

ATMOSPHERIC MODELING STUDIES

WASHINGTON WORKS

NEAREST LUBECK NEIGHBOR ANNUAL EXPOSURE IS CA. 0.03 UG/M3 (10% CEG)  
ASSUMING 85% UTILITY/90% EFFICIENCY OF FINE POWDER DRIER SCRUBBER.

DORDRECHT

NEAREST NEIGHBOR ANNUAL EXPOSURE IS CA. 0.03 UG/M3 WITH NO SCRUBBER  
IN PLACE.

SHIMIZU

NEAREST NEIGHBOR ANNUAL EXPOSURE IS CA. 0.05 UG/M3 WITH SCRUBBER IN  
OPERATION.

C:SLG  
1/2/92

RJZ010047

EID935502

C-8 STRATEGIES

- I. WE WILL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS GOVERNING THE USE AND DISPOSAL OF C-8.
- II. WE WILL CONTROL C-8 EXPOSURE TO PERSONNEL BY BEING IN FULL COMPLIANCE WITH THE AEL (0.01 MG/M3) FOR EMPLOYEES AND WITH THE CEG (0.0003 MG/M3 IN AIR, AND 1 PPB IN DRINKING WATER) FOR THE GENERAL PUBLIC.
- III. WE WILL COMMUNICATE C-8 INFORMATION TO EMPLOYEES AS DETERMINED BY SPD & SITE MANAGEMENT AND TO THE GENERAL PUBLIC AS DETERMINED BY SPD & SITE MANAGEMENT WITH THE ADVICE OF CORPORATE EXTERNAL AFFAIRS AND LEGAL.
- IV. WE WILL CONTINUE TO USE C-8 FOR THE MANUFACTURE OF FLUOROPOLYMERS. WE WILL CONTINUE TO REDUCE C-8 EMISSIONS TO THE ENVIRONMENT BY UTILIZING GOOD MANAGEMENT PRACTICES AS REQUIRED BY CORPORATE POLICY.

## GLOBAL C-8 USERS

| <u>SITE</u>              | <u>AMOUNT - LBS</u> |
|--------------------------|---------------------|
| WASHINGTON WORKS         | 71,100              |
| DORDRECHT WORKS          | 31,400              |
| SHIMIZU                  | 15,950              |
| CHAMBERS WORKS           | 2,000               |
| SPRUANCE                 | 1,500               |
| PARLIN                   | 2,500               |
| U.S. MAJOR CUSTOMERS     | 6,150               |
| NON-U.S. MAJOR CUSTOMERS | 4,060               |

RJZ010049

**WASHINGTON WORKS**

**C-8 MASS BALANCE (LBS)**

**1991 EST.**

**PURCHASED** **71,100**

**DISPOSAL**

|         |                |        |
|---------|----------------|--------|
| WATER - | OHIO RIVER     | 20,410 |
|         | DELAWARE RIVER | 11,250 |

|       |                   |       |
|-------|-------------------|-------|
| AIR - | OHIO RIVER VALLEY | 4,590 |
|-------|-------------------|-------|

|        |        |       |
|--------|--------|-------|
| LAND - | LETART | 3,700 |
|--------|--------|-------|

|           |             |        |
|-----------|-------------|--------|
| PRODUCT - | DISPERSIONS | 11,000 |
|           | FINE POWDER | 50     |
|           |             | -----  |

|       |        |
|-------|--------|
| TOTAL | 63,000 |
|-------|--------|

**RECOVERED OR DESTROYED**

|           |       |
|-----------|-------|
| FP DRIERS | 7,500 |
|-----------|-------|

|           |     |
|-----------|-----|
| FEP OVENS | 600 |
|-----------|-----|

|       |       |
|-------|-------|
| TOTAL | 8,100 |
|-------|-------|

|           |      |
|-----------|------|
| % OF FEED | 11.4 |
|-----------|------|

RJZ010050

**DORDRECHT WORK**  
**C-8 MASS BALANCE (LBS)**  
**1990 EST.**

|                         |                      |
|-------------------------|----------------------|
| <b><u>PURCHASED</u></b> | <b><u>31,400</u></b> |
|-------------------------|----------------------|

**DISPOSAL**

|         |                                     |        |
|---------|-------------------------------------|--------|
| WATER   | - MERWEDE RIVER                     | 21,200 |
| AIR     | -                                   | 7,100  |
| LAND    | - DORDRECHT MUNICIPAL DISPOSAL AREA | 400    |
| PRODUCT | - DISPERSIONS                       | 2,300  |
|         |                                     | -----  |
| TOTAL   |                                     | 31,000 |

**RECOVERED OR DESTROYED**

|             |     |
|-------------|-----|
| FEP OVENS   | 400 |
| 1/2 OF FEED | 1.2 |

RJZ010051

**SHIMIZU WORKS**  
**C-8 MASS BALANCE (LBS)**  
**1990 ACTUAL**

|                                          |                      |
|------------------------------------------|----------------------|
| <b><u>PURCHASED</u></b>                  | <b><u>15,950</u></b> |
| <b><u>DISPOSAL</u></b>                   |                      |
| WATER - SUGURA BAY                       | 12,800               |
| AIR                                      | 500                  |
| LAND                                     | 10                   |
| PRODUCT                                  | 1,700                |
|                                          | -----                |
| TOTAL                                    | 15,000               |
| <br><b><u>RECOVERED OR DESTROYED</u></b> |                      |
| INCINERATOR - SUPERNATE                  | 950                  |
| % OF FEED                                | 6.0                  |

RJZ010052

EID935507

OTHER C-8 MASS BALANCES

CHAMBERS WORKS

1560 LBS TO DELAWARE RIVER  
350 LBS TO AIR  
90 LBS TO PRODUCT

SPRUANCE

1500 LBS TO JAMES RIVER

PARLIN

2500 LBS TO OTHER CUSTOMERS

RJZ010053

EID935508

A Community Exposure Guideline ("CEG") is an exposure guideline established by Haskell Laboratory. The CEG assumes a 24-hour lifetime exposure by all, including the most sensitive individuals, in an exposed community population. Exposure above the CEG will not necessarily result in any adverse effects. Where data indicates that the CEG may be approached or exceeded, Haskell, the appropriate Business and Legal will evaluate, what action, if any should be taken. It is the Company's intent to maintain exposure below the CEG.

RJZ010054

EID935509

## GLOBAL C-8 ISSUES

### WASHINGTON WORKS

- LAB DISCUSSION
- C-8 LEVELS IN AIR - RESOLVED
- OHIO & DELAWARE RIVER
- GROUNDWATER
- LANDFILL - LETART & DRY RUN

### DORDRECHT WORKS

- C-8 LEVELS IN AIR - RESOLVED
- MERWEDE RIVER
- LANDFILL

### SHIMIZU WORKS

- SUGURA BAY

### CHAMBERS WORKS

- RECOVERY IN PACT UNIT

### SPRUANCE

- JAMES RIVER

### MAJOR CUSTOMERS

- AWARENESS OF HAZARD

RJZ010055

C-8 ANALYTICAL PROGRAM

|                  | METHOD                          | ACCURACY             | DETECTION<br>LIMIT | COST/<br>SAMPLE | LAB<br>EPA<br>RECOGNIZED |
|------------------|---------------------------------|----------------------|--------------------|-----------------|--------------------------|
| EXP. STA.        | DERIVITIZIE<br>GC               | 3 $\sigma$ 1.4 PPB   | 1 PPB              | > \$350         | NO                       |
| CH2MHILL         | EXTRACTION<br>DERIVITIZIE<br>GC | 3 $\sigma$ .0066 PPB | 0.1 PPB            | \$350           | YES                      |
| WASHINGTON WORKS | DERIVITIZIE/GC                  | -                    | 1/2 PPM            | -               | NO                       |

PREFERRED LAB - CH2MHILL - ROUTINE C-8 SAMPLES

EXP. STA. - NEW PROCEDURES

EID935511

R1Z010056

## FINE POWDER DRIER VENT SCRUBBER

### 1991 STATUS

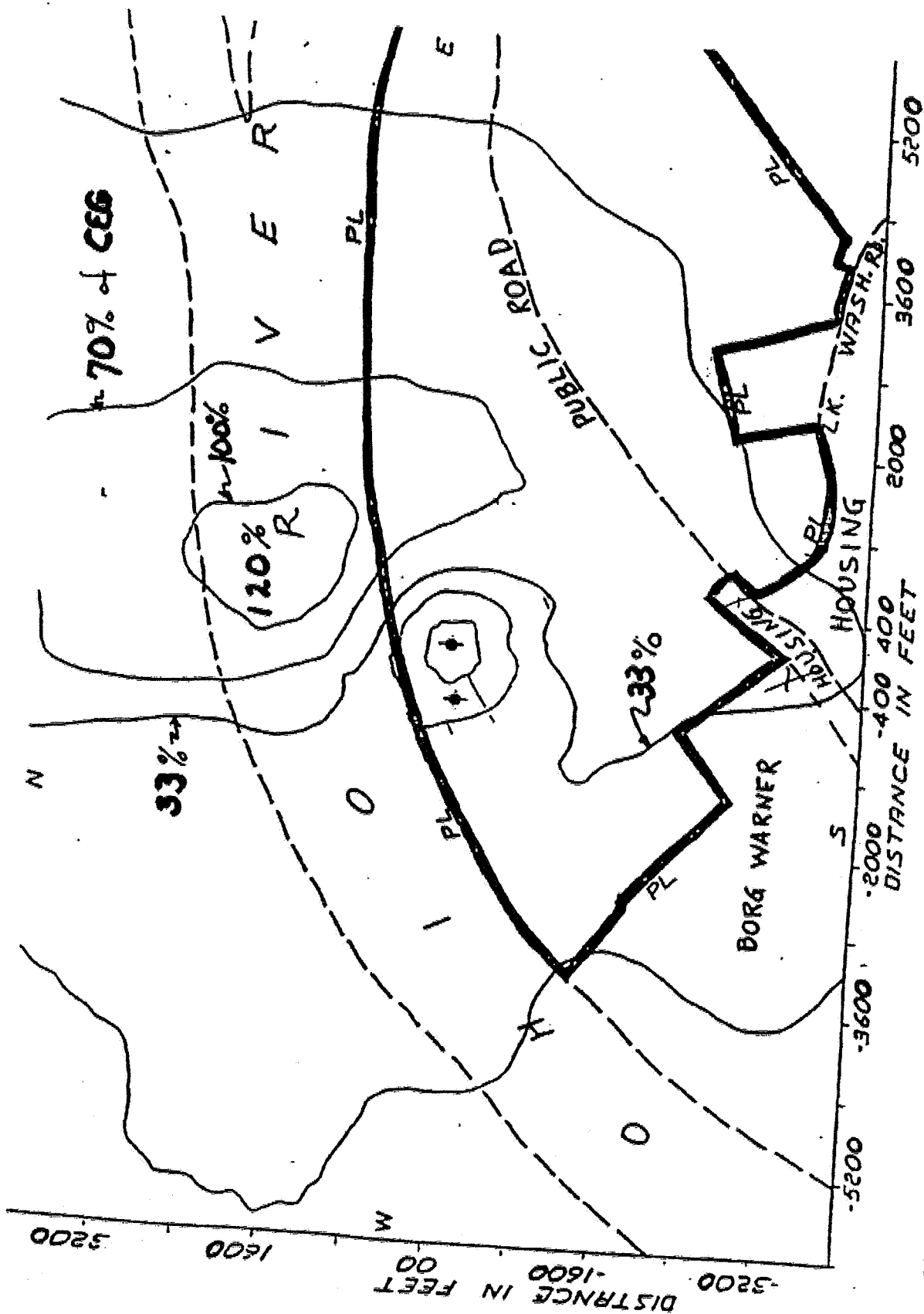
|                     | STATUS<br>12/91 | PROJECT OBJECTIVES |
|---------------------|-----------------|--------------------|
| SCRUBBER EFFICIENCY | 90              | 90                 |
| SYSTEM UTILITY      | 92              | 95                 |
| 1991 RECOVERED C-8  | 7800 (60%)      | 13,000             |

SYSTEM START-UP - 3/90

RJZ010057

EID935512

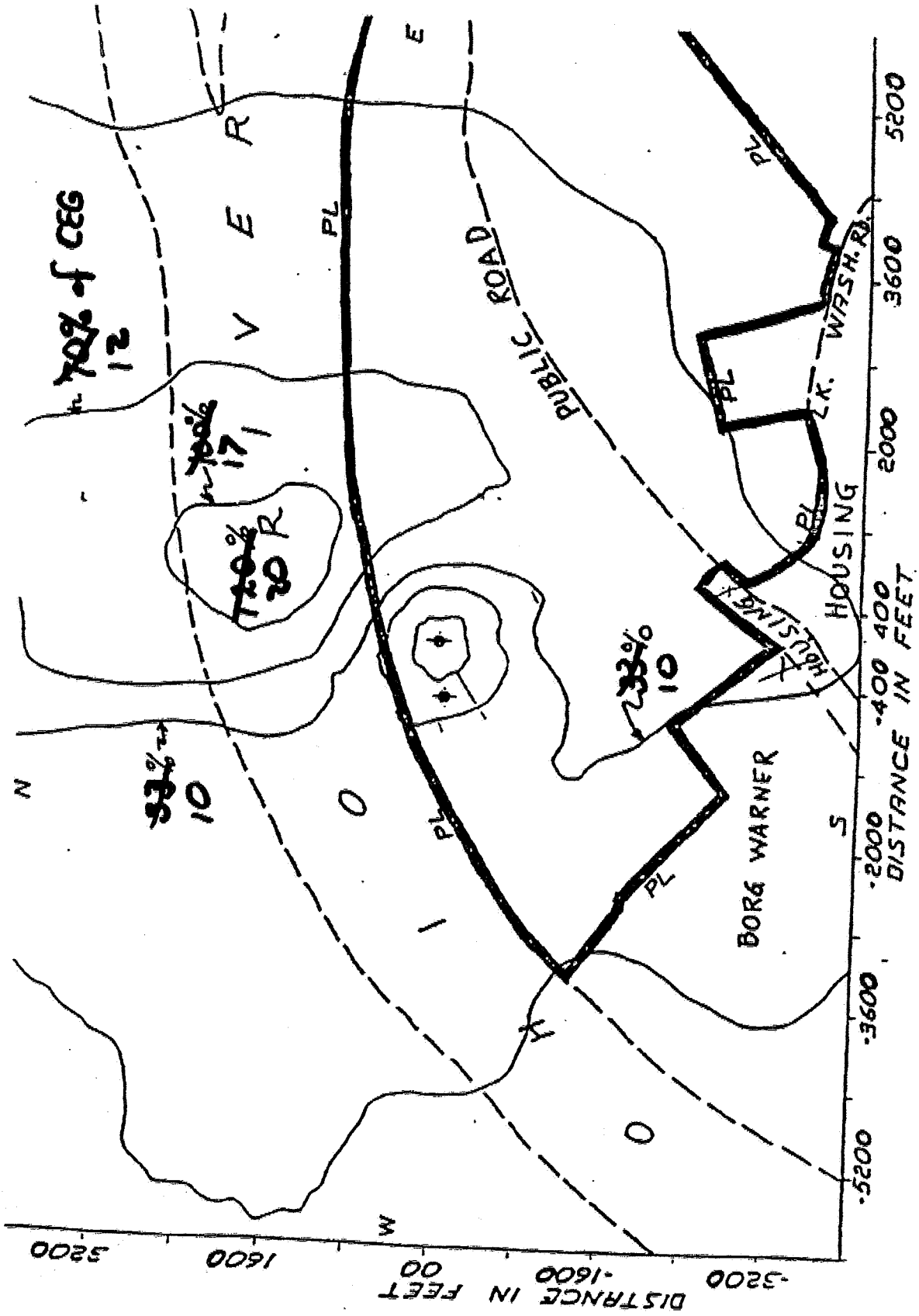
# WASHINGTON WORKS C-8 ANNUAL MEAN CONCENTRATION CASE 1



RJ2010058

W. HINGTON WORKS C-B ANNUAL MEAN CONCENTRATION  
CASE 1

W. HINGTON  
A3ATEWENT



EID935514

RJ2010059

WASHINGTON WORKS

C-8 IN WATER

SOURCES

LBS/YR

OHIO RIVER

|                        |        |
|------------------------|--------|
| GRANULAR               | 160    |
| FINE POWDER/DISPERSION | 2,850  |
| FEP                    | 17,400 |
| TOTAL                  | 20,410 |

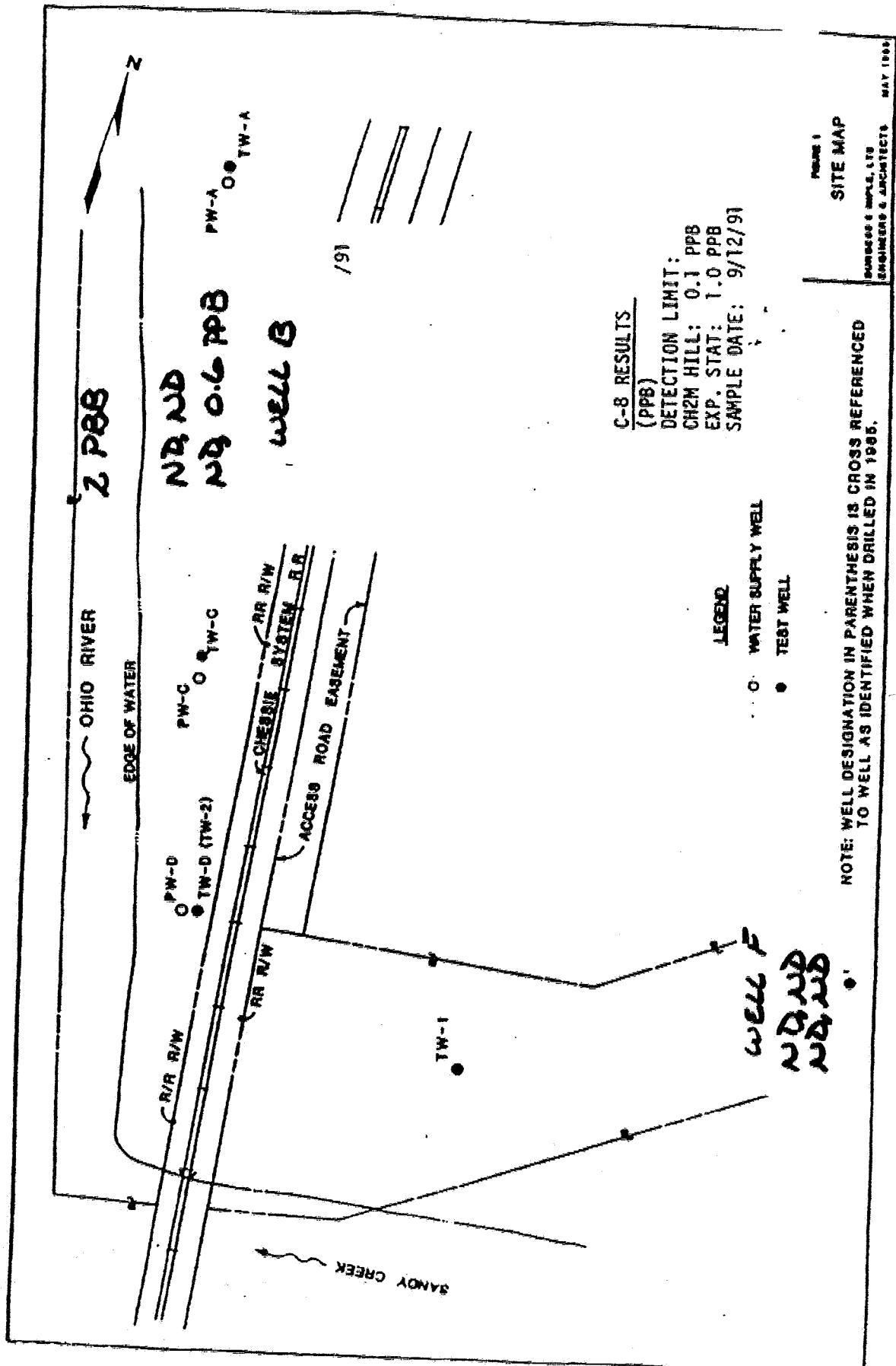
DELAWARE RIVER

|                      |        |
|----------------------|--------|
| DISPERSION SUPERNATE | 11,250 |
|----------------------|--------|

RJZ010060

EID935515





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RJZ010062

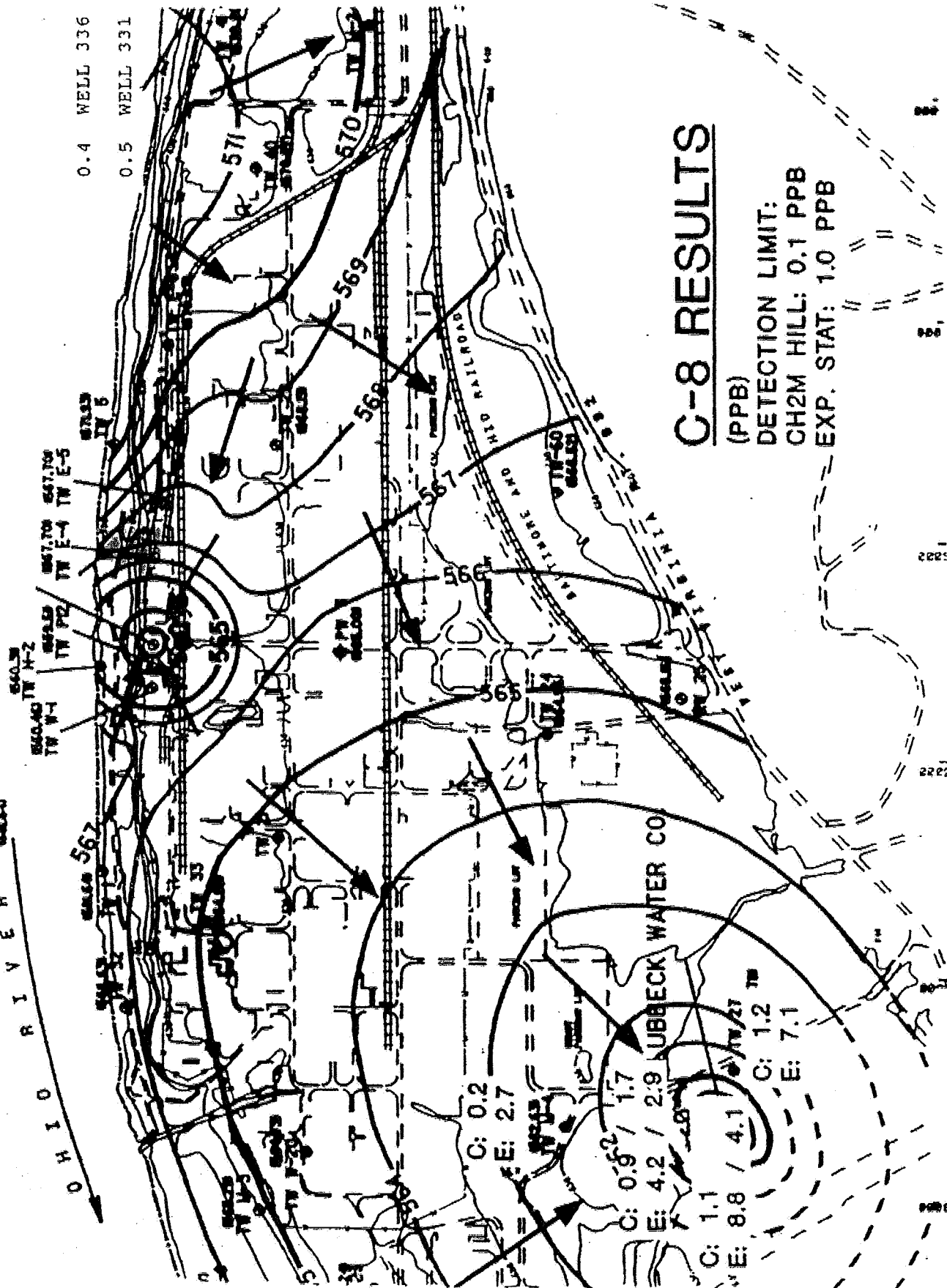
**WASHINGTON WORKS**  
**C-8 IN WATER PROGRAMS**

| <u>PROGRAM</u>                                        | <u>STATUS</u>             | <u>EST. COMP.</u> |
|-------------------------------------------------------|---------------------------|-------------------|
| CAPTURE FEP DRIER VENT<br>(11,000 LBS/YR)             | BASIC DATA<br>DEVELOPMENT | 3Q '92            |
| DETERMINE CHAMBERS WORKS<br>PACT PROCESS MASS BALANCE | IN PROGRESS               | 1Q '92            |
| RECOVER C-8 FROM PTFE<br>SUPERNATE (10,000 LBS/YR)    | CONCEPT STAGE             | GOAL-1994         |
| REPLACE C-8 IN FEP<br>WITH TBSA                       | 25% COMPLETE              | UNKNOWN           |

RJZ010063

EID935518

O H I O R I V E R



# C-8 RESULTS

(PPB)

DETECTION LIMIT:  
CH2M HILL: 0.1 PPB  
EXP. STAT: 1.0 PPB

C: 0.2 / 1.7  
E: 2.7 / 2.9  
C: 0.9 / 1.7  
E: 4.2 / 2.9  
C: 1.1 / 4.1  
E: 8.8 / 4.1  
C: 1.2 / 7.1  
E: 7.1 / 7.1

RJ2010065

ALL NUMBERS IN PPM

OHIO RIVER

4-1119  
SECTION 101133  
ANEROBIC  
31806371

3-4 JUN  
71 JOW  
RIVERBANK

192.9'

10

**Abstract**

1

**ADPGW#1**

**ADPGW#2**

ADPGW#3

3.

0.025

20

7-20 JULY 14 1953

POLYACETAL  
INCINERATOR  
UNIT C-6

[illegible]

**NOTES**

1

0.004

50.05

0.043

00953

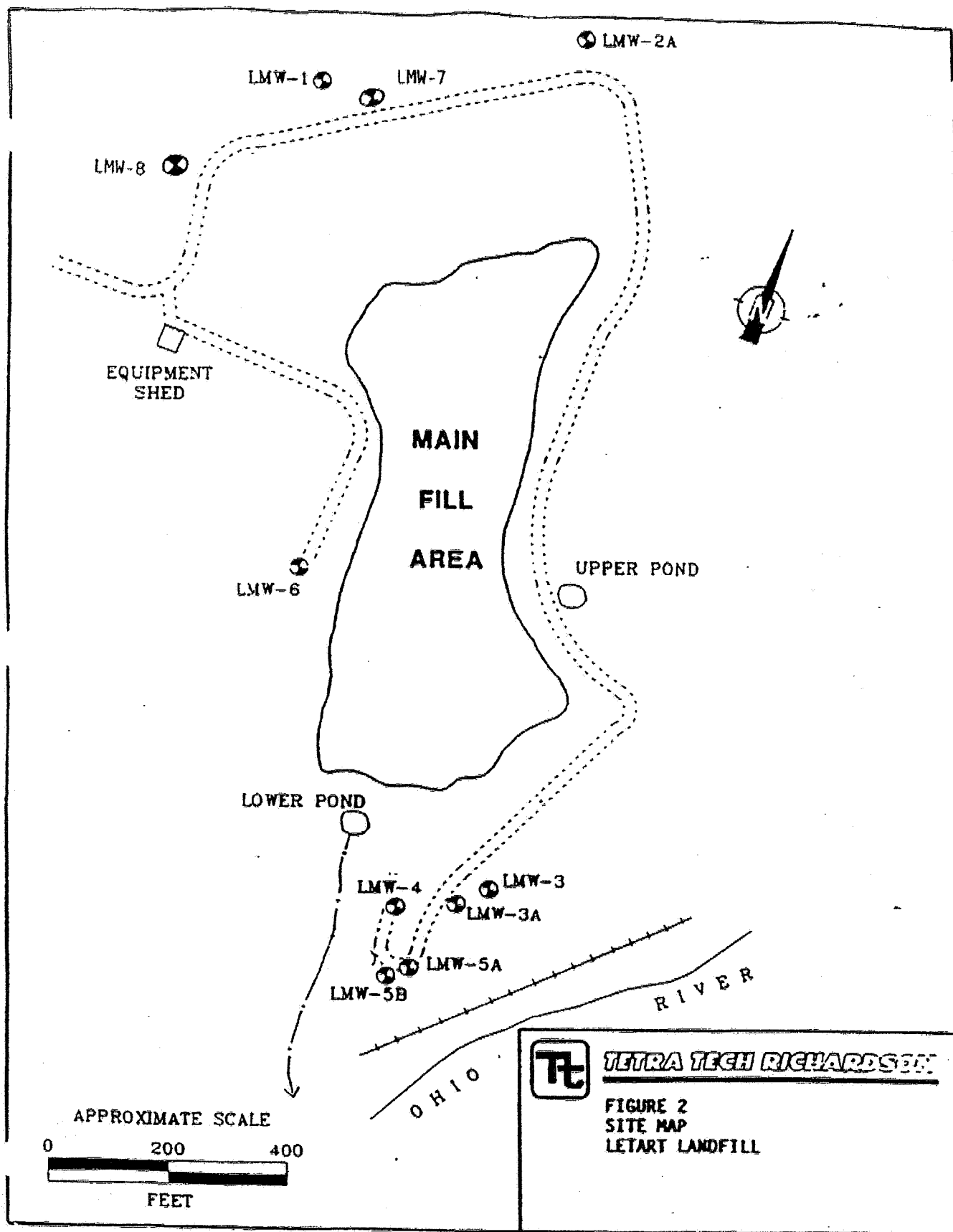
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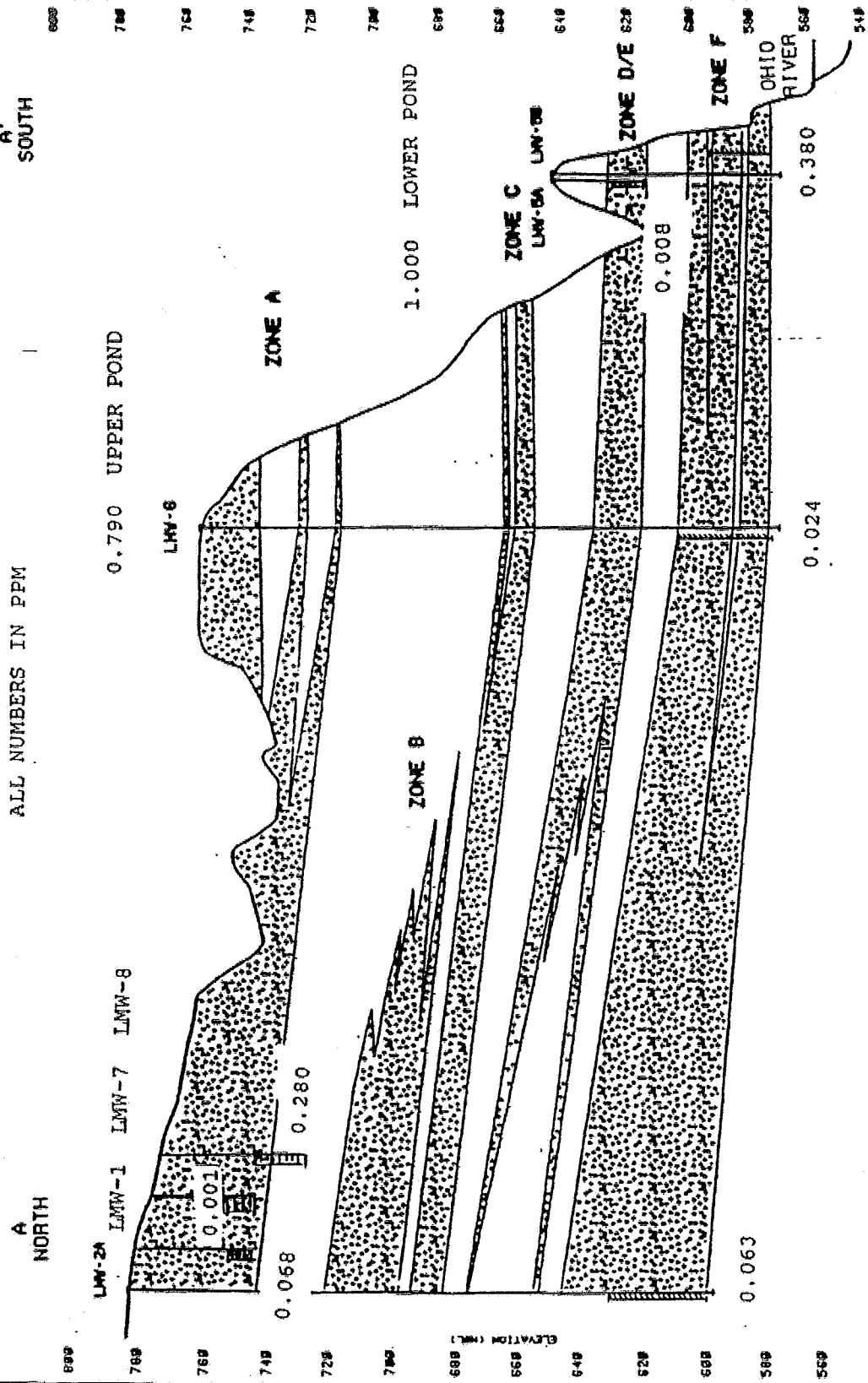
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# C-8 RESULT



890010ZFR

**GEOLOGICAL CROSS-SECTION A - A'**  
**LETART LANDFILL**  
**DUPONT WASHINGTON WORKS**  
**PARKERSBURG, WEST VIRGINIA**

**LEGEND**

- SANDSTONE AND SILTSTONE
- SILT
- SCAFFOLD INTERVAL

**SCALE**

10 FT

20

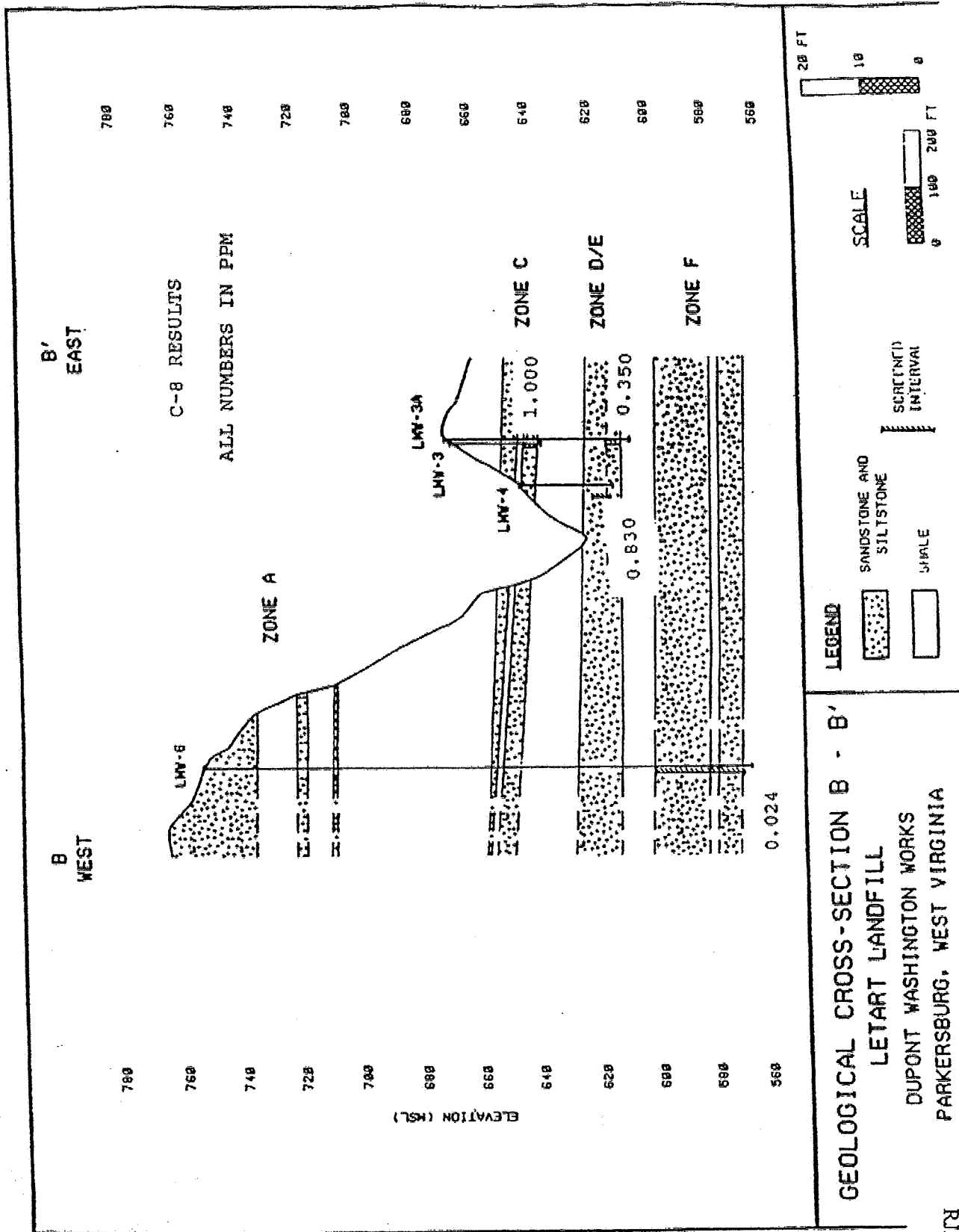
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0 100 200 FT

NOTE: "DUPONT" IS NOT SHOWN AS A "DUPONT" BUT AS A "DUPONT" UNIT.

SEPTEMBER 1998

ENHANCED BY D. W. W. W. W.



## LETART LANDFILL STRATEGY

- 1) SUBMIT COMPLIANCE SCHEDULE TO DNR IN 1Q  
1992 TO ALLOW CONTINUED OPERATION THROUGH  
NOVEMBER 1, 1992
  
- 2) EVALUATE COMPLIANCE SCHEDULE OPTIONS:
  - CONTEST LINER EQUIVALENCY DECISION;  
REQUEST WAIVER
    - DECIDE SIGNIFICANCE OF C-8 PRESENCE  
IN ZONE F
  
  - RETROFIT LANDFILL
    - DECIDE COST EFFECTIVENESS FOR 3000  
TON/YR WASTE
  
  - CLOSE LANDFILL
    - OTHER TEFLON\* WASTE MANAGEMENT OPTIONS  
AVAILABLE
      - DISPOSAL AT OTHER LANDFILLS
      - WASTE MINIMIZATION
      - SCRAP RECOVERY

RJZ010070

## PROGRESS AND PROGRAMS

### 1) TECHNOLOGY STUDIES

- LITERATURE SURVEY COMPLETED
  - BIODEGRADATION NOT EFFECTIVE
  - INCINERATION
  - CARBON ADSORPTION
  - ION EXCHANGE
- ELECTRO-CHEMICAL DESTRUCTION
  - U OF D

### 2) DRY RUN LANDFILL

- SLUDGE ENCAPSULATED
- SAMPLES 1092

### 3) SITE REMEDIATION

- PUMP TO CONTAIN

RJZ010071

## COMMUNICATIONS

### 1) NEW WELL FIELD RESULTS

- LPSD (DONE)
- RESAMPLE AFTER WELLS ARE ON LINE (1092)

### 2) VI REPORT RESULTS

- EPA (REGION III), WV-DNR, LPSD, LOCAL MEDIA
- DUE 4/6/92

### 3) LETART RESULTS

- WV-DNR
- COMPLIANCE SCHEDULE (1092)

RJZ010072

## OTHER GLOBAL C-8 PROGRAMS

- DORDRECHT
  - C-8 IN AIR SCRUBBER - SCOPE DEV.
  - MERWEDE RIVER ANALYSIS
- SHIMIZU
  - C-8 SCRUBBER ON LINE
  - SUGURA BAY ANALYSIS
- CHAMBERS WORKS
  - WASTE WATER TREATMENT ANALYSIS
- SPRUANCE
  - JAMES RIVER ANALYSIS
- CUSTOMERS
  - NEW MSDS ISSUED

RJZ010073

EID935527