. MAXIMUM DESIGN DISCHARGE FLOW RATE.	DESIGN		[ ] [ ] [ ] [ ] [ ] [ ]		UNIT CODE [ ]		
A. DO YOU USE WATER TREATMENT ADDITIVES TO TREAT YOUR DISCHARGE? (IF NO, CONTINUE TO ITEM 3)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO						
<b>ITEM 2</b>  WATER TREATMENT ADDITIVES  UNITS CODE 1 Mg/l 2 Ug/l	B. NAME, FUNCTION, AND CHEMICAL COMPOSITION OF THESE ADDITIVES.	NAME		FUNCTION			
		[ ] [ ] [ ] [ ] [ ] [ ]		[ ] [ ] [ ] [ ] [ ] [ ]			
		[ ] [ ] [ ] [ ] [ ] [ ]		[ ] [ ] [ ] [ ] [ ] [ ]			
		[ ] [ ] [ ] [ ] [ ] [ ]		[ ] [ ] [ ] [ ] [ ] [ ]			
		[ ] [ ] [ ] [ ] [ ] [ ]		[ ] [ ] [ ] [ ] [ ] [ ]			
		[ ] [ ] [ ] [ ] [ ] [ ]		[ ] [ ] [ ] [ ] [ ] [ ]			
	C. NAME AND ADDRESS OF MANUFACTURERS OF THESE ADDITIVES.						
	D. EXPECTED DISCHARGE CONCENTRATION OF ADDITIVES.	MINIMUM	UNITS CODE	AVERAGE	UNITS CODE	MAXIMUM	UNITS CODE
	ADDITIVE NAME	[ ] [ ] [ ] [ ]	[ ] [ ]	[ ] [ ] [ ] [ ]	[ ] [ ]	[ ] [ ] [ ] [ ]	[ ] [ ]
	ADDITIVE NAME	[ ] [ ] [ ] [ ]	[ ] [ ]	[ ] [ ] [ ] [ ]	[ ] [ ]	[ ] [ ] [ ] [ ]	[ ] [ ]
E. DO YOU TREAT THE DISCHARGE TO REMOVE ADDITIVES?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO						
F. WHAT IS THE REMOVAL EFFICIENCY AND DISCHARGE FREQUENCY?	REMOVAL		DISCHARGE FREQUENCY				
	[ ] [ ] [ ] [ ]		HRS./DAY		DAYS/WK.		
ADDITIVE NAME	[ ] [ ] [ ] [ ]		[ ] [ ]		[ ] [ ]		
ADDITIVE NAME	[ ] [ ] [ ] [ ]		[ ] [ ]		[ ] [ ]		
ADDITIVE NAME	[ ] [ ] [ ] [ ]		[ ] [ ]		[ ] [ ]		
G. AS AN ATTACHMENT TO THIS APPLICATION PROVIDE SPECIFIC MAMMALIAN OR AQUATIC TOXICOLOGICAL DATA OR REFERENCE WHICH ARE AVAILABLE AND INFORMATION ON THE RATE OF DEGRADATION OF THE PRODUCTS FOR EACH ADDITIVE.							

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
3PROCESS  
STREAMS  
CONTRIBUTING  
TO  
OUTFALL  
DISCHARGE

UNITS CODE

POUNDS  
GALLONS  
CUBIC  
YARDS  
TONS  
MGY  
MGD  
GPD

TIME

HOUR  
DAY  
WEEK  
MONTH  
YEAR

OUTFALL NUMBER

0019

PROCESS  
1A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

1.

LOW VOLUME WASTE 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 4

DAYS/YEAR 20

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

1 5

DAILY MINIMUM

0 7

DAILY MAXIMUM

300000 7

D. PROCESS PRODUCTION RATE

UNITS/TIME

PROCESS  
2A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

2.

CHEM METAL CLN 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 24

DAYS/YEAR 10

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

5 5

DAILY MINIMUM

0 7

DAILY MAXIMUM

500000 7

D. PROCESS PRODUCTION RATE

UNITS/TIME

PROCESS  
3A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

3.

NON CHEM MET C 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY 24

DAYS/YEAR 10

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

5 5

DAILY MINIMUM

0 7

DAILY MAXIMUM

500000 7

D. PROCESS PRODUCTION RATE

UNITS/TIME

PROCESS  
4A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS/TIME

PROCESS  
5A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS/TIME

1. Low Volume Waste
2. Chemical Metal Cleaning Waste
3. Non-chemical Metal Cleaning Waste

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
4GROUNDWATER  
DISCHARGE  
INFORMATION

OUTFALL NUMBER

0, 0, 9

A. IS THE DISCHARGE FROM THIS OUTFALL DIRECTED TO THE GROUND OR GROUNDWATERS? (IF NO, CONTINUE TO ITEM 5)

☐ YES☒ NO

B. HAS A HYDROGEOLOGICAL STUDY OR ITS EQUIVALENT BEEN PERFORMED OR IS THERE SUFFICIENT CURRENT HYDROGEOLOGICAL INFORMATION AVAILABLE AS REQUIRED BY THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES OF AUGUST 14, 1980 R. 323.2207 (PAGE 45) FOR THIS EXISTING OR PROPOSED DISCHARGE? IF YES ATTACH A COPY OF THE REPORT.

☐ YES☐ NO

C. ARE YOU REQUESTING AN EXEMPTION FROM SUBMITTING A HYDROGEOLOGICAL REPORT UNDER RULE R. 323.2207 (10) (PAGE 45) OR FROM GROUNDWATER MONITORING REQUIREMENTS UNDER RULE R. 323.2208 (5) (PAGE 47) OF THE PART 22 RULES. IF YES ATTACH DOCUMENTS AND EXPLANATION TO DEMONSTRATE THAT YOUR DISCHARGE WOULD QUALIFY FOR AN EXEMPTION.

☐ YES☐ NO

D. ARE YOU REQUESTING A VARIANCE FROM RULE 323.2205 (PAGE 45) (NONDEGRADATION) OF THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES? IF YES, ATTACH SUCH DOCUMENTS AS NECESSARY TO DEMONSTRATE THE NEED FOR A VARIANCE IN TERMS OF THE CRITERIA SPECIFIED IN RULE 323.2210 (PAGE 47) OF THE PART 22 RULES.

☐ YES☐ NO

E. LIST ALL CHEMICAL SUBSTANCES WHICH ARE IN MICHIGAN'S CRITICAL MATERIALS REGISTER TABLE IV (PAGE 6) AND/OR U.S. EPA'S PRIORITY POLLUTANT LIST TABLE V (PAGE 7) OR ANY OTHER SUBSTANCES WHICH ARE OR MAY BECOME INJURIOUS TO THE DESIGNATED USES OF THE GROUNDWATER OR TO THE PUBLIC HEALTH THAT ARE DISCHARGED OR EXPECTED TO BE DISCHARGED TO THE GROUNDWATER BY THIS FACILITY. ESTIMATE THE FINAL EFFLUENT CONCENTRATION AND RECORD ALL DATA IN ITEM 7 OF SECTION II IN THIS BOOKLET.

☐

NOT APPLICABLE/BELIEVED ABSENT

☐

PRESENT, DATA PROVIDED IN ITEM 7

THE APPLICANT MAY BE REQUIRED TO DO ADDITIONAL WASTE ANALYSES.

ITEM  
5EXPECTED  
WASTEWATER  
CHARAC-  
TERISTICS

UNITS CODE

Mg/l

2 Ug/l

3 COUNTS

100 ml

1 S.U.

5 °F

6 LBS DAY

A. DISCHARGE CHARACTERISTICS

CONCENTRATION

UNITS CODE # ANALYSES SAMPLE TYPE

AVE

MAX

CODE

\*BOD<sub>5</sub> (FIVE DAY BIOCHEMICAL OXYGEN DEMAND)

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

\*COD (CHEMICAL OXYGEN DEMAND)

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

\*TOD (TOTAL OXIDIZABLE CARBON)

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

\*AMMONIA NITROGEN (AS NH<sub>3</sub>)

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

\*TOTAL SUSPENDED SOLIDS

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

TOTAL PHOSPHORUS (AS P)

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

TOTAL RESIDUAL CHLORINE

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

DISSOLVED OXYGEN

MIN

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

\*pH

|\_| 7 | 0

|\_|\_| - |

1 | |

|\_|

FECAL COLIFORM BACTERIA

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

1 | |

|\_|

\*TEMPERATURE (SUMMER)

\* NA

|\_|\_| - |

1 | |

|\_|

\*TEMPERATURE (WINTER)

\* NA

|\_|\_| - |

1 | |

|\_|

B. OTHER WASTEWATER CHARACTERISTICS

OIL &amp; GREASE

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

|\_| | |

|\_|

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

|\_| | |

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|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

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|\_| | |

|\_|

|\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_| - |\_|\_|\_|

|\_| | |

|\_|

\* NA Not Applicable

\*REQUIRED INFORMATION FOR SURFACE WATER DISCHARGES.  
NOTE: SEE ATTACHMENT

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
6PRIORITY  
POLLUTANTS  
AND  
ADDITIONAL  
INFORMATION  
FOR  
SURFACE  
WATER  
DISCHARGE  
ONLY

OUTFALL NUMBER

01019

THE FOLLOWING REQUESTED INFORMATION SHALL BE ADDRESSED BY ALL SURFACE WATER DISCHARGERS.  
NOTE: NEW USE DISCHARGERS SHALL PROVIDE EXPECTED VALUES FOR THE QUANTITATIVE AND QUALITATIVE INFORMATION REQUESTED BELOW.A. IS THIS FACILITY A PRIMARY INDUSTRY? (REFER TO TABLE 1A PAGE 41)  
(IF NO, GO TO E) (IF YES, GO TO B)☒ YES☐ NOB. INDICATE TYPE OF PRIMARY INDUSTRY AS LISTED IN TABLE 1A PAGE 41.  
(CONTINUE WITH C.)

S T E A M E L E C T R I C

C. DOES THIS OUTFALL DISCHARGE CONTAIN ANY PROCESS WASTEWATER?  
(IF NO, GO TO E) (IF YES, GO TO D)☒ YES☐ NOD. INDICATE WHICH GO/MS FRACTIONS MUST BE TESTED FOR.  
(REFER TO TABLE 1A PAGE 41)

NOTE: FOR EACH GO/MS FRACTION CHECKED, EACH SPECIFIC ORGANIC TOXIC POLLUTANT WITHIN EACH FRACTION MUST BE ANALYZED FOR (SEE TABLE 11A PAGE 42). IN ADDITION, ALL PRIMARY INDUSTRY APPLICANTS WITH A PROCESS WASTEWATER DISCHARGE MUST PROVIDE QUANTITATIVE DATA FOR EACH TOXIC POLLUTANT IN TABLE 11A PAGE 43.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

(CONTINUE WITH E-K BELOW)

☒ VOLATILE☐ BASE/NEUTRAL☒ ACID☐ PESTICIDE

E. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF THE TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE THAT ANY POLLUTANT LISTED IN TABLE 11A AND 11A PAGES 42-43 IS DISCHARGED FROM ANY OUTFALL, THE QUANTITATIVE DATA MUST BE PROVIDED.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT/DATA IS ATTACHED

F. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE ANY POLLUTANTS LISTED IN TABLE 11A PAGE 43 ARE DISCHARGED FROM ANY OUTFALL THE APPLICANT MUST DESCRIBE REASONS FOR THE POLLUTANT BEING PRESENT AND PROVIDE ANY AVAILABLE QUANTITATIVE DATA.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT/DATA IS ATTACHED

G. ALL SURFACE WATER DISCHARGE APPLICANTS (PRIMARY AND SECONDARY INDUSTRIES) AND:

USES OR MANUFACTURES 2, 4, 5-TRICHLOROPHENOXY ACETIC ACID (2, 4, 5-T);  
6-(2, 4, 5-TRICHLOROPHENYL) PROPANOIC ACID (SILVEX, 2, 4, 5, TP);  
2-(2, 4, 5-TRICHLOROPHENYL) ETHYL 2, 2-DICHLOROPROPIONATE (PERBON, D);  
2-(2, 4, 5-TRICHLOROPHENYL) PHOSPHOROTHIOATE (RONNEL);  
1-DIMETHYL 0-(2, 4, 5-TRICHLOROPHENYL) PHOSPHOROTHIOATE (RONNEL);  
2, 4, 5-TRICHLOROPHENOL (TCP); OR HEXACHLOROPHENE (HEP). (ALL DATA FOR THE ABOVE MUST BE GENERATED USING STANDARD ANALYTICAL CALIBRATION PROCEDURES) OR

KNOWS OR HAS REASON TO BELIEVE THAT TCDD IS OR MAY BE PRESENT IN THEIR DISCHARGE. MUST REPORT QUALITATIVE DATA, GENERATED WHICH USED A SCREENING PROCEDURE NOT CALIBRATED WITH ANALYTICAL STANDARDS, FOR 2, 3, 7, 8- TETRACHLORODIBENZOP-DIOXIN (TCDD). RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT/DATA IS ATTACHED

H. IF THE SURFACE WATER DISCHARGE APPLICANT KNOWS OR HAS REASON TO BELIEVE THAT BIOLOGICAL TOXICITY TESTS WERE MADE IN THE LAST THREE (3) YEARS ON ANY OF THE APPLICANT'S DISCHARGES OR ON A RECEIVING WATER IN RELATION TO A DISCHARGE, PROVIDE THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE☐ APPLICABLE/SEE ATTACHED

I. IF A CONTRACT LABORATORY OR CONSULTING FIRM PERFORMED ANY OF THE ANALYSES REQUIRED BY THIS APPLICATION, PROVIDE THE NAME AND ADDRESS OF EACH LABORATORY OR FIRM AND THE ANALYSES PERFORMED AS AN ATTACHMENT TO THIS APPLICATION.

☐ NOT APPLICABLE☒ APPLICABLE/SEE ATTACHED

J. DO YOU DISCHARGE ANY OTHER TOXIC OR INJURIOUS CHEMICAL SUBSTANCES NOT LISTED IN TABLES 11A PAGE 43 AND 11A THROUGH 11A PAGES 42-43. IF YES, THEN IDENTIFY THE CHEMICAL SUBSTANCES AND ESTIMATE THE FINAL EFFLUENT CONCENTRATIONS. SUBMIT THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE☐ APPLICABLE/SEE ATTACHEDNational environmental Testing, Inc.  
Auburn Hills Division  
1700 Harmon Road  
Auburn Hills, MI 48326Tel: (810) 391-2050  
Fax: (810) 391-9698  
(800) 526-4951

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
7CRITICAL  
MATERIALS  
\*  
TOXIC  
POLLUTANTS  
\*  
HAZARDOUS  
SUBSTANCES  
IN  
DISCHARGE

OUTFALL NUMBER

0009

A. USE THIS DATA SHEET TO RECORD INFORMATION AS REQUIRED IN: (CHECK APPROPRIATE BOX FOR WHICH INFORMATION THIS DATA SHEET REPRESENTS.)

- ☐ 1. SECTION II, ITEM 4-E. GROUNDWATER DISCHARGE INFORMATION (PAGE 55)
- ☐ 2. SECTION II, ITEM 6. PRIORITY POLLUTANTS IN SURFACE WATER DISCHARGE (PAGE 37)
- ☐ 3. B. BELOW: CRITICAL MATERIALS (TABLE IV) IN SURFACE WATER DISCHARGE (PAGE 39)

B. LIST ANY CRITICAL MATERIAL (TABLE IV PAGE 6) NOT ADDRESSED IN SECTION II ITEM F PRIORITY POLLUTANTS WHICH YOU KNOW OR HAVE REASON TO BELIEVE TO BE PRESENT IN THE DISCHARGE. SEE REVERSE SIDE OF THIS PAGE FOR FURTHER DIRECTIONS.

☒ NOT APPLICABLE☐ APPLICABLE (SEE BELOW)

## UNITS CODE

- 1 Mg/l
- 2 Ug/l
- 3 LBS DAY
- 4 KG DAY

## SAMPLE TYPE

- 1 GRAB
- 2 24 HR COMP

MATERIAL	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
MATERIAL 1	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 2	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 3	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 4	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 5	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 6	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 7	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 8	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			

ADDITIONAL PAGES OF THIS ITEM 7 ARE ATTACHED FOR THE REST OF THE CRITICAL MATERIALS AND/OR PRIORITY POLLUTANTS REQUIRED TO BE REPORTED.

☐ YES  
☐ NO



## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

<b>ITEM 1</b>  DISCHARGE LOCATION  SCHEDULE  FLOW RATE  WASTEWATER TYPE CODE 1 CONTACT COOLING 2 NONCONTACT COOLING 3 PROCESS 4 SANITARY 5 STORMWATER  UNIT CODE 1 MGY 2 MGD 3 GPD	CUTFALL NUMBER		0111	
	A. LOCATION OF DISCHARGE		N.W. & N.W. 1/4, SECTION 12, TOWNSHIP 16S, RANGE 10E	
	B. NAME OF RECEIVING WATER (I.E. GROUNDWATER OR NAME OF SURFACE WATER)		SWAN CREEK	
	C. DO YOU DISCHARGE SEASONALLY? (IF NO, CONTINUE TO E)		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
	D. IF YES, LIST DISCHARGE PERIODS		MO. / DAY	
			THROUGH	
			THROUGH	
			THROUGH	
	E. LAND APPLICATION RATE		IN./HR. HR./DAY IN./WK. <input checked="" type="checkbox"/>	
	F. TYPE OF WASTEWATER DISCHARGE		2 3 5 WASTEWATER TYPE CODE	
G. DISCHARGE SCHEDULE (YEARLY AVERAGE)		HOURS/DAY 24 DAY/YEAR 365		
H. DISCHARGE FLOW RATE		TOTAL YEARLY 4254.8 UNIT CODE 1		
		DAILY MINIMUM 0		
		DAILY MAXIMUM 1427 2		
I. THE MAXIMUM DISCHARGE FLOW RATE TO BE AUTHORIZED IN PERMIT.		AUTHORIZED 195.0 UNIT CODE 2		
J. MAXIMUM DESIGN DISCHARGE FLOW RATE.		DESIGN 195.0 UNIT CODE 2		
<b>ITEM 2</b>  WATER TREATMENT ADDITIVES   UNITS CODE 1 Mg/l 2 Ug/l	A. DO YOU USE WATER TREATMENT ADDITIVES TO TREAT YOUR DISCHARGE? (IF NO, CONTINUE TO ITEM 3)		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
	B. NAME, FUNCTION, AND CHEMICAL COMPOSITION OF THESE ADDITIVES.		NAME FUNCTION Betz Polymer 1120 Settling Agent Betz Polymer 1192 Settling Agent	
	C. NAME AND ADDRESS OF MANUFACTURERS OF THESE ADDITIVES.		Betz Industrial Inc. 4636 Somerton Road Trevose, PA 19047	
	D. EXPECTED DISCHARGE CONCENTRATION OF ADDITIVES.		MINIMUM UNITS CODE AVERAGE UNITS CODE MAXIMUM UNITS CODE ADDITIVE NAME Betz Polymer 1120 0 1 1.0 1 2.0 1 ADDITIVE NAME Betz Polymer 1192 0 2 5.0 2 10.0 2 ADDITIVE NAME	
	E. DO YOU TREAT THE DISCHARGE TO REMOVE ADDITIVES?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
	F. WHAT IS THE REMOVAL EFFICIENCY AND DISCHARGE FREQUENCY?		% REMOVAL DISCHARGE FREQUENCY HRS./DAY DAYS/WK. ADDITIVE NAME ADDITIVE NAME ADDITIVE NAME	
	G. AS AN ATTACHMENT TO THIS APPLICATION PROVIDE SPECIFIC MAMMALIAN OR AQUATIC TOXICOLOGICAL DATA OF REFERENCE WHICH ARE AVAILABLE AND INFORMATION ON THE RATE OF DEGRADATION OF THE PRODUCTS FOR EACH ADDITIVE.			

## SECTION II

PERMIT  
NUMBER

M10037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
3PROCESS  
STREAMS  
CONTRIBUTING  
TO  
OUTFALL  
DISCHARGE

UNITS CODE

POUNDS  
GALLONS  
CUBIC  
YARDS  
TONS  
MGY  
MGD  
GPD

TIME

HOUR  
DAY  
WEEK  
MONTH  
YEAR

OUTFALL NUMBER

0111

PROCESS  
1A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

1.

OILY WASTE O.O.C. 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

18

DAYS/YEAR

365

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

26.5 5

DAILY MINIMUM

0 7

DAILY MAXIMUM

73000 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
2A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

2.

PIMP PIT CLNG 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

24

DAYS/YEAR

160

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

86.4 5

DAILY MINIMUM

0 6

DAILY MAXIMUM

144 6

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
3A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

3.

SITORIM WATER 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

24

DAYS/YEAR

365

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

72.9 5

DAILY MINIMUM

0 7

DAILY MAXIMUM

729000 7

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
4A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

4.

FIRE PROTE FLSH 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

12

DAYS/YEAR

17

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

10.1 5

DAILY MINIMUM

0 6

DAILY MAXIMUM

144 6

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
5A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

5.

GSW FLOW CONTRL 4911

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

24

DAYS/YEAR

365

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

1576.8 5

DAILY MINIMUM

0 6

DAILY MAXIMUM

432 6

D. PROCESS PRODUCTION RATE

UNITS / TIME

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
3PROCESS  
STREAMS  
CONTRIBUTING  
TO  
OUTFALL  
DISCHARGEUNITS CODE  
POUNDS  
GALLONS  
CUBIC  
YARDS  
TONS  
MGY  
MGD  
GPD

TIME

HOUR  
DAY  
WEEK  
MONTH  
YEAR

OUTFALL NUMBER

011

PROCESS  
1A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

6.

G S W B L C K W A S H 4 9 1 1

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

4

DAYS/YEAR

3 6 5

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

2 5 5 5

UNIT CODE

5

DAILY MINIMUM

0

6

DAILY MAXIMUM

7

6

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
2A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

UNIT CODE

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

DAILY MINIMUM

DAILY MAXIMUM

UNITS / TIME

PROCESS  
3A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

UNIT CODE

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

DAILY MINIMUM

DAILY MAXIMUM

UNITS / TIME

D. PROCESS PRODUCTION RATE

PROCESS  
4A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

UNIT CODE

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

DAILY MINIMUM

DAILY MAXIMUM

UNITS / TIME

D. PROCESS PRODUCTION RATE

PROCESS  
5A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

UNIT CODE

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

DAILY MINIMUM

DAILY MAXIMUM

UNITS / TIME

D. PROCESS PRODUCTION RATE

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
4GROUNDWATER  
DISCHARGE  
INFORMATION

OUTFALL NUMBER

0, 1, 1

- A. IS THE DISCHARGE FROM THIS OUTFALL DIRECTED TO THE GROUND OR GROUNDWATERS? (IF NO, CONTINUE TO ITEM 5)
- B. HAS A HYDROGEOLOGICAL STUDY OR ITS EQUIVALENT BEEN PERFORMED OR IS THERE SUFFICIENT CURRENT HYDROGEOLOGICAL INFORMATION AVAILABLE AS REQUIRED BY THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES OF AUGUST 14, 1980 R. 323.2207 (PAGE 45) FOR THIS EXISTING OR PROPOSED DISCHARGE? IF YES ATTACH A COPY OF THE REPORT.
- C. ARE YOU REQUESTING AN EXEMPTION FROM SUBMITTING A HYDROGEOLOGICAL REPORT UNDER RULE R. 323.2207 (10) (PAGE 45) OR FROM GROUNDWATER MONITORING REQUIREMENTS UNDER RULE R. 323.2208 (5) (PAGE 47) OF THE PART 22 RULES. IF "YES" ATTACH DOCUMENTS AND EXPLANATION TO DEMONSTRATE THAT YOUR DISCHARGE WOULD QUALIFY FOR AN EXEMPTION.
- D. ARE YOU REQUESTING A VARIANCE FROM RULE 323.2205 (PAGE 45) (NONDEGRADATION) OF THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES? IF YES, ATTACH SUCH DOCUMENTS AS NECESSARY TO DEMONSTRATE THE NEED FOR A VARIANCE IN TERMS OF THE CRITERIA SPECIFIED IN RULE 323.2210 (PAGE 42) OF THE PART 22 RULES.
- E. LIST ALL CHEMICAL SUBSTANCES WHICH ARE IN MICHIGAN'S CRITICAL MATERIALS REGISTER TABLE IV (PAGE 6) AND/OR U.S. EPA'S PRIORITY POLLUTANT LIST TABLE V (PAGE 7) OR ANY OTHER SUBSTANCES WHICH ARE OR MAY BECOME INJURIOUS TO THE DESIGNATED USES OF THE GROUNDWATER OR TO THE PUBLIC HEALTH THAT ARE DISCHARGED OR EXPECTED TO BE DISCHARGED TO THE GROUNDWATER BY THIS FACILITY. ESTIMATE THE FINAL EFFLUENT CONCENTRATION AND RECORD ALL DATA IN ITEM 7 OF SECTION II IN THIS BOOKLET.

☐ YES ☒ NO☐ YES ☐ NO☐ YES ☐ NO☐ YES ☐ NO☐ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT, DATA PROVIDED IN ITEM 7

THE APPLICANT MAY BE REQUIRED TO DO ADDITIONAL WASTE ANALYSES.

ITEM  
5EXPECTED  
WASTEWATER  
CHARAC-  
TERISTICS

## UNITS CODE

Mg/l  
1 Ug/l  
3 COUNTS/  
100 ml  
1 S.U.  
5 °F  
6 LBS DAY

## A. DISCHARGE CHARACTERISTICS

## CONCENTRATION

UNITS CODE # ANALYSES SAMPLE TYPE

AVE

MAX

CODE

\*BOD<sub>5</sub> (FIVE DAY BIOCHEMICAL OXYGEN DEMAND)

\*COD (CHEMICAL OXYGEN DEMAND)

\*TOC (TOTAL ORGANIC CARBON)

\*AMMONIA NITROGEN (AS N)

\*TOTAL SUSPENDED SOLIDS

TOTAL PHOSPHORUS (AS P)

TOTAL RESIDUAL CHLORINE

DISSOLVED OXYGEN

MIN

\*PH

FECAL COLIFORM BACTERIA

\*TEMPERATURE (SUMMER)

\*TEMPERATURE (WINTER)

\* N/A

\* N/A

## B. OTHER WASTEWATER CHARACTERISTICS

OIL &amp; GREASE

SAMPLE  
TYPE

1 GRAB  
2 24 HOUR  
COMPOSITE

\* N/A Not Applicable

\*REQUIRED INFORMATION FOR SURFACE WATER DISCHARGES.

NOTE: SEE ATTACHMENT

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
6PRIORITY  
POLLUTANTS  
AND  
ADDITIONAL  
INFORMATION  
FOR  
SURFACE  
WATER  
DISCHARGE  
ONLY

OUTFALL NUMBER

0111

THE FOLLOWING REQUESTED INFORMATION MUST BE ADDRESSED BY ALL SURFACE WATER DISCHARGERS.  
NOTE! NEW USE DISCHARGERS MUST PROVIDE EXPECTED VALUES FOR THE QUANTITATIVE AND  
QUALITATIVE INFORMATION REQUESTED BELOW.

A. IS THIS FACILITY A PRIMARY INDUSTRY? (REFER TO TABLE 1A PAGE 41) (IF NO, GO TO E) (IF YES, GO TO B)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
B. INDICATE TYPE OF PRIMARY INDUSTRY AS LISTED IN TABLE 1A PAGE 41. (CONTINUE WITH C.)	S.T.E.A.M. E.L.E.C.T.R.
C. DOES THIS OUTFALL DISCHARGE CONTAIN ANY PROCESS WASTEWATER? (IF NO, GO TO E) (IF YES, GO TO D)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
D. INDICATE WHICH GC/MS FRACTIONS MUST BE TESTED FOR. (REFER TO TABLE 1A PAGE 41)  NOTE! FOR EACH GC/MS FRACTION CHECKED, EACH SPECIFIC ORGANIC TOXIC POLLUTANT WITHIN EACH FRACTION <u>MUST</u> BE ANALYZED FOR (SEE TABLE 11A PAGE 42). IN ADDITION, ALL PRIMARY INDUSTRY APPLICANTS WITH A PROCESS WASTEWATER DISCHARGE <u>MUST</u> PROVIDE QUANTITATIVE DATA FOR EACH TOXIC POLLUTANT IN TABLE 11A PAGE 43.  RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET. (CONTINUE WITH E-K BELOW)	<input checked="" type="checkbox"/> VOLATILE <input type="checkbox"/> BASE/NEUTRAL <input checked="" type="checkbox"/> ACID <input type="checkbox"/> PESTICIDE
E. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF THE TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE THAT ANY POLLUTANT LISTED IN TABLE 11A AND 11A PAGES 42-43 IS DISCHARGED FROM ANY OUTFALL, THE QUANTITATIVE DATA <u>MUST</u> BE PROVIDED.  RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.	<input checked="" type="checkbox"/> NOT APPLICABLE/BELIEVED ABSENT <input type="checkbox"/> PRESENT/DATA IS ATTACHED
F. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE ANY POLLUTANTS LISTED IN TABLE 11A PAGE 43 ARE DISCHARGED FROM ANY OUTFALL, THE APPLICANT <u>MUST</u> DESCRIBE REASONS FOR THE POLLUTANT BEING PRESENT AND PROVIDE ANY AVAILABLE QUANTITATIVE DATA.  RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.	<input checked="" type="checkbox"/> NOT APPLICABLE/BELIEVED ABSENT <input type="checkbox"/> PRESENT/DATA IS ATTACHED
G. ALL SURFACE WATER DISCHARGE APPLICANTS (PRIMARY AND SECONDARY INDUSTRIES) WHO:  USES OR MANUFACTURES 2, 4, 5 - TRICHLOROPHENOXY ACETIC ACID (2, 4, 5-T); 2, 4, 5-TRICHLOROPHENOXY PROPANOIC ACID (SILVEX, 2, 4, 5, TP); 2, 4, 5-TRICHLOROPHENOXY ETHYL 2, 2-DICHLOROPROPIONATE (ERBON); 2, 4, 5-TRICHLOROPHENOXY ETHYL 2, 2-DICHLOROPROPIONATE (ERBONEL); 2-DIMETHYL 0-(2, 4, 5-TRICHLOROPHENYL) PHOSPHOROTHIOATE (IRONNEL); 2, 4, 5-TRICHLOROPHENOL (TCP); OR HEXACHLOROPHENE (HCP); (ALL DATA FOR THE ABOVE MUST BE GENERATED USING STANDARD ANALYTICAL CALIBRATION PROCEDURES) OR  KNOWS OR HAS REASON TO BELIEVE THAT TOC IS OR MAY BE PRESENT IN THEIR DISCHARGE. MUST REPORT QUALITATIVE DATA, GENERATED WHICH USED A SCREENING PROCEDURE NOT CALIBRATED WITH ANALYTICAL STANDARDS, FOR 2, 3, 7, 8 - TETRACHLORODIBENZO-P-DIOXIN (TCDD). RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.	<input checked="" type="checkbox"/> NOT APPLICABLE/BELIEVED ABSENT <input type="checkbox"/> PRESENT/DATA IS ATTACHED
H. IF THE SURFACE WATER DISCHARGE APPLICANT KNOWS OR HAS REASON TO BELIEVE THAT BIOLOGICAL TOXICITY TESTS WERE MADE IN THE LAST THREE (3) YEARS ON ANY OF THE APPLICANT'S DISCHARGES OR ON A RECEIVING WATER IN RELATION TO A DISCHARGE, PROVIDE THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.	<input checked="" type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> APPLICABLE/SEE ATTACHED
I. IF A CONTRACT LABORATORY OR CONSULTING FIRM PERFORMED ANY OF THE ANALYSES REQUIRED BY THIS APPLICATION, PROVIDE THE NAME AND ADDRESS OF EACH LABORATORY OR FIRM AND THE ANALYSES PERFORMED AS AN ATTACHMENT OF THIS APPLICATION.	<input type="checkbox"/> NOT APPLICABLE <input checked="" type="checkbox"/> APPLICABLE/SEE ATTACHED
J. DO YOU DISCHARGE ANY OTHER TOXIC OR INJURIOUS CHEMICAL SUBSTANCES NOT LISTED IN TABLES 11A PAGE 43 AND 11A THROUGH 11A PAGES 42-43. IF YES, THEN IDENTIFY THE CHEMICAL SUBSTANCES AND ESTIMATE THE FINAL EFFLUENT CONCENTRATIONS. SUBMIT THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.	<input checked="" type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> APPLICABLE/SEE ATTACHED

National Environmental Testing, Inc.  
Auburn Hills Division  
1700 Harmon Road  
Auburn Hills, MI 48326

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## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
7CRITICAL  
MATERIALS  
\*  
TOXIC  
POLLUTANTS  
\*  
HAZARDOUS  
SUBSTANCES  
IN  
DISCHARGE

OUTFALL NUMBER

0111

A. USE THIS DATA SHEET TO RECORD INFORMATION AS REQUIRED IN: (CHECK APPROPRIATE BOX FOR WHICH INFORMATION THIS DATA SHEET REPRESENTS.)

- ☐ 1. SECTION II, ITEM 4-E. GROUNDWATER DISCHARGE INFORMATION (PAGE 35)
- ☐ 2. SECTION II, ITEM 6. PRIORITY POLLUTANTS IN SURFACE WATER DISCHARGE (PAGE 37)
- ☐ 3. P. BELOW: CRITICAL MATERIALS (TABLE IV) IN SURFACE WATER DISCHARGE (PAGE 39)

B. LIST ANY CRITICAL MATERIAL (TABLE IV PAGE 6) NOT ADDRESSED IN SECTION II ITEM 6 PRIORITY POLLUTANTS WHICH YOU KNOW OR HAVE REASON TO BELIEVE TO BE PRESENT IN THE DISCHARGE. SEE REVERSE SIDE OF THIS PAGE FOR FURTHER DIRECTIONS.

☒ NOT APPLICABLE

☐ APPLICABLE (SEE BELOW)

## UNITS CODE

- 1 Mg/l
- 2 Ug/l
- 3 LBS DAY
- 4 KG DAY

## SAMPLE TYPE

- 1 GRAB
- 2 24 HR COMP

MATERIAL	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
MATERIAL 1	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 2	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 3	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 4	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 5	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 6	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 7	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			
MATERIAL 8	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES	UNIT CODE		UNIT CODE
	C. MAXIMUM CONCENTRATION AND MASS			

ADDITIONAL PAGES OF THIS ITEM 7 ARE ATTACHED FOR THE REST OF THE CRITICAL MATERIALS AND/OR PRIORITY POLLUTANTS REQUIRED TO BE REPORTED.

☐ YES

☐ NO



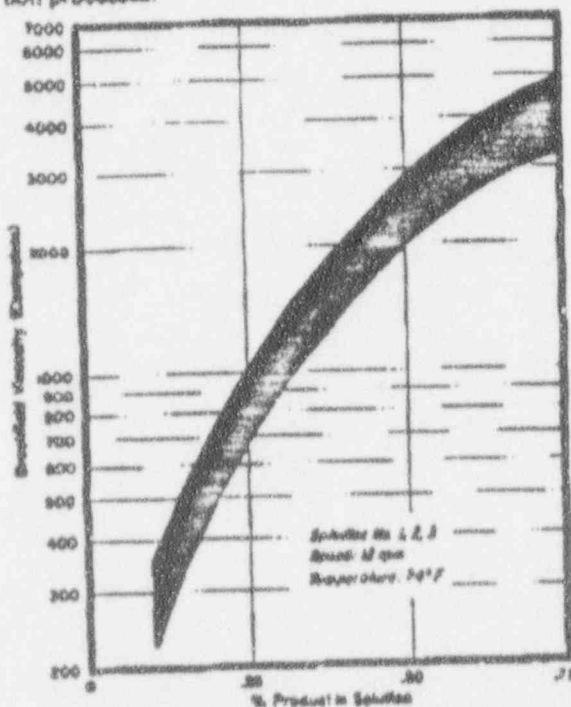
# product facts

## BETZ® POLYMER 1120

- Economical Treatment Levels
- Improves Water Quality
- Does Not Require pH Adjustment
- Increases Operating Efficiency

### DESCRIPTION AND USE

BETZ Polymer 1120 is a high charge density anionic, high molecular weight polymer which works as a flocculant or sludge conditioning aid to enhance liquid-solids separation processes.



Viscosity vs. % Product Concentration of BETZ 1120

### GENERAL APPLICATIONS

BETZ Polymer 1120 settles iron oxide suspensions from steel industry wastewaters, precipitated hydrous metals in finishing water wastes and reduces fines in blast furnace, steel mill scale and BOP scrubber thickener effluents.

This polymer produces a fast settling floc which reduces carryover when used as a flocculant with inorganic or cationic polymeric coagulants.

Oil removal is improved when BETZ Polymer 1120 is applied to refinery and other industrial waste waters by increasing air flotation unit and API separator efficiencies.

BETZ Polymer 1120 has excellent performance when used as an aid in protein removal on air flotation systems and starch clarification with centrifuges.

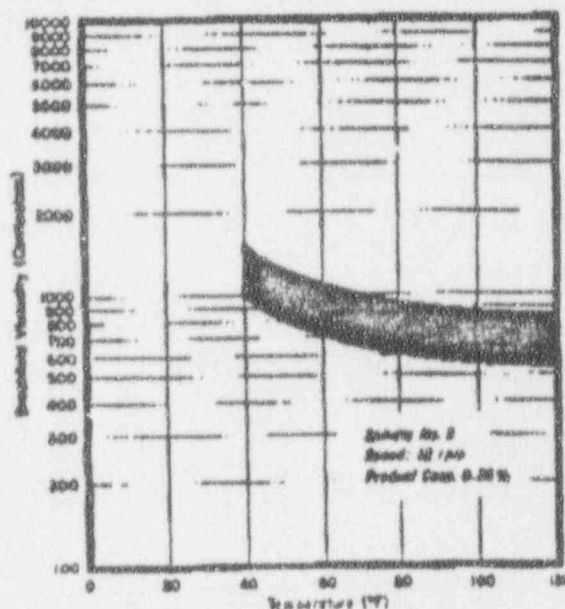
In the paper industry, and many other market areas, BETZ Polymer 1120 is an effective sludge conditioning agent for dewatering operations. By producing a well flocculated sludge, filtrates are cleaner and solids capture is improved.

### GENERAL PROPERTIES

Appearance ..... Free flowing white powder  
Bulk density ..... 42-50 pounds per cubic foot

### FEEDING REQUIREMENTS

BETZ Polymer 1120 may be prepared in batch fashion by slowly adding the powder to the vortex of an agitated tank, using a dry feeder or an eductor. Do not add water to the dry polymer. Maximum practical solution concentration is 0.8 percent by weight. Air or low speed (400



BETZ Polymer 1120  
Viscosity vs. Temperature (°F)



BETZ LABORATORIES, INC.  
4836 SOMERTON ROAD, TREVOSE, PA. 19063  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

(PAGE 1 OF 3)

PRODUCT: POLYMER 1120

EFFECTIVE DATE 06-24-91

PRINTED: 26-May-1991

REVISIONS TO SECTIONS: 7; EDIT: 6,8

PRODUCT APPLICATION: FLOCCULANT.

SECTION 1 HAZARDOUS INGREDIENTS

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

Post-it® brand fax transmittal memo 7571		1 of pages = 4
To: Pete Iovello	From: Marissa	
Ca: Fresno	Ca: Bob	
Dept:	Phone: 219-277-1830	
Fax: 313 6-5295	Fax: 219-277-8834	

Let me know if you need anything else!

## SECTION 2 TYPICAL PHYSICAL DATA

PH: 1% SOL (APPROX.) 7.5 ODOR: NONE  
FL.PT.(DEG.F): >200 FL.WT(CC) BP.GR.(70°F) OR DENSITY: 40 LBS/CU.FT.  
VAPOR PRESSURE(mm.HG): <1 VAPOR DENSITY(AIR=1): <1  
VISC cps 70°F: NA % SOLUBILITY(WATER): 5  
EVAP.RATE: NA WATER=1 APPEARANCE: OFF-WHITE  
PHYSICAL STATE: GRANULES FREEZE POINT(DEG.F): NA

## SECTION 3 REACTIVITY DATA

STABLE. MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE BETZ TANK  
CLEAN-OUT CATEGORY 'A'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

~~CONFIDENTIAL - NOT FOR RELEASE~~

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POLYMER 1120

SECTION 4 HEALTH HAZARD EFFECTS

ACUTE SKIN EFFECTS \*\*\*

NON-HAZARDOUS TO SKIN

ACUTE EYE EFFECTS \*\*\*

POTENTIAL EYE IRRITANT DUE TO MECHANICAL ACTION ONLY

ACUTE RESPIRATORY EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

DUSTS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE \*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

NUISANCE DUST

SECTION 5 FIRST AID INSTRUCTIONS

SKIN CONTACT \*\*\*

NO TREATMENT REQUIRED

EYE CONTACT \*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE \*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION \*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM. DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

SECTION 6 SPILL DISPOSAL AND FIRE INSTRUCTIONS

SPILL INSTRUCTIONS \*\*\*

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. SWEEP UP AND PLACE IN WASTE DISPOSAL CONTAINER.

FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS \*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS).

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS \*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER



## BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POLYMER 1120

## SECTION 7: SPECIAL PROTECTIVE EQUIPMENT

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR FLBE. USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION

ADEQUATE VENTILATION TO MAINTAIN DUST CONCENTRATIONS BELOW THE EXPOSURE LIMIT OF 10MG/M3(TWEL/TLV) FOR NUISANCE DUSTS. RECOMMENDED RESPIRATORY PROTECTION

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/NEB FILTERS. RECOMMENDED SKIN PROTECTION

RUBBER GLOVES  
WASH OFF AFTER EACH USE. REPLACE AS NECESSARY. RECOMMENDED EYE PROTECTION  
SAFETY GLASSES

## SECTION 8: STORAGE AND HANDLING PRECAUTIONS

## STORAGE INSTRUCTIONS

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.  
KEEP DRY. STORE AWAY FROM OXIDIZERS.

## HANDLING INSTRUCTIONS

NORMAL CHEMICAL HANDLING

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

## APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY  
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD/UN/ER GUIDER IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NOT HAZARDOUS UNDER SECTION 311/312

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS: HEALTH - 0; FIRE - 1; REACTIVITY - 0; SPEC. H - NONE; PE - A

BETZ LABORATORIES  
4636 SOMERTON ROAD, TREVOSE, PA 19053

PRODUCT: POLYMER 1120

AQUATIC TOXICOLOGY

Rainbow Trout

72 Hour Static Screen

No effect level: 100 MG/L

Bluegill Sunfish

96 Hour Static Screen

No effect level: 300 MG/L

Daphnia magna

48 Hour Static Renewal Bioassay\*

LC50: 470 MG/L

No effect level: 170 MG/L

\*This toxicity testing was calculated from a product of similar formulation.

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19053  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : POLYMER 1192

(PAGE 1 OF 3)  
EFFECTIVE DATE 02-16-91  
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REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : COAGULANT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 6.3	ODOR: SLIGHT AMMONIA
FL.PT.(DEG.F): >200	SETA(CC)	SP.GR.(70F)OR DENSITY: 1.032
VAPOR PRESSURE(mmHG): ND		VAPOR DENSITY(AIR=1): ND
VISC cps70F: 168		%SOLUBILITY(WATER): 100
EVAP.RATE: <1	ETHER=1	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID		FREEZE POINT(DEG.F): 30

-----SECTION 3-----REACTIVITY DATA-----

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK  
CLEAN-OUT CATEGORY 'A'

HEAT L DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POLYMER 1192

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS \*\*\*

MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM  
DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.  
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL/CO2/FOAM OR WATER. SLIPPERY CONDITION. USE SAND/GRIT

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POLYMER 1192

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,

USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION\*\*\*

RUBBER GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING

HANDLING INSTRUCTIONS\*\*\*

NORMAL CHEMICAL HANDLING

\*\*\*\*\*  
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD  
\*\*\*\*\*

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...CLEARANCE FOR POTABLE WATER USE:

EPA UP TO 50PPM-ALSO FLORIDA

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B





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UNDERSTANDING AQUATIC TOXICITY TESTING RESULTS  
FOR  
CATIONIC POLYELECTROLYTES

Many cationic polymers in their free state cause toxicity to fish at relatively low levels. This is because the positively charged polymer attaches to the negatively charged gill epithelium (a cellular membrane), blocking passage of oxygen into the fish and causing asphyxiation. Standard EPA and ASTM aquatic testing procedures are designed to measure the toxicity level of free cationic polymer in clean water which does not contain suspended solids. However, studies indicate that in normal treatment processes, the polymer does not exist in its free form but instead is bound to the suspended solids which are present in the system. Any toxicity of the resultant water that might be attributed to free polymer is sharply reduced or eliminated since these bound polymers have been "neutralized" and cannot attach to the gill epithelium.

If the polymers were severely overdosed, free residual cationic polyelectrolytes might be released to the aquatic environment due to the presence of significantly more polymer than can be bound to the available suspended solids. Such an occurrence is unlikely since problems in the water clarification process (namely dispersion) would become apparent before the polymer reached a toxic level. In addition, if such a release would occur, there should be sufficient silt and other suspended solids present in the receiving stream to buffer or neutralize the effects on the aquatic environment. Therefore, when reviewing aquatic toxicology data for cationic polyelectrolytes, it should be remembered that these results refer to the presence of free (not bound) cationic polymers in the clean water and that the amount of free polymer entering the environment is negligible when used in accordance with safe and practical operating parameters.

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PRODUCT: POLYMER 1192

AQUATIC TOXICOLOGY

Rainbow Trout

96 Hour Static Acute Bioassay  
LC50: .49 MG/L  
No effect level: 0.37 MG/L

Fathead Minnow

96 Hour Static Acute Bioassay  
LC50: 1.15 MG/L  
No effect level: 0.56 MG/L

Daphnia magna

48 Hour Static Acute Bioassay  
LC50: 1.3 MG/L  
No effect level: 0.28 MG/L

MAMMALIAN TOXICOLOGY

ORAL LD50 RAT: >8,000 MG/KG

DERMAL LD50 RABBIT: >2000 MG/KG

INHALATION LC50 RAT: NO DATA

NOTE: NO DEATHS AT ONE HOUR OF 10 L/MIN

SKIN IRRITATION SCORE RABBIT: NEGATIVE

EYE IRRITATION SCORE RABBIT: SLIGHT

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

ITEM 1		OUTFALL NUMBER		0, 1, 2	
DISCHARGE LOCATION		A. LOCATION OF DISCHARGE			
SCHEDULE		N.W. & S.W. SECTION 21, TOWN 6S, RANGE 10E			
FLOW RATE		B. NAME OF RECEIVING WATER (IE: GROUNDWATER OR NAME OF SURFACE WATER)			
WASTEWATER TYPE CODE		LAKE ERIE			
1 CONTACT COOLING		C. DO YOU DISCHARGE SEASONALLY? (IF NO, CONTINUE TO E)			
2 NONCONTACT COOLING		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
3 PROCESS		D. IF YES, LIST DISCHARGE PERIODS			
4 SANITARY		MO. / DAY			
5 STORMWATER		THROUGH			
UNIT CODE		E. LAND APPLICATION RATE			
1 MGY		IN./HR.			
2 MGD		HR./DAY			
3 GPD		IN./WK. <input checked="" type="checkbox"/> N			
		F. TYPE OF WASTEWATER DISCHARGE			
		WASTEWATER TYPE CODE			
		G. DISCHARGE SCHEDULE (YEARLY AVERAGE)			
		HOURS/DAY			
		DAY/YEAR			
		H. DISCHARGE FLOW RATE			
		TOTAL YEARLY			
		DAILY MINIMUM			
		DAILY MAXIMUM			
		I. THE MAXIMUM DISCHARGE FLOW RATE TO BE AUTHORIZED IN PERMIT.			
		AUTHORIZED			
		J. MAXIMUM DESIGN DISCHARGE FLOW RATE.			
		DESIGN			
		A. DO YOU USE WATER TREATMENT ADDITIVES TO TREAT YOUR DISCHARGE? (IF NO, CONTINUE TO ITEM 3)			
		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
ITEM 2		B. NAME, FUNCTION, AND CHEMICAL COMPOSITION OF THESE ADDITIVES.			
WATER TREATMENT ADDITIVES		NAME			
		FUNCTION			
		C. NAME AND ADDRESS OF MANUFACTURERS OF THESE ADDITIVES.			
UNITS CODE		D. EXPECTED DISCHARGE CONCENTRATION OF ADDITIVES.			
1 Mg/l		MINIMUM			
2 Ug/l		UNITS CODE			
		AVERAGE			
		UNITS CODE			
		MAXIMUM			
		UNITS CODE			
		E. DO YOU TREAT THE DISCHARGE TO REMOVE ADDITIVES?			
		<input type="checkbox"/> YES <input type="checkbox"/> NO			
		F. WHAT IS THE REMOVAL EFFICIENCY AND DISCHARGE FREQUENCY?			
		REMOVAL			
		DISCHARGE FREQUENCY			
		HRS./DAY			
		DAYS/WK.			
		G. AS AN ATTACHMENT TO THIS APPLICATION PROVIDE SPECIFIC MAMMALIAN OR AQUATIC TOXICOLOGICAL DATA OR REFERENCE WHICH ARE AVAILABLE AND INFORMATION ON THE RATE OF DEGRADATION OF THE PRODUCTS FOR EACH ADDITIVE.			

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
3PROCESS  
STREAMS  
CONTRIBUTING  
TO  
OUTFALL  
DISCHARGEUNITS CODE  
POUNDS  
GALLONS  
CUBIC  
YARDS  
TONS  
MGY  
MGD  
GPDTIME  
HOUR  
DAY  
WEEK  
MONTH  
YEAR

OUTFALL NUMBER		0112	
PROCESS 1	A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE THROUGH THIS OUTFALL AND SIC CODE	1.	H V A C C O O L I N G 4911
	B. PROCESS SCHEDULE (YEARLY AVERAGE)	HOURS/DAY	24 DAYS/YEAR 90
	C. PROCESS WASTEWATER FLOW RATE	TOTAL YEARLY	259 5
	D. PROCESS PRODUCTION RATE	DAILY MINIMUM	0 7
PROCESS 2	A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE THROUGH THIS OUTFALL AND SIC CODE		
	B. PROCESS SCHEDULE (YEARLY AVERAGE)	HOURS/DAY	DAYS/YEAR
	C. PROCESS WASTEWATER FLOW RATE	TOTAL YEARLY	
	D. PROCESS PRODUCTION RATE	DAILY MINIMUM	
PROCESS 3	A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE THROUGH THIS OUTFALL AND SIC CODE		
	B. PROCESS SCHEDULE (YEARLY AVERAGE)	HOURS/DAY	DAYS/YEAR
	C. PROCESS WASTEWATER FLOW RATE	TOTAL YEARLY	
	D. PROCESS PRODUCTION RATE	DAILY MINIMUM	
PROCESS 4	A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE THROUGH THIS OUTFALL AND SIC CODE		
	B. PROCESS SCHEDULE (YEARLY AVERAGE)	HOURS/DAY	DAYS/YEAR
	C. PROCESS WASTEWATER FLOW RATE	TOTAL YEARLY	
	D. PROCESS PRODUCTION RATE	DAILY MINIMUM	
PROCESS 5	A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE THROUGH THIS OUTFALL AND SIC CODE		
	B. PROCESS SCHEDULE (YEARLY AVERAGE)	HOURS/DAY	DAYS/YEAR
	C. PROCESS WASTEWATER FLOW RATE	TOTAL YEARLY	
	D. PROCESS PRODUCTION RATE	DAILY MINIMUM	

1. HVAC Cooling Water

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
4GROUNDWATER  
DISCHARGE  
INFORMATION

OUTFALL NUMBER

0 1 2

A. IS THE DISCHARGE FROM THIS OUTFALL DIRECTED TO THE GROUND OR  
GROUNDWATER? (IF NO, CONTINUE TO ITEM 5)☐ YES☒ NOB. HAS A HYDROGEOLOGICAL STUDY OR ITS EQUIVALENT BEEN PERFORMED OR IS THERE SUFFICIENT  
CURRENT HYDROGEOLOGICAL INFORMATION AVAILABLE AS REQUIRED BY THE WATER RESOURCES  
COMMISSION PART 22 GROUNDWATER RULES OF AUGUST 14, 1980 R.323.2207 (PAGE 45) FOR  
THIS EXISTING OR PROPOSED DISCHARGE? IF YES ATTACH A COPY OF THE REPORT.☐ YES☐ NOC. ARE YOU REQUESTING AN EXEMPTION FROM SUBMITTING A HYDROGEOLOGICAL REPORT UNDER  
RULE R.323.2207 (10) (PAGE 45) OR FROM GROUNDWATER MONITORING REQUIREMENTS  
UNDER RULE R.323.2208 (5) (PAGE 47) OF THE PART 22 RULES. IF YES ATTACH  
DOCUMENTS AND EXPLANATION TO DEMONSTRATE THAT YOUR DISCHARGE WOULD QUALIFY FOR  
AN EXEMPTION.☐ YES☐ NOD. ARE YOU REQUESTING A VARIANCE FROM RULE 323.2205 (PAGE 45) (NONDEGRADATION) OF  
THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES? IF YES, ATTACH SUCH  
DOCUMENTS AS NECESSARY TO DEMONSTRATE THE NEED FOR A VARIANCE IN TERMS OF THE  
CRITERIA SPECIFIED IN RULE 323.2210 (PAGE 47) OF THE PART 22 RULES.☐ YES☐ NOE. LIST ALL CHEMICAL SUBSTANCES WHICH ARE IN MICHIGAN'S CRITICAL MATERIALS REGISTER TABLE IV  
(PAGE 6) AND/OR U.S. EPA'S PRIORITY POLLUTANT LIST TABLE V (PAGE 7) OR ANY OTHER SUBSTANCES  
WHICH ARE OR MAY BECOME INJURIOUS TO THE DESIGNATED USES OF THE GROUNDWATER OR TO THE  
PUBLIC HEALTH THAT ARE DISCHARGED OR EXPECTED TO BE DISCHARGED TO THE GROUNDWATER BY THIS  
FACILITY. ESTIMATE THE FINAL EFFLUENT CONCENTRATION AND RECORD ALL DATA IN ITEM 7 OF  
SECTION II IN THIS BOOKLET.☐ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT, DATA PROVIDED IN ITEM 7

THE APPLICANT MAY BE REQUIRED TO DO ADDITIONAL WASTE ANALYSES.

ITEM  
5EXPECTED  
WASTEWATER  
CHARAC-  
TERISTICS

## UNITS CODE

Mg l  
2 Ug l  
3 COUNTS /  
100 ml  
1 S.U.  
5 °F  
6 LBS DAY

## A. DISCHARGE CHARACTERISTICS

## CONCENTRATION

UNITS CODE # ANALYSES SAMPLE TYPE

AVE

MAX

CODE

\*BOD<sub>5</sub> (FIVE DAY BIOCHEMICAL OXYGEN DEMAND)

\*COD (CHEMICAL OXYGEN DEMAND)

\*TOD (TOTAL ORGANIC CARBON)

\*AMMONIA NITROGEN (AS NH<sub>3</sub>)

\*TOTAL SUSPENDED SOLIDS

TOTAL PHOSPHORUS (AS P)

TOTAL RESIDUAL CHLORINE

DISSOLVED OXYGEN MIN

\*PH

FECAL COLIFORM BACTERIA

\*TEMPERATURE (SUMMER)

\*TEMPERATURE (WINTER)

## B. OTHER WASTEWATER CHARACTERISTICS

OIL &amp; GREASE

SAMPLE  
TYPE1 GRAB  
2 24 HOUR  
COMPOSITE

NOTE: NO SAMPLE FLOW AVAILABLE UNTIL SUMMER.

\*REQUIRED INFORMATION FOR SURFACE WATER DISCHARGES.



## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
6PRIORITY  
POLLUTANTS  
AND  
ADDITIONAL  
INFORMATION  
FOR  
SURFACE  
WATER  
DISCHARGE  
ONLY

OUTFALL NUMBER

0112

THE FOLLOWING REQUESTED INFORMATION SHALL BE ADDRESSED BY ALL SURFACE WATER DISCHARGERS.  
NOTE! NEW USE DISCHARGERS SHALL PROVIDE EXPECTED VALUES FOR THE QUANTITATIVE AND QUALITATIVE INFORMATION REQUESTED BELOW.A. IS THIS FACILITY A PRIMARY INDUSTRY? (REFER TO TABLE IA PAGE 41)  
(IF NO, GO TO E) (IF YES, GO TO B)☒ YES ☐ NOB. INDICATE TYPE OF PRIMARY INDUSTRY AS LISTED IN TABLE IA PAGE 41.  
(CONTINUE WITH C)

STEAM ELECTRIC

C. DOES THIS OUTFALL DISCHARGE CONTAIN ANY PROCESS WASTEWATER?  
(IF NO, GO TO E) (IF YES, GO TO D)☒ YES ☐ NOD. INDICATE WHICH GC/MS FRACTIONS MUST BE TESTED FOR.  
(REFER TO TABLE IA PAGE 41)

NOTE! FOR EACH GC/MS FRACTION CHECKED, EACH SPECIFIC ORGANIC TOXIC POLLUTANT WITHIN EACH FRACTION MUST BE ANALYZED FOR (SEE TABLE IIA PAGE 42). IN ADDITION, ALL PRIMARY INDUSTRY APPLICANTS WITH A PROCESS WASTEWATER DISCHARGE MUST PROVIDE QUANTITATIVE DATA FOR EACH TOXIC POLLUTANT IN TABLE IIA PAGE 43.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

(CONTINUE WITH E-K BELOW)

☒ VOLATILE  
☐ BASE/NEUTRAL  
☒ ACID  
☐ PESTICIDE

E. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE THAT ANY POLLUTANT LISTED IN TABLE IIA AND IIA PAGES 42-43 IS DISCHARGED FROM ANY OUTFALL, THE QUANTITATIVE DATA MUST BE PROVIDED.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT  
☐ PRESENT/DATA IS ATTACHED

F. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE ANY POLLUTANTS LISTED IN TABLE IIA PAGE 43 ARE DISCHARGED FROM ANY OUTFALL, THE APPLICANT MUST DESCRIBE REASONS FOR THE POLLUTANT BEING PRESENT AND PROVIDE ANY AVAILABLE QUANTITATIVE DATA.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT  
☐ PRESENT/DATA IS ATTACHED

G. ALL SURFACE WATER DISCHARGE APPLICANTS (PRIMARY AND SECONDARY INDUSTRIES) AND:

USES OR MANUFACTURES 2, 4, 5 - TRICHLOROPHENOL ACETIC ACID (2, 4, 5-T);  
2, 4, 5 - TRICHLOROPHENOL; PROPANIC ACID (SILVEX, 2, 4, 5, TP);  
2, 4, 5 - TRICHLOROPHENOL; ETHYL 2, 2-DICHLOROPROPIONATE (ERBON);  
2-DIMETHYL 0-(2, 4, 5-TRICHLOROPHENYL) PHOSPHOROTHIOATE (RONNEL);  
2, 4, 5-TRICHLOROPHENOL (TCP); OR HEXACHLOROPHENE (HCP); (ALL DATA FOR THE ABOVE MUST BE GENERATED USING STANDARD ANALYTICAL CALIBRATION PROCEDURES) OR

KNOWS OR HAS REASON TO BELIEVE THAT TODD IS OR MAY BE PRESENT IN THEIR DISCHARGE. MUST REPORT QUALITATIVE DATA GENERATED WHICH USED A SCREENING PROCEDURE NOT CALIBRATED WITH ANALYTICAL STANDARDS, FOR 2, 3, 7, 8 - TETRACHLORODIBENZO-P-DIOXIN (TCDD). RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT  
☐ PRESENT/DATA IS ATTACHED

H. IF THE SURFACE WATER DISCHARGE APPLICANT KNOWS OR HAS REASON TO BELIEVE THAT BIOLOGICAL TOXICITY TESTS WERE MADE IN THE LAST THREE (3) YEARS ON ANY OF THE APPLICANT'S DISCHARGES OR ON A RECEIVING WATER IN RELATION TO A DISCHARGE, PROVIDE THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE  
☐ APPLICABLE/SEE ATTACHED

I. IF A CONTRACT LABORATORY OR CONSULTING FIRM PERFORMED ANY OF THE ANALYSES REQUIRED BY THIS APPLICATION, PROVIDE THE NAME AND ADDRESS OF EACH LABORATORY OR FIRM AND THE ANALYSES PERFORMED AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE  
☐ APPLICABLE/SEE ATTACHED

J. DO YOU DISCHARGE ANY OTHER TOXIC OR INJURIOUS CHEMICAL SUBSTANCES NOT LISTED IN TABLES IV PAGE 5 AND IIA THROUGH IIA PAGES 42-43. IF YES, THEN IDENTIFY THE CHEMICAL SUBSTANCES AND ESTIMATE THE FINAL EFFLUENT CONCENTRATIONS. SUBMIT THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.

☒ NOT APPLICABLE  
☐ APPLICABLE/SEE ATTACHED

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
7CRITICAL  
MATERIALS  
\*  
TOXIC  
POLLUTANTS  
\*  
HAZARDOUS  
SUBSTANCES  
IN  
DISCHARGE

OUTFALL NUMBER

0, 1, 2

A. USE THIS DATA SHEET TO RECORD INFORMATION AS REQUIRED IN: (CHECK APPROPRIATE BOX FOR WHICH INFORMATION THIS DATA SHEET REPRESENTS.)

- ☐ 1. SECTION II, ITEM 4-E. GROUNDWATER DISCHARGE INFORMATION (PAGE 55)
- ☐ 2. SECTION II, ITEM 6. PRIORITY POLLUTANTS IN SURFACE WATER DISCHARGE (PAGE 57)
- ☐ 3. B. BELOW: CRITICAL MATERIALS (TABLE IV) IN SURFACE WATER DISCHARGE (PAGE 59)

B. LIST ANY CRITICAL MATERIAL (TABLE IV PAGE 6) NOT ADDRESSED IN SECTION II ITEM 6 PRIORITY POLLUTANTS WHICH YOU KNOW OR HAVE REASON TO BELIEVE TO BE PRESENT IN THE DISCHARGE. SEE REVERSE SIDE OF THIS PAGE FOR FURTHER DIRECTIONS.

☒ NOT APPLICABLE☐ APPLICABLE (SEE BELOW)

## UNITS CODE

- 1 Mg/l
- 2 UG/l
- 3 LBS DAY
- 4 KG DAY

## SAMPLE TYPE

- 1 GRAB
- 2 24 HR COMP

MATERIAL	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
MATERIAL 1	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 2	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 3	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 4	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 5	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 6	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 7	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 8	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			

ADDITIONAL PAGES OF THIS ITEM 7 ARE ATTACHED FOR THE REST OF THE CRITICAL MATERIALS AND/OR PRIORITY POLLUTANTS REQUIRED TO BE REPORTED.

☐ YES  
☐ NO

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

ITEM 1	OUTFALL NUMBER		013			
	A. LOCATION OF DISCHARGE		S W & N W & SECTION 21, TOWN 6 S, RANGE 10 E			
	B. NAME OF RECEIVING WATER (IE, GROUNDWATER OR NAME OF SURFACE WATER)		LAKE ERIE			
	C. DO YOU DISCHARGE SEASONALLY? (IF NO, CONTINUE TO E)		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
	D. IF YES, LIST DISCHARGE PERIODS		MO. / DAY			
	DISCHARGE LOCATION		THROUGH			
	SCHEDULE		THROUGH			
	FLOW RATE		THROUGH			
	WASTEWATER TYPE CODE		IN./HR. HR./DAY IN./WEL. <input checked="" type="checkbox"/>			
	E. LAND APPLICATION RATE		WASTEWATER TYPE CODE			
1 CONTACT COOLING	F. TYPE OF WASTEWATER DISCHARGE		3 5			
2 NONCONTACT COOLING	G. DISCHARGE SCHEDULE (YEARLY AVERAGE)		HOURS/DAY 24 DAY/YEAR 60			
3 PROCESS	H. DISCHARGE FLOW RATE		TOTAL YEARLY 450 UNIT CODE 1			
4 SANITARY			DAILY MINIMUM 0 2			
5 STORMWATER			DAILY MAXIMUM 75 2			
UNIT CODE		I. THE MAXIMUM DISCHARGE FLOW RATE TO BE AUTHORIZED IN PERMIT.		AUTHORIZED		
1 MGY	J. MAXIMUM DESIGN DISCHARGE FLOW RATE.		DESIGN		UNIT CODE	
2 MGD					UNIT CODE	
3 GPD					UNIT CODE	
ITEM 2	A. DO YOU USE WATER TREATMENT ADDITIVES TO TREAT YOUR DISCHARGE? (IF NO, CONTINUE TO ITEM 3)		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
	B. NAME, FUNCTION, AND CHEMICAL COMPOSITION OF THESE ADDITIVES.		NAME Betz Polymer 1192 Amionic Settling Betz Polymer 1120 Cationic Settling			
	C. NAME AND ADDRESS OF MANUFACTURERS OF THESE ADDITIVES.		Betz Industrial 4636 Somerton Road Trevose, PA 19053			
	D. EXPECTED DISCHARGE CONCENTRATION OF ADDITIVES.		MINIMUM UNITS CODE AVERAGE UNITS CODE MAXIMUM UNITS CODE			
	ADDITIVE NAME Polymer 1192		0 2 50 2 100 2			
	ADDITIVE NAME Polymer 1120		0 1 10 1 20 1			
	ADDITIVE NAME					
	E. DO YOU TREAT THE DISCHARGE TO REMOVE ADDITIVES?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
	F. WHAT IS THE REMOVAL EFFICIENCY AND DISCHARGE FREQUENCY?		% REMOVAL DISCHARGE FREQUENCY			
	ADDITIVE NAME		HRS./DAY DAYS/WK.			
ADDITIVE NAME						
ADDITIVE NAME						
G. AS AN ATTACHMENT TO THIS APPLICATION PROVIDE SPECIFIC MAMMALIAN OR AQUATIC TOXICOLOGICAL DATA OR REFERENCE WHICH ARE AVAILABLE AND INFORMATION ON THE RATE OF DEGRADATION OF THE PRODUCTS FOR EACH ADDITIVE.						

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE**ITEM  
3**PROCESS  
STREAMS  
CONTRIBUTING  
TO  
OUTFALL  
DISCHARGE

UNITS CODE

POUNDS  
GALLONS  
CUBIC  
YARDS  
TONS  
MGY  
MGD  
GPD

TIME

HOUR  
DAY  
WEEK  
MONTH  
YEAR

OUTFALL NUMBER

(0113)

PROCESS  
1A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

NONE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
2A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
3A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
4A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS / TIME

PROCESS  
5A. NAME OF PROCESS CONTRIBUTING TO THE DISCHARGE  
THROUGH THIS OUTFALL AND SIC CODE

B. PROCESS SCHEDULE (YEARLY AVERAGE)

HOURS/DAY

DAYS/YEAR

C. PROCESS WASTEWATER FLOW RATE

TOTAL YEARLY

UNIT CODE

DAILY MINIMUM

DAILY MAXIMUM

D. PROCESS PRODUCTION RATE

UNITS / TIME

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

ITEM  
4

### GROUNDWATER DISCHARGE INFORMATION

CUTFALL NUMBER

0, 1, 3

- A. IS THE DISCHARGE FROM THIS OUTFALL DIRECTED TO THE GROUND OR GROUNDWATERS? (IF NO, CONTINUE TO ITEM 5)
- B. HAS A HYDROGEOLOGICAL STUDY OF ITS EQUIVALENT BEEN PERFORMED OR IS THERE SUFFICIENT CURRENT HYDROGEOLOGICAL INFORMATION AVAILABLE AS REQUIRED BY THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES OF AUGUST 14, 1980 R.323.2207 (PAGE 45) FOR THIS EXISTING OR PROPOSED DISCHARGE? IF YES ATTACH A COPY OF THE REPORT.
- C. ARE YOU REQUESTING AN EXEMPTION FROM SUBMITTING A HYDROGEOLOGICAL REPORT UNDER RULE R.323.2207 (10) (PAGE 45) OR FROM GROUNDWATER MONITORING REQUIREMENTS UNDER RULE R.323.2206 (5) (PAGE 42) OF THE PART 22 RULES? IF YES ATTACH DOCUMENTS AND EXPLANATION TO DEMONSTRATE THAT YOUR DISCHARGE WOULD QUALIFY FOR AN EXEMPTION.
- D. ARE YOU REQUESTING A VARIANCE FROM RULE 323.2205 (PAGE 45) (NONDEGRADATION) OF THE WATER RESOURCES COMMISSION PART 22 GROUNDWATER RULES? IF YES, ATTACH SUCH DOCUMENTS AS NECESSARY TO DEMONSTRATE THE NEED FOR A VARIANCE IN TERMS OF THE CRITERIA SPECIFIED IN RULE 323.2210 (PAGE 47) OF THE PART 22 RULES.
- E. LIST ALL CHEMICAL SUBSTANCES WHICH ARE IN MICHIGAN'S CRITICAL MATERIALS REGISTER TABLE IV (PAGE 6) AND/OR U.S. EPA'S PRIORITY POLLUTANT LIST TABLE V (PAGE 7) OR ANY OTHER SUBSTANCES WHICH ARE OR MAY BECOME INJURIOUS TO THE DESIGNATED USES OF THE GROUNDWATER OR TO THE PUBLIC HEALTH THAT ARE DISCHARGED OR EXPECTED TO BE DISCHARGED TO THE GROUNDWATER BY THIS FACILITY. ESTIMATE THE FINAL EFFLUENT CONCENTRATION AND RECORD ALL DATA IN ITEM 7 OF SECTION II IN THIS BOOKLET.
- THE APPLICANT MAY BE REQUIRED TO DO ADDITIONAL WASTE ANALYSES.

THE APPLICANT MAY BE REQUIRED TO DO ADDITIONAL WASTE ANALYSES.

NOT APPLICABLE/BELIEVED ABSENT

PRESENT. DATA PROVIDED IN ITEM 7

ITEM  
5

EXPECTED  
WASTEWATER  
CHARAC-  
TERISTICS

JN, TS CODE

2 Mg/l  
 3 Ug/l  
 4 COUNTS  
 5 100 ml  
 6 S.U.  
 7 °F  
 8 LBS DAY

#### A. DISCHARGE CHARACTERISTICS

CONCENTRATION

UNITS CODE 11 ANALYSES 5 SAMPLE TYPE 1

AVE

MAX

CCOV

\*BOC<sub>5</sub> (FIVE DAY BIOCHEMICAL OXYGEN DEMAND)

\*COD (CHEMICAL OXYGEN DEMAND)

\*AMMONIA NITROGEN (AS N)

\*TOTAL SUSPENDED SOLIDS

TOTAL PHOSPHORUS (AS P)

TOTAL RESIDUAL CHLORINE

• **2014**

\*TEMPERATURE (SUMMER)

\*TEMPERATURE (°C)

B. OTHER WASTEWATER CHARACTERISTICS

O I L B G R E A S E

### SAMPLE

TYPE

1 GRAB

2 24 HOUR  
COMPOSIT

\* Not Applicable

\*REQUIRED INFORMATION FOR SURFACE WATER DISCHARGES.

NOTE: SEE ATTACHMENT



## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDE

0113

ITEM  
6PRIORITY  
POLLUTANTS  
AND  
ADDITIONAL  
INFORMATION  
FOR  
SURFACE  
WATER  
DISCHARGE  
ONLY

OUTFALL NUMBER

THE FOLLOWING REQUESTED INFORMATION SHALL BE ADDRESSED BY ALL SURFACE WATER DISCHARGERS.  
NOTE: NEW USE DISCHARGERS SHALL PROVIDE EXPECTED VALUES FOR THE QUANTITATIVE AND QUALITATIVE INFORMATION REQUESTED BELOW.A. IS THIS FACILITY A PRIMARY INDUSTRY? (REFER TO TABLE 1A PAGE 41)  
(IF NO, GO TO E) (IF YES, GO TO B)☒ YES☐ NOB. INDICATE TYPE OF PRIMARY INDUSTRY AS LISTED IN TABLE 1A PAGE 41.  
(CONTINUE WITH C.)

STEAM ELECT P

C. DOES THIS OUTFALL DISCHARGE CONTAIN ANY PROCESS WASTEWATER?  
(IF NO, GO TO E) (IF YES, GO TO D)☒ YES☐ NOD. INDICATE WHICH GC/MS FRACTIONS MUST BE TESTED FOR.  
(REFER TO TABLE 1A PAGE 41)

NOTE: FOR EACH GC/MS FRACTION CHECKED, EACH SPECIFIC ORGANIC TOXIC POLLUTANT WITHIN EACH FRACTION MUST BE ANALYZED FOR (SEE TABLE 11A PAGE 42). IN ADDITION, ALL PRIMARY INDUSTRY APPLICANTS WITH A PROCESS WASTEWATER DISCHARGE MUST PROVIDE QUANTITATIVE DATA FOR EACH TOXIC POLLUTANT IN TABLE 11A PAGE 43.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

(CONTINUE WITH E-K BELOW)

☒ VOLATILE☐ BASE/NEUTRAL☒ ACID☐ PESTICIDE

E. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF THE TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE THAT ANY POLLUTANT LISTED IN TABLE 11A AND 11A PAGES 42-43 IS DISCHARGED FROM ANY OUTFALL, THE QUANTITATIVE DATA MUST BE PROVIDED.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT/DATA IS ATTACHED

F. IF ANY SURFACE WATER DISCHARGE APPLICANT (PRIMARY OR SECONDARY INDUSTRY), REGARDLESS OF TYPE OF DISCHARGE, KNOWS OR HAS REASON TO BELIEVE ANY POLLUTANTS LISTED IN TABLE 1A PAGE 43 ARE DISCHARGED FROM ANY OUTFALL, THE APPLICANT MUST DESCRIBE REASONS FOR THE POLLUTANT BEING PRESENT AND PROVIDE ANY AVAILABLE QUANTITATIVE DATA.

RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.

☒ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT/DATA IS ATTACHEDG. ALL SURFACE WATER DISCHARGE APPLICANTS (PRIMARY AND SECONDARY INDUSTRIES)  
MUST:USE OF MANUFACTURES 2, 4, 5 - TRICHLOROPHENOLY ACETIC ACID (2, 4, 5-T);  
2, 4, 5-TRICHLOROPHENOLY PROPANOIC ACID (SILVEX, 2, 4, 5, TP);  
2, 4, 5-TRICHLOROPHENOLY ETHYL 2, 2-DICHLOROPROPIONATE (ERBON); D,  
2-DIMETHYL (2, 4, 5-TRICHLOROPHENYL) PHOSPHOROTHIOATE (RONNEL);  
2, 4, 5-TRICHLOROPHENOL (TCP); OR HEXACHLOROPHENE (HCP); (ALL DATA FOR THE  
ABOVE MUST BE GENERATED USING STANDARD ANALYTICAL CALIBRATION PROCEDURES) ORKNOWS OR HAS REASON TO BELIEVE THAT TCDD IS OR MAY BE PRESENT IN THEIR DISCHARGE.  
MUST REPORT QUALITATIVE DATA, GENERATED WHICH USED A SCREENING PROCEDURE NOT  
CALIBRATED WITH ANALYTICAL STANDARDS, FOR 2, 3, 7, 8 - TETRACHLORODIBENZO-P-DIOXIN  
(TCDD). RECORD ALL DATA ON FORMS PROVIDED (ITEM 7) IN THIS BOOKLET.☒ NOT APPLICABLE/BELIEVED ABSENT☐ PRESENT/DATA IS ATTACHEDH. IF THE SURFACE WATER DISCHARGE APPLICANT KNOWS OR HAS REASON TO BELIEVE THAT  
BIOLOGICAL TOXICITY TESTS WERE MADE IN THE LAST THREE (3) YEARS ON ANY OF THE  
APPLICANT'S DISCHARGES OR ON A RECEIVING WATER IN RELATION TO A DISCHARGE, PROVIDE  
THIS INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.☒ NOT APPLICABLE☐ APPLICABLE/SEE ATTACHEDI. IF A CONTRACT LABORATORY OR CONSULTING FIRM PERFORMED ANY OF THE ANALYSES REQUIRED  
BY THIS APPLICATION, PROVIDE THE NAME AND ADDRESS OF EACH LABORATORY OR FIRM AND  
THE ANALYSES PERFORMED AS AN ATTACHMENT TO THIS APPLICATION.☐ NOT APPLICABLE☒ APPLICABLE/SEE ATTACHEDJ. DO YOU DISCHARGE ANY OTHER TOXIC OR INJURIOUS CHEMICAL SUBSTANCES NOT LISTED IN  
TABLES IV PAGE 4 AND 11A THROUGH 11A PAGES 42-43. IF YES, THEN IDENTIFY THE  
CHEMICAL SUBSTANCES AND ESTIMATE THE FINAL EFFLUENT CONCENTRATIONS. SUBMIT THIS  
INFORMATION AS AN ATTACHMENT TO THIS APPLICATION.☒ NOT APPLICABLE☐ APPLICABLE/SEE ATTACHEDNational Environmental Testing, Inc.  
Auburn Hills Division  
1700 Harmon Road  
Auburn Hills, MI 48326Tel: (810) 391-2050  
Fax: (810) 391-9698  
(800) 526-4951

## SECTION II

PERMIT  
NUMBER

MI0037028

SEE INSTRUCTIONS  
ON REVERSE SIDEITEM  
7CRITICAL  
MATERIALS  
•  
TOXIC  
POLLUTANTS  
•  
HAZARDOUS  
SUBSTANCES  
IN  
DISCHARGE

OUTFALL NUMBER

01131

A. USE THIS DATA SHEET TO RECORD INFORMATION AS REQUIRED IN: (CHECK APPROPRIATE BOX FOR WHICH INFORMATION THIS DATA SHEET REPRESENTS.)

- ☐ 1. SECTION II, ITEM 4-E. GROUNDWATER DISCHARGE INFORMATION (PAGE 35)
- ☐ 2. SECTION II, ITEM 6. PRIORITY POLLUTANTS IN SURFACE WATER DISCHARGE (PAGE 37)
- ☐ 3. B. BELOW: CRITICAL MATERIALS (TABLE IV) IN SURFACE WATER DISCHARGE (PAGE 39)

B. LIST ANY CRITICAL MATERIAL (TABLE IV PAGE 6) NOT ADDRESSED IN SECTION II ITEM 6 PRIORITY POLLUTANTS WHICH YOU KNOW OR HAVE REASON TO BELIEVE TO BE PRESENT IN THE DISCHARGE. SEE REVERSE SIDE OF THIS PAGE FOR FURTHER DIRECTIONS.

☒ NOT APPLICABLE☐ APPLICABLE (SEE BELOW)

## UNITS CODE

- 1 Mg/l
- 2 Ug/l
- 3 LBS DAY
- 4 KG DAY

## SAMPLE TYPE

- 1 GRAB
- 2 24 HR COMP

MATERIAL	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT	UNIT CODE	SAMPLE TYPE	# OF ANALYSES
MATERIAL 1	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 2	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 3	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 4	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 5	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 6	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 7	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			
MATERIAL 8	B. AVERAGE CONCENTRATION; SAMPLE TYPE; # OF ANALYSES			
	C. MAXIMUM CONCENTRATION AND MASS			
	A. NAME OF CRITICAL MATERIAL OR PRIORITY POLLUTANT			

ADDITIONAL PAGES OF THIS ITEM 7 ARE ATTACHED FOR THE REST OF THE CRITICAL MATERIALS AND/OR PRIORITY POLLUTANTS REQUIRED TO BE REPORTED.

☐ YES  
☐ NO



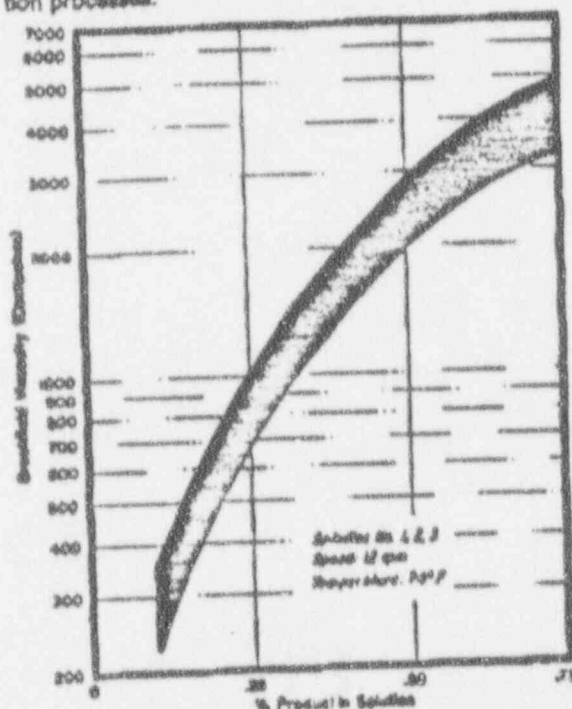
# product facts

## BETZ® POLYMER 1120

- Economical Treatment Levels
- Improves Water Quality
- Does Not Require pH Adjustment
- Increases Operating Efficiency

### DESCRIPTION AND USE

BETZ Polymer 1120 is a high charge density anionic, high molecular weight polymer which works as a flocculant or sludge conditioning aid to enhance liquid-solids separation processes.



Viscosity vs. % Product Concentration of BETZ 1120

### GENERAL APPLICATIONS

BETZ Polymer 1120 settles iron oxide suspensions from steel industry wastewaters, precipitated hydrous metals in finishing water wastes and reduces fines in blast furnace, steel mill scale and BOP scrubber thickener effluents.

This polymer produces a fast settling floc which reduces carryover when used as a flocculant with inorganic or cationic polymeric coagulants.

Oil removal is improved when BETZ Polymer 1120 is applied to refinery and other industrial waste waters by increasing air flotation unit and API separator efficiencies.

BETZ Polymer 1120 has excellent performance when used as an aid in protein removal on air flotation systems and starch clarification with centrifuges.

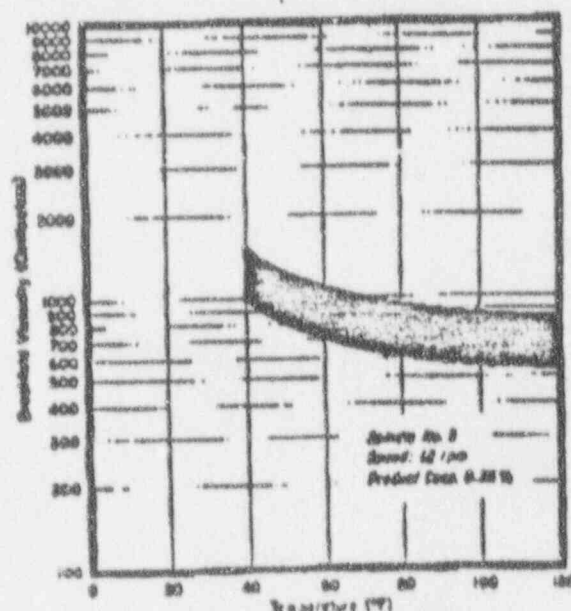
In the paper industry, and many other market areas, BETZ Polymer 1120 is an effective sludge conditioning agent for dewatering operations. By producing a well flocculated sludge, filtrates are clearer and solids capture is improved.

### GENERAL PROPERTIES

Appearance ..... Free flowing white powder  
Bulk density ..... 42-50 pounds per cubic foot

### FEEDING REQUIREMENTS

BETZ Polymer 1120 may be prepared in batch fashion by slowly adding the powder to the vortex of an agitated tank, using a dry feeder or an eductor. Do not add water to the dry polymer. Maximum practical solution concentration is 0.5 percent by weight. Air or low speed (400



BETZ Polymer 1120  
Viscosity vs. Temperature (°F)



BETZ LABORATORIES, INC.  
4836 SOMERTON ROAD, TREVOSE, PA. 19063  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

(PAGE 1 OF 3)

PRODUCT: POLYMER 1120

EFFECTIVE DATE 05-24-91

PRINTED: 28-May-1991

REVISIONS TO SECTIONS: 7; EDIT: 6, 8

PRODUCT APPLICATION: FLOCCULANT.

SECTION 1 — HAZARDOUS INGREDIENTS

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

Post-it® brand fax transmittal memo 7571		1 of pages 4
To: Pete Lovello	From: Marissa	
Co: Fesqui	Co: Betz	
Dept:	Phone: 219-277-8830	
Fax: 313-586-5295	Fax: 219-277-8834	

Let me know if you need anything else!

## SECTION 2 — TYPICAL PHYSICAL DATA

PH: 1% SOL. (APPROX.) 7.6 ODOR: NONE  
FL.PT. (DEG.F): >200 (N/A) (OC) BP. GR. (70F) OR DENSITY: 40 LBS/CU.FT.  
VAPOR PRESSURE (mmHG): <1 VAPOR DENSITY (AIR=1): <1  
VISC @ 70F: NA % SOLUBILITY (WATER): 5  
EVAP. RATE: NA WATER=1 APPEARANCE: OFF-WHITE  
PHYSICAL STATE: GRANULES FREEZE POINT (DEG.F): NA

## SECTION 3 — REACTIVITY DATA

STABLE. MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE BETZ TANK  
CLEAN-OUT CATEGORY 'A'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.



~~CONFIDENTIAL - INTERNAL USE ONLY~~

## BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POLYMER 1120

## SECTION 4 HEALTH HAZARD EFFECTS

ACUTE SKIN EFFECTS \*\*\*

NON-HAZARDOUS TO SKIN

ACUTE EYE EFFECTS \*\*\*

POTENTIAL EYE IRRITANT DUE TO MECHANICAL ACTION ONLY

ACUTE RESPIRATORY EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

DUSTS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE \*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

NUISANCE DUST

## SECTION 5 FIRST AID INSTRUCTIONS

SKIN CONTACT \*\*\*

NO TREATMENT REQUIRED

EYE CONTACT \*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE \*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION \*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM. DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

## SECTION 6 SPILL, DISPOSAL AND FIRE INSTRUCTIONS

SPILL INSTRUCTIONS \*\*\*

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. SWEEP UP AND PLACE IN WASTE DISPOSAL CONTAINER.

FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS \*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS)

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS \*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

## BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POLYMER 1120

SECTION 7 SPECIAL PROTECTIVE EQUIPMENT

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR FLBE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION

ADEQUATE VENTILATION TO MAINTAIN DUST CONCENTRATIONS BELOW THE EXPOSURE LIMIT OF 10MG/M3(MEL/TLV) FOR NUISANCE DUSTS.

RECOMMENDED RESPIRATORY PROTECTION

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/NEB FILTERS.

RECOMMENDED SKIN PROTECTION

RUBBER GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION

SAFETY GLASSES

SECTION 8 STORAGE AND HANDLING PRECAUTIONS

STORAGE INSTRUCTIONS

KEEP DRUMS &amp; PAILS CLOSED WHEN NOT IN USE.

KEEP DRY. STORE AWAY FROM OXIDIZERS

HANDLING INSTRUCTIONS

NORMAL CHEMICAL HANDLING

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

## APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY  
...REPORTABLE QUANTITY (RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARDOUS MATERIAL GUIDE IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312

...MICHIGAN CRITICAL MATERIALS: NONE

NTPAHMS: HEALTH - 0; FIRE - 1; REACTIVITY - 0; SPECIAL - NONE; PE - A

BETZ LABORATORIES  
4638 SOMERTON ROAD , TREVOSE, PA 19053

PRODUCT: POLYMER 1120

AQUATIC TOXICOLOGY

Rainbow Trout

72 Hour Static Screen

No effect level: 100 MG/L

Bluegill Sunfish

96 Hour Static Screen

No effect level: 300 MG/L

Daphnia magna

48 Hour Static Renewal Bioassay\*

LC50: 470 MG/L

No effect level: 170 MG/L

\*This toxicity testing was calculated from a product of similar formulation.

BETZ LABORATORIES, INC.  
4636 SOMERTON ROAD, TREVOSE, PA. 19053  
BETZ MATERIAL SAFETY DATA SHEET  
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : POLYMER 1192

(PAGE 1 OF 3)  
EFFECTIVE DATE 02-16-91  
PRINTED: 1-Mar-1991

REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : COAGULANT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 6.3	ODOR: SLIGHT AMMONIA
FL.PT.(DEG.F): >200	SETA(CC)	SP.GR.(70F)OR DENSITY: 1.032
VAPOR PRESSURE(mmHG): ND		VAPOR DENSITY(AIR=1): ND
VISC cps70F: 168		%SOLUBILITY(WATER): 100
EVAP.RATE: <1	ETHER=1	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID		FREEZE POINT(DEG.F): 30

-----SECTION 3-----REACTIVITY DATA-----

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK  
CLEAN-OUT CATEGORY 'A'

HEAT DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS TOXIC GASES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POLYMER 1192

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS \*\*\*

MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS\*\*\*

VENTILATE AREA. USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL/CO2/FOAM OR WATER. SLIPPERY CONDITION. USE SAND/GRIT



BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POLYMER 1192

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION\*\*\*

RUBBER GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS\*\*\*

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING

HANDLING INSTRUCTIONS\*\*\*

NORMAL CHEMICAL HANDLING

\*\*\*\*\*  
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD  
\*\*\*\*\*

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...CLEARANCE FOR POTABLE WATER USE:

EPA UP TO 50PPM-ALSO FLORIDA

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B



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UNDERSTANDING AQUATIC TOXICITY TESTING RESULTS  
FOR  
CATIONIC POLYELECTROLYTES

Many cationic polymers in their free state cause toxicity to fish at relatively low levels. This is because the positively charged polymer attaches to the negatively charged gill epithelium (a cellular membrane), blocking passage of oxygen into the fish and causing asphyxiation. Standard EPA and ASTM aquatic testing procedures are designed to measure the toxicity level of free cationic polymer in clean water which does not contain suspended solids. However, studies indicate that in normal treatment processes, the polymer does not exist in its free form but instead is bound to the suspended solids which are present in the system. Any toxicity of the resultant water that might be attributed to free polymer is sharply reduced or eliminated since these bound polymers have been "neutralized" and cannot attach to the gill epithelium.

If the polymers were severely overdosed, free residual cationic polyelectrolytes might be released to the aquatic environment due to the presence of significantly more polymer than can be bound to the available suspended solids. Such an occurrence is unlikely since problems in the water clarification process (namely dispersion) would become apparent before the polymer reached a toxic level. In addition, if such a release would occur, there should be sufficient silt and other suspended solids present in the receiving stream to buffer or neutralize the effects on the aquatic environment. Therefore, when reviewing aquatic toxicology data for cationic polyelectrolytes, it should be remembered that these results refer to the presence of free (not bound) cationic polymers in the clean water and that the amount of free polymer entering the environment is negligible when used in accordance with safe and practical operating parameters.

## FERMI 2 POWER PLANT - NPDES

	METHOD	LOD PPM	DATE	INTAKE PPM	OUTFALL 009	OUTFALL 011	OUTFALL 013	OUTFALL 001	ANALYST
Ag	272.2	0.0005	03/02/94	nd	nd	nd	nd	nd	MLA/DRS
Al	200.7	0.05	02/28/94	1.02	0.13	0.37	0.16	0.80	DMB
As	206.2	0.001	02/28/94	nd	nd	nd	nd	nd	MLA/DRS
B	200.7	0.10	02/28/94	nd	0.33	0.11	nd	nd	PMB
Ba	200.7	0.01	02/28/94	nd	nd	nd	nd	nd	PMB
Be	200.7	0.005	02/28/94	nd	nd	nd	nd	nd	PMB
Cd	213.2	0.0002	03/02/94	0.0006	0.0008	nd	nd	0.002	MLA/DRS
Co	200.0	0.10	02/28/94	nd	nd	nd	nd	nd	PMB
Cr	218.2	0.01	03/01/94	nd	nd	nd	nd	nd	MLA/DRS
Cu	220.2	0.005	03/01/94	nd	nd	nd	nd	0.005	MLA/DRS
Fe	200.7	0.02	02/28/94	1.4	0.24	0.36	0.22	1.0	PMB
Hg	245.1	0.0002	02/15/93	nd	nd	nd	nd	nd	MLA/DRS
Mg	200.7	1.0	02/28/94	7.9	11	25	12	8.2	PMB
Mn	200.7	0.02	02/28/94	nd	0.09	0.03	0.16	nd	PMB
Mo	200.7	0.10	02/28/94	nd	nd	nd	nd	nd	PMB
Ni	200.7	0.01	02/28/94	nd	nd	nd	nd	nd	PMB
Pb	239.2	0.001	03/03/94	0.001	0.002	nd	nd	nd	MLA/DRS
Sb	204.2	0.005	03/09/94	nd	nd	nd	nd	nd	MLA/DRS
Se	270.2	0.003	02/28/94	nd	nd	nd	nd	nd	MLA/DRS
Sn	282.2	0.10	03/08/94	nd	nd	nd	nd	nd	MLA/DRS
Ti	200.7	0.03	02/28/94	nd	nd	nd	nd	nd	PMB
Tl	279.2	0.002	03/01/94	nd	nd	nd	nd	nd	MLA/DRS
Zn	200.7	0.05	02/28/94	nd	0.10	nd	nd	nd	PMB

ALL CONCENTRATIONS IN mg/l



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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
pH (Field)	6.68	units		02/01/1994	mab	150.1 (3)	
BOD - Five Day	<3	mg/L	02/02/1994	02/07/1994	cab	405.1 (3)	
Bromide	0.36	mg/L		02/07/1994	dds	340.2 (3)	
COD	12	mg/L		02/07/1994	glc	410.1-2 (3)	
Cyanide, Amenable	<0.02	mg/L		02/04/1994	dds	335.1 (3)	
Cyanide, Total	<0.02	mg/L		02/04/1994	dds	335.2 (3)	
Fluoride	0.12	mg/L		02/03/1994	dds	340.2 (3)	
Nitrogen, Ammonia	0.6	mg/L		02/07/1994	cab	350.2 (3)	
Nitrogen, Kjeldahl	0.6	mg/L		02/11/1994	akm	351.3 (3)	
Nitrogen, Nitrate	0.95	mg/L		02/02/1994	glc	352.1 (3)	
Nitrogen, Nitrite	0.02	mg/L		02/02/1994	glc	354.1 (3)	
Nitrogen, Organic	<0.5	mg/L		02/11/1994	akm	351.3 (3)	
Oil & Grease	<5	mg/L		02/07/1994	akm	413.1 (3)	
Oxygen, Dissolved	12	mg/L		02/02/1994	cab	360.2 (3)	
Phenol (4-AAP)	<0.010	mg/L		02/09/1994	glc	420.1 (3)	
Phosphorus, Total	0.14	mg/L		02/08/1994	dds	365.2 (3)	
Solids, Suspended	6	mg/L		02/03/1994	cab	160.2 (3)	
Sulfate	26	mg/L		02/10/1994	dds	375.4 (3)	
Sulfide, Total	0.07	mg/L		02/01/1994	dds	376.2 (3)	
Total Organic Carbon	5	mg/L		02/16/1994	aus	9060 (1)	

Bruce E. Brown  
Project Manager





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02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
VOLATILE COMPOUNDS							
Acrolein	<100	ug/L		02/09/1994	pmc	624 (5)	
Acrylonitrile	<100	ug/L		02/09/1994	pmc	624 (5)	
Benzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromodichloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromoform	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromomethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Carbon tetrachloride	<10	ug/L		02/09/1994	pmc	624 (5)	
Chlorobenzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
2-Chloroethyl vinyl ether	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloroform	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Dibromochloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1-Dichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,2-Dichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
cis-1,2-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
trans-1,2-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
1,2-Dichloropropane	<10	ug/L		02/09/1994	pmc	624 (5)	
cis-1,3-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
trans-1,3-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
Ethyl benzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Methylene chloride	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1,2,2-Tetrachloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Tetrachloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
Toluene	<10	ug/L		02/09/1994	pmc	624 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
1,1,1-Trichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1,2-Trichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Trichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
Trichlorofluoromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Vinyl chloride	<10	ug/L		02/09/1994	pmc	624 (5)	

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02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Notes
BASE NEUTRAL COMPOUNDS			02/02/1994				
Acenaphthene	<10	ug/L		02/10/1994	wad	625 (5)	
Acenaphthylene	<10	ug/L		02/10/1994	wad	625 (5)	
Anthracene	<10	ug/L		02/10/1994	wad	625 (5)	
Benzidine	<10	ug/L		02/10/1994	wad	625 (5)	
Benzo(a)anthracene	<10	ug/L		02/10/1994	wad	625 (5)	
Benzo(b)fluoranthene	<10	ug/L		02/10/1994	wad	625 (5)	
Benzo(k)fluoranthene	<10	ug/L		02/10/1994	wad	625 (5)	
Benzo(a)pyrene	<10	ug/L		02/10/1994	wad	625 (5)	
Benzo(ghi)perylene	<10	ug/L		02/10/1994	wad	625 (5)	
Bis(2-chloroethyl)ether	<10	ug/L		02/10/1994	wad	625 (5)	
Bis(2-chloroethoxy)methane	<10	ug/L		02/10/1994	wad	625 (5)	
Bis(2-ethylhexyl)phthalate	<10	ug/L		02/10/1994	wad	625 (5)	
Bis(2-chloroisopropyl) ether	<10	ug/L		02/10/1994	wad	625 (5)	
Butyl benzyl phthalate	<10	ug/L		02/10/1994	wad	625 (5)	
4-Bromophenyl phenyl ether	<10	ug/L		02/10/1994	wad	625 (5)	
2-Chloronaphthalene	<10	ug/L		02/10/1994	wad	625 (5)	
4-Chlorophenylphenyl ether	<10	ug/L		02/10/1994	wad	625 (5)	
Chrysene	<10	ug/L		02/10/1994	wad	625 (5)	
Dibenzo(a,h)anthracene	<10	ug/L		02/10/1994	wad	625 (5)	
Di-n-butylphthalate	<10	ug/L		02/10/1994	wad	625 (5)	
1,2-Dichlorobenzene	<10	ug/L		02/10/1994	wad	625 (5)	
1,3-Dichlorobenzene	<10	ug/L		02/10/1994	wad	625 (5)	
1,4-Dichlorobenzene	<10	ug/L		02/10/1994	wad	625 (5)	
3,3'-Dichlorobenzidine	<10	ug/L		02/10/1994	wad	625 (5)	
Diethyl phthalate	<10	ug/L		02/10/1994	wad	625 (5)	
Dimethyl phthalate	<10	ug/L		02/10/1994	wad	625 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
2,4-Dinitrotoluene	<10	ug/L		02/10/1994	wad	625 (5)	
2,6-Dinitrotoluene	<10	ug/L		02/10/1994	wad	625 (5)	
Di-n-octylphthalate	<10	ug/L		02/10/1994	wad	625 (5)	
1,2-Diphenylhydrazine	<10	ug/L		02/10/1994	wad	625 (5)	
Fluoranthene	<10	ug/L		02/10/1994	wad	625 (5)	
Fluorene	<10	ug/L		02/10/1994	wad	625 (5)	
Hexachlorobenzene	<10	ug/L		02/10/1994	wad	625 (5)	
Hexachlorobutadiene	<10	ug/L		02/10/1994	wad	625 (5)	
Hexachlorocyclopentadiene	<10	ug/L		02/10/1994	wad	625 (5)	
Hexachloroethane	<10	ug/L		02/10/1994	wad	625 (5)	
Indeno(1,2,3-cd)pyrene	<10	ug/L		02/10/1994	wad	625 (5)	
Isophorone	<10	ug/L		02/10/1994	wad	625 (5)	
Naphthalene	<10	ug/L		02/10/1994	wad	625 (5)	
Nitrobenzene	<10	ug/L		02/10/1994	wad	625 (5)	
N-Nitrosodimethylamine	<10	ug/L		02/10/1994	wad	625 (5)	
N-Nitrosodiphenylamine	<10	ug/L		02/10/1994	wad	625 (5)	
N-Nitrosodi-n-propylamine	<10	ug/L		02/10/1994	wad	625 (5)	
Phenanthrene	<10	ug/L		02/10/1994	wad	625 (5)	
Pyrene	<10	ug/L		02/10/1994	wad	625 (5)	
1,2,4-Trichlorobenzene	<10	ug/L		02/10/1994	wad	625 (5)	
2,3,7,8 TCDD Screen	ND	ug/L		02/10/1994	wad	625 (5)	

ND - not detected via forward library search.

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## ANALYTICAL REPORT

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DETROIT EDISON COMPANY  
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02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
ACID COMPOUNDS			02/02/1994				
4-Chloro-3-methylphenol	<10	ug/L		02/10/1994	wad	625 (5)	
2-Chlorophenol	<10	ug/L		02/10/1994	wad	625 (5)	
2,4-Dichlorophenol	<10	ug/L		02/10/1994	wad	625 (5)	
2,4-Dimethylphenol	<10	ug/L		02/10/1994	wad	625 (5)	
2,4-Dinitrophenol	<50	ug/L		02/10/1994	wad	625 (5)	
4,6-Dinitro-2-methylphenol	<50	ug/L		02/10/1994	wad	625 (5)	
2-Nitrophenol	<10	ug/L		02/10/1994	wad	625 (5)	
4-Nitrophenol	<10	ug/L		02/10/1994	wad	625 (5)	
Pentachlorophenol	<10	ug/L		02/10/1994	wad	625 (5)	
Phenol	<10	ug/L		02/10/1994	wad	625 (5)	
2,4,6-Trichlorophenol	<10	ug/L		02/10/1994	wad	625 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/22/1994

Job No.: 94.00533  
Sample No.: 145130

Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PESTICIDES			02/02/1994				
Aldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
alpha-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
beta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
gamma-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
delta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
Chlordane	<1.0	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDD	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDE	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDT	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Dieldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan I	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan II	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan Sulfate	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Endrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endrin Aldehyde	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor Epoxide	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Methoxychlor	<1.0	ug/L		02/07/1994	mmk	608 (5)	
Toxaphene	<0.80	ug/L		02/07/1994	mmk	608 (5)	

Bruce E. Brown  
Project Manager







NATIONAL  
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02/22/1994

Job No.: 94.00533  
Sample No.: 145130

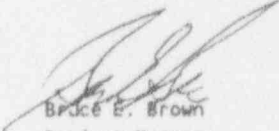
Fermi 2 Power Plant

Sample Description: Intake 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PCBs			02/02/1994				
Aroclor-1016	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1221	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1232	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1242	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1248	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1254	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1260	<0.050	ug/L		02/07/1994	mmk	608 (5)	

  
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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/18/1994

Job No.: 94.00626  
Sample No.: 145351

Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
pH (Field)	7.19	units		02/03/1994	mab	150.1 (3)	
BOD - Five Day	<3	mg/L	02/03/1994	02/08/1994	cab	405.1 (3)	
Bromide	<0.10	mg/L		02/14/1994	dds	340.2 (3)	
COD	56	mg/L		02/10/1994	gls	410.1-2 (3)	
Cyanide, Amenable	<0.02	mg/L		02/11/1994	dds	335.1 (3)	
Cyanide, Total	<0.02	mg/L		02/11/1994	dds	335.2 (3)	
Fluoride	0.12	mg/L		02/14/1994	dds	340.2 (3)	
Nitrogen, Ammonia	0.19	mg/L		02/14/1994	cab	350.2 (3)	
Nitrogen, Kjeldahl	0.7	mg/L		02/11/1994	akm	351.3 (3)	
Nitrogen, Nitrate	0.02	mg/L		02/10/1994	gls	352.1 (3)	
Nitrogen, Nitrite	0.02	mg/L		02/04/1994	akm	354.1 (3)	
Nitrogen, Organic	0.5	mg/L		02/11/1994	akm	351.3 (3)	
Oil & Grease	<5	mg/L		02/09/1994	gls	413.1 (3)	
Oxygen, Dissolved	14	mg/L		02/03/1994	cab	360.2 (3)	
Phenol (4-AAP)	<0.010	mg/L		02/10/1994	gls	420.1 (3)	
Phosphorus, Total	0.11	mg/L		02/09/1994	dds	365.2 (3)	
Solids, Suspended	<del>379</del> 17	mg/L		02/09/1994	cab	160.2 (3)	
Sulfate	27	mg/L		02/10/1994	dds	375.4 (3)	
Sulfide, Total	<0.05	mg/L		02/09/1994	dds	376.2 (3)	
Total Organic Carbon	4	mg/L		02/10/1994	aus	9060 (1)	

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7940 Livernois  
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02/18/1994

Job No.: 94.00626  
Sample No.: 145351

Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
VOLATILE COMPOUNDS							
Acrolein	<100	ug/L		02/10/1994	pmc	624 (5)	
Acrylonitrile	<100	ug/L		02/10/1994	pmc	624 (5)	
Benzene	<10	ug/L		02/10/1994	pmc	624 (5)	
Bromodichloromethane	<10	ug/L		02/10/1994	pmc	624 (5)	
Bromoform	<10	ug/L		02/10/1994	pmc	624 (5)	
Bromomethane	<10	ug/L		02/10/1994	pmc	624 (5)	
Carbon tetrachloride	<10	ug/L		02/10/1994	pmc	624 (5)	
Chlorobenzene	<10	ug/L		02/10/1994	pmc	624 (5)	
Chloroethane	<10	ug/L		02/10/1994	pmc	624 (5)	
2-Chloroethyl vinyl ether	<10	ug/L		02/10/1994	pmc	624 (5)	
Chloroform	<10	ug/L		02/10/1994	pmc	624 (5)	
Chloromethane	<10	ug/L		02/10/1994	pmc	624 (5)	
Dibromochloromethane	<10	ug/L		02/10/1994	pmc	624 (5)	
1,1-Dichloroethane	<10	ug/L		02/10/1994	pmc	624 (5)	
1,2-Dichloroethane	<10	ug/L		02/10/1994	pmc	624 (5)	
1,1-Dichloroethene	<10	ug/L		02/10/1994	pmc	624 (5)	
cis-1,2-Dichloroethene	<10	ug/L		02/10/1994	pmc	624 (5)	
trans-1,2-Dichloroethene	<10	ug/L		02/10/1994	pmc	624 (5)	
1,2-Dichloropropane	<10	ug/L		02/10/1994	pmc	624 (5)	
cis-1,3-Dichloropropene	<10	ug/L		02/10/1994	pmc	624 (5)	
trans-1,3-Dichloropropene	<10	ug/L		02/10/1994	pmc	624 (5)	
Ethyl benzene	<10	ug/L		02/10/1994	pmc	624 (5)	
Methylene chloride	<10	ug/L		02/10/1994	pmc	624 (5)	
1,1,2,2-Tetrachloroethane	<10	ug/L		02/10/1994	pmc	624 (5)	
Tetrachloroethene	<10	ug/L		02/10/1994	pmc	624 (5)	
Toluene	<10	ug/L		02/10/1994	pmc	624 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/18/1994

Job No.: 94.00626  
Sample No.: 145351

Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
1,1,1-Trichloroethane	<10	ug/L		02/10/1994	pnc	624 (5)	
1,1,2-Trichloroethane	<10	ug/L		02/10/1994	pnc	624 (5)	
Trichloroethene	<10	ug/L		02/10/1994	pnc	624 (5)	
Trichlorofluoromethane	<10	ug/L		02/10/1994	pnc	624 (5)	
Vinyl chloride	<10	ug/L		02/10/1994	pnc	624 (5)	

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02/18/1994

Job No.: 94.00626  
Sample No.: 145351

Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
BASE NEUTRAL COMPOUNDS			02/08/1994				
Acenaphthene	<10	ug/L		02/14/1994	wad	625 (5)	
Acenaphthylene	<10	ug/L		02/14/1994	wad	625 (5)	
Anthracene	<10	ug/L		02/14/1994	wad	625 (5)	
Benzidine	<10	ug/L		02/14/1994	wad	625 (5)	
Benzo(a)anthracene	<10	ug/L		02/14/1994	wad	625 (5)	
Benzo(b)fluoranthene	<10	ug/L		02/14/1994	wad	625 (5)	
Benzo(k)fluoranthene	<10	ug/L		02/14/1994	wad	625 (5)	
Benzo(a)pyrene	<10	ug/L		02/14/1994	wad	625 (5)	
Benzo(ghi)perylene	<10	ug/L		02/14/1994	wad	625 (5)	
Bis(2-chloroethyl)ether	<10	ug/L		02/14/1994	wad	625 (5)	
Bis(2-chloroethoxy)methane	<10	ug/L		02/14/1994	wad	625 (5)	
Bis(2-ethylhexyl)phthalate	<10	ug/L		02/14/1994	wad	625 (5)	
Bis(2-chloroisopropyl) ether	<10	ug/L		02/14/1994	wad	625 (5)	
Butyl benzyl phthalate	<10	ug/L		02/14/1994	wad	625 (5)	
4-Bromophenyl phenyl ether	<10	ug/L		02/14/1994	wad	625 (5)	
2-Chloronaphthalene	<10	ug/L		02/14/1994	wad	625 (5)	
4-Chlorophenylphenyl ether	<10	ug/L		02/14/1994	wad	625 (5)	
Chrysene	<10	ug/L		02/14/1994	wad	625 (5)	
Dibenzo(a,h)anthracene	<10	ug/L		02/14/1994	wad	625 (5)	
Di-n-butylphthalate	<10	ug/L		02/14/1994	wad	625 (5)	
1,2-Dichlorobenzene	<10	ug/L		02/14/1994	wad	625 (5)	
1,3-Dichlorobenzene	<10	ug/L		02/14/1994	wad	625 (5)	
1,4-Dichlorobenzene	<10	ug/L		02/14/1994	wad	625 (5)	
3,3'-Dichlorobenzidine	<10	ug/L		02/14/1994	wad	625 (5)	
Diethyl phthalate	<10	ug/L		02/14/1994	wad	625 (5)	
Dimethyl phthalate	<10	ug/L		02/14/1994	wad	625 (5)	

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02/18/1994

Job No.: 94.00626  
Sample No.: 145351

Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
2,4-Dinitrotoluene	<10	ug/L		02/14/1994	wad	625 (5)	
2,6-Dinitrotoluene	<10	ug/L		02/14/1994	wad	625 (5)	
Di-n-octylphthalate	<10	ug/L		02/14/1994	wad	625 (5)	
1,2-Diphenylhydrazine	<10	ug/L		02/14/1994	wad	625 (5)	
Fluoranthene	<10	ug/L		02/14/1994	wad	625 (5)	
Fluorene	<10	ug/L		02/14/1994	wad	625 (5)	
Hexachlorobenzene	<10	ug/L		02/14/1994	wad	625 (5)	
Hexachlorobutadiene	<10	ug/L		02/14/1994	wad	625 (5)	
Hexachlorocyclopentadiene	<10	ug/L		02/14/1994	wad	625 (5)	
Hexachloroethane	<10	ug/L		02/14/1994	wad	625 (5)	
Indeno(1,2,3-cd)pyrene	<10	ug/L		02/14/1994	wad	625 (5)	
Isophorone	<10	ug/L		02/14/1994	wad	625 (5)	
Naphthalene	<10	ug/L		02/14/1994	wad	625 (5)	
Nitrobenzene	<10	ug/L		02/14/1994	wad	625 (5)	
N-Nitrosodimethylamine	<10	ug/L		02/14/1994	wad	625 (5)	
N-Nitrosodiphenylamine	<10	ug/L		02/14/1994	wad	625 (5)	
N-Nitrosodi-n-propylamine	<10	ug/L		02/14/1994	wad	625 (5)	
Phenanthrene	<10	ug/L		02/14/1994	wad	625 (5)	
Pyrene	<10	ug/L		02/14/1994	wad	625 (5)	
1,2,4-Trichlorobenzene	<10	ug/L		02/14/1994	wad	625 (5)	
2,3,7,8 TCDD Screen	ND	ug/L		02/14/1994	wad	625 (5)	

ND - Not detected via forward library search.

Bruce E. Brown  
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02/18/1994

Job No.: 94.00626  
Sample No.: 145351

Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
ACID COMPOUNDS			02/08/1994				
4-Chloro-3-methylphenol	<10	ug/L		02/14/1994	wad	625 (5)	
2-Chlorophenol	<10	ug/L		02/14/1994	wad	625 (5)	
2,4-Dichlorophenol	<10	ug/L		02/14/1994	wad	625 (5)	
2,4-Dimethylphenol	<10	ug/L		02/14/1994	wad	625 (5)	
2,4-Dinitrophenol	<50	ug/L		02/14/1994	wad	625 (5)	
4,6-Dinitro-2-methylphenol	<50	ug/L		02/14/1994	wad	625 (5)	
2-Nitrophenol	<10	ug/L		02/14/1994	wad	625 (5)	
4-Nitrophenol	<10	ug/L		02/14/1994	wad	625 (5)	
Pentachlorophenol	<10	ug/L		02/14/1994	wad	625 (5)	
Phenol	<10	ug/L		02/14/1994	wad	625 (5)	
2,4,6-Trichlorophenol	<10	ug/L		02/14/1994	wad	625 (5)	

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Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PESTICIDES			02/08/1994				
Aldrin	<0.50	ug/L		02/11/1994	mmk	608 (5)	
alpha-BHC	<0.40	ug/L		02/11/1994	mmk	608 (5)	
beta-BHC	<0.40	ug/L		02/11/1994	mmk	608 (5)	
gamma-BHC	<0.40	ug/L		02/11/1994	mmk	608 (5)	
delta-BHC	<0.40	ug/L		02/11/1994	mmk	608 (5)	
Chlordane	<1.0	ug/L		02/11/1994	mmk	608 (5)	
4,4'-DDD	<0.50	ug/L		02/11/1994	mmk	608 (5)	
4,4'-DDE	<0.50	ug/L		02/11/1994	mmk	608 (5)	
4,4'-DDT	<0.50	ug/L		02/11/1994	mmk	608 (5)	
Dieldrin	<0.50	ug/L		02/11/1994	mmk	608 (5)	
Endosulfan I	<0.50	ug/L		02/11/1994	mmk	608 (5)	
Endosulfan II	<0.50	ug/L		02/11/1994	mmk	608 (5)	
Endosulfan Sulfate	<0.80	ug/L		02/11/1994	mmk	608 (5)	
Endrin	<0.50	ug/L		02/11/1994	mmk	608 (5)	
Endrin Aldehyde	<0.80	ug/L		02/11/1994	mmk	608 (5)	
Heptachlor	<0.80	ug/L		02/11/1994	mmk	608 (5)	
Heptachlor Epoxide	<0.50	ug/L		02/11/1994	mmk	608 (5)	
Methoxychlor	<1.0	ug/L		02/11/1994	mmk	608 (5)	
Toxaphene	<0.80	ug/L		02/11/1994	mmk	608 (5)	

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02/18/1994

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Sample No.: 145351


Fermi 2 Power Plant

Sample Description: #001 02/03

Date Taken: 02/03/1994

Date Received: 02/03/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PCBs			02/08/1994				
Aroclor-1016	<0.050	ug/L		02/11/1994	mmk	608 (5)	
Aroclor-1221	<0.050	ug/L		02/11/1994	mmk	608 (5)	
Aroclor-1232	<0.050	ug/L		02/11/1994	mmk	608 (5)	
Aroclor-1242	<0.050	ug/L		02/11/1994	mmk	608 (5)	
Aroclor-1248	<0.050	ug/L		02/11/1994	mmk	608 (5)	
Aroclor-1254	<0.050	ug/L		02/11/1994	mmk	608 (5)	
Aroclor-1260	<0.050	ug/L		02/11/1994	mmk	608 (5)	

  
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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
pH (Field)	7.07	units	02/01/1994	01/31/1994	mab	150.1 (3)	
BOD - Five Day	<3	mg/L		02/07/1994	cab	405.1 (3)	
Bromide	0.26	mg/L		02/07/1994	cdls	340.2 (3)	
COD	46	mg/L		02/07/1994	gls	410.1-2 (3)	
Cyanide, Amenable	<0.02	mg/L		02/04/1994	dds	335.1 (3)	
Cyanide, Total	<0.02	mg/L		02/04/1994	dds	335.2 (3)	
Fluoride	0.20	mg/L		02/03/1994	cdls	340.2 (3)	
Nitrogen, Ammonia	17	mg/L		02/02/1994	akm	350.2 (3)	
Nitrogen, Kjeldahl	23	mg/L		02/11/1994	akm	351.3 (3)	
Nitrogen, Nitrate	0.69	mg/L		02/02/1994	gls	352.1 (3)	
Nitrogen, Nitrite	<0.02	mg/L		02/02/1994	gls	354.1 (3)	
Nitrogen, Organic	6.0	mg/L		02/11/1994	akm	351.3 (3)	
Oil & Grease	<5	mg/L		02/07/1994	akm	413.1 (3)	
Oxygen, Dissolved	10	mg/L		01/31/1994	cab	360.2 (3)	
Phenol (4-AAP)	<0.010	mg/L		02/09/1994	gls	420.1 (3)	
Phosphorus, Total	0.27	mg/L		02/08/1994	dds	365.2 (3)	
Solids, Suspended	<4	mg/L		02/03/1994	cab	160.2 (3)	
Sulfate	29	mg/L		02/10/1994	dds	375.4 (3)	
Sulfide, Total	<0.05	mg/L		02/01/1994	dds	376.2 (3)	
Total Organic Carbon	21	mg/L		02/10/1994	aus	9060 (1)	

Bruce E. Brown  
Project Manager







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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
VOLATILE COMPOUNDS							
Acrolein	<100	ug/L		02/08/1994	pmc	624 (5)	
Acrylonitrile	<100	ug/L		02/08/1994	pmc	624 (5)	
Benzene	<10	ug/L		02/08/1994	pmc	624 (5)	
Bromodichloromethane	<10	ug/L		02/08/1994	pmc	624 (5)	
Bromoform	<10	ug/L		02/08/1994	pmc	624 (5)	
Bromomethane	<10	ug/L		02/08/1994	pmc	624 (5)	
Carbon tetrachloride	<10	ug/L		02/08/1994	pmc	624 (5)	
Chlorobenzene	<10	ug/L		02/08/1994	pmc	624 (5)	
Chloroethane	<10	ug/L		02/08/1994	pmc	624 (5)	
2-Chloroethyl vinyl ether	<10	ug/L		02/08/1994	pmc	624 (5)	
Chloroform	<10	ug/L		02/08/1994	pmc	624 (5)	
Chloromethane	<10	ug/L		02/08/1994	pmc	624 (5)	
Dibromochloromethane	<10	ug/L		02/08/1994	pmc	624 (5)	
1,1-Dichloroethane	<10	ug/L		02/08/1994	pmc	624 (5)	
1,2-Dichloroethane	<10	ug/L		02/08/1994	pmc	624 (5)	
1,1-Dichloroethene	<10	ug/L		02/08/1994	pmc	624 (5)	
cis-1,2-Dichloroethene	<10	ug/L		02/08/1994	pmc	624 (5)	
trans-1,2-Dichloroethene	<10	ug/L		02/08/1994	pmc	624 (5)	
1,2-Dichloropropene	<10	ug/L		02/08/1994	pmc	624 (5)	
cis-1,3-Dichloropropene	<10	ug/L		02/08/1994	pmc	624 (5)	
trans-1,3-Dichloropropene	<10	ug/L		02/08/1994	pmc	624 (5)	
Ethyl benzene	<10	ug/L		02/08/1994	pmc	624 (5)	
Methylene chloride	<10	ug/L		02/08/1994	pmc	624 (5)	
1,1,2,2-Tetrachloroethane	<10	ug/L		02/08/1994	pmc	624 (5)	
Tetrachloroethene	<10	ug/L		02/08/1994	pmc	624 (5)	
Toluene	<10	ug/L		02/08/1994	pmc	624 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
1,1,1-Trichloroethane	<10	ug/L		02/08/1994	pnc	624 (5)	
1,1,2-Trichloroethane	<10	ug/L		02/08/1994	pnc	624 (5)	
Trichloroethene	<10	ug/L		02/08/1994	pnc	624 (5)	
Trichlorofluoromethane	<10	ug/L		02/08/1994	pnc	624 (5)	
Vinyl chloride	<10	ug/L		02/08/1994	pnc	624 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
BASE NEUTRAL COMPOUNDS			02/02/1994				
Acenaphthene	<10	ug/L		02/09/1994	njd	625 (5)	
Acenaphthylene	<10	ug/L		02/09/1994	njd	625 (5)	
Anthracene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzidine	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(a)anthracene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(b)fluoranthene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(k)fluoranthene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(a)pyrene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(ghi)perylene	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-chloroethyl)ether	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-chloroethoxy)methane	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-ethylhexyl)phthalate	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-chloroisopropyl) ether	<10	ug/L		02/09/1994	njd	625 (5)	
Butyl benzyl phthalate	<10	ug/L		02/09/1994	njd	625 (5)	
4-Bromophenyl phenyl ether	<10	ug/L		02/09/1994	njd	625 (5)	
2-Chloronaphthalene	<10	ug/L		02/09/1994	njd	625 (5)	
4-Chlorophenylphenyl ether	<10	ug/L		02/09/1994	njd	625 (5)	
Chrysene	<10	ug/L		02/09/1994	njd	625 (5)	
Dibenzo(a,h)anthracene	<10	ug/L		02/09/1994	njd	625 (5)	
Di-n-butylphthalate	<10	ug/L		02/09/1994	njd	625 (5)	
1,2-Dichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
1,3-Dichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
1,4-Dichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
3,3'-Dichlorobenzidine	<10	ug/L		02/09/1994	njd	625 (5)	
Diethyl phthalate	<10	ug/L		02/09/1994	njd	625 (5)	
Dimethyl phthalate	<10	ug/L		02/09/1994	njd	625 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
2,4-Dinitrotoluene	<10	ug/L		02/09/1994	njd	625 (5)	
2,6-Dinitrotoluene	<10	ug/L		02/09/1994	njd	625 (5)	
Di-n-octylphthalate	<10	ug/L		02/09/1994	njd	625 (5)	
1,2-Diphenylhydrazine	<10	ug/L		02/09/1994	njd	625 (5)	
Fluoranthene	<10	ug/L		02/09/1994	njd	625 (5)	
Fluorene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachlorobutadiene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachlorocyclopentadiene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachloroethane	<10	ug/L		02/09/1994	njd	625 (5)	
Indeno(1,2,3-cd)pyrene	<10	ug/L		02/09/1994	njd	625 (5)	
Isophorone	<10	ug/L		02/09/1994	njd	625 (5)	
Naphthalene	<10	ug/L		02/09/1994	njd	625 (5)	
Nitrobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
N-Nitrosodimethylamine	<10	ug/L		02/09/1994	njd	625 (5)	
N-Nitrosodiphenylamine	<10	ug/L		02/09/1994	njd	625 (5)	
N-Nitrosodi-n-propylamine	<10	ug/L		02/09/1994	njd	625 (5)	
Phenanthrene	<10	ug/L		02/09/1994	njd	625 (5)	
Pyrene	<10	ug/L		02/09/1994	njd	625 (5)	
1,2,4-Trichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
2,3,7,8 TCDD Screen	ND	ug/L		02/09/1994	njd	625 (5)	

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Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
ACID COMPOUNDS			02/02/1994				
4-Chloro-3-methylphenol	<10	ug/L		02/09/1994	njd	625 (5)	
2-Chlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4-Dichlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4-Dimethylphenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4-Dinitrophenol	<50	ug/L		02/09/1994	njd	625 (5)	
4,6-Dinitro-2-methylphenol	<50	ug/L		02/09/1994	njd	625 (5)	
2-Nitrophenol	<10	ug/L		02/09/1994	njd	625 (5)	
4-Nitrophenol	<10	ug/L		02/09/1994	njd	625 (5)	
Pentachlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	
Phenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4,6-Trichlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	

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02/17/1994

Job No.: 94.00504  
Sample No.: 145057

Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Notes
PESTICIDES			02/02/1994				
Aldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
alpha-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
beta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
gamma-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
delta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
Chlordane	<1.0	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDD	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDE	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDT	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Dieldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan I	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan II	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan Sulfate	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Endrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endrin Aldehyde	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor Epoxide	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Methoxychlor	<1.0	ug/L		02/07/1994	mmk	608 (5)	
Toxaphene	<0.80	ug/L		02/07/1994	mmk	608 (5)	

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## ANALYTICAL REPORT

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DETROIT EDISON COMPANY  
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Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145057

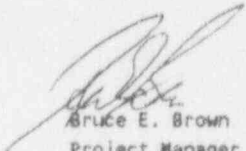
Fermi 2 Power Plant

Sample Description: 009 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PCBs			02/02/1994				
Aroclor-1016	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1221	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1232	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1242	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-124P	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1254	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1260	<0.050	ug/L		02/07/1994	mmk	608 (5)	

  
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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/22/1994

Job No.: 94.00532  
Sample No.: 145129

Fermi 2 Power Plant

Sample Description: #011 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
pH (Field)	6.73	units		02/01/1994	mab	150.1 (3)	
BOD - Five Day	<3	mg/L	02/02/1994	02/07/1994	cab	405.1 (3)	
Bromide	0.51	mg/L		02/07/1994	dds	340.2 (3)	
COD	<10	mg/L		02/07/1994	gls	410.1-2 (3)	
Cyanide, Amenable	<0.02	mg/L		02/04/1994	dds	335.1 (3)	
Cyanide, Total	<0.02	mg/L		02/04/1994	dds	335.2 (3)	
Fluoride	0.54	mg/L		02/03/1994	dds	340.2 (3)	
Nitrogen, Ammonia	0.5	mg/L		02/07/1994	cab	350.2 (3)	
Nitrogen, Kjeldahl	0.6	mg/L		02/11/1994	akm	351.3 (3)	
Nitrogen, Nitrate	0.83	mg/L		02/02/1994	gls	352.1 (3)	
Nitrogen, Nitrite	<0.02	mg/L		02/02/1994	gls	354.1 (3)	
Nitrogen, Organic	0.1	mg/L		02/11/1994	akm	351.3 (3)	
Oil & Grease	<5	mg/L		02/07/1994	akm	413.1 (3)	
Oxygen, Dissolved	12	mg/L		02/02/1994	cab	360.2 (3)	
Phenol (4-AAP)	<0.010	mg/L		02/09/1994	gls	420.1 (3)	
Phosphorus, Total	0.12	mg/L		02/08/1994	dds	365.2 (3)	
Solids, Suspended	4	mg/L		02/03/1994	cab	160.2 (3)	
Sulfate	130	mg/L		02/10/1994	dds	375.4 (3)	
Sulfide, Total	<0.05	mg/L		02/01/1994	dds	376.2 (3)	
Total Organic Carbon	5	mg/L		02/16/1994	aus	9060 (1)	

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02/22/1994

Job No.: 94.00532  
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Fermi 2 Power Plant

Sample Description: #011 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
VOLATILE COMPOUNDS							
Acrolein	<100	ug/L		02/09/1994	pmc	624 (5)	
Acrylonitrile	<100	ug/L		02/09/1994	pmc	624 (5)	
Benzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromodichloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromoform	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromomethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Carbon tetrachloride	<10	ug/L		02/09/1994	pmc	624 (5)	
Chlorobenzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
2-Chloroethyl vinyl ether	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloroform	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Dibromochloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1-Dichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,2-Dichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
cis-1,2-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
trans-1,2-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
1,2-Dichloropropane	<10	ug/L		02/09/1994	pmc	624 (5)	
cis-1,3-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
trans-1,3-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
Ethyl benzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Methylene chloride	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1,2,2-Tetrachloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Tetrachloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
Toluene	<10	ug/L		02/09/1994	pmc	624 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
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Detroit, MI 48210

02/22/1994

Job No.: 94.00532  
Sample No.: 145129

Fermi 2 Power Plant

Sample Description: #011 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
1,1,1-Trichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1,2-Trichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Trichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
Trichlorofluoromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Vinyl chloride	<10	ug/L		02/09/1994	pmc	624 (5)	

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Detroit, MI 48210

02/22/1994

Job No.: 94.00532  
Sample No.: 145129

Fermi 2 Power Plant

Sample Description: #011 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
BASE NEUTRAL COMPOUNDS			02/02/1994				
Acenaphthene	<10	ug/L		02/10/1994	njd	625 (5)	
Acenaphthylene	<10	ug/L		02/10/1994	njd	625 (5)	
Anthracene	<10	ug/L		02/10/1994	njd	625 (5)	
Benzidine	<10	ug/L		02/10/1994	njd	625 (5)	
Benzo(a)anthracene	<10	ug/L		02/10/1994	njd	625 (5)	
Benzo(b)fluoranthene	<10	ug/L		02/10/1994	njd	625 (5)	
Benzo(k)fluoranthene	<10	ug/L		02/10/1994	njd	625 (5)	
Benzo(a)pyrene	<10	ug/L		02/10/1994	njd	625 (5)	
Benzo(ghi)perylene	<10	ug/L		02/10/1994	njd	625 (5)	
Bis(2-chloroethyl)ether	<10	ug/L		02/10/1994	njd	625 (5)	
Bis(2-chloroethoxy)methane	<10	ug/L		02/10/1994	njd	625 (5)	
Bis(2-ethylhexyl)phthalate	<10	ug/L		02/10/1994	njd	625 (5)	
Bis(2-chloroisopropyl) ether	<10	ug/L		02/10/1994	njd	625 (5)	
Butyl benzyl phthalate	<10	ug/L		02/10/1994	njd	625 (5)	
4-Bromophenyl phenyl ether	<10	ug/L		02/10/1994	njd	625 (5)	
2-Chloronaphthalene	<10	ug/L		02/10/1994	njd	625 (5)	
4-Chlorophenylphenyl ether	<10	ug/L		02/10/1994	njd	625 (5)	
Chrysene	<10	ug/L		02/10/1994	njd	625 (5)	
Dibenzo(a,h)anthracene	<10	ug/L		02/10/1994	njd	625 (5)	
Di-n-butylphthalate	<10	ug/L		02/10/1994	njd	625 (5)	
1,2-Dichlorobenzene	<10	ug/L		02/10/1994	njd	625 (5)	
1,3-Dichlorobenzene	<10	ug/L		02/10/1994	njd	625 (5)	
1,4-Dichlorobenzene	<10	ug/L		02/10/1994	njd	625 (5)	
3,3'-Dichlorobenzidine	<10	ug/L		02/10/1994	njd	625 (5)	
Diethyl phthalate	<10	ug/L		02/10/1994	njd	625 (5)	
Dimethyl phthalate	<10	ug/L		02/10/1994	njd	625 (5)	

Bruce E. Brown  
Project Manager







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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/22/1994

Job No.: 94.00532  
Sample No.: 145129

Fermi 2 Power Plant

Sample Description: #011 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
2,4-Dinitrotoluene	<10	ug/L		02/10/1994	njd	625 (5)	
2,6-Dinitrotoluene	<10	ug/L		02/10/1994	njd	625 (5)	
Di-n-octylphthalate	<10	ug/L		02/10/1994	njd	625 (5)	
1,2-Diphenylhydrazine	<10	ug/L		02/10/1994	njd	625 (5)	
Fluoranthene	<10	ug/L		02/10/1994	njd	625 (5)	
Fluorene	<10	ug/L		02/10/1994	njd	625 (5)	
Hexachlorobenzene	<10	ug/L		02/10/1994	njd	625 (5)	
Hexachlorobutadiene	<10	ug/L		02/10/1994	njd	625 (5)	
Hexachlorocyclopentadiene	<10	ug/L		02/10/1994	njd	625 (5)	
Hexachloroethane	<10	ug/L		02/10/1994	njd	625 (5)	
Indeno(1,2,3-cd)pyrene	<10	ug/L		02/10/1994	njd	625 (5)	
Isophorone	<10	ug/L		02/10/1994	njd	625 (5)	
Naphthalene	<10	ug/L		02/10/1994	njd	625 (5)	
Nitrobenzene	<10	ug/L		02/10/1994	njd	625 (5)	
N-Nitrosodimethylamine	<10	ug/L		02/10/1994	njd	625 (5)	
N-Nitrosodiphenylamine	<10	ug/L		02/10/1994	njd	625 (5)	
N-Nitrosodi-n-propylamine	<10	ug/L		02/10/1994	njd	625 (5)	
Phenanthrene	<10	ug/L		02/10/1994	njd	625 (5)	
Pyrene	<10	ug/L		02/10/1994	njd	625 (5)	
1,2,4-Trichlorobenzene	<10	ug/L		02/10/1994	njd	625 (5)	
2,3,7,8 TCDD Screen	ND	ug/L		02/10/1994	njd	625 (5)	

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02/22/1994

Job No.: 94.00532  
Sample No.: 145129

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Sample Description: #011 02/01

Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
ACID COMPOUNDS			02/02/1994				
4-Chloro-3-methylphenol	<10	ug/L		02/10/1994	njd	625 (5)	
2-Chlorophenol	<10	ug/L		02/10/1994	njd	625 (5)	
2,4-Dichlorophenol	<10	ug/L		02/10/1994	njd	625 (5)	
2,4-Dimethylphenol	<10	ug/L		02/10/1994	njd	625 (5)	
2,4-Dinitrophenol	<50	ug/L		02/10/1994	njd	625 (5)	
4,6-Dinitro-2-methylphenol	<50	ug/L		02/10/1994	njd	625 (5)	
2-Nitrophenol	<10	ug/L		02/10/1994	njd	625 (5)	
4-Nitrophenol	<10	ug/L		02/10/1994	njd	625 (5)	
Pentachlorophenol	<10	ug/L		02/10/1994	njd	625 (5)	
Phenol	<10	ug/L		02/10/1994	njd	625 (5)	
2,4,6-Trichlorophenol	<10	ug/L		02/10/1994	njd	625 (5)	

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02/22/1994

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Sample No.: 145129

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Date Taken: 02/01/1994

Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PESTICIDES			02/02/1994				
Aldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
alpha-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
beta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
gamma-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
delta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
Chlordane	<1.0	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDD	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDE	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDT	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Dieldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan I	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan II	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan Sulfate	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Endrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endrin Aldehyde	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor Epoxide	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Methoxychlor	<1.0	ug/L		02/07/1994	mmk	608 (5)	
Toxaphene	<0.80	ug/L		02/07/1994	mmk	608 (5)	

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02/22/1994

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Fermi 2 Power Plant

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Date Received: 02/01/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PCBs			02/02/1994				
Aroclor-1016	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1221	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1232	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1242	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1248	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1254	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1260	<0.050	ug/L		02/07/1994	mmk	608 (5)	

  
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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145058

Fermi 2 Power Plant

Sample Description: 013 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
pH (Field)	6.95	units		01/31/1994	mab	150.1 (3)	
BOD - Five Day	4	mg/L	02/01/1994	02/07/1994	cab	405.1 (3)	
Bromide	0.20	mg/L		02/07/1994	dds	340.2 (3)	
COD	<10	mg/L		02/07/1994	gls	410.1-2 (3)	
Cyanide, Amenable	<0.02	mg/L		02/04/1994	dds	335.1 (3)	
Cyanide, Total	<0.02	mg/L		02/04/1994	dds	335.2 (3)	
Fluoride	0.10	mg/L		02/03/1994	dds	340.2 (3)	
Nitrogen, Ammonia	3.4	mg/L		02/02/1994	akm	350.2 (3)	
Nitrogen, Kjeldahl	4.0	mg/L		02/11/1994	akm	351.3 (3)	
Nitrogen, Nitrate	0.64	mg/L		02/02/1994	gls	352.1 (3)	
Nitrogen, Nitrite	<0.02	mg/L		02/02/1994	gls	354.1 (3)	
Nitrogen, Organic	0.6	mg/L		02/11/1994	akm	351.3 (3)	
Oil & Grease	<5	mg/L		02/07/1994	akm	413.1 (3)	
Oxygen, Dissolved	11	mg/L		01/31/1994	cab	360.2 (3)	
Phenol (4-AAP)	<0.010	mg/L		02/09/1994	gls	420.1 (3)	
Phosphorus, Total	0.05	mg/L		02/08/1994	dds	365.2 (3)	
Solids, Suspended	5	mg/L		02/03/1994	cab	160.2 (3)	
Sulfate	53	mg/L		02/10/1994	dds	375.4 (3)	
Sulfide, Total	<0.05	mg/L		02/01/1994	dds	376.2 (3)	
Total Organic Carbon	5	mg/L		02/10/1994	aus	9060 (1)	

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02/17/1994

Job No.: 94.00504  
Sample No.: 145058

Fermi 2 Power Plant

Sample Description: 013 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
VOLATILE COMPOUNDS							
Acrolein	<100	ug/L		02/09/1994	pmc	624 (5)	
Acrylonitrile	<100	ug/L		02/09/1994	pmc	624 (5)	
Benzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromodichloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromoform	<10	ug/L		02/09/1994	pmc	624 (5)	
Bromomethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Carbon tetrachloride	<10	ug/L		02/09/1994	pmc	624 (5)	
Chlorobenzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
2-Chloroethyl vinyl ether	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloroform	<10	ug/L		02/09/1994	pmc	624 (5)	
Chloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Dibromochloromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1-Dichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,2-Dichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
cis-1,2-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
trans-1,2-Dichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
1,2-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
cis-1,3-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
trans-1,3-Dichloropropene	<10	ug/L		02/09/1994	pmc	624 (5)	
Ethyl benzene	<10	ug/L		02/09/1994	pmc	624 (5)	
Methylene chloride	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1,2,2-Tetrachloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Tetrachloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
Toluene	<10	ug/L		02/09/1994	pmc	624 (5)	

Bruce E. Brown  
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Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145058

Fermi 2 Power Plant

Sample Description: 013 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
1,1,1-Trichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
1,1,2-Trichloroethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Trichloroethene	<10	ug/L		02/09/1994	pmc	624 (5)	
Trichlorofluoromethane	<10	ug/L		02/09/1994	pmc	624 (5)	
Vinyl chloride	<10	ug/L		02/09/1994	pmc	624 (5)	

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Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
BASE NEUTRAL COMPOUNDS			02/02/1994				
Acenaphthene	<10	ug/L		02/09/1994	njd	625 (5)	
Acenaphthylene	<10	ug/L		02/09/1994	njd	625 (5)	
Anthracene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzidine	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(a)anthracene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(b)fluoranthene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(k)fluoranthene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(a)pyrene	<10	ug/L		02/09/1994	njd	625 (5)	
Benzo(ghi)perylene	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-chloroethyl)ether	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-chloroethoxy)methane	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-ethylhexyl)phthalate	<10	ug/L		02/09/1994	njd	625 (5)	
Bis(2-chloroisopropyl) ether	<10	ug/L		02/09/1994	njd	625 (5)	
Butyl benzyl phthalate	<10	ug/L		02/09/1994	njd	625 (5)	
4-Bromophenyl phenyl ether	<10	ug/L		02/09/1994	njd	625 (5)	
2-Chloronaphthalene	<10	ug/L		02/09/1994	njd	625 (5)	
4-Chlorophenylphenyl ether	<10	ug/L		02/09/1994	njd	625 (5)	
Chrysene	<10	ug/L		02/09/1994	njd	625 (5)	
Dibenzo(a,h)anthracene	<10	ug/L		02/09/1994	njd	625 (5)	
Di-n-butylphthalate	<10	ug/L		02/09/1994	njd	625 (5)	
1,2-Dichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
1,3-Dichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
1,4-Dichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
3,3'-Dichlorobenzidine	<10	ug/L		02/09/1994	njd	625 (5)	
Diethyl phthalate	<10	ug/L		02/09/1994	njd	625 (5)	
Dimethyl phthalate	<10	ug/L		02/09/1994	njd	625 (5)	

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Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
2,4-Dinitrotoluene	<10	ug/L		02/09/1994	njd	625 (5)	
2,6-Dinitrotoluene	<10	ug/L		02/09/1994	njd	625 (5)	
Di-n-octylphthalate	<10	ug/L		02/09/1994	njd	625 (5)	
1,2-Diphenylhydrazine	<10	ug/L		02/09/1994	njd	625 (5)	
Fluoranthene	<10	ug/L		02/09/1994	njd	625 (5)	
Fluorene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachlorobutadiene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachlorocyclopentadiene	<10	ug/L		02/09/1994	njd	625 (5)	
Hexachloroethane	<10	ug/L		02/09/1994	njd	625 (5)	
Indeno(1,2,3-cd)pyrene	<10	ug/L		02/09/1994	njd	625 (5)	
Isophorone	<10	ug/L		02/09/1994	njd	625 (5)	
Naphthalene	<10	ug/L		02/09/1994	njd	625 (5)	
Nitrobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
N-Nitrosodimethylamine	<10	ug/L		02/09/1994	njd	625 (5)	
N-Nitrosodiphenylamine	<10	ug/L		02/09/1994	njd	625 (5)	
N-Nitrosodi-n-propylamine	<10	ug/L		02/09/1994	njd	625 (5)	
Phenanthrene	<10	ug/L		02/09/1994	njd	625 (5)	
Pyrene	<10	ug/L		02/09/1994	njd	625 (5)	
1,2,4-Trichlorobenzene	<10	ug/L		02/09/1994	njd	625 (5)	
2,3,7,8 TCDD Screen	ND	ug/L		02/09/1994	njd	625 (5)	

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## ANALYTICAL REPORT

Walt Meier  
DETROIT EDISON COMPANY  
7940 Livernois  
Detroit, MI 48210

02/17/1994

Job No.: 94.00504  
Sample No.: 145058

Fermi 2 Power Plant

Sample Description: 013 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
			02/02/1994				
PESTICIDES				02/07/1994	mmk	608 (5)	
Aldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
alpha-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
beta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
gamma-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
delta-BHC	<0.40	ug/L		02/07/1994	mmk	608 (5)	
Chlordane	<1.0	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDD	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDE	<0.50	ug/L		02/07/1994	mmk	608 (5)	
4,4'-DDT	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Dieldrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan I	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan II	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endosulfan Sulfate	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Endrin	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Endrin Aldehyde	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor	<0.80	ug/L		02/07/1994	mmk	608 (5)	
Heptachlor Epoxide	<0.50	ug/L		02/07/1994	mmk	608 (5)	
Methoxychlor	<1.0	ug/L		02/07/1994	mmk	608 (5)	
Toxaphene	<0.80	ug/L		02/07/1994	mmk	608 (5)	

Bruce E. Brown  
Project Manager





NATIONAL  
ENVIRONMENTAL  
TESTING, INC.

Auburn Hills Division  
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Auburn Hills, MI 48326  
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ACID COMPOUNDS			02/02/1994				
4-Chloro-3-methylphenol	<10	ug/L		02/09/1994	njd	625 (5)	
2-Chlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4-Dichlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4-Dimethylphenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4-Dinitrophenol	<50	ug/L		02/09/1994	njd	625 (5)	
4,6-Dinitro-2-methylphenol	<50	ug/L		02/09/1994	njd	625 (5)	
2-Nitrophenol	<10	ug/L		02/09/1994	njd	625 (5)	
4-Nitrophenol	<10	ug/L		02/09/1994	njd	625 (5)	
Pentachlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	
Phenol	<10	ug/L		02/09/1994	njd	625 (5)	
2,4,6-Trichlorophenol	<10	ug/L		02/09/1994	njd	625 (5)	

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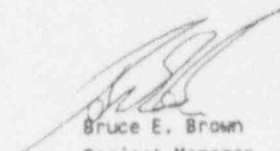
Fermi 2 Power Plant

Sample Description: 013 01/31

Date Taken: 01/31/1994

Date Received: 01/31/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
PCBs			02/02/1994				
Aroclor-1016	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1221	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1232	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1242	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1248	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1254	<0.050	ug/L		02/07/1994	mmk	608 (5)	
Aroclor-1260	<0.050	ug/L		02/07/1994	mmk	608 (5)	

  
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