**2021 Hazardous Waste Scanning Project**

**File Form Naming Convention.**

(*File_Type*).(*Program*).(*Site_Number*).(*YYYY-MM-DD*).(*File_Name*).pdf

*Note 1: Each category is separated by a period "."*
*Note 2: Each word within category is separated by an underscore "_"*

Specific File Naming Convention Label:

Report.HW.932035.1995-04-01.PSA_vol2_appendices.pdf

YR-9900 D4519

# ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK

## PRELIMINARY SITE ASSESSMENT
## Volume 2: Appendices

## Union Carbide Corporation
## Carbon Products Division Site
## Site Number 932035
## Town of Niagara, Niagara County

## April 1995

Prepared for:

**New York State Department of Environmental Conservation**

50 Wolf Road, Albany, New York 12233

*Michael D. Zagata, Commissioner*

**Division of Hazardous Waste Remediation**

*Michael J. O'Toole, Jr., P.E., Director*

Prepared by:

**Ecology and Environment Engineering, P.C.**

YR9900_D4519

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**ecology and environment engineering, p.c.**

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recycled paper

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# APPENDIX A

## EPA 2070-13 SITE INSPECTION FORM

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

## PART 1 - SITE LOCATION AND INSPECTION INFORMATION

| I. IDENTIFICATION | |
|---|---|
| 01 State: NY | 02 Site Number: 932035 |

## II. SITE NAME AND LOCATION

| 01 Site Name (legal, common, or descriptive name of site) | 02 Street, Route No., or specific location identifier | | | | |
|---|---|---|---|---|---|
| Union Carbide Corp., Carbon Products Division Site | 3501 Hyde Park Boulevard | | | | |
| 03 City | 04 State | 05 Zip Code | 06 County | 07 County Code | 08 Cong. Dist. |
| Town of Niagara | New York | 14305 | Niagara | 063 | 32 |

| 09 Coordinates Latitude | Longitude | 10 Type of Ownership (check one) |
|---|---|---|
| 43° 07' 14" . N | 079° 01' 35" . W | [X] A. Private [ ] B. Federal _____ [ ] C. State [ ] D. County [ ] E. Municipal [ ] F. Other _____ [ ] G. Unknown |

## III. INSPECTION INFORMATION

| 01 Date of Inspection | 02 Site Status | 03 Years of Operation |
|---|---|---|
| 08 / 10 / 93 (Month Day Year) | [ ] Active [X] Inactive | 1934 (Beginning Year) \| 1987 (Ending Year) [ ] Unknown |

04 Agency Performing Inspection (check all that apply)
[ ] A. EPA [ ] B. EPA Contractor _____ (name of firm) [ ] C. Municipal [ ] D. Municipal Contractor _____ (name of firm)
[ ] E. State [X] F. State Contractor Ecology and Environment Engineering, P.C. (name of firm) [ ] G. Other _____ (specify)

| 05 Chief Inspector | 06 Title | 07 Organization | 08 Telephone No. |
|---|---|---|---|
| Jim Richert | Geologist | Ecology and Environment Engineering, P.C. | (716) 684-8060 |
| **09 Other Inspectors** | **10 Title** | **11 Organization** | **12 Telephone No.** |
| Gene Florentino | Geologist | Ecology and Environment Engineering, P.C. | (716) 684-8060 |
| Valerie Woodward | Sr. Engineering Geologist | NYSDEC | (518) 457-9738 |
| Paul Dicky | — | Niagara County DOH | (716) 278-8787 |
| Carol Dunnigan | — | Conestoga-Rovers & Associates | (716) 283-6720 |
| **13 Site Representatives Interviewed** | **14 Title** | **15 Address** | **16 Telephone No.** |
| A.L. Ogg | Site Manager | UCAR Carbon Company, Inc. 3625 Highland Avenue, P.O. Box 887 Niagara Falls, NY 14302 | (716) 278-3275 |
| Rick Bolton | Process Manager | P.O. Box 513, Columbia, TN 38402 | (615) 380-4215 |
| | | | ( ) |

| 17 Access Gained by (check one) | 18 Time of Inspection | 19 Weather Conditions |
|---|---|---|
| [X] Permission [ ] Warrant | 1035 to 1500 | Mostly cloudy, 75 to 80°F |

## IV. INFORMATION AVAILABLE FROM

| 01 Contact | 02 Of (Agency/Organization) | 03 Telephone No. |
|---|---|---|
| Valerie Woodward | NYSDEC | (518) 457-9538 |

| 04 Person Responsible for Site Inspection Form | 05 Agency | 06 Organization | 07 Telephone No. | 08 Date |
|---|---|---|---|---|
| Jim Richert | | Ecology and Environment Engineering, P.C. | (716) 684-8060 | 06 / 21 / 94 (Month Day Year) |

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 2 - WASTE INFORMATION**

| I. IDENTIFICATION | |
|---|---|
| 01 State | 02 Site Number |
| NY | 932035 |

## II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

**01 Physical States (check all that apply)**

[X] A. Solid
[X] B. Powder, Fines
[X] C. Sludge
[ ] D. Other _____
[ ] E. Slurry
[X] F. Liquid
[ ] G. Gas

**02 Waste Quantity at Site (measure of waste quantities must be independent)**

Tons Unknown
Cubic Yards _____
No. of Drums _____

**03 Waste Characteristics (check all that apply)**

[X] A. Toxic
[ ] B. Corrosive
[ ] C. Radioactive
[ ] D. Persistent
[ ] E. Soluble
[ ] F. Infectious
[ ] G. Flammable
[ ] H. Ignitable
[X] I. Highly volatile
[ ] J. Explosive
[ ] K. Reactive
[ ] L. Incompatible
[ ] M. Not applicable

## III. WASTE TYPE

| Category | Substance Name | 01 Gross Amount | 02 Unit of Measure | 03 Comments |
|---|---|---|---|---|
| SLU | Sludge | 400 | pounds | Spent degreasing sludge (111-TCA) |
| OLW | Oily waste | >200 | gallons | spread on site roads for dust control or landfilled |
| SOL | Solvents | | | |
| PSD | Pesticides | | | |
| OOC | Other organic chemicals | Unknown | | |
| IOC | Inorganic chemicals | | | |
| ACD | Acids | | | |
| BAS | Bases | | | |
| MES | Heavy metals | Unknown | | |

## IV. HAZARDOUS SUBSTANCES (see Appendix for most frequently cited CAS Numbers) (This section continued on next page.)

| 01 Category | 02 Substance Name | 03 CAS Number | 04 Storage/Disposal Method | 05 Concentration* | 06 Measure of Concentration |
|---|---|---|---|---|---|
| | Polycyclic (in soil) aromatic hydrocarbons (PAHs) | | Landfilled | 2,000,000 | µg/kg |
| | Lead (in soil) | | Landfilled | 1,560 | mg/kg |
| | Various pesticides (in soil) | | Landfilled | 13,000 | µg/kg |
| | Vinyl chloride | | Landfilled | 70 | µg/L |
| | Total 1,2-DCE | | Landfilled | 350 E | µg/L |
| | TCE | | Landfilled | 270 E | µg/L |

## V. FEEDSTOCKS (see Appendix for CAS Numbers)

| Category | 01 Feedstock Name | 02 CAS Number | Category | 01 Feedstock Name | 02 CAS Number |
|---|---|---|---|---|---|
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |

## VI. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC PSA Task 1 Report of Union Carbide Corp., Carbon Products Division site 1991
Sample analyses contained in NYSDEC PSA report of Carbon Products Division site 1994.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS**

I. IDENTIFICATION

| 01 State | 02 Site Number |
|---|---|
| NY | 932035 |

## II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. Groundwater Contamination — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
03 Population Potentially Affected 0 — 04 Narrative Description:

Groundwater samples collected from on-site monitoring wells contain chlorinated organics and metals at levels above state standards. However, area residents obtain drinking water from municipal supplies and there are no known drinking water wells within the 4-mile target area.

01 [ ] B. Surface Water Contamination — 02 [ ] Observed (date _____) — [ ] Potential — [ ] Alleged
03 Population Potentially Affected _____ — 04 Narrative Description:

01 [ ] C. Contamination of Air — 02 [ ] Observed (date _____) — [ ] Potential — [ ] Alleged
03 Population Potentially Affected _____ — 04 Narrative Description:

01 [ ] D. Fire/Explosive Conditions — 02 [ ] Observed (date _____) — [ ] Potential — [ ] Alleged
03 Population Potentially Affected _____ — 04 Narrative Description:

01 [X] E. Direct Contact — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
03 Population Potentially Affected Unknown — 04 Narrative Description:

Potential for direct contact with hazardous substances by vandals who have cut through the fence and trespassed on land adjacent to the site.

01 [X] F. Contamination of Soil — 02 [X] Observed (date 1993) — [X] Potential — [ ] Alleged
03 Area Potentially Affected 20 acres — 04 Narrative Description:

Although the landfill site is properly capped, the 20-acre area adjacent to the west side of the site is not capped. Soil samples obtained from this off-site area contained elevated concentrations of PAHs and several pesticides.

01 [ ] G. Drinking Water Contamination — 02 [ ] Observed (date _____) — [ ] Potential — [ ] Alleged
03 Population Potentially Affected _____ — 04 Narrative Description:

01 [X] H. Worker Exposure/Injury — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
03 Workers Potentially Affected <10 — 04 Narrative Description:

Slight chance of worker exposure to soil while performing site maintenance (i.e., grass cutting and fence repair).

01 [X] I. Population Exposure/Injury — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
03 Population Potentially Affected Unknown — 04 Narrative Description:

Unauthorized site visitors and site workers could come in contact with surface soils adjacent to the site which contain elevated concentrations of PAHs.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS**

I. IDENTIFICATION

| 01 State | 02 Site Number |
|---|---|
| NY | 932035 |

II. HAZARDOUS CONDITIONS AND INCIDENTS (Cont.)

01 [X] J. Damage to Flora — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
04 Narrative Description:

No damage to flora was observed during any reported site inspections.

01 [X] K. Damage to Fauna — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
04 Narrative Description:

There was no damage to fauna observed during E & E PSA site inspections. There are no wildlife refuges or endangered species within a 1-mile radius of the site. Potential exists if wastes are on the surface.

01 [ ] L. Contamination of Food Chain — 02 [ ] Observed (date _____) — [ ] Potential — [ ] Alleged
04 Narrative Description:

01 [X] M. Unstable Containment of Wastes (spills/ runoff/standing liquids, leaking drums) — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
03 Population Potentially Affected: 5,994 — 04 Narrative Description:

There is potential for unstable containment of wastes because the landfill is not lined. In 1977, Union Carbide reported that 200 gallons per month of machining oil were put in 55-gallon drums and disposed of in the landfill, except during summer months when the oil was put on roadways. It was not reported how long this practice was continued. The landfill has been adequately capped. The population indicated is the population within 1-mile of the site.

01 [X] N. Damage to Off-site Property — 02 [ ] Observed (date _____) — [X] Potential — [ ] Alleged
04 Narrative Description:

The slight potential exists for damage to off-site property due to groundwater contamination affecting off-site wells. There is no groundwater contamination of off-site wells as of 12/93. Landfill is known to extend beyond the site boundary.

01 [ ] O. Contamination of Sewers, Storm Drains, WWTPs — 02 [ ] Observed (date _____) — [ ] Potential — [ ] Alleged
04 Narrative Description:

There are no sewers, storm drains, or wastewater treatment plants that would be affected by contaminants from the site.

01 [X] P. Illegal/Unauthorized Dumping — 02 [X] Observed (date 8/10/93) — [ ] Potential — [ ] Alleged
04 Narrative Description:

Piles of vegetation on site may stem from unauthorized dumping.

05 Description of Any Other Known, Potential, or Alleged Hazards

All known, potential, or alleged hazards have been discussed.

III. TOTAL POPULATION POTENTIALLY AFFECTED 5,994

IV. COMMENTS

V. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, PSA of Union Carbide Republic Plant Landfill, Albany, NY, January 1994.
NUS Corp. Region 2 FIT Site Inspection conducted on 08/20-21/87, filed under TDD No. 02-8706-25, Edison, NJ.
Niagara County Health Department.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

## PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

| 01 State | 02 Site Number |
|---|---|
| NY | 932035 |

II. PERMIT INFORMATION

| 01 Type of Permit Issued (check all that apply) | 02 Permit Number | 03 Date Issued | 04 Expiration Date | 05 Comments |
|---|---|---|---|---|
| [ ] A. NPDES | | | | |
| [ ] B. UIC | | | | |
| [ ] C. AIR | | | | |
| [ ] D. RCRA | | | | |
| [ ] E. RCRA Interim Status | | | | |
| [ ] F. SPCC Plan | | | | |
| [X] G. State (specify) NYSDEC | 32N03 | | | These were operating per- |
| [X] H. Local (specify) Town of Niagara | 12473 | | | mits for the landfill when |
| [ ] I. Other (specify) | | | | it was in use. |
| [ ] J. None | | | | |

III. SITE DESCRIPTION

| 01 Storage Disposal (check all that apply) | 02 Amount | 03 Unit of Measure |
|---|---|---|
| [ ] A. Surface Impoundment | | |
| [ ] B. Piles | | |
| [ ] C. Drum, Aboveground | | |
| [ ] D. Tank, Aboveground | | |
| [ ] E. Tank, Belowground | | |
| [X] F. Landfill | 16.48 | Acres |
| [ ] G. Landfarm | | |
| [X] H. Open Dump | 20 | Acres |
| [ ] I. Other _____ (specify) | | |

04 Treatment (check all that apply)

[ ] A. Incineration
[ ] B. Underground Injection
[ ] C. Chemical/Physical
[ ] D. Biological
[ ] E. Waste Oil Processing
[ ] F. Solvent Recovery
[ ] G. Other Recycling Recovery
[ ] H. Other _____ (specify)

05 Other

[ ] Buildings On Site

06 Area of Site

16.48 Acres
Capped landfill

07 Comments

The facility has undergone a closure program in accordance with the NYSDEC Part 360 Solid Waste Management Facility Guidelines. The capping operation was completed as of June 30, 1987. A well monitoring program is being continued to monitor groundwater contamination. The landfill was closed because Union Carbide had shut down the plants that had generated the waste deposited in the facility.

IV. CONTAINMENT

01 Containment of Wastes (check one)
[ ] A. Adequate, Secure [X] B. Moderate [ ] C. Inadequate, Poor [ ] D. Insecure, Unsound, Dangerous

02 Description of Drums, Diking, Liners, Barriers, etc.
The landfill is unlined. Union Carbide has completed a closure program as of June 30, 1987, when the landfill capping operation was completed. The cap consists of 18 inches of clay, a 3-inch drainage layer, and a 6-inch topsoil layer. There are also 20 monitoring wells located on or near the Union Carbide property.

V. ACCESSIBILITY

01 Waste Easily Accessible [ ] Yes [X] No
02 Comments
The facility is surrounded by an 8-foot-high fence topped with barbed wire. The gate is locked when the facility is unattended. However, incidents of vandals cutting holes in the fence were reported by Union Carbide and was observed by E & E personnel during site inspection. High levels of PAH compounds were detected in soil samples collected adjacent to the site. The off-site areas where the contaminated soil occurs is easily accessible to site trespassers, however.

VI. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, PSA Report of the Union Carbide Site, June 1994.
NUS Corporation Region 2 FIT Site Inspection conducted on August 20-21, 1987, filed under TDD No. 02-8706-25, Edison, NJ.
Union Carbide Landfill Closure Plans, Republic Plant, Niagara, New York. Conestoga-Rovers & Associates. Submitted to NYSDEC on September 24, 1986, revised October, 1986.

# POTENTIAL HAZARDOUS WASTE SITE
# SITE INSPECTION REPORT

**PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA**

| I. IDENTIFICATION | |
|---|---|
| 01 State: NY | 02 Site Number: 932035 |

## II. DRINKING WATER SUPPLY

**01 Type of Drinking Supply (check as applicable)**

| | Surface | Well |
|---|---|---|
| Community | A. [X] | B. [ ] |
| Non-community | C. [ ] | D. [ ] |

**02 Status**

| Endangered | Affected | Monitored |
|---|---|---|
| A. [ ] | B. [ ] | C. [X] |
| D. [ ] | E. [ ] | F. [ ] |

**03 Distance to Site**

A >3 (mi)

B _____ (mi)

## III. GROUNDWATER

**01 Groundwater Use in Vicinity (check one)**

[ ] A. Only Source for Drinking

[ ] B. Drinking (other sources available) Commercial, Industrial, Irrigation (no other water sources available)

[ ] C. Commercial, Industrial, Irrigation (limited other sources available)

[X] D. Not Used, Unusable

**02 Population Served by Groundwater** 0

**03 Distance to Nearest Drinking Water Well** >4 (mi)

| 04 Depth to Groundwater | 05 Direction of Groundwater Flow | 06 Depth to Aquifer of Concern | 07 Potential Yield of Aquifer | 08 Sole Source Aquifer |
|---|---|---|---|---|
| 4 (ft) | west and east | 12 (ft) | _____ (gpd) | [ ] Yes [X] No [ ] Unknown |

**09 Description of Wells (including usage, depth, and location relative to population and buildings)**

There are no wells in use within 3 miles of the site.

**10 Recharge Area**

[X] Yes | Comments: The Lockport Dolomite Aquifer principally recharges by infiltration of rainfall and snowmelt through the unconsolidated glacial deposits.

[ ] No |

**11 Discharge Area**

[ ] Yes | Comments:

[X] No |

## IV. SURFACE WATER

**01 Surface Water (check one)**

[X] A. Reservoir, Recreation, Drinking Water Source - Niagara River Water Intakes are greater than 3 miles from site

[ ] B. Irrigation, Economically

[ ] C. Commercial, Industrial Important Resources

[ ] D. Not Currently Used

**02 Affected/Potentially Affected Bodies of Water**

| Name: | Affected | Distance to Site |
|---|---|---|
| There are no surface water bodies that are affected or potentially affected and flow paths observed to or from the site. | [ ] | _____ (mi) |

## V. DEMOGRAPHIC AND PROPERTY INFORMATION

**01 Total Population Within**

| One (1) Mile of Site | Two (2) Miles of Site | Three (3) Miles of Site |
|---|---|---|
| A. 5,994 No. of Persons | B. 35,280 No. of Persons | C. 58,687 No. of Persons |

**02 Distance to Nearest Population** 0.136 (mi)

**03 Number of Buildings Within Two (2) Miles of Site** 12,419

**04 Distance to Nearest Off-Site Building** 700 (feet)

**05 Population Within Vicinity of Site (provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)**

The south side of the site is adjacent to the city of Niagara Falls, which has a population of 71,384 (U.S. Census, 1980). The city is a heavily industrialized urban area. To the north and east are the less densely populated towns of Lewiston and Niagara.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA**

I. IDENTIFICATION

| 01 State | 02 Site Number |
|---|---|
| NY | 932035 |

## VI. ENVIRONMENTAL INFORMATION

01 Permeability of Unsaturated Zone (check one)

[ ] A. Impermeable (less than $10^{-6}$ cm/sec) [X] B. Relatively Impermeable ($10^{-4}$ - $10^{-6}$ cm/sec) [ ] C. Relatively Permeable ($10^{-2}$ - $10^{-4}$ cm/sec) [ ] D. Very Permeable (greater than $10^{-2}$ cm/sec)

02 Permeability of Bedrock (check one)

[ ] A. Impermeable (less than $10^{-6}$ cm/sec) [ ] B. Relatively Impermeable ($10^{-4}$ - $10^{-6}$ cm/sec) [X] C. Relatively Permeable ($10^{-2}$ - $10^{-4}$ cm/sec) [ ] D. Very Permeable (greater than $10^{-2}$ cm/sec)

| 03 Depth to Bedrock | 04 Depth of Contaminated Soil Zone | 05 Soil pH |
|---|---|---|
| 7 to 26 (ft) | <5 (ft) | 7.35 |

| 06 Net Precipitation | 07 One Year 24-Hour Rainfall | 08 Slope: Site Slope | Direction of Site Slope | Terrain Average Slope |
|---|---|---|---|---|
| 6 (in) | 2.1 (in) | <1 % | southwest | 1.6 % |

09 Flood Potential

Site is in >500 Year Floodplain

10 [ ] Site is on Barrier Island, Coastal High Hazard Area, Riverine Floodway

11 Distance to Wetlands (5 acre minimum)

ESTUARINE: A. 2 (mi)

OTHER: B. 1 (mi)

12 Distance to Critical Habitat (of endangered species)

1 (mi)

Endangered Species: N/A

13 Land Use in Vicinity

Distance to:

| COMMERCIAL/INDUSTRIAL | RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES | AGRICULTURAL LANDS: PRIME AG LAND | AGRICULTURAL LANDS: AG LAND |
|---|---|---|---|
| A. Adjacent (mi) | B. 2 miles from Whirlpool State Park Devils Hole State Park (mi) | C. 2 (mi) | D. 1 (mi) |

14 Description of Site in Relation to Surrounding Topography

The site is located on a flat plain at an elevation of 600 feet above sea level. The Niagara Escarpment is 3 miles north, which has an approximately 250 foot elevation change and runs roughly east and west. A flat plain area extends east of the site which has a slight rise in elevation to the east. To the southwest, approximately 3 miles away is the Niagara Gorge. Approximately 1.5 miles to the north is the reservoir and canal for the Niagara Power Project.

## VII. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)


U.S. Department of Agriculture. Soil Survey of Niagara County, New York October 1972.
Test and Boring Log, Earth Dimensions, Inc., Hole No. 1, August 8, 1978.
U.S.G.S. Topographic Quadrangle Map, Niagara Falls, NY-Ont. Quad, 1980.
General Sciences Corporation. Graphical Exposure Modeling System (GEMS). Landover, Maryland, 1986
U.S. Department of Commerce, Bureau of the Census. 1980 Census of Population and Housing, Buffalo, NY PHC80-2-106, July, 1983.
Telecon Note: Conversation between Dean Brown, Niagara Water Department and Brian Pedersen, NUS Corporation September 1, 1987.
Telecon Note: Conversation between Jerry Pietraszek, NYSDEC, and Brian Pedersen, NUS Corporation, September 15, 1987.
Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 6 - SAMPLE AND FIELD INFORMATION**

| I. IDENTIFICATION | |
|---|---|
| 01 State<br>NY | 02 Site Number<br>932035 |

## II. SAMPLES TAKEN

| Sample Type | 01 Number of Samples Taken | 02 Samples Sent To | 03 Estimated Date Results Available |
|---|---|---|---|
| Groundwater | 20 | Ecology and Environment, Inc., Analytical Services Center | March 1994 |
| Surface Water | 1 | Ecology and Environment, Inc., Analytical Services Center | |
| Waste | 0 | | |
| Air | 0 | | |
| Runoff | 0 | Results received January 25, 1988 | |
| Spill | 0 | | |
| Soil | 20 | Ecology and Environment, Inc., Analytical Services Center | |
| Vegetation | 0 | | |
| Other - Sediment | 1 | Ecology and Environment, Inc., Analytical Services Center | |

## III. FIELD MEASUREMENTS TAKEN

| 01 Type | 02 Comments |
|---|---|
| OVA, HNu, Rad-mini | No air readings above background in breathing zone. |
| $O_2$/explosimeter | OVA readings above background from subsurface soils an head space in well BW-4. |
| Draeger Tubes | Tested negative for vinyl chloride in well BW-4. |
| Telog's in nine wells | Telog's monitored groundwater elevations from 12-1-93 to 12-7-93. |

## IV. PHOTOGRAPHS AND MAPS

| 01 Type [X] Ground [X] Aerial | 02 In Custody of Ecology and Environment Engineering, P.C. (name of organization or individual) |
|---|---|
| Site features and investigation activities. | |
| | |
| | |
| | |

| 03 Maps | 04 Location of Maps |
|---|---|
| [X] Yes<br>[ ] No | Ecology and Environment Engineering, P.C. |

## V. OTHER FIELD DATA COLLECTED (provide narrative description of sampling activities)

Background files, logbooks, etc. Files under job YR9000 at E & E, Lancaster, New York.

## VI. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

Ecology and Environment Engineering, P.C. site file YR9000.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

## PART 7 - OWNER INFORMATION

| I. IDENTIFICATION | |
|---|---|
| 01 State<br>NY | 02 Site Number<br>932035 |

| II. CURRENT OWNER(S) | | | PARENT COMPANY (if applicable) | | |
|---|---|---|---|---|---|
| 01 Name<br>UCAR Corporation | 02 D&B Number | | 08 Name | 09 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>3625 Highland Avenue, P.O. Box 887 | | 04 SIC Code | 10 Street Address (P.O. Box, RFD #, etc.) | | 11 SIC Code |
| 05 City<br>Niagara Falls | 06 State<br>NY | 07 Zip Code<br>14302 | 12 City | 13 State | 14 Zip Code |
| 01 Name | 02 D&B Number | | 08 Name | 09 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 10 Street Address (P.O. Box, RFD #, etc.) | | 11 SIC Code |
| 05 City | 06 State | 07 Zip Code | 12 City | 03 State | 14 Zip Code |
| 01 Name | 02 D&B Number | | 08 Name | 09 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 10 Street Address (P.O. Box, RFD #, etc.) | | 11 SIC Code |
| 05 City | 06 State | 07 Zip Code | 12 City | 13 State | 14 Zip Code |

| III. PREVIOUS OWNER(S) (list most recent first) | | | IV. REALTY OWNER(S) (if applicable, list most recent first) | | |
|---|---|---|---|---|---|
| 01 Name<br>Aluminum Company of America | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>Unknown | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City | 06 State | 07 Zip Code | 05 City | 06 State | 07 Zip Code |
| 01 Name<br>Republic Carbon Company | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>3501 Hyde Park Boulevard | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City<br>Town of Niagara | 06 State<br>NY | 07 Zip Code<br>14305 | 05 City | 06 State | 07 Zip Code |
| 01 Name | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City | 06 State | 07 Zip Code | 05 City | 06 State | 07 Zip Code |

V. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, Phase I Investigation Report of Union Carbide Republic Plant Landfill, Albany, NY, January, 1987.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 8 - OPERATOR INFORMATION**

| I. IDENTIFICATION | |
|---|---|
| 01 State<br>NY | 02 Site Number<br>932035 |

| II. CURRENT OPERATOR (provide if different from owner) | | | OPERATOR'S PARENT COMPANY (if applicable) | | |
|---|---|---|---|---|---|
| 01 Name<br>Same as owner. | 02 D&B Number | | 10 Name | 11 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 12 Street Address (P.O. Box, RFD #, etc.) | | 13 SIC Code |
| 05 City | 06 State | 07 Zip Code | 14 City | 15 State | 16 Zip Code |
| 08 Years of Operation | 09 Name of Owner | | | | |

| III. PREVIOUS OPERATOR(S) (list most recent first; provide if different from owner) | | | PREVIOUS OPERATORS' PARENT COMPANIES (if applicable) | | |
|---|---|---|---|---|---|
| 01 Name<br>Same as owner. | 02 D&B Number | | 10 Name | 11 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 12 Street Address (P.O. Box, RFD #, etc.) | | 13 SIC Code |
| 05 City | 06 State | 07 Zip Code | 14 City | 15 State | 16 Zip Code |
| 08 Years of Operation | 09 Name of Owner During this Period | | | | |
| 01 Name | 02 D&B Number | | 10 Name | 11 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 12 Street Address (P.O. Box, RFD #, etc.) | | 13 SIC Code |
| 05 City | 06 State | 07 Zip Code | 14 City | 15 State | 16 Zip Code |
| 08 Years of Operation | 09 Name of Owner During this Period | | | | |
| 01 Name | 02 D&B Number | | 10 Name | 11 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 12 Street Address (P.O. Box, RFD #, etc.) | | 13 SIC Code |
| 05 City | 06 State | 07 Zip Code | 14 City | 15 State | 16 Zip Code |
| 08 Years of Operation | 09 Name of Owner During this Period | | | | |

**IV. SOURCES OF INFORMATION** (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, PSA Report of Union Carbide Republic Plant Landfill, Albany, NY, June 1994.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 9 - GENERATOR/TRANSPORTER INFORMATION**

| I. IDENTIFICATION | |
|---|---|
| 01 State<br>NY | 02 Site Number<br>932035 |

## II. ON-SITE GENERATOR

| | | |
|---|---|---|
| 01 Name<br>Union Carbide Republic Plant | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>3501 Hyde Park Boulevard | | 04 SIC Code |
| 05 City<br>Niagara | 06 State<br>NY | 07 Zip Code<br>14301 |

## III. OFF-SITE GENERATOR(S)

| | | | | | |
|---|---|---|---|---|---|
| 01 Name<br>Union Carbide National Plant | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>3625 Highland Avenue | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City<br>Niagara Falls | 06 State<br>NY | 07 Zip Code<br>14302 | 05 City | 06 State | 07 Zip Code |
| 01 Name<br>Union Carbide Acheson Plant | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>1930 Buffalo Avenue | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City<br>Niagara Falls | 06 State<br>NY | 07 Zip Code | 05 City | 06 State | 07 Zip Code |

## IV. TRANSPORTER(S)

| | | | | | |
|---|---|---|---|---|---|
| 01 Name<br>Union Carbide Corporation | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.)<br>3625 Highland Avenue | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City<br>Niagara Falls | 06 State<br>NY | 07 Zip Code<br>14302 | 05 City | 06 State | 07 Zip Code |
| 01 Name | 02 D&B Number | | 01 Name | 02 D&B Number | |
| 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code | 03 Street Address (P.O. Box, RFD #, etc.) | | 04 SIC Code |
| 05 City | 06 State | 07 Zip Code | 05 City | 06 State | 07 Zip Code |

## V. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, PSA Report of Union Carbide Republic Plant Landfill, Albany, NY, June 1994.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 10 - PAST RESPONSE ACTIVITIES**

| I. IDENTIFICATION | |
|---|---|
| 01 State<br>NY | 02 Site Number<br>932035 |

## II. PAST RESPONSE ACTIVITIES

01 [ ] A. Water Supply Closed — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] B. Temporary Water Supply Provided — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] C. Permanent Water Supply Provided — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] D. Spilled Material Removed — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] E. Contaminated Soil Removed — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [X] F. Waste Repackaged — 02 Date 1987 — 03 Agency Site owner
04 Description:
Three buried drums of off-spec Code-88 waste overpacked.

01 [X] G. Waste Disposed Elsewhere — 02 Date 1987 — 03 Agency Site owner
04 Description:
Removed from site and property disposed off-site.

01 [ ] H. On-Site Burial — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] I. In Situ Chemical Treatment — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] J. In Situ Biological Treatment — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] K. In Situ Physical Treatment — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] L. Encapsulation — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] M. Emergency Waste Treatment — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] N. Cutoff Walls — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] O. Emergency Diking/Surface Water Diversion — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] P. Cutoff Trenches/Sump — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

**PART 10 - PAST RESPONSE ACTIVITIES**

I. IDENTIFICATION

| 01 State | 02 Site Number |
|---|---|
| NY | 932035 |

II. PAST RESPONSE ACTIVITIES (Cont.)

01 [ ] Q. Subsurface Cutoff Wall — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] R. Barrier Walls Constructed — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [X] S. Capping/Covering — 02 Date 1987 — 03 Agency _____
04 Description: The site was closed in 1987 and a final cover of 6" - 24" of clay and "material suitable to sustain plant growth" was put in place.

01 [ ] T. Bulk Tankage Repaired — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] U. Grout Curtain Constructed — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] V. Bottom Sealed — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] W. Gas Control — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] X. Fire Control — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] Y. Leachate Treatment — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] Z. Area Evacuated — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [X] 1. Access to Site Restricted — 02 Date 12/12/75 — 03 Agency _____
04 Description:
Site is surrounded by an 8-foot chain-link fence with locked gate

01 [ ] 2. Population Relocated — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

01 [ ] 3. Other Remedial Activities — 02 Date _____ — 03 Agency _____
04 Description:
No previous history.

III. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, Phase I Investigation Report of Union Carbide Landfill, Albany, NY, January, 1987.
Telephone conversation between Mike Hopkins, Niagara Company Health Department, and Brian Pedersen, NUS Corporation, August 31, 1987.
Personal Interview of Mike Balent, Chief Plant Engineer, Union Carbide Corporation, Carbon Products Division, by Brian Pedersen, NUS Corporation, on August 20, 1987.

# POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

## PART 11 - ENFORCEMENT INFORMATION

| I. IDENTIFICATION | |
|---|---|
| 01 State<br>NY | 02 Site Number<br>932035 |

## II. ENFORCEMENT INFORMATION

01 Past Regulatory/Enforcement Action [ ] Yes [X] No

02 Description of Federal, State, Local Regulatory/Enforcement Action

No federal, state, or local regulatory enforcement action has occurred.

## III. SOURCES OF INFORMATION (cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, PSA Report of Union Carbide Landfill, Albany, NY, June 1994.

# APPENDIX B

# GEOPHYSICAL REPORT

ecology and environment
engineering, p.c.
BUFFALO CORPORATE CENTER
368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060

September 7, 1993

Valerie Woodward
Senior Engineering Geologist
Western Investigation Section
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

RE: Union Carbide (Site #932035)
Geophysical Survey Results

Dear Ms. Woodward:

Enclosed are the results of the geophysical survey which was performed by Ecology and Environment Engineering P.C. (E & E) at the Union Carbide Site, located in the Town of Niagara, Niagara County, New York on August 19 and 30, 1993. Included are the details of the survey techniques used as well as results of the survey. A grid location map and contour plots of the data are included as attachment 1 and 2, respectively.

The surveys were performed at two soil boring locations (B-1 and B-2) and all eight well locations (GW-7A, GW-7B, GW-8A, GW-8B, GW-9A, GW-9B GW-10A and GW-10B.) Where wells were closely paired (GW-8A/8B, GW-9A/9B, and GW-10A/10B) one grid was surveyed for both paired wells. Therefore, at total of seven grids were surveyed for the boring and well locations.
All boring and well locations were staked on August 18, 1993 with New York State Department of Environmental Conservation (NYSDEC) concurrence as indicated in the NYSDEC scope-of-work (SOW).

In addition to the drilling-related geophysics which was performed, extensive geophysics was initially proposed with the objective of delineating the fill boundary. However, subsequent information received by NYSDEC proved sufficient for determining the fill boundary. Therefore, at the direction of NYSDEC, the additional geophysics was not performed.



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SURVEY TECHNIQUES

The geophysical surveys were performed using an EG&G Geometrics model G-856 proton precession magnetometer and a Geonics Ltd. model EM31 ground conductivity meter.

Grids were established over each proposed boring and well location with 10-foot station and line spacings. Five of the grids were 40 feet along the X-axis, and 40-feet along the Y-axis (GW-7A, GW-7B, GW-8A/8B, B-1, and B-2); and two grids were 60 feet along the X-axis and 60-feet along the Y-axis (GW-9A/9B and GW-10A/10B). All grids were oriented north-south/east-west with station (0,0) located in the southwest corner of each grid, except for grid GW-8A/8B where station (0,0), was located in the northeast corner of the grid. Compass directions were corrected for regional magnetic declination (8.5 degrees west).

One reading of the earth's total magnetic field (in units of gammas) was collected at each grid station. Magnetic readings were later corrected for diurnal drift from base station readings. Four readings were recorded at each grid station by the EM31. Two of these readings were collected with the instrument oriented parallel to the Y-axis (orientation 1) of the grid, and the remaining two were collected with the instrument oriented parallel to the X-axis (orientation 2). The readings in each orientation consisted of the quadrature phase component (conductivity) of the induced magnetic field in both the vertical and horizontal dipole modes.

The quadrature phase component measures ground conductivity in units of millimhos/meter (mmhos/m). In the vertical dipole mode, the instrument response has a maximum depth of penetration of approximately 18 feet below ground surface and it is more sensitive to deeply buried objects. In the horizontal dipole mode, the instrument response has a maximum depth of penetration of about 9 feet below ground surface and is more sensitive to shallow objects.

All instrument readings were electronically recorded and stored by the instruments. Magnetometer readings were down-loaded using MAGPAC Version 4.1.5-89 software (EG&G Geometrics) and EM31 readings were down-loaded using DAT31 Version 3.20 software (Geonics, Ltd.). All geophysical data were then plotted and contoured using Surfer Version 4.0 software (Golden Software, Inc.).

SURVEY RESULTS

Several contour maps of each survey grid were generated to illustrate survey results. Magnetometer contour maps are labeled MAG or magnetics, and EM31 maps are labeled conductivity for the quadrature phase component. Vertical and horizontal dipole modes in instrument orientations 1 and 2 are labeled V1, H1, V2, and H2, respectively. Attachment 2 contains the contour plots illustrating the survey results. Asterisks on the maps indicate data collection stations. Multiple contour intervals are presented for some orientations to better illustrate anomalies.

GRID B-1

Variable magnetic gradients were detected throughout grid B-1. Conductivity readings were also elevated much higher above the normal range for clean soils characteristic for western New York. This is probably due to the carbonaceous fill material present at the site. The strongest magnetic anomalies occurred in the central and southern portion of the grid. Additionally, a linear feature appears in the magnetic contour plot along the line X=30. The strongest electromagnetic anomalies occurred in the central and east-southeastern portion of the grid. Fill materials were noted exposed at the ground surface in the eastern portion of the grid, corresponding with the EM31 anomalies.

Based upon these results, it appears that the entire grid area is underlain by fill material. E & E recommends avoiding grid stations (10,0), (10,20), (20,0), (20,20), (20,30), and (30,10) when drilling borehole B-1 as these are the locations of the strongest magnetic anomalies.

GRID B-2

Several anomalous areas were detected in grid B-2. A high magnetic gradient was detected in the southwest corner of the grid area. Once again, as with grid B-1, conductivity values in the entire grid area were much higher than normal soil conductivities, thus indicating the presence of carbonaceous fill underlying the entire grid area. Exposed fill was noted in the north eastern portion of the grid. Electromagnetic anomalies also occurred at various locations throughout the grid area.

E & E recommends avoiding grid stations (0,0), (0,10), (10,0), (10,30), (20,0), (20,30), (40,10), and (40,30) when drilling borehole B-2 as these are the locations of the strongest subsurface anomalies.

GRID GW-7A

A magnetic and electromagnetic anomaly was detected in the eastern portion of grid GW-7A. This anomaly is the result of interference caused by the presence of the site fence which was within 10 feet of the grid area and possibly high voltage power lines further east. The presence of fill material in this area can not be determined due to the interference. However, relatively normal conductivity readings were detected west of the dirt road in the wooded area.

E & E recommends drilling GW-7A anywhere within the grid area west of stations (30,0) to (30,40).

GRID GW-7B

Only one minor magnetic anomaly was detected in grid GW-7B. This anomaly occurred at station (10,10). Since this anomaly was not detected by the EM31, it is probably the result of a metallic object too small for the EM31 to detect. Minor electromagnetic anomalies were detected at stations (10,20) and (30,30) in some instrument orientations. Since significant Magnetic anomalies were not detected in these locations, they may be due to the presence of small non-ferous objects or natural variations in soil type. Conductivity readings throughout the grid were relativity normal, thus indicating the absence of the carbonaceous fill material.

E & E recommends drilling GW-7B at any location within this grid area, except at stations (10,10), (10,20), and (30,30).

GRID GW-8A/B

A very steep drop in magnetic readings was detected from south to north in grid GW-8A/B. This may be the result of interference caused by the site fence approximately 10 feet north of the grid as well as high voltage power lines further north or the fill boundary may be nearby to the north. The same general pattern is also seen in the results of the electromagnetic readings. Conductivity increases to the south as the instrument approaches the carbonaceous fill material noted to be exposed in the central/south-central portion of the grid. The linear feature along Y=30 noted most prominenty on the V1 conductivity contour map is due to a mound of carbonaceous fill material observed there. It appears that the entire grid is underlain by carbonaceous fill; however, this can not be confirmed by geophysics due to the interferences to the north.

E & E recommends drilling GW-8A and GW-8B at any location within the grid area except stations (0,10), (30,20), and (30,30).

GRID GW-9A/B

Only one magnetic anomaly was detected in grid GW-9A/B. This occurred at station (30,0) in the vicinity of a metal sign and post. There were no substantial electromagnetic anomalies detected. However, Several minor anomalies were noted at the southwest corner, and at stations (30,50) and (50,40). Values for conductivity indicate that this grid is not underlain by carbonaceous fill material.

E & E recommends drilling GW-9A and GW-9B at any location within this grid, except at (30,0) since the sign post may have masked shallow subsurface objects, or at the locations of the minor electromagnetic anomalies noted above.

GRID GW-10A/B

A large magnetic anomaly was detected in the north-central portion of grid GW-10A/B. This anomaly was strongest at stations (20,50), (30, 40), and (40,30). Another strong anomaly is present at (0,60). The source of these anomalies is unknown; however, it was not clearly detected by the EM31. However, conductivity readings in the vertical dipole mode were highest on the western side of the grid, including the area of the magnetic anomalies. Therefore, the magnetic anomalies may be due to an elongated metallic object (eg. pipe, rod, etc.) of low metallic mass or to deep fill with a variable metallic content. Conductivity readings were high throughout the survey area, with strong gradients detected in the vertical dipole mode along in the east and southeastern portion of the grid. The source of this gradient is unknown, however, carbonaceous fill material appears to be underlying the entire grid area.

E & E recommends drilling GW-10A and GW-10B in the southwest quadrant or northwest corner of the grid. Stations (20,50), (30,40), (0,60) and all stations east of (40,0) to (40,50) should particularly be avoided.

CONCLUSIONS/RECOMMENDATIONS

Analysis of the magnetometer and EM31 data for each of the survey grids has indicated areas potentially safe to drill and areas which should be avoided. Carbonaceous Fill was clearly detected by the EM31. All of the survey grids had at least one area free from subsurface magnetic and electromagnetic anomalies. Therefore, the drilling program at this site may proceed as scheduled following the recommendations stated above.



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If you have any questions, or require additional information, please contact me, Richard Watt or Gene Florentino at 716/684-8060.

Sincerely,

Jim Richert

Jim Richert
Site Manager/Geologist

djr/YR9030
[SEC]2398

cc: B. Peck, Project Manager
J. Griffis, Project Director

ATTACHMENT
1
GRID LOCATION MAP



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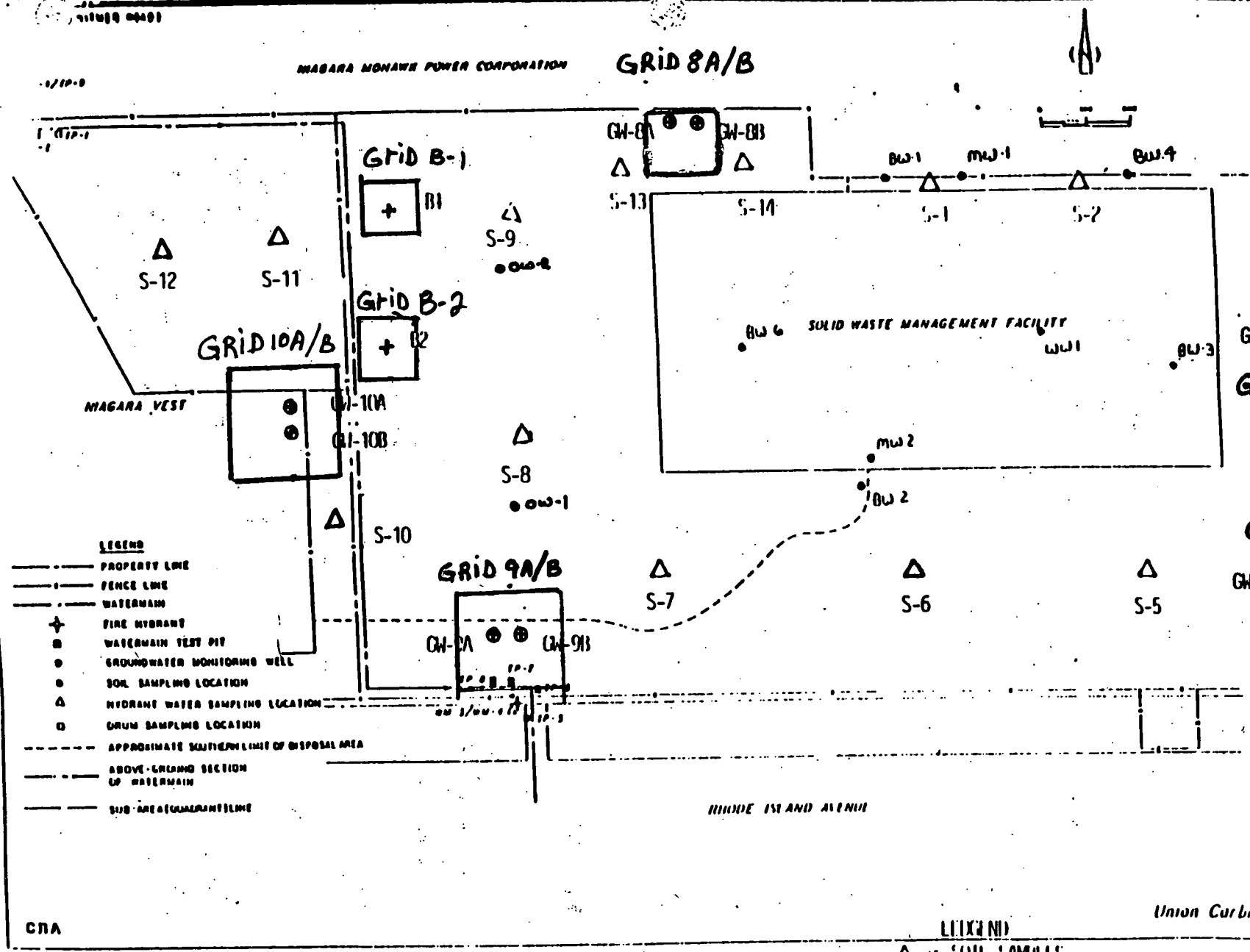




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ATTACHMENT
2
GEOPHYSICAL SURVEY
CONTOUR PLOTS



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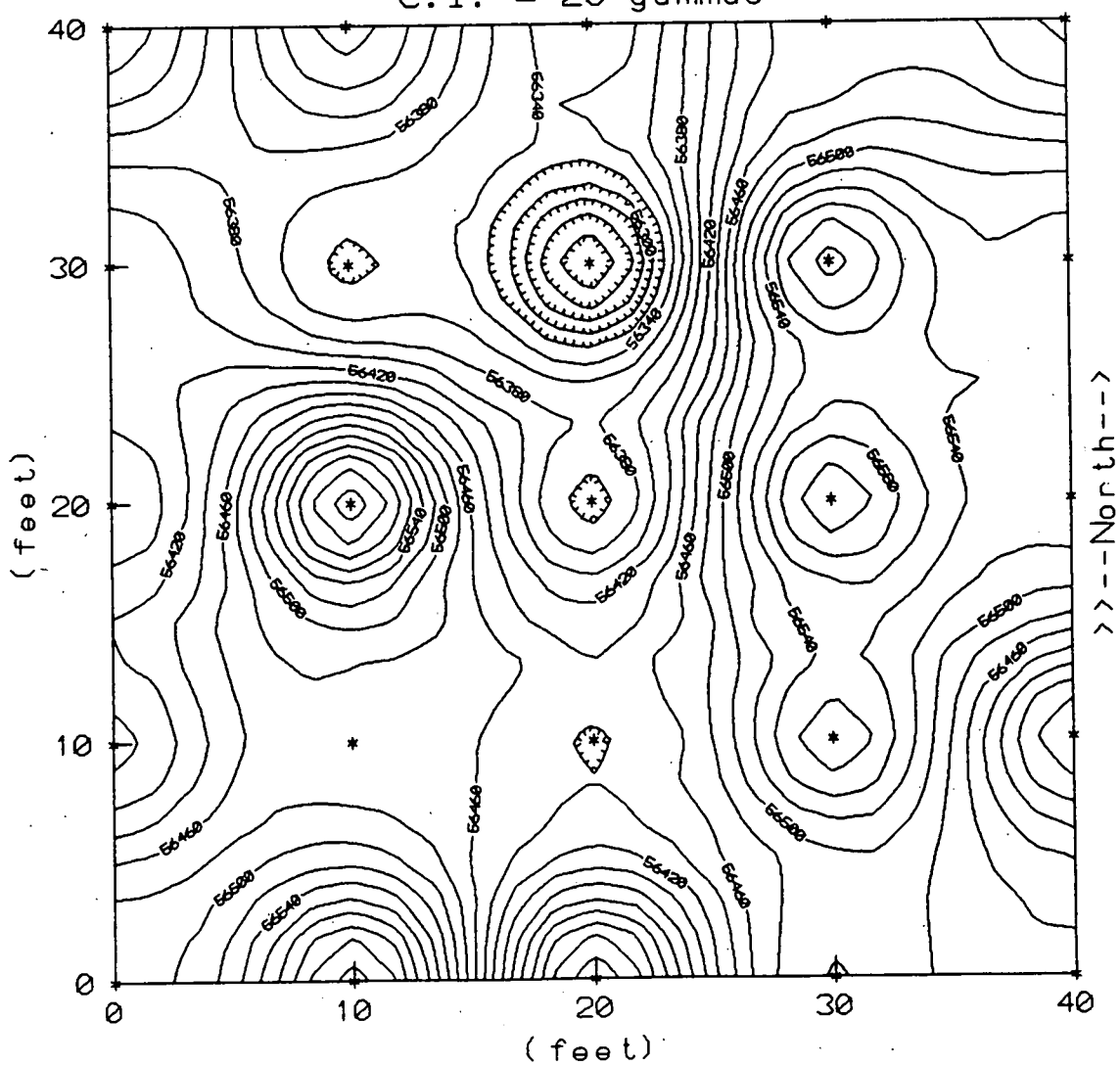
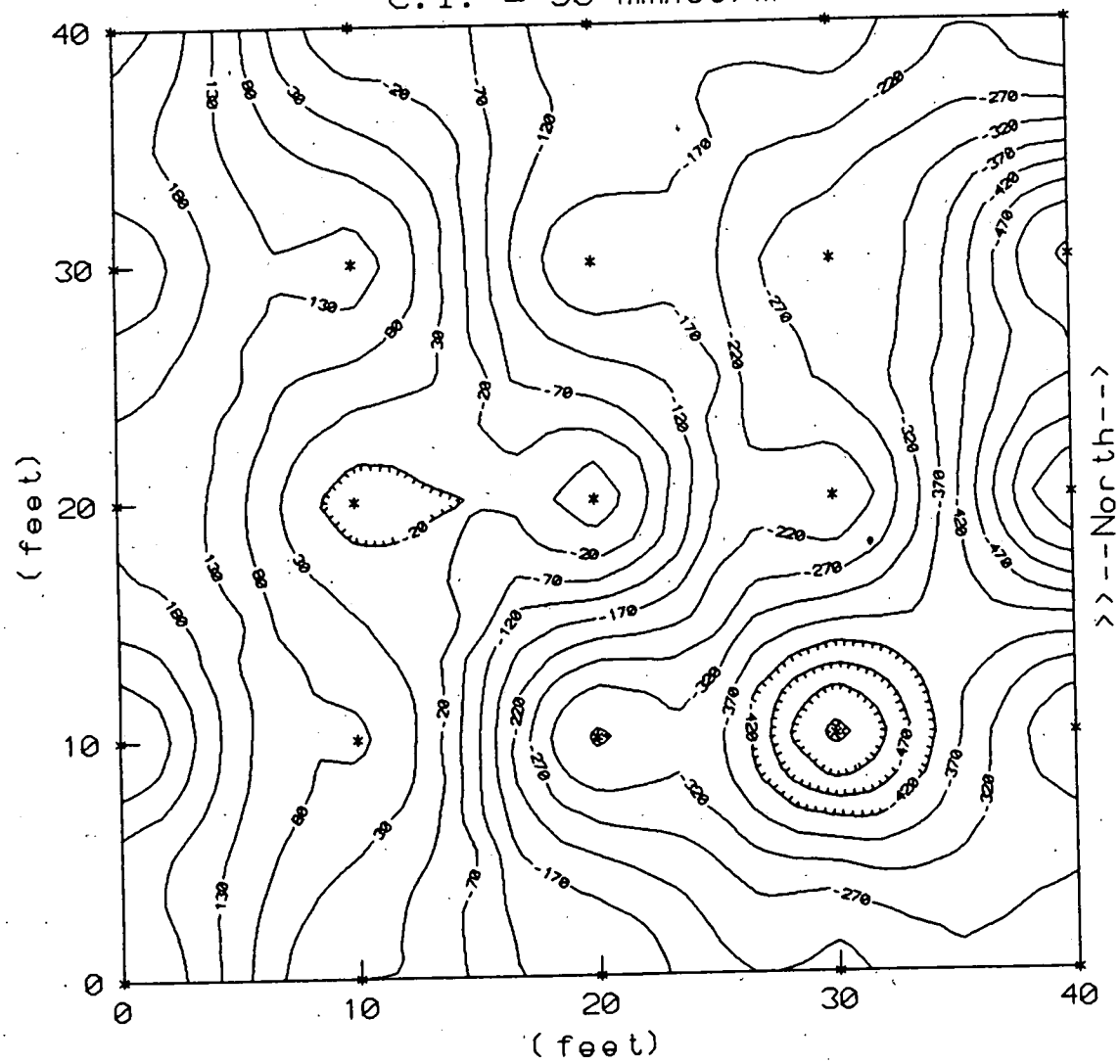
Union Carbide Magnetics B-1

C.I. = 20 gammas



UCar V1 Conductivity B-1

C.I. = 50 mmhos/m



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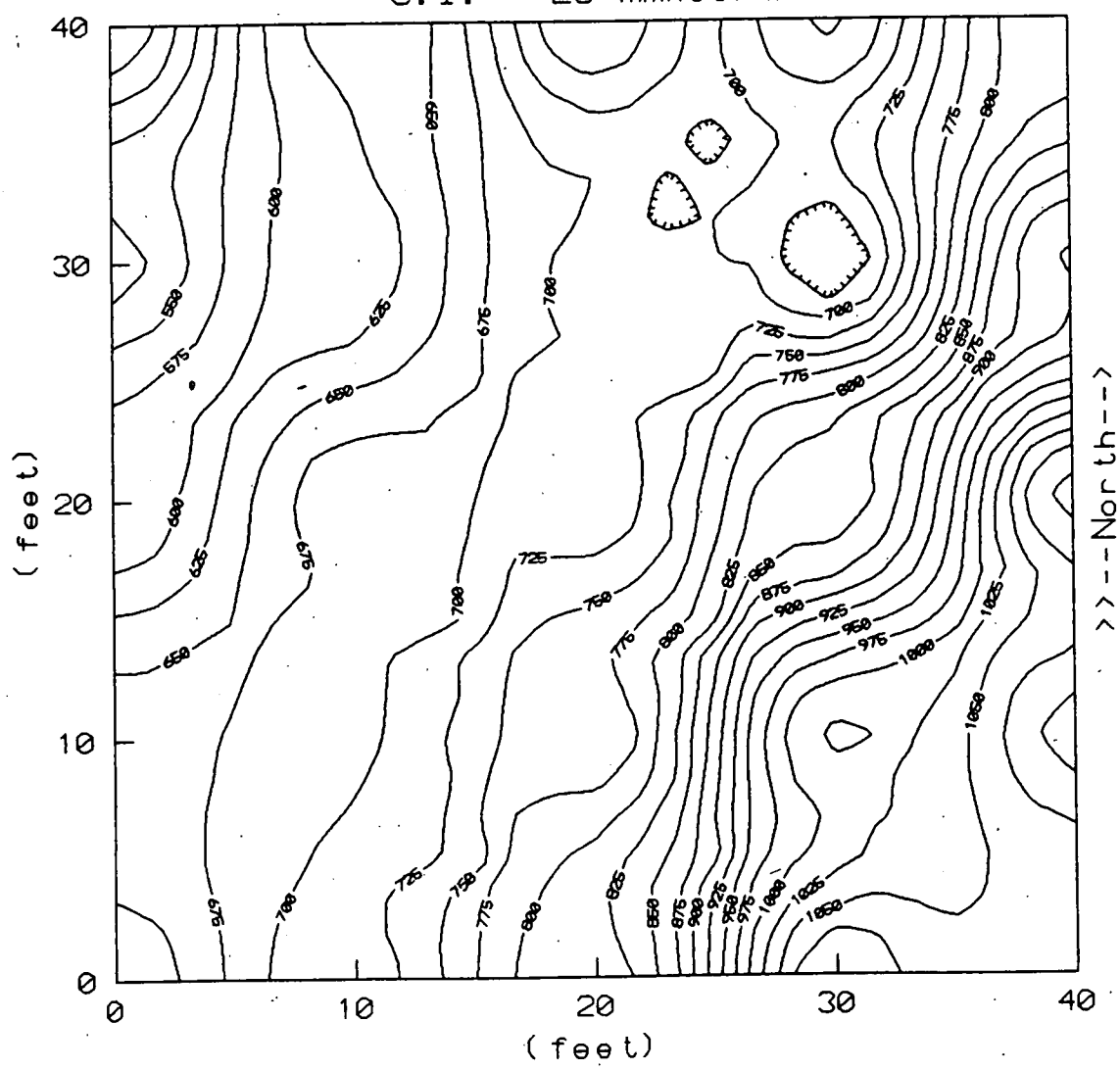
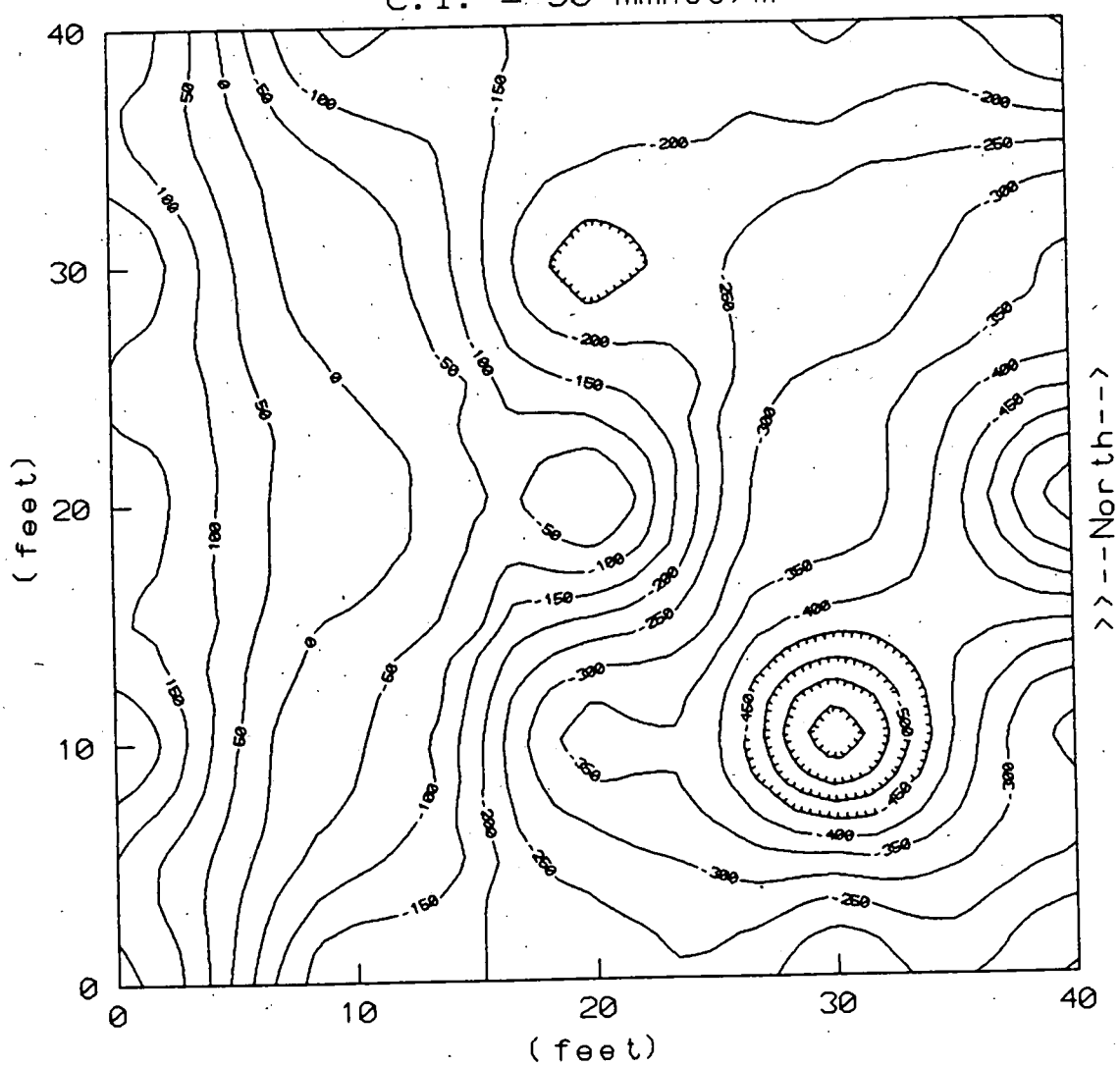
UCar H1 Conductivity B-1

C.I. = 25 mmhos/m



UCar V2 Conductivity B-1

C.I. = 50 mmhos/m



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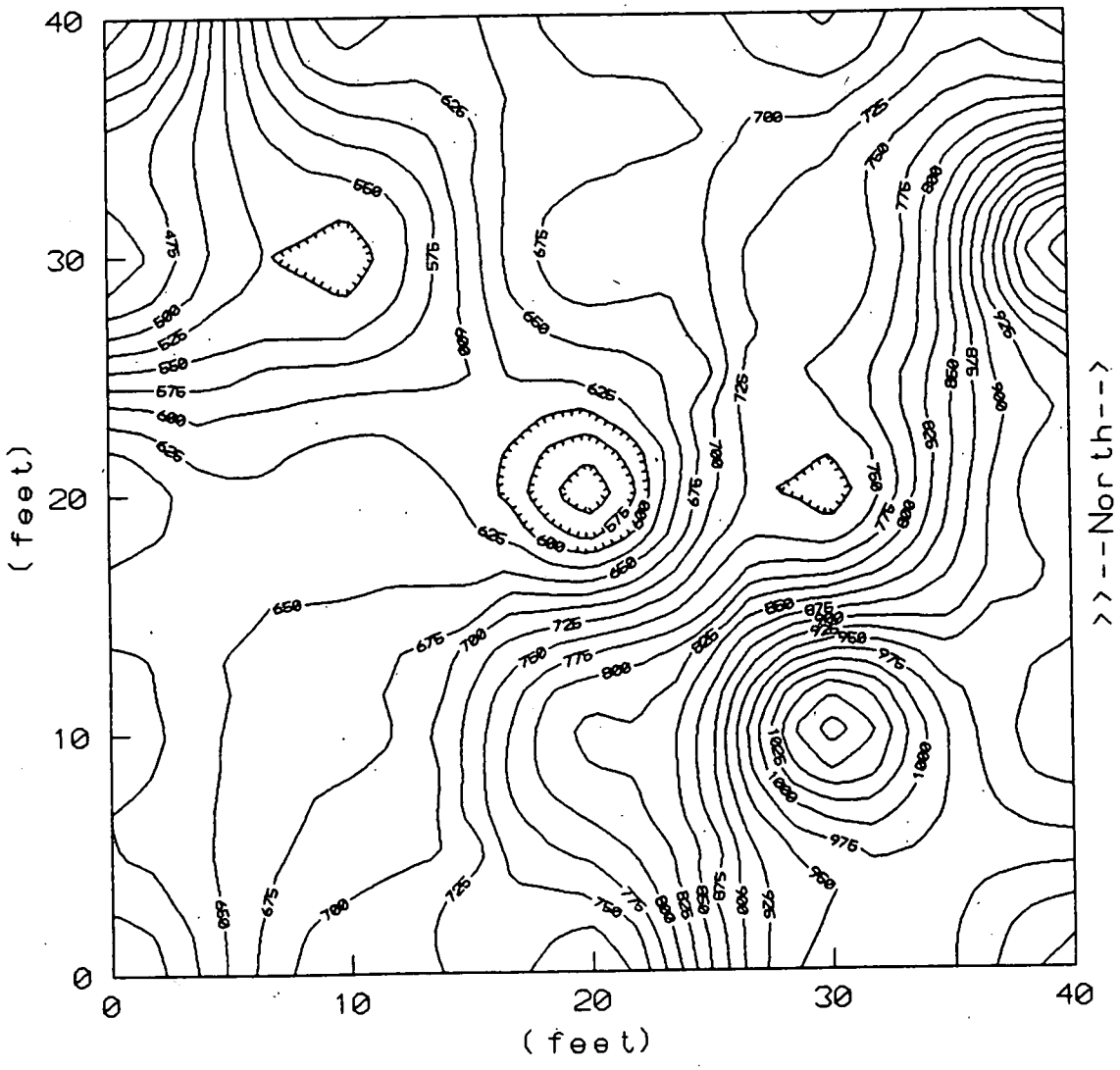
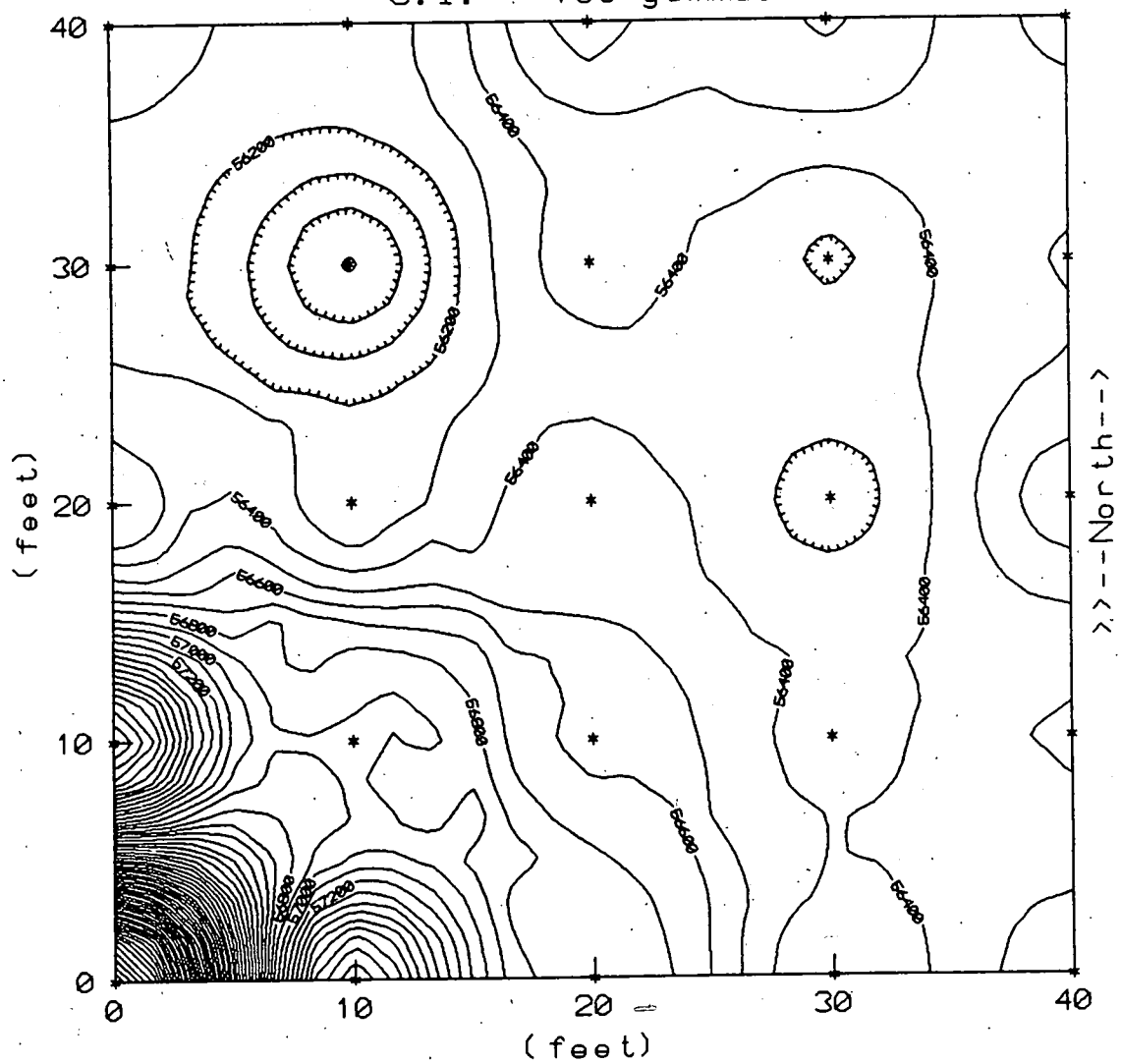
UCar H2 Conductivity B-1

C.I. = 25 mmhos/m



# Union Carbide Magnetics B-2

C.I. = 100 gammas



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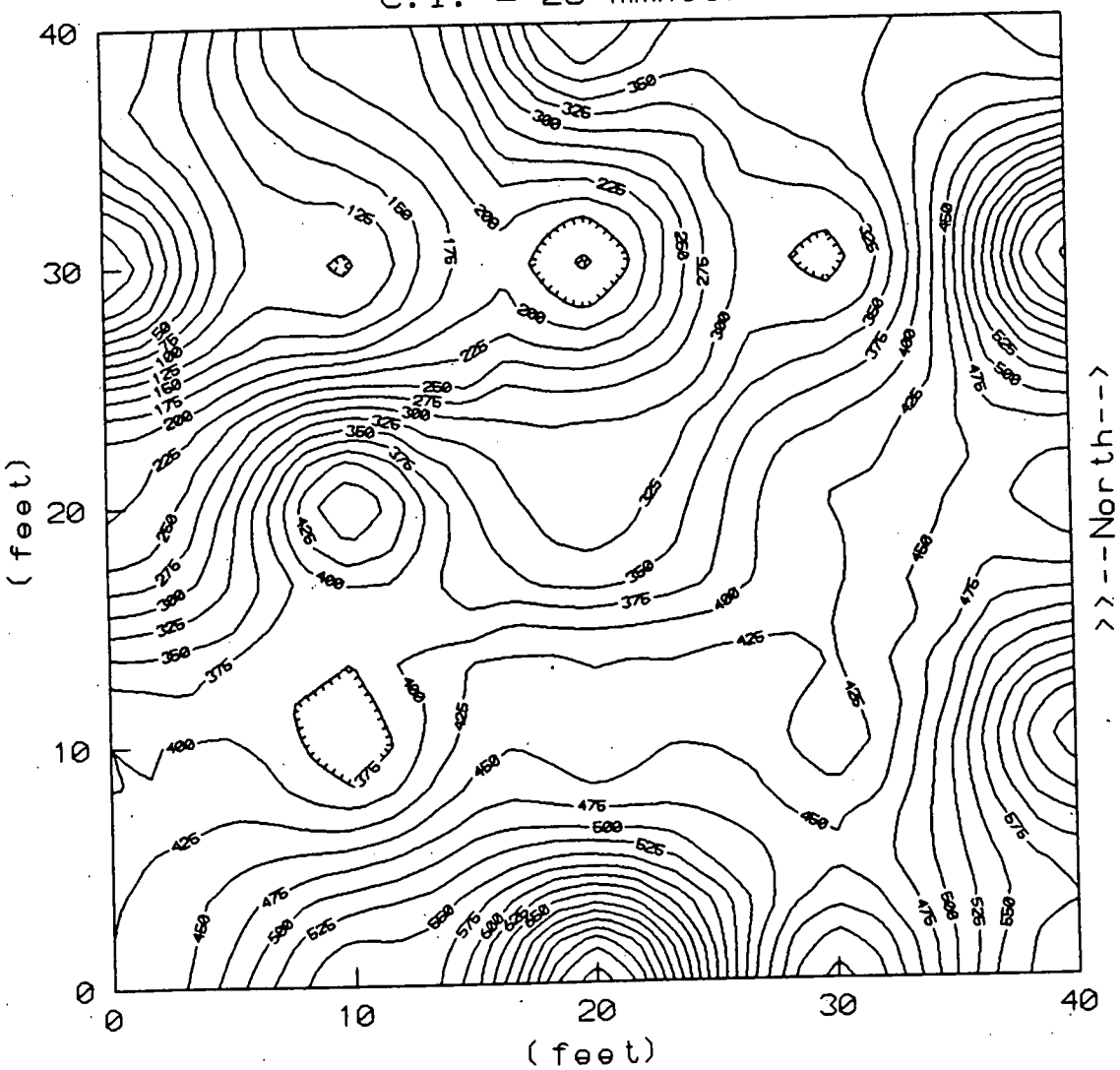
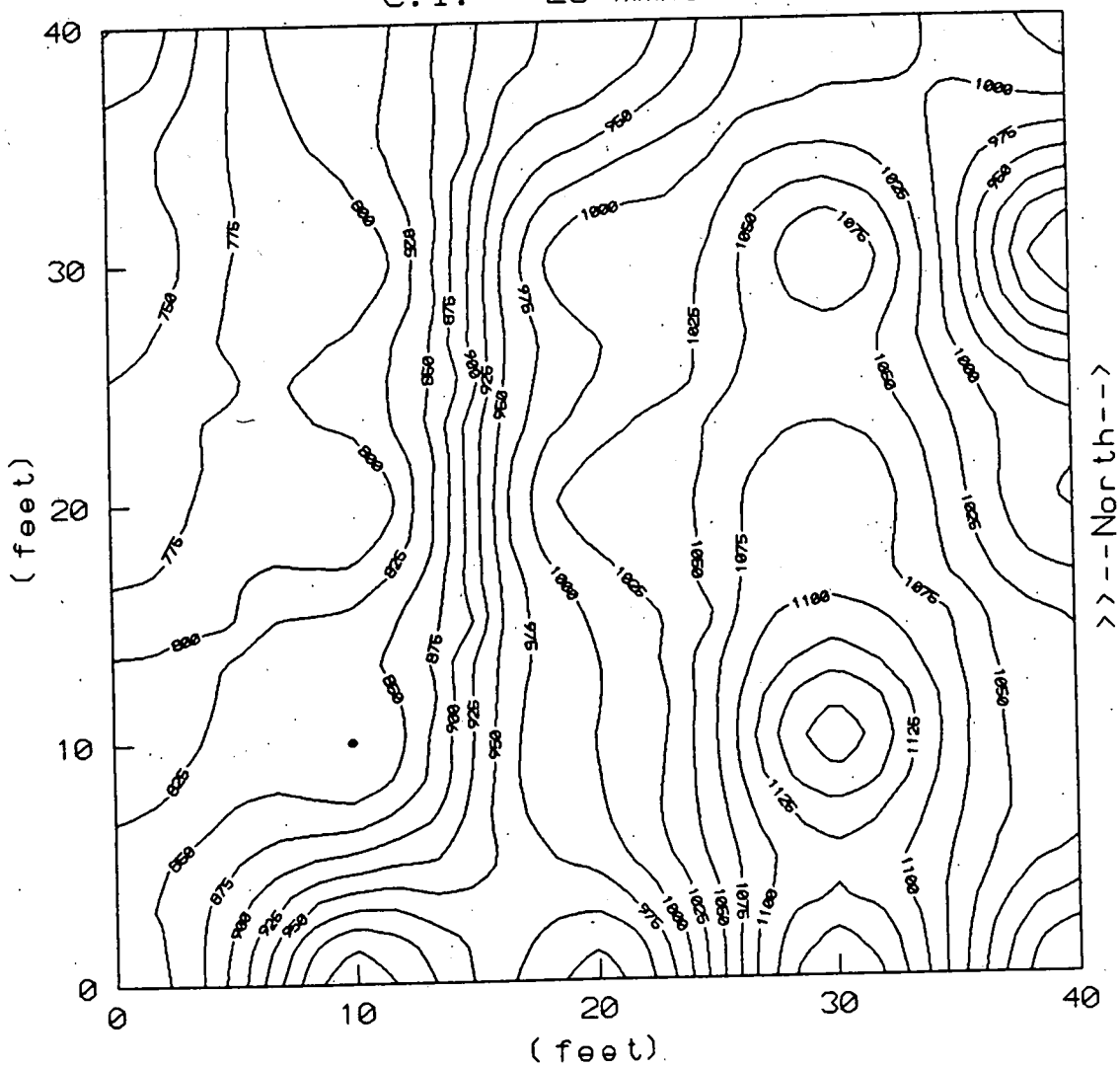
UCar V1 Conductivity B-2

C.I. = 25 mmhos/m



UCar H1 Conductivity B-2

C.I. = 25 mmhos/m



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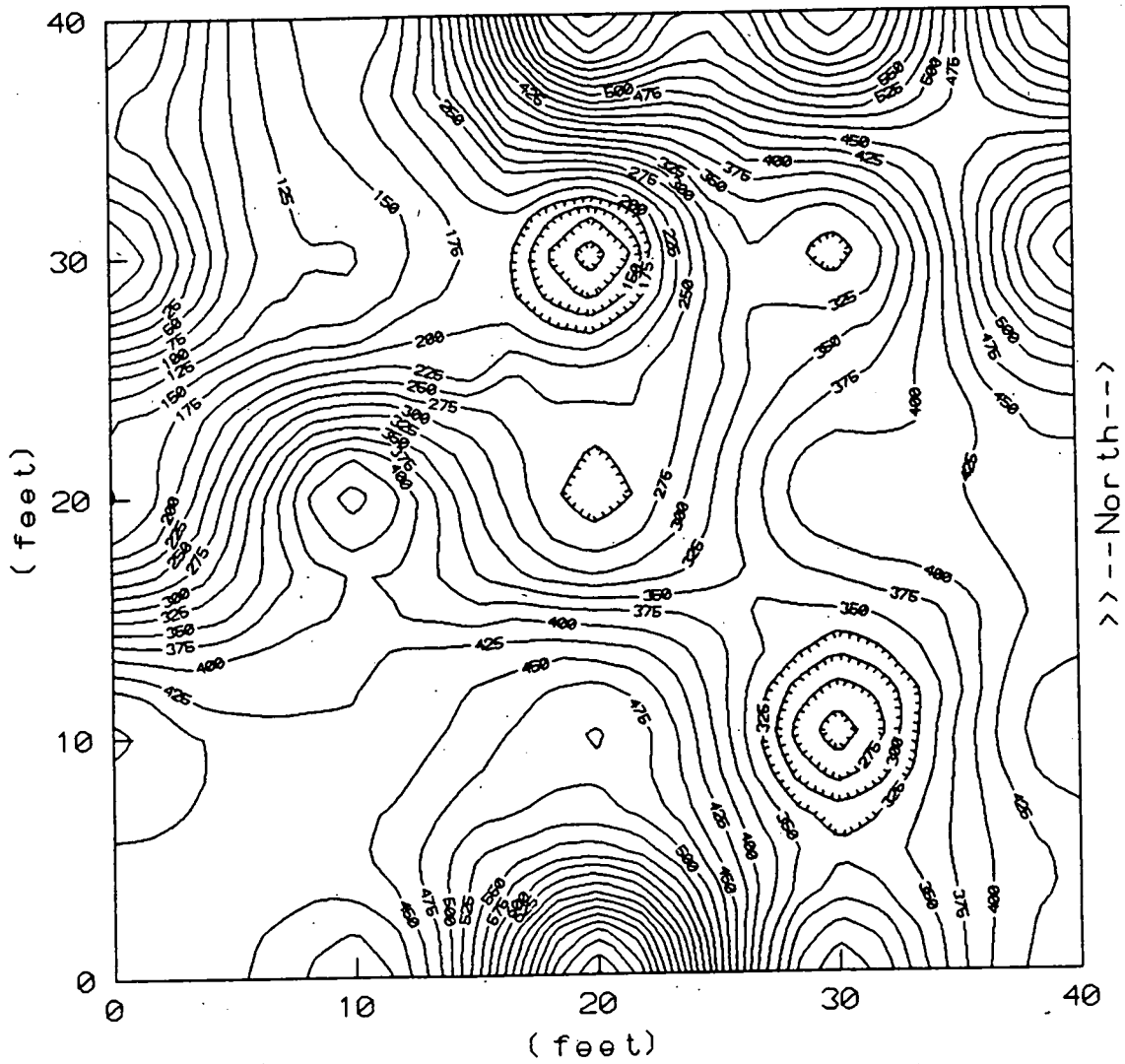
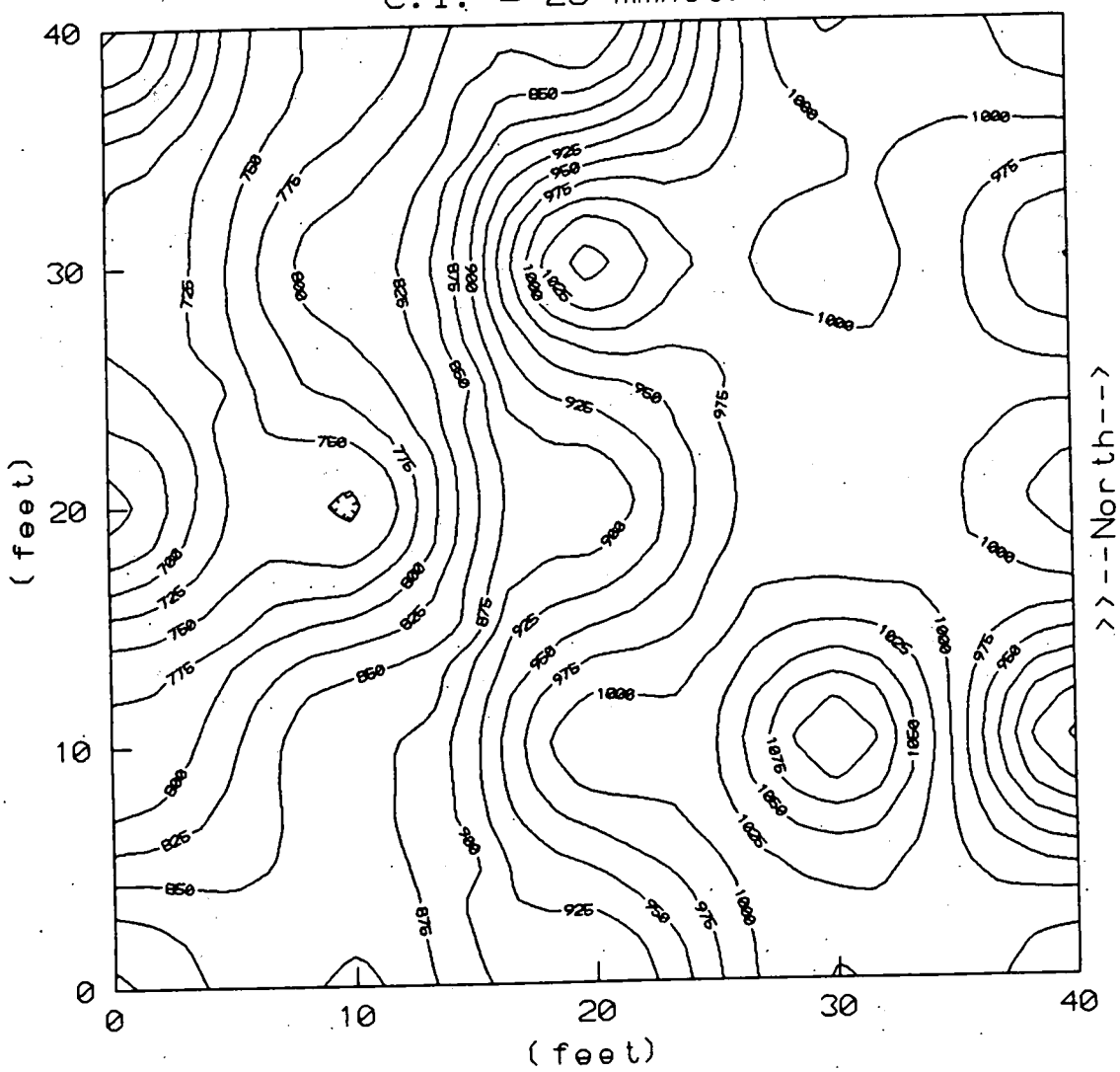
UCar V2 Conductivity B-2

C.I. = 25 mmhos/m



UCar H2 Conductivity B-2

C.I. = 25 mmhos/m



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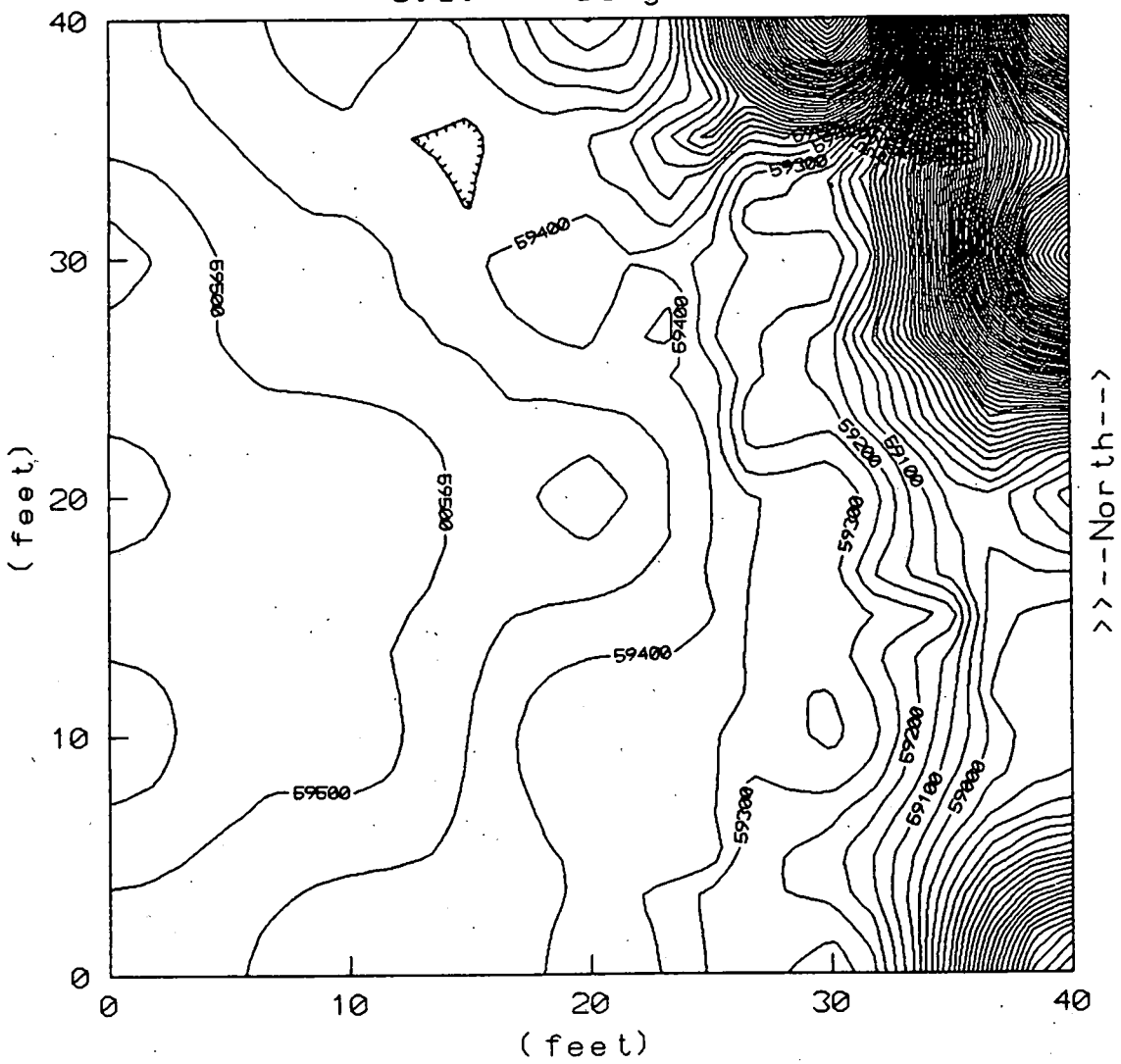
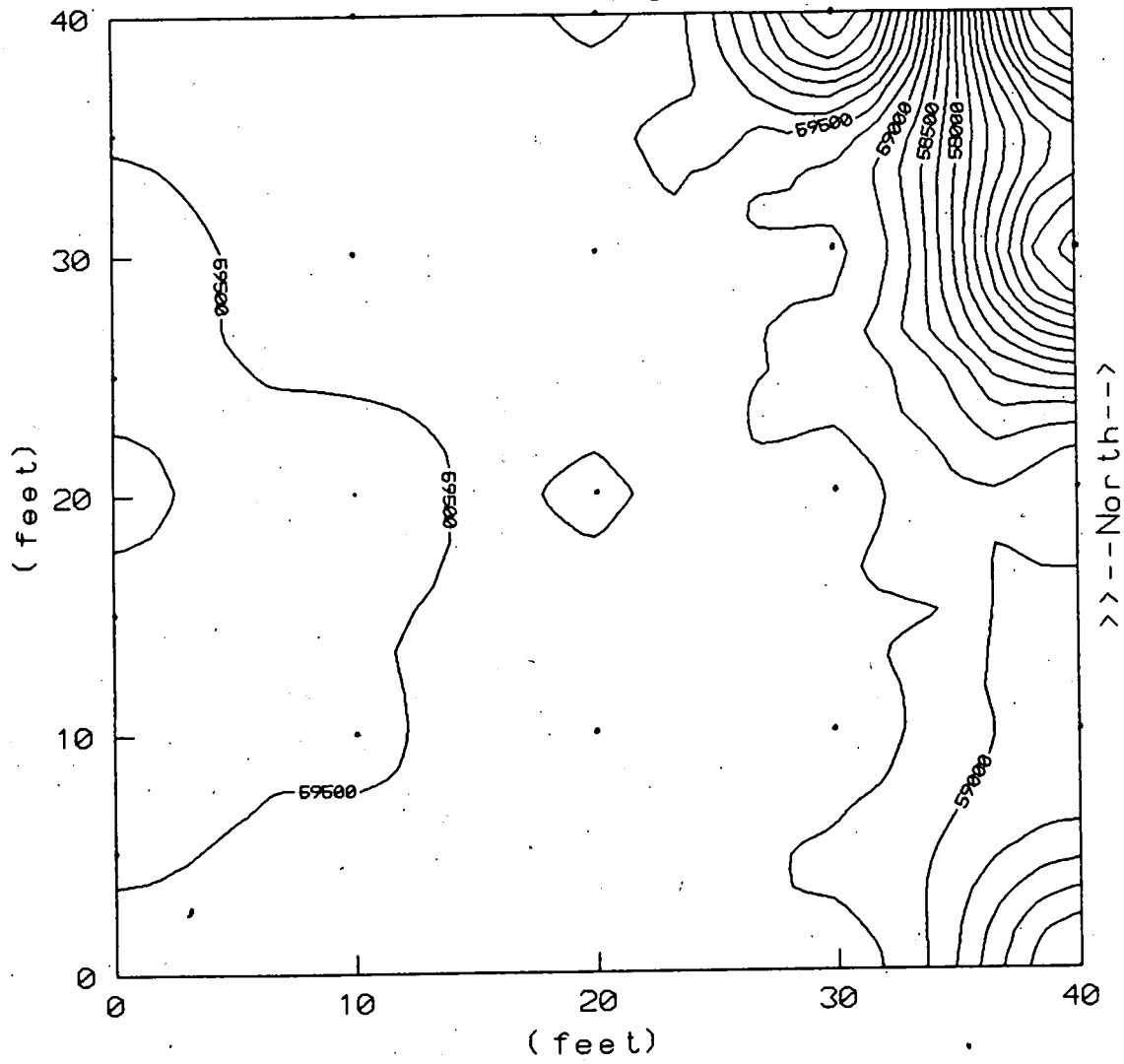
# Union Carbide MAG GW-7A

C.I. = 50 gammas



# Union Carbide MAG GW-7A

C.I. = 250 gammas



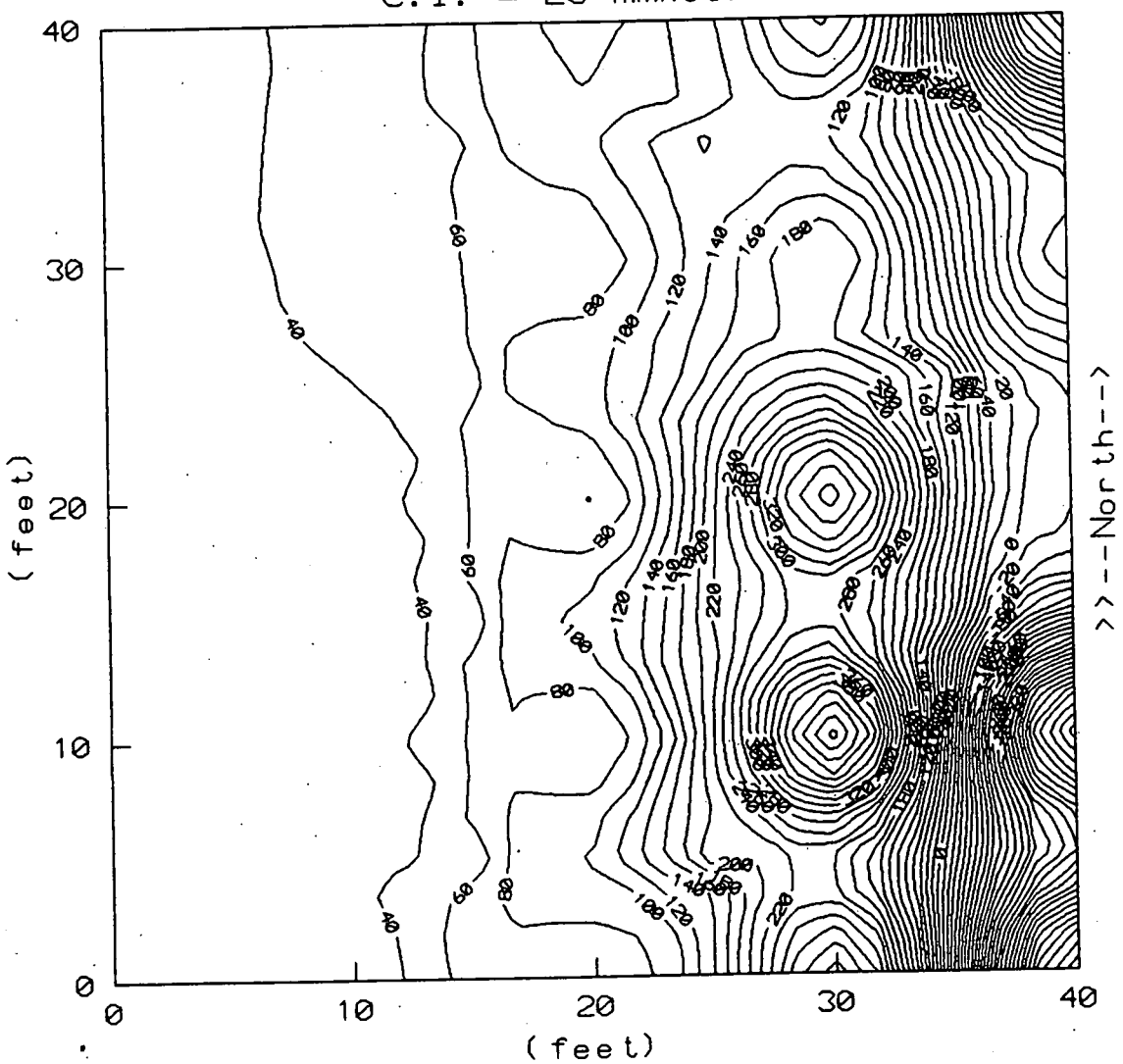



recycled paper

ecology and environment

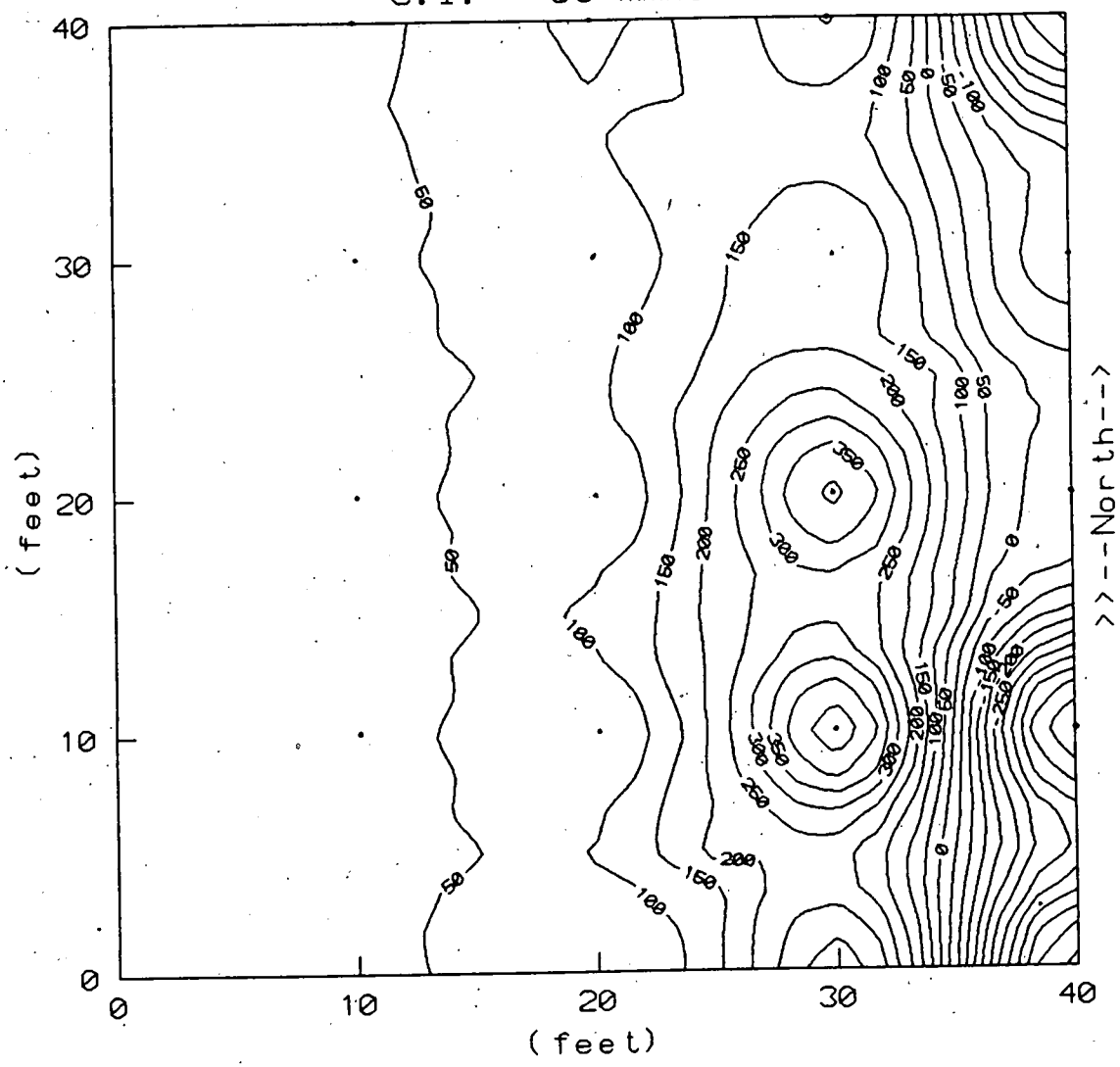
# UCar V1 Conductivity GW-7A

C.I. = 20 mmhos/m



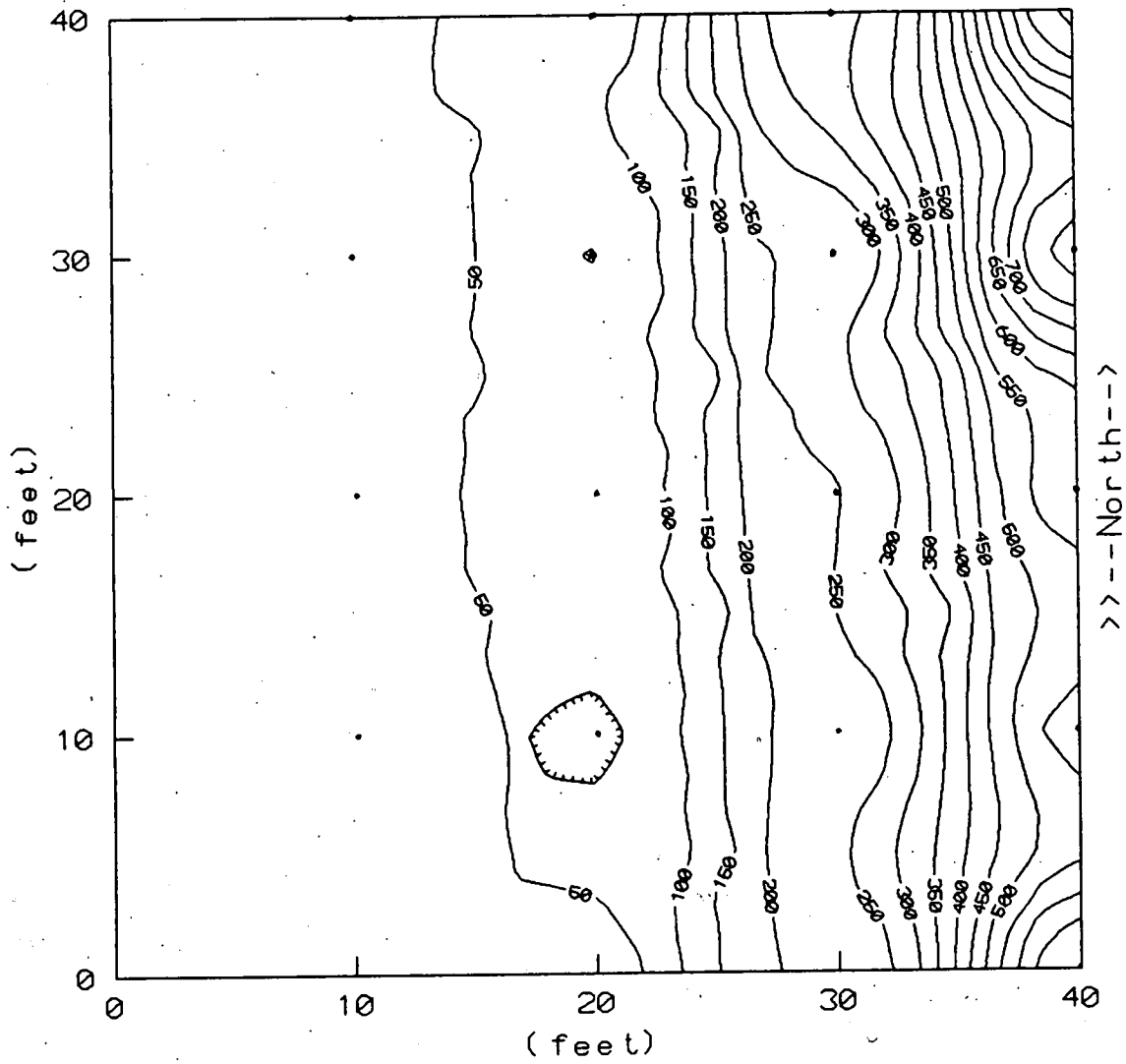
# UCar V1 Conductivity GW-7A

C.I. = 50 mmhos/m



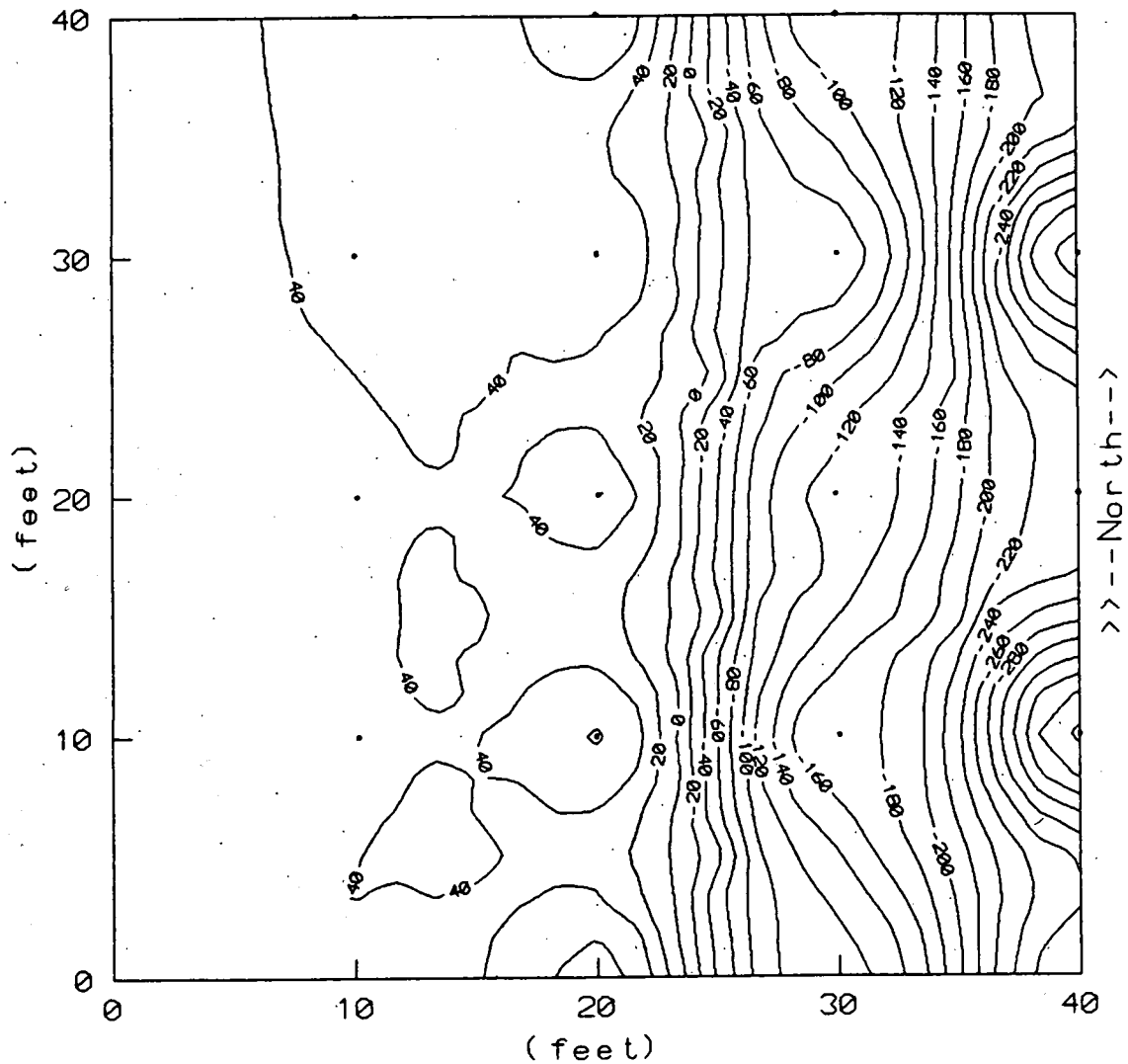
# UCar H1 Conductivity GW-7A

C.I. = 50 mmhos/m



# UCar V2 Conductivity GW-7A

C.I. = 20 mmhos/m



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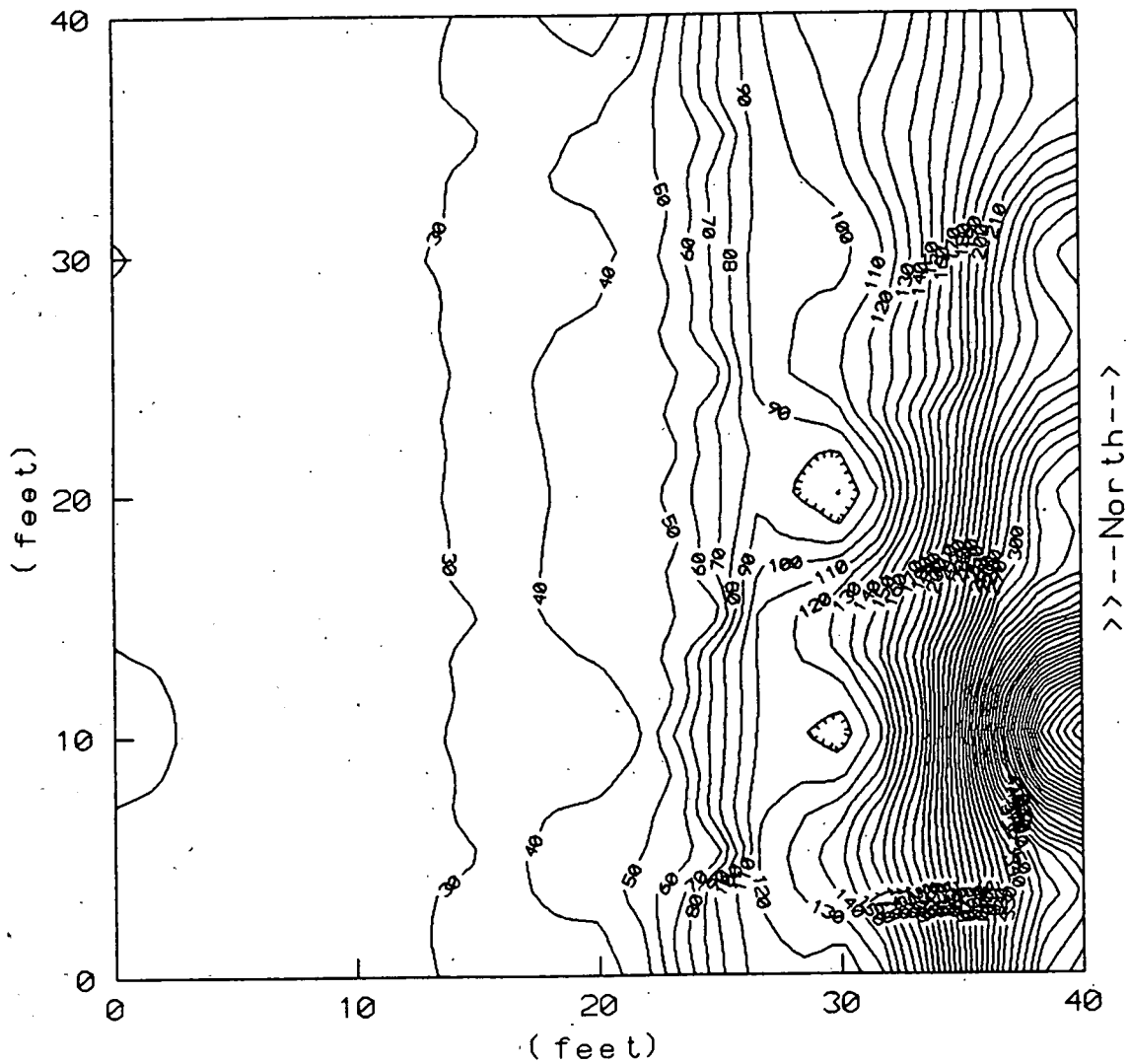
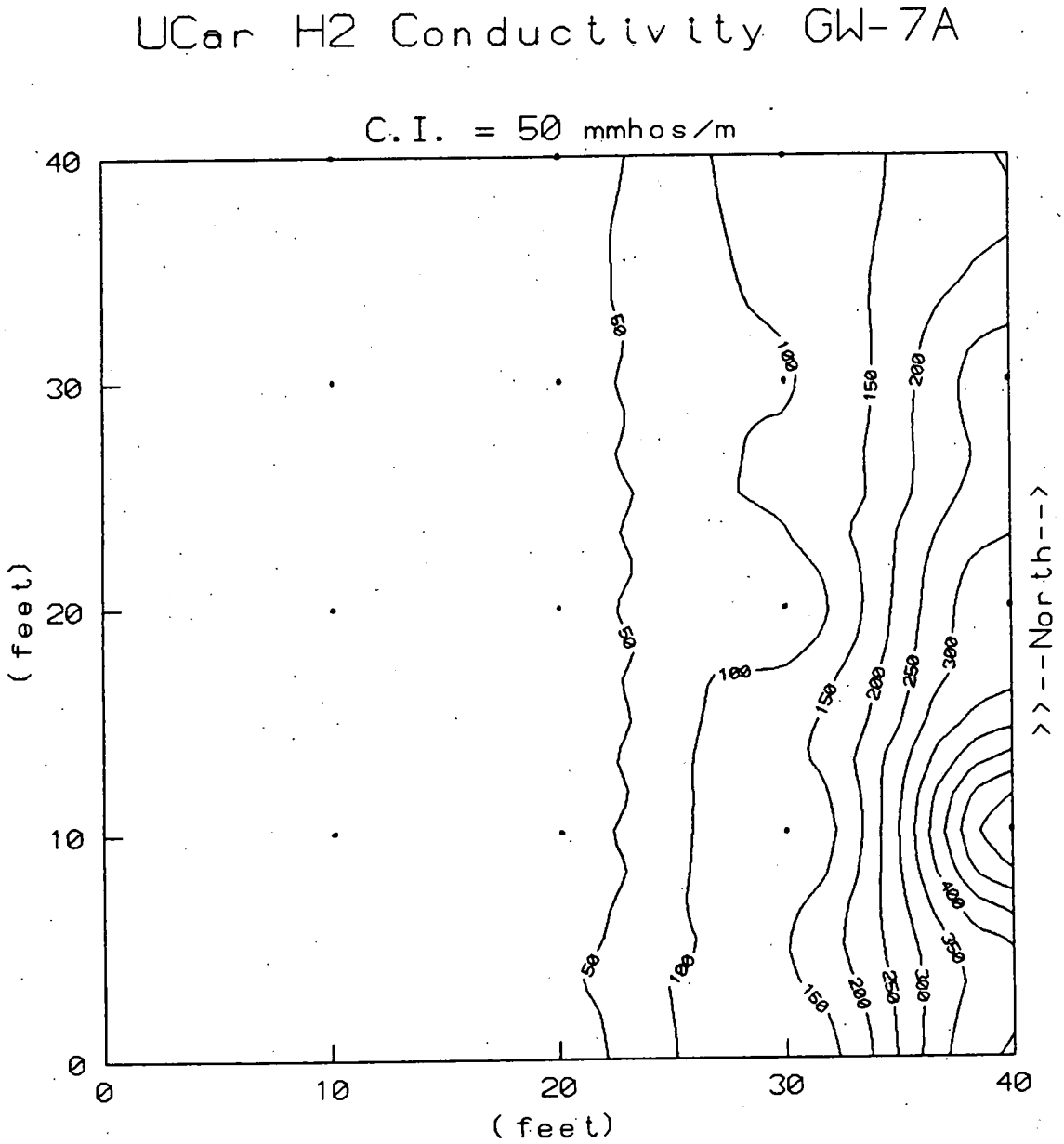
ecology and environment

UCar H2 Conductivity GW-7A

C.I. = 10 mmhos/m





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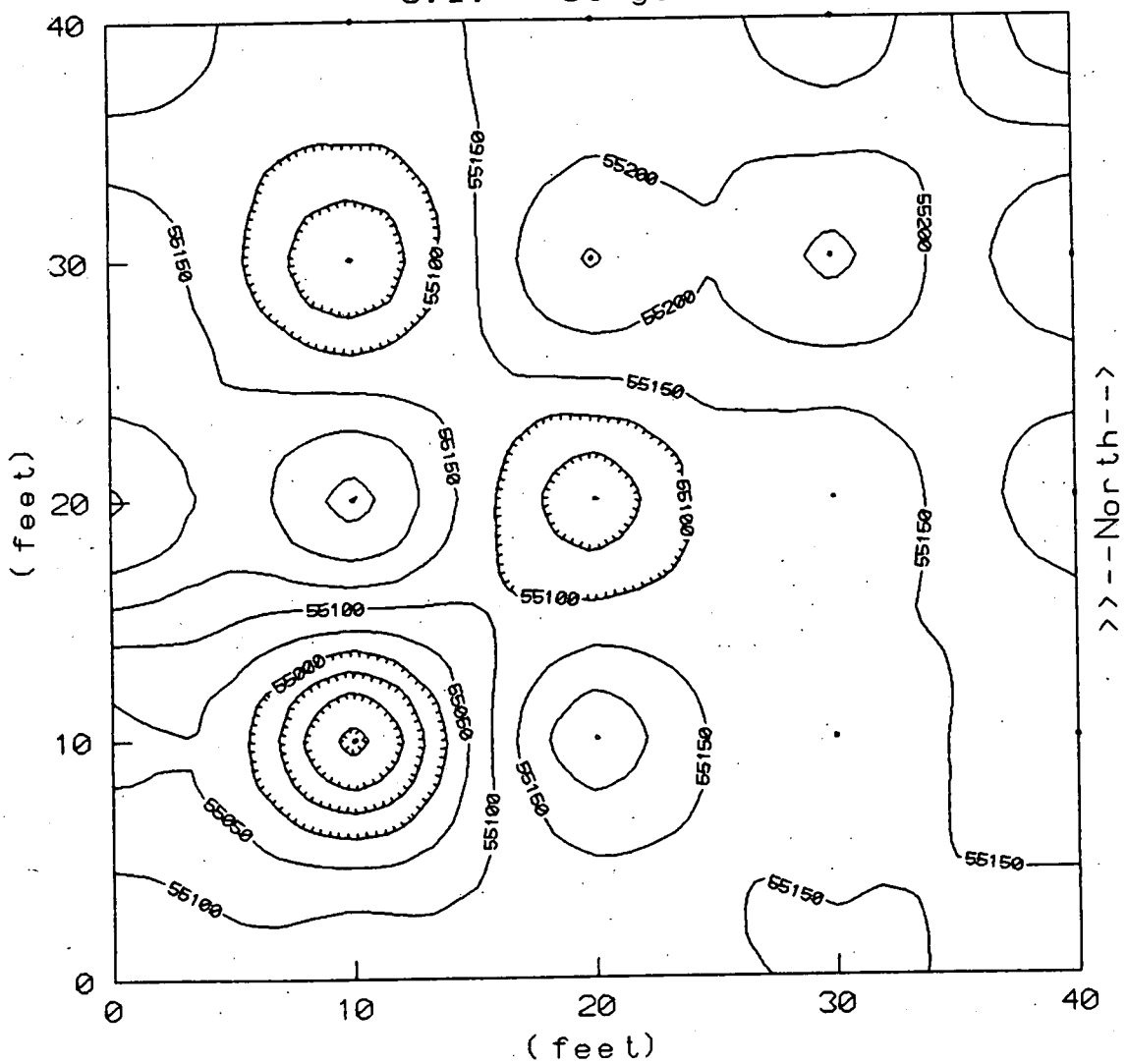
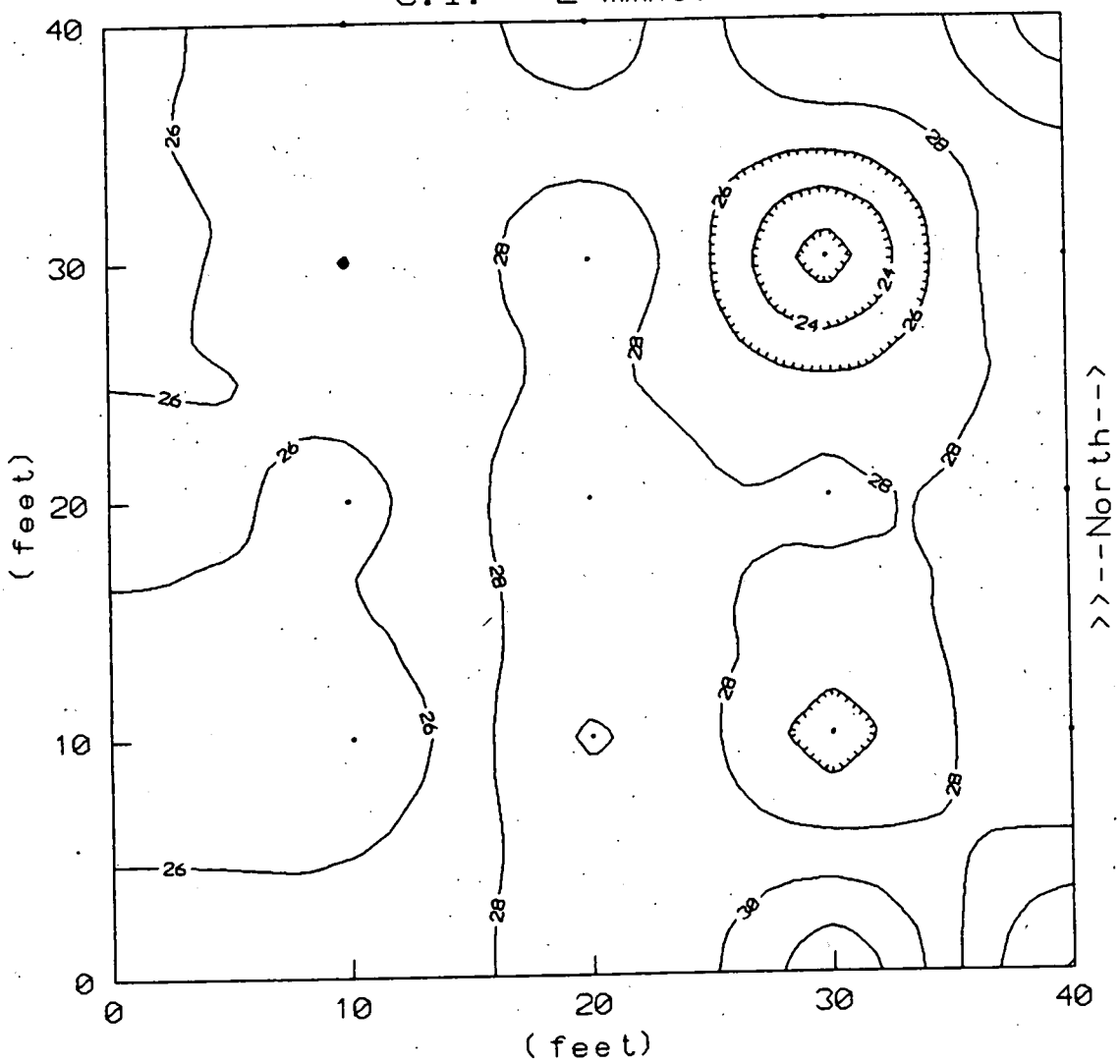
Union Carbide MAG GW-7B

C.I. = 50 gammas



# UCar V1 Conductivity GW-7B

C.I. = 2 mmhos/m



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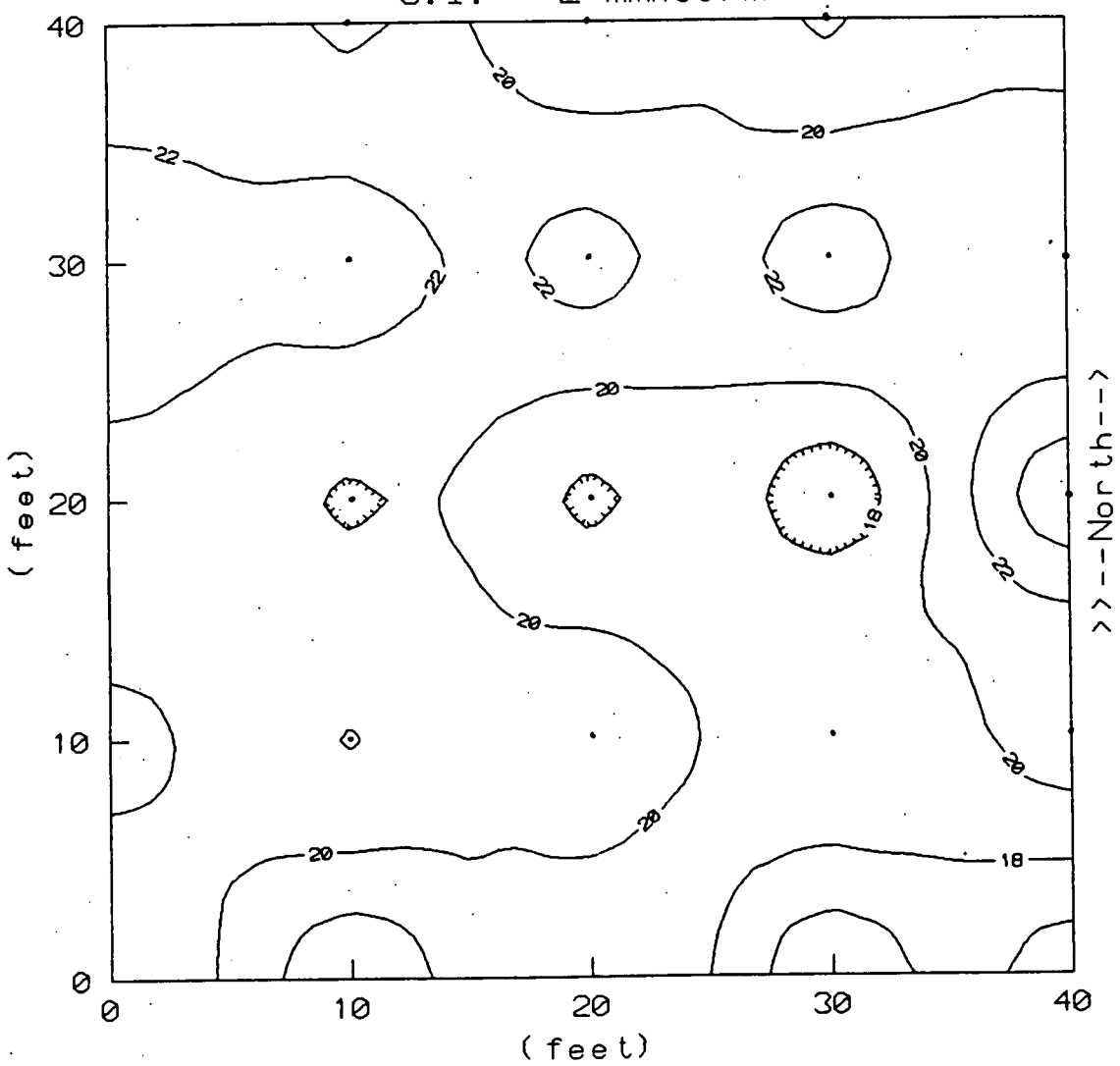
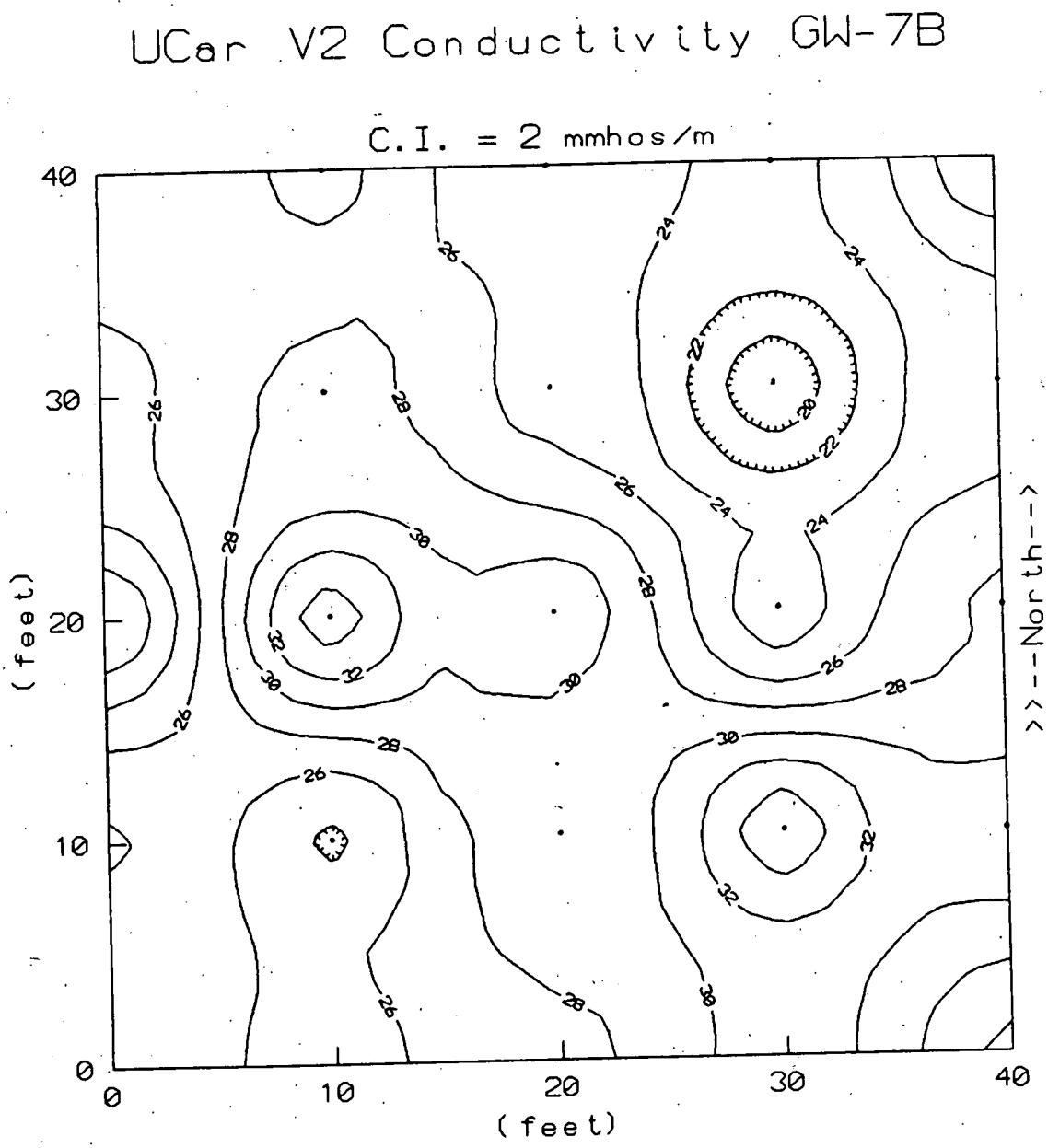
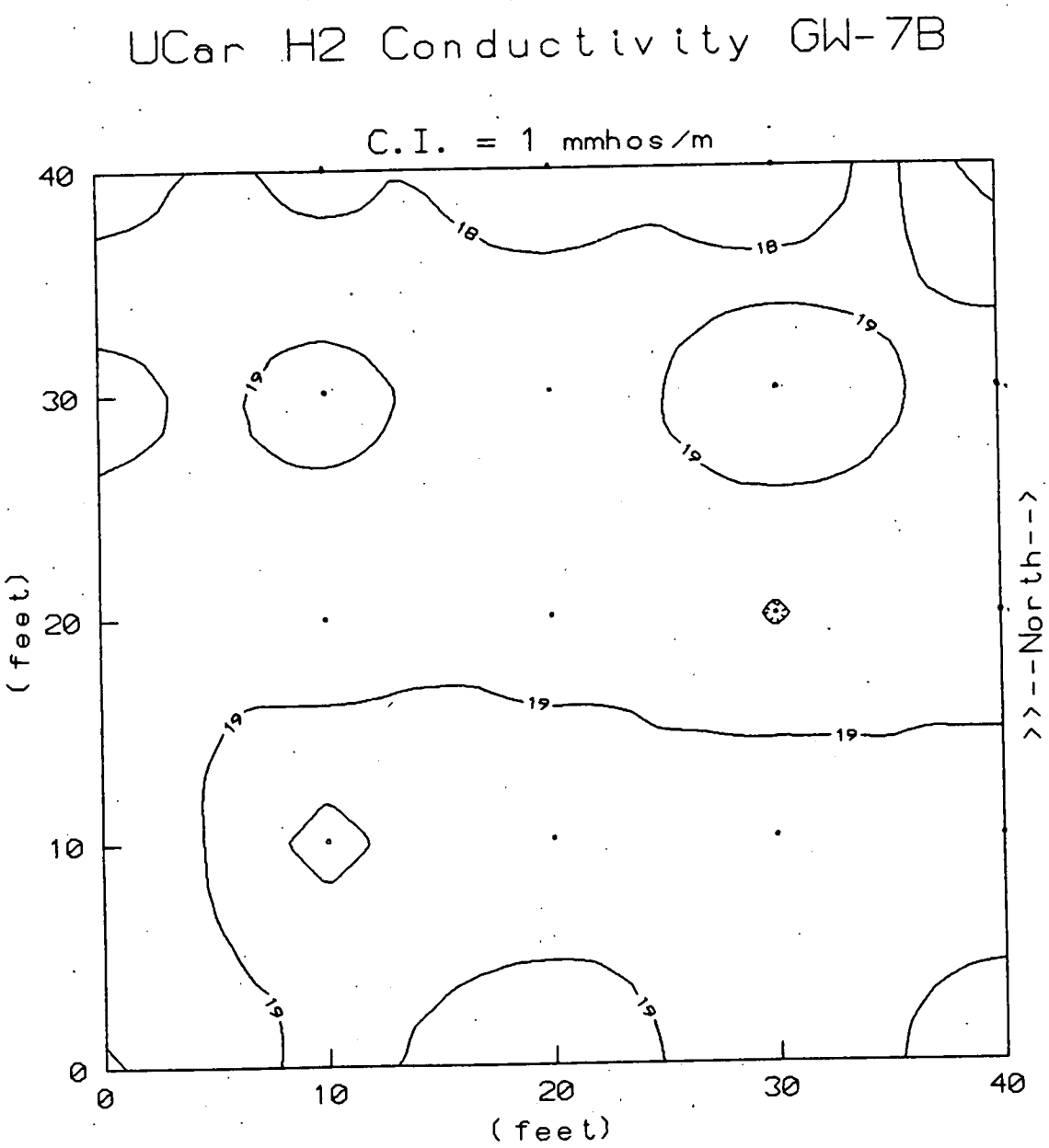
# UCar H1 Conductivity GW-7B

C.I. = 2 mmhos/m

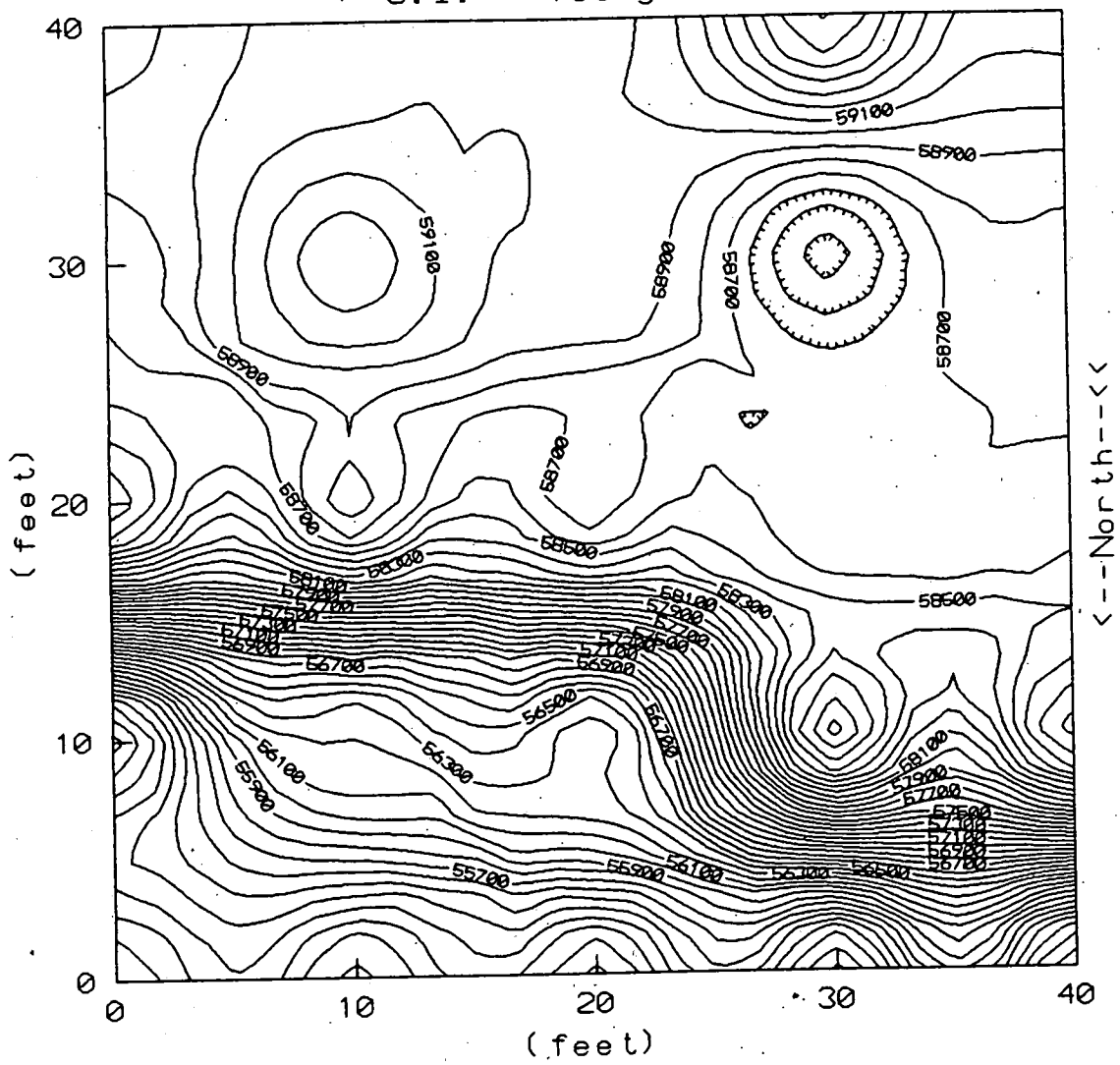



UCar V2 Conductivity GW-7B
C.I. = 2 mmhos/m
40
30
20
10
0
(feet)
0
10
20
30
40
(feet)
<--North-->
22
24
26
28
30
32


UCar H2 Conductivity GW-7B
C.I. = 1 mmhos/m
40
30
20
10
0
(feet)
0
10
20
30
40
(feet)
18
18
19
19
19
19
19
19
19
19
>>--North--<<

# Union Carbide MAG GW-8A/B

C.I. = 100 gammas



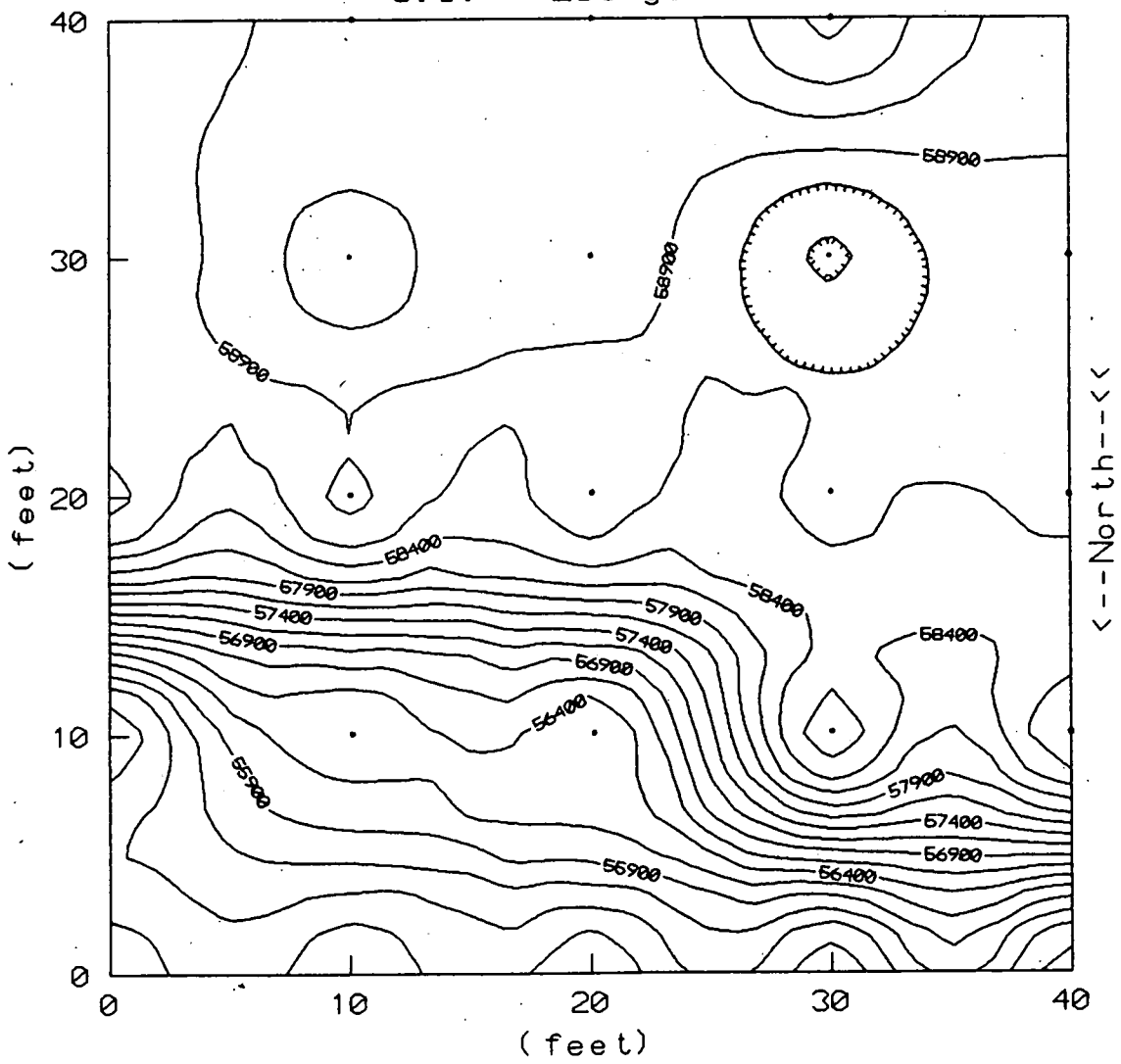



recycled paper

ecology and environment

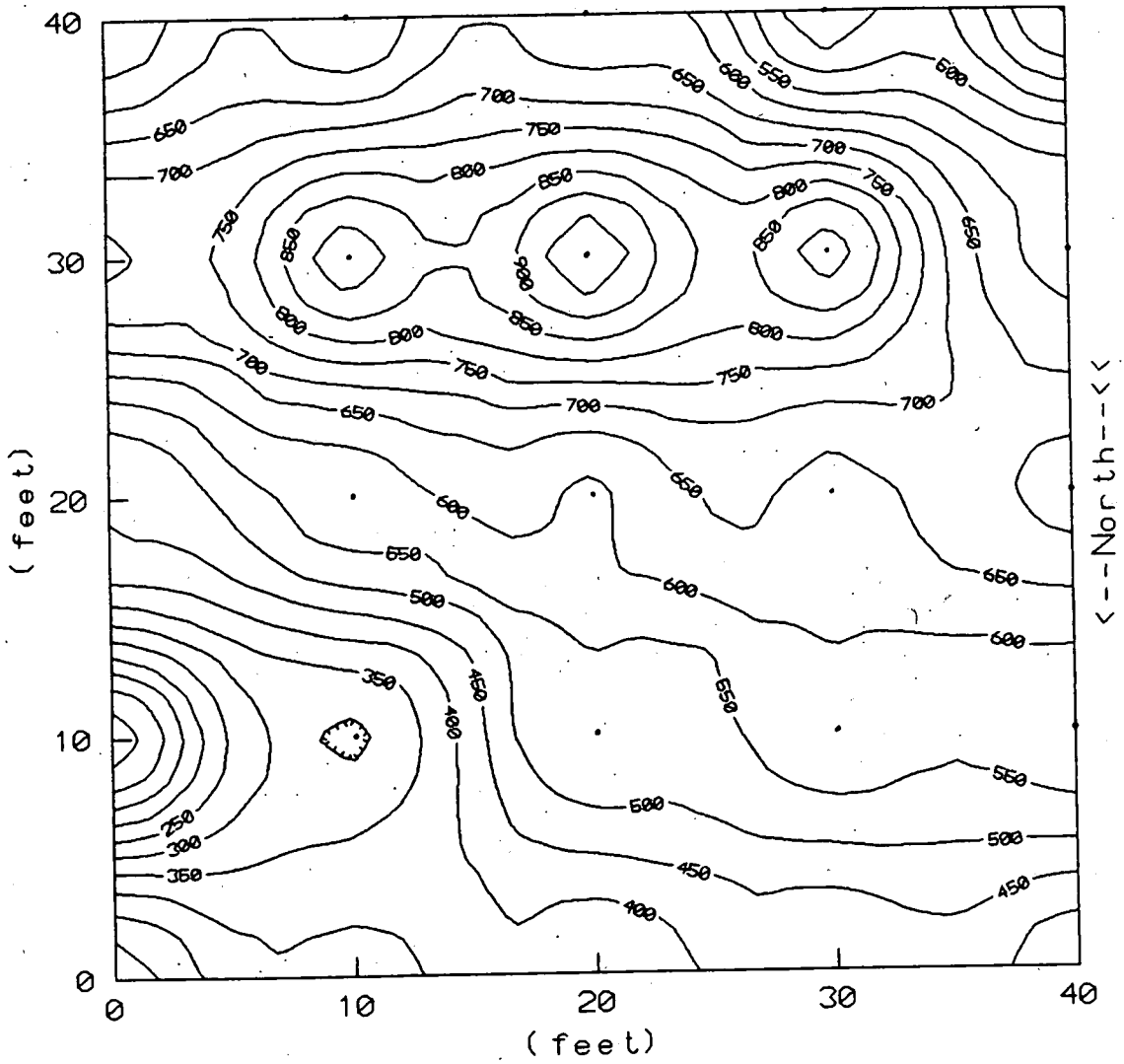
Union Carbide MAG GW-8A/B

C.I. = 250 gammas



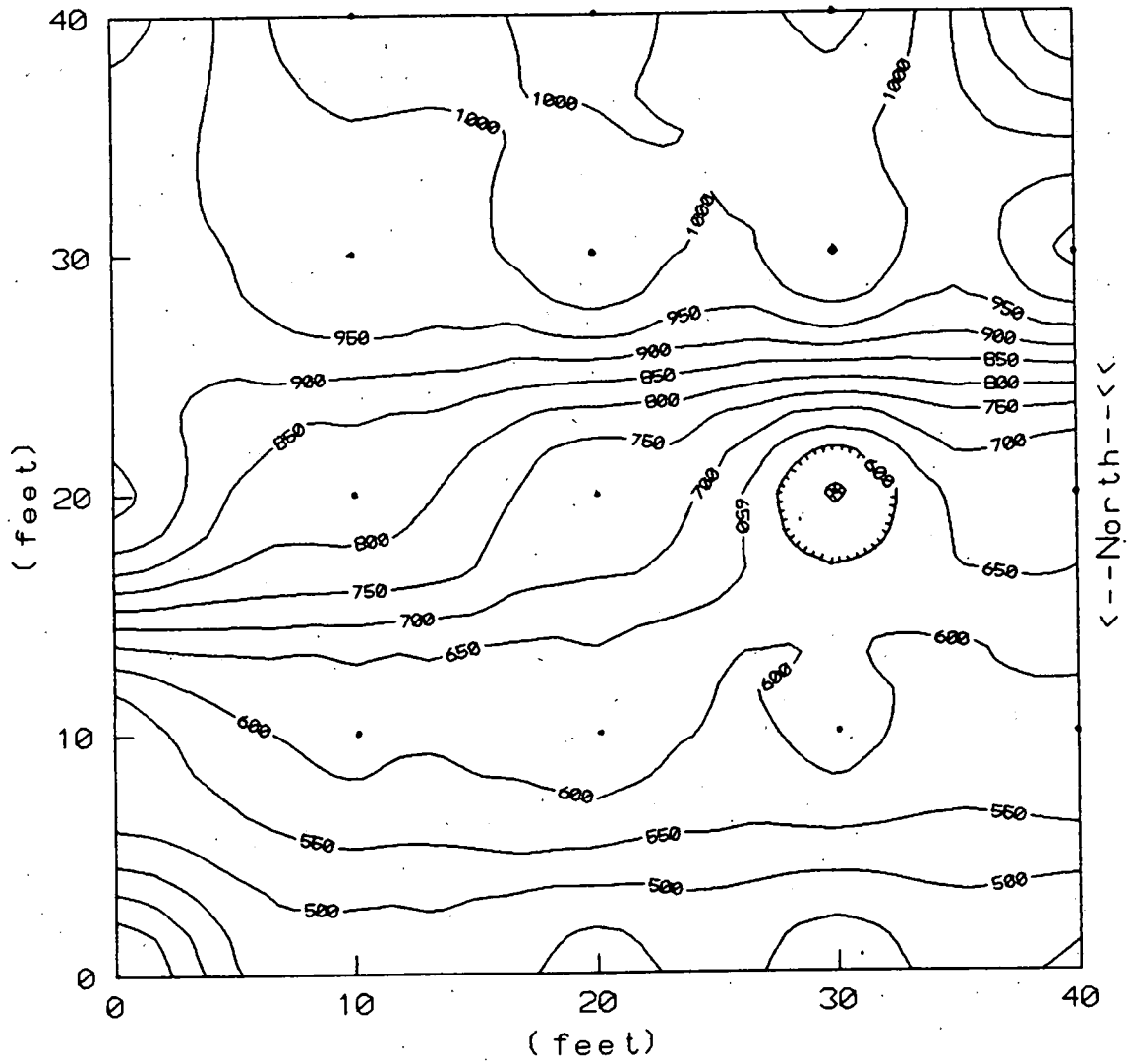
# UCar V1 Conductivity GW-8A/B

C.I. = 50 mmhos/m



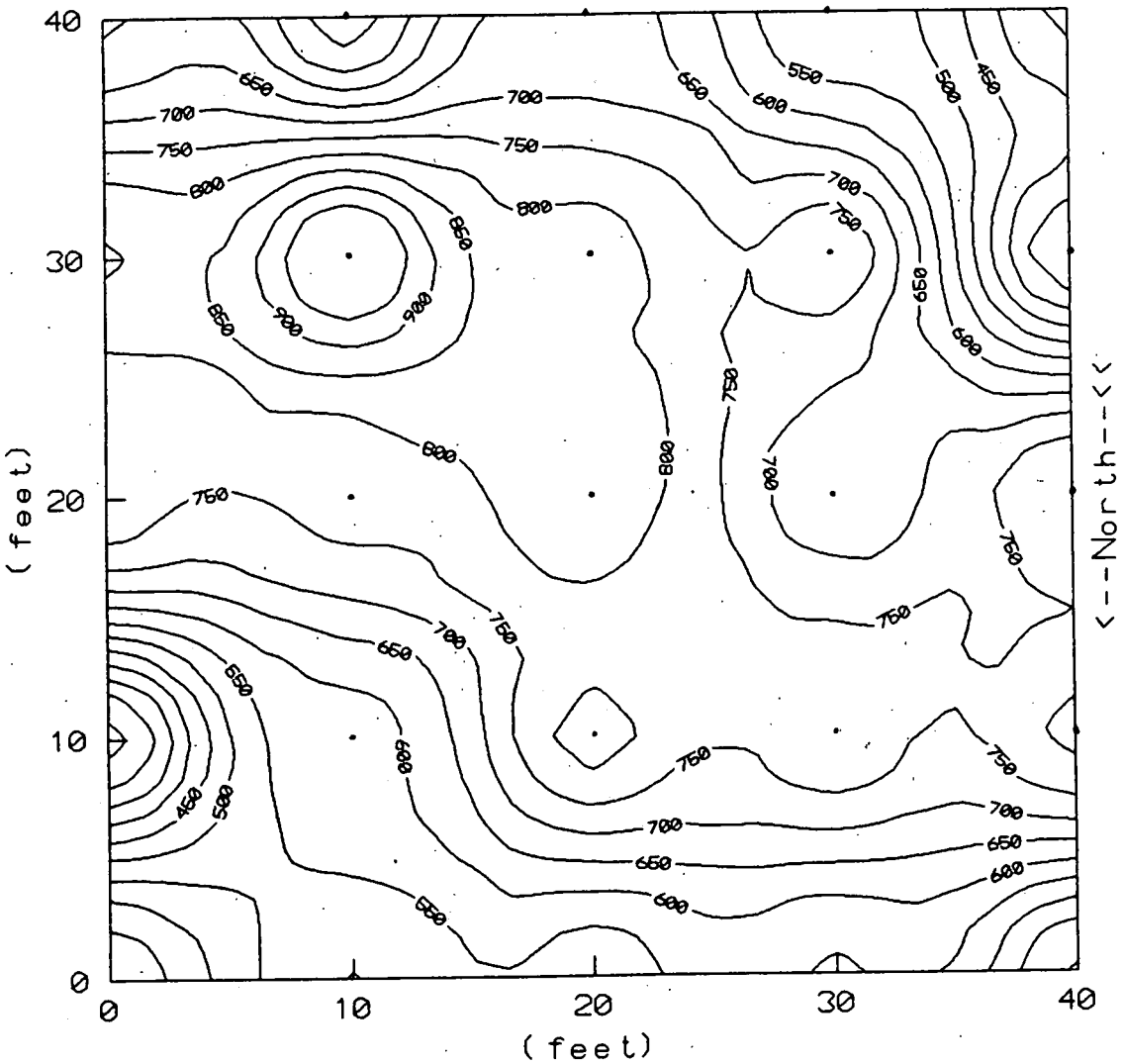
# UCar H1 Conductivity GW-8A/B

C.I. = 50 mmhos/m



# UCar V2 Conductivity GW-8A/B

C.I. = 50 mmhos/m



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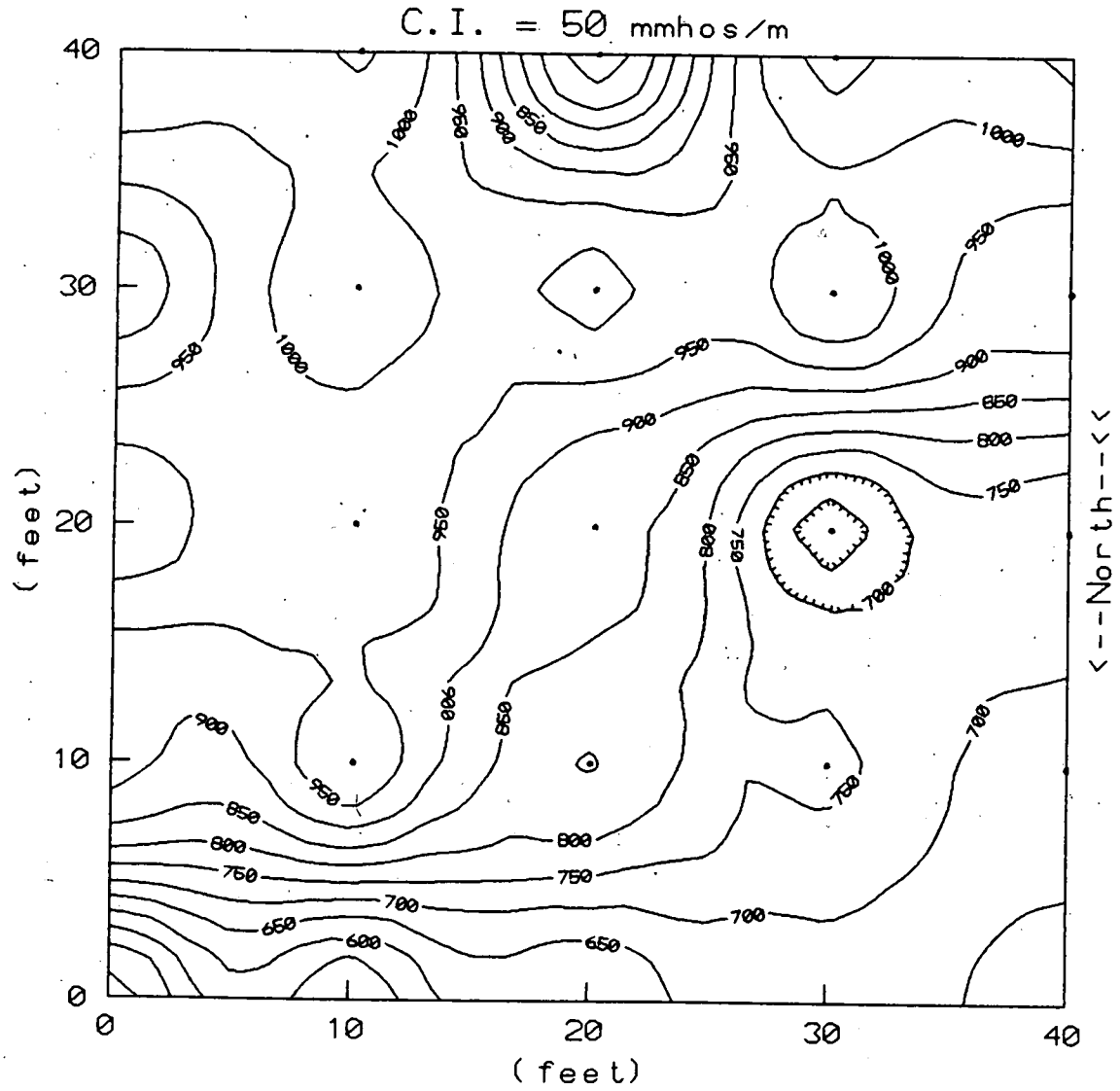
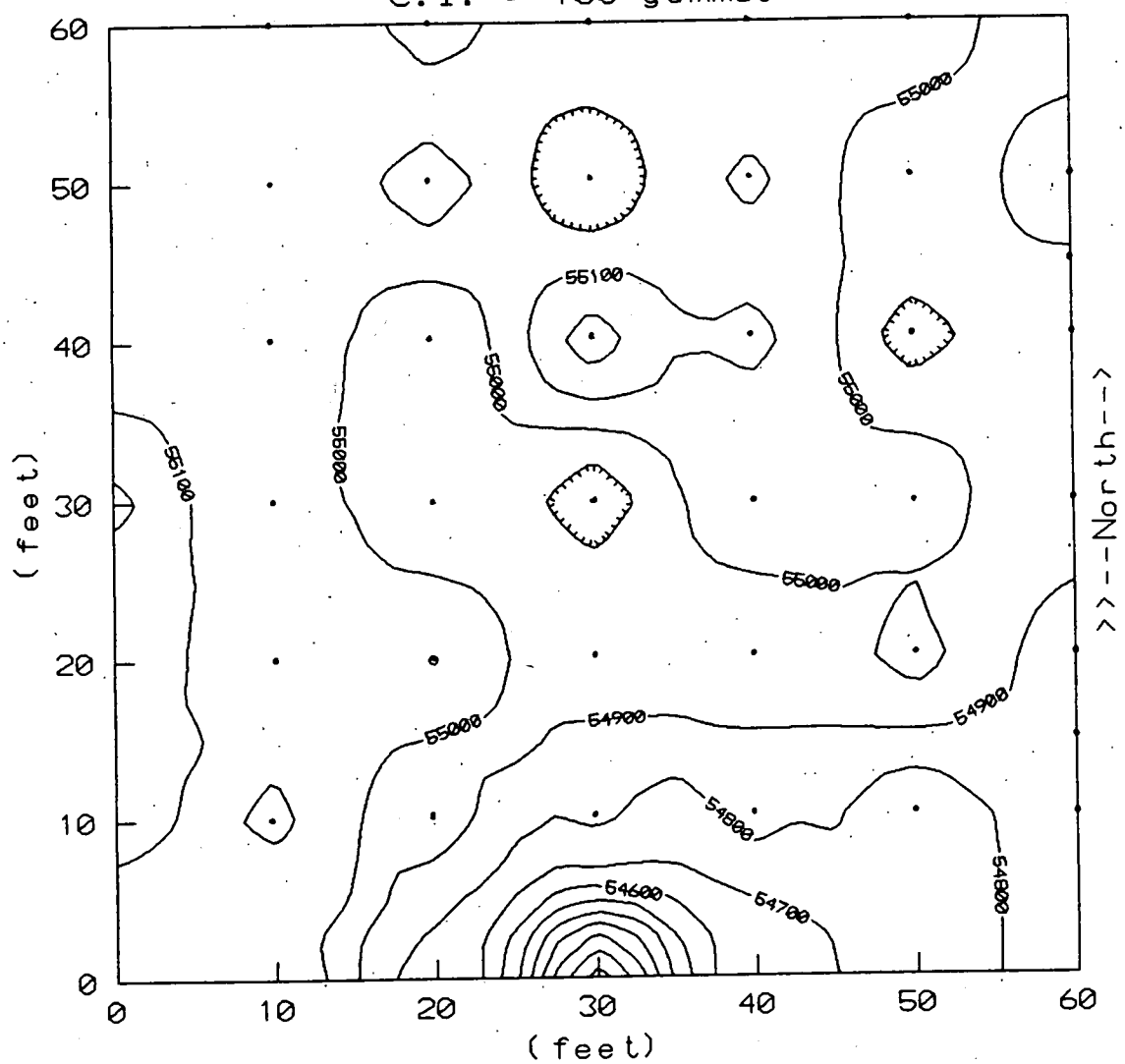
# UCar H2 Conductivity GW-8A/B



# Union Carbide MAG GW-9A/B

C.I. = 100 gammas



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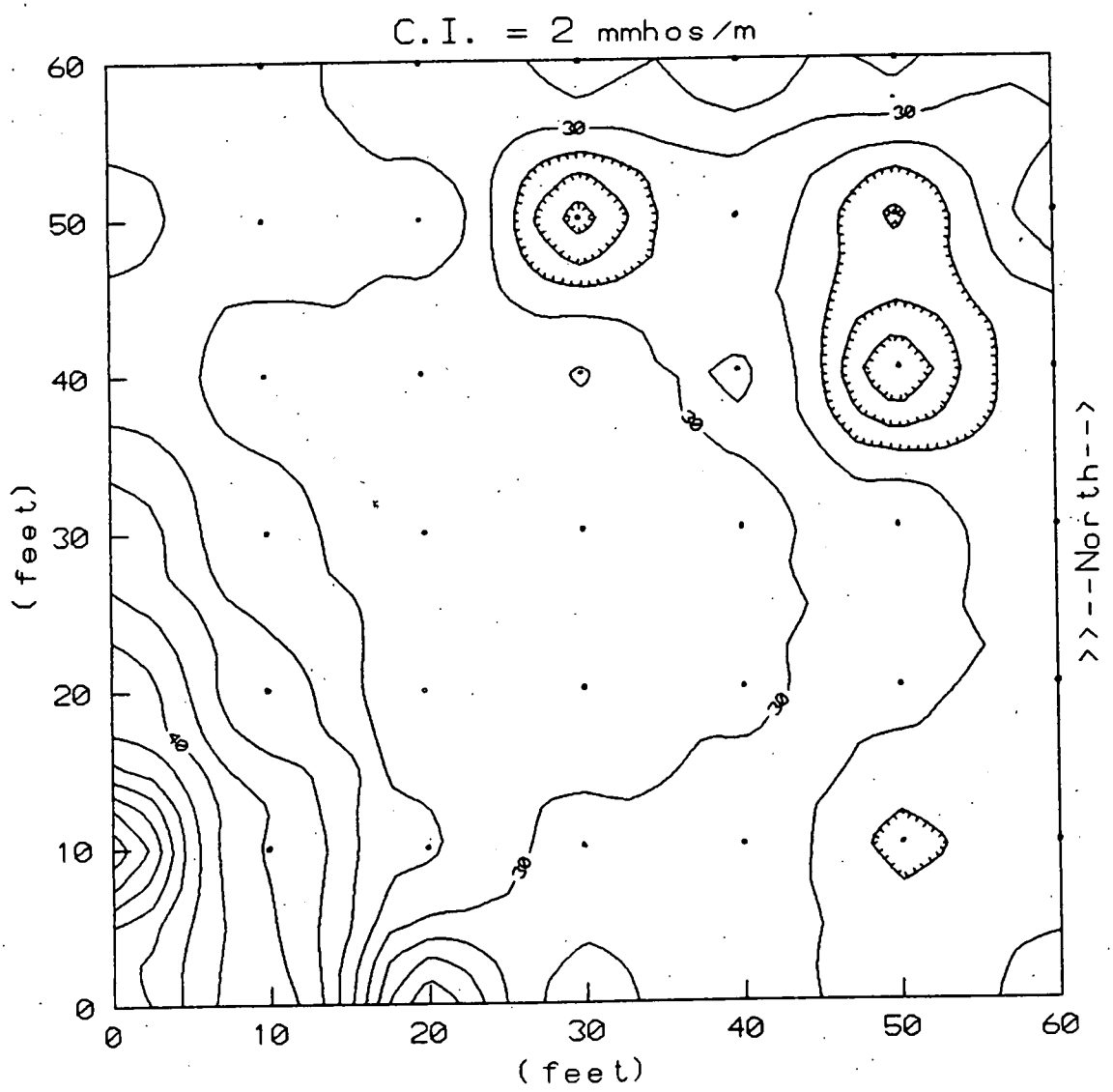
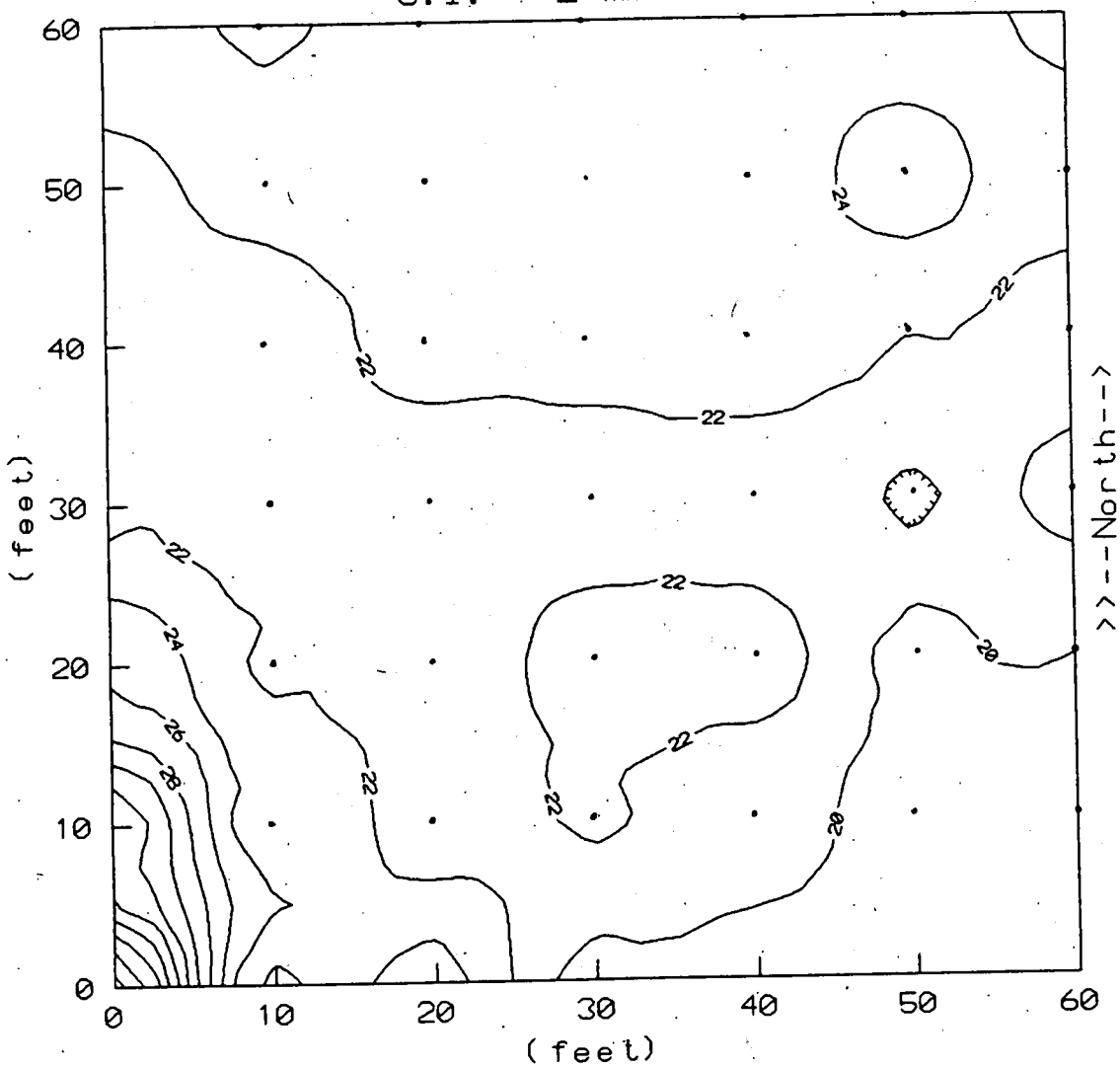
# UCar V1 Conductivity GW-9A/B



# UCar H1 Conductivity GW-9A/B

C.I. = 2 mmhos/m



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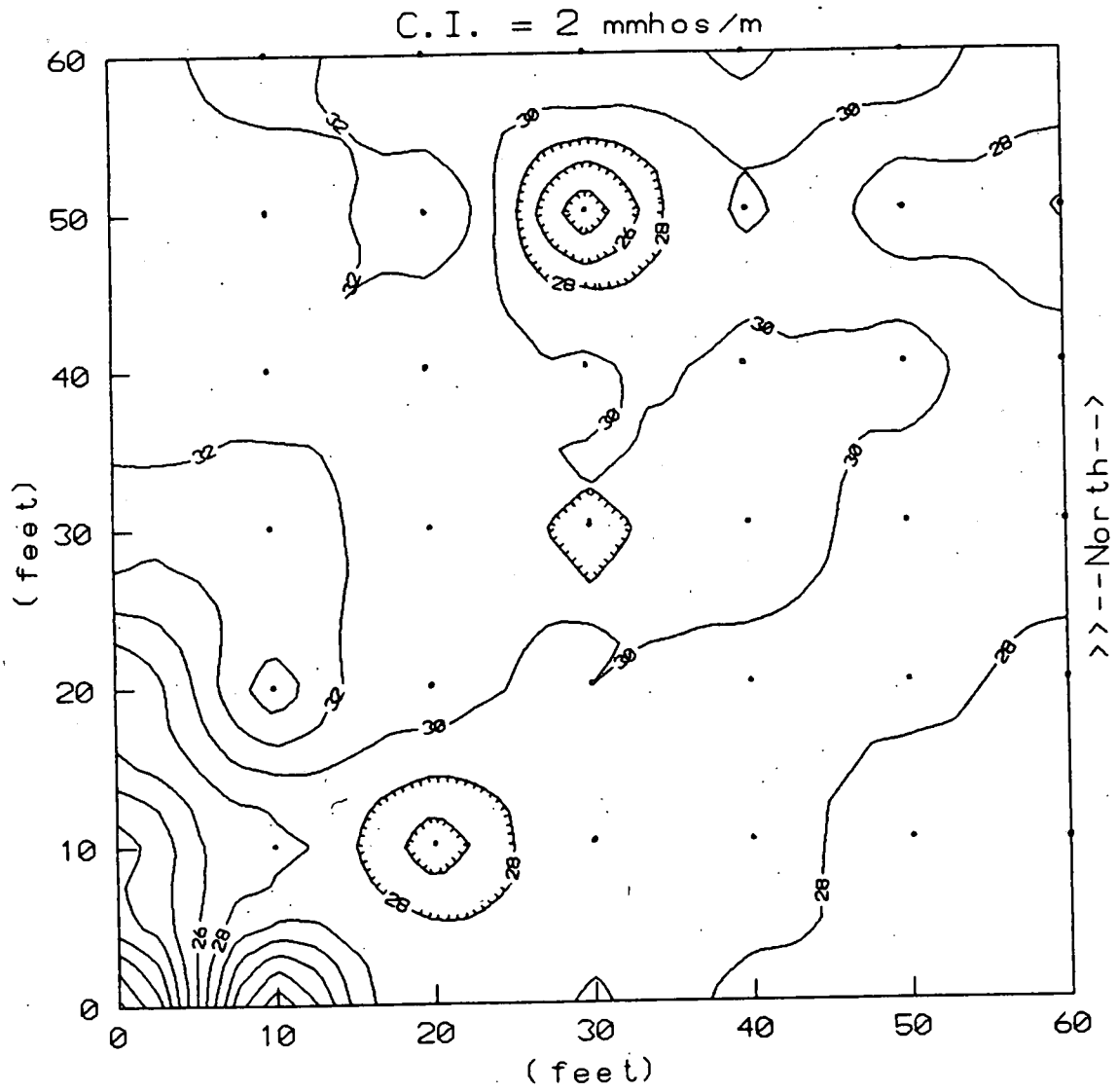
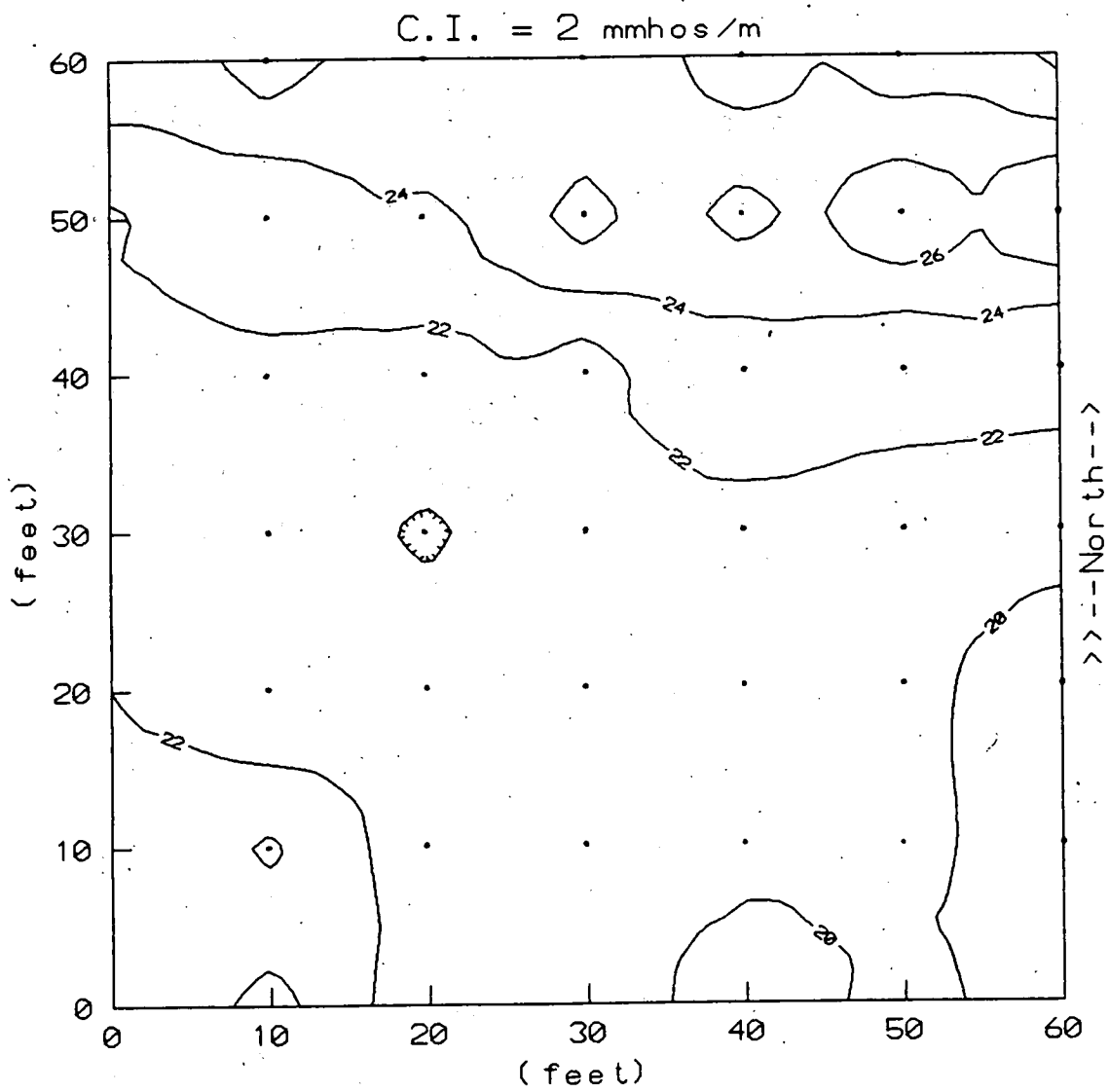
UCar V2 Conductivity GW-9A/B



# UCar H2 Conductivity GW-9A/B






recycled paper

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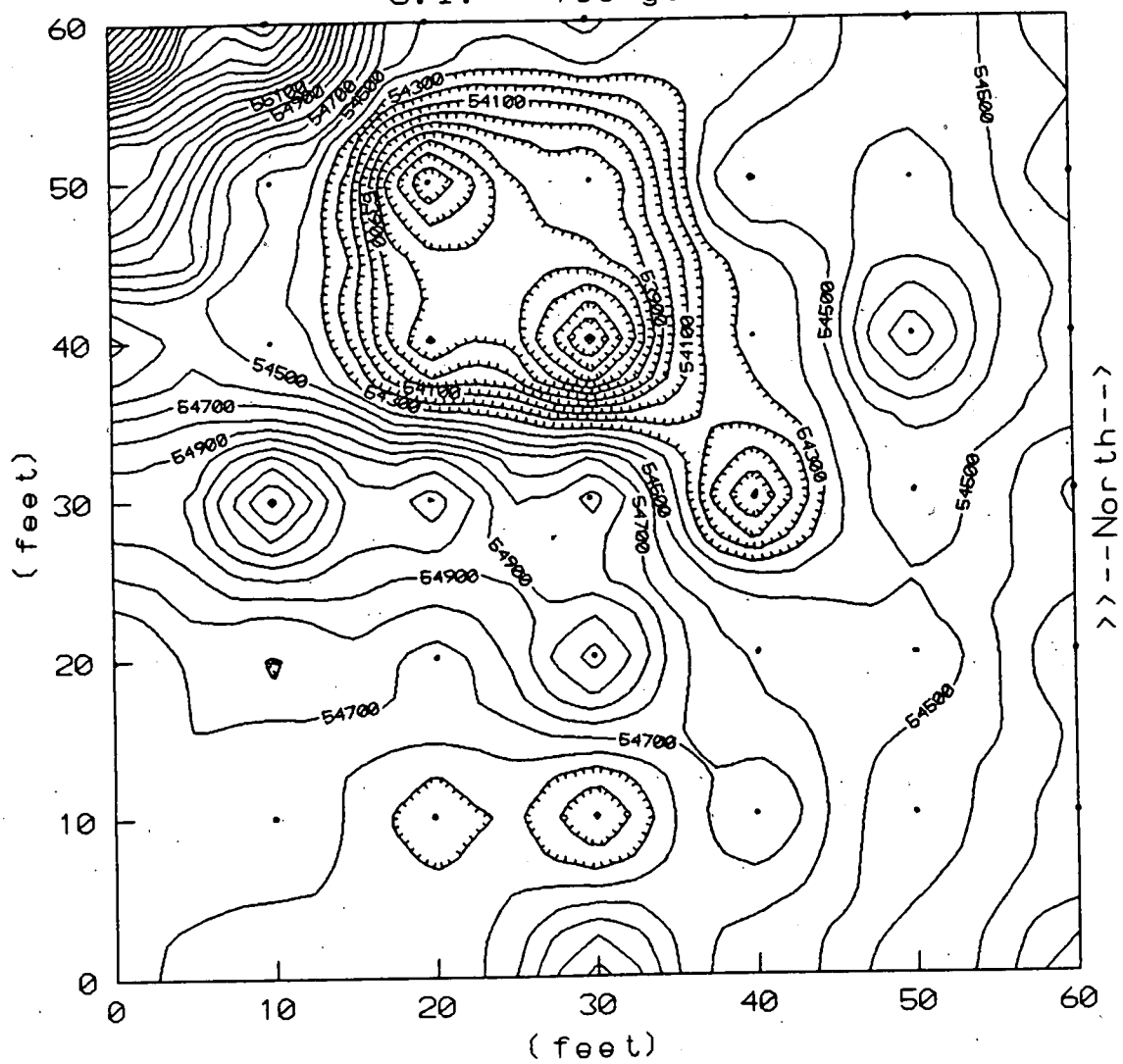
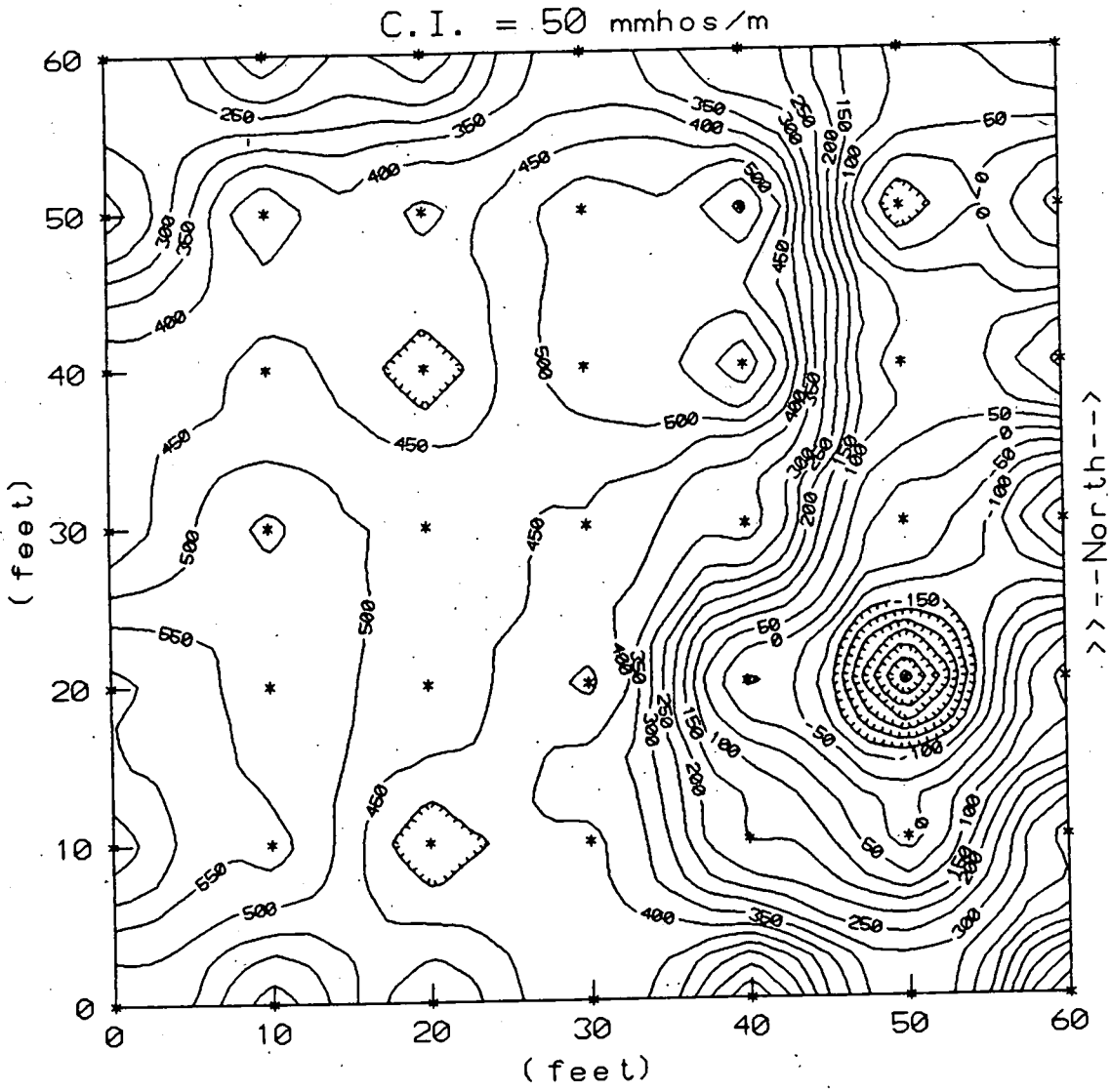
Union Carbide MAG GW-10A/B

C.I. = 100 gammas

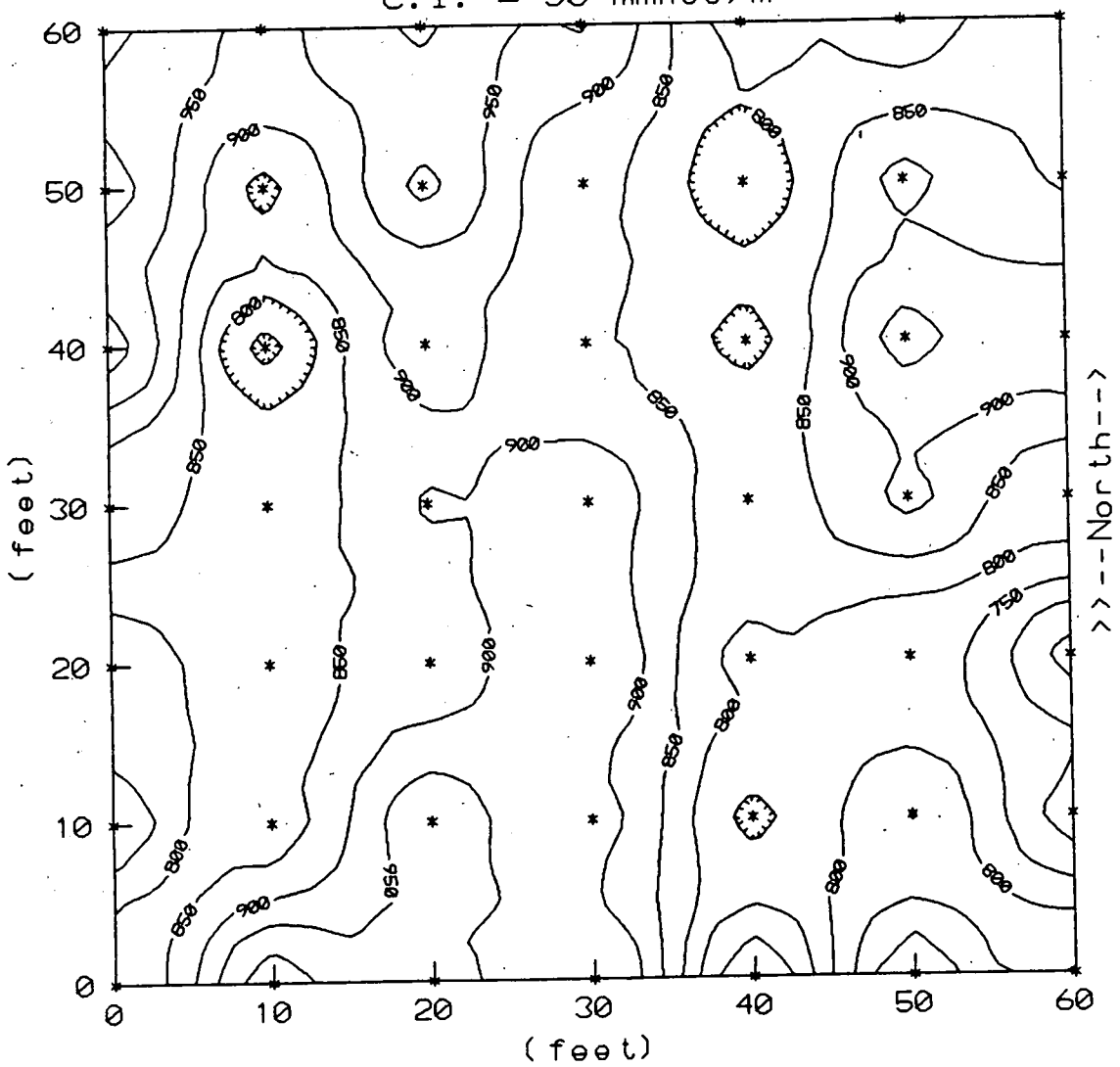


UCar V1 Conductivity GW-10A/B



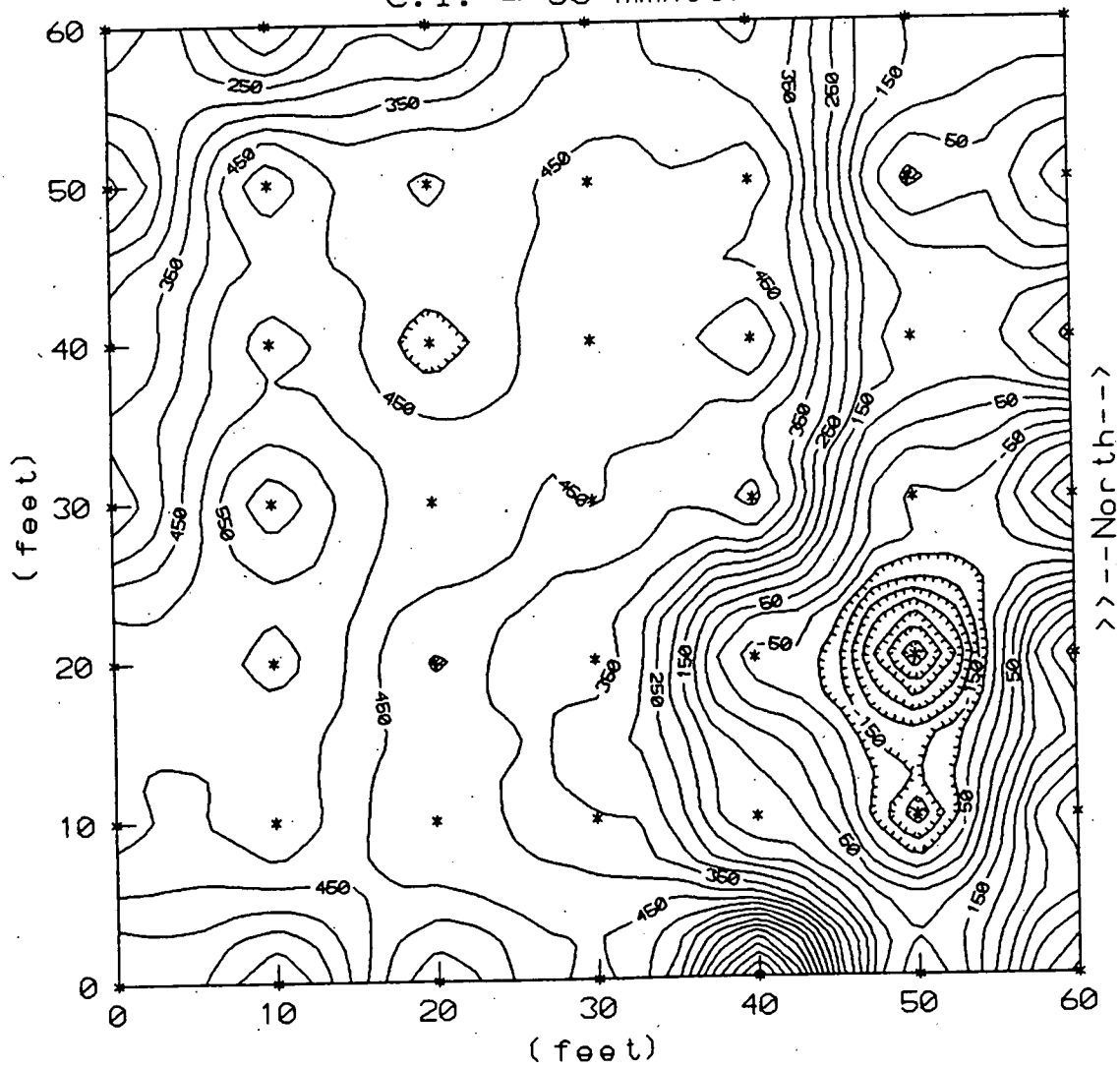
UCar H1 Conductivity GW-10A/B

C.I. = 50 mmhos/m



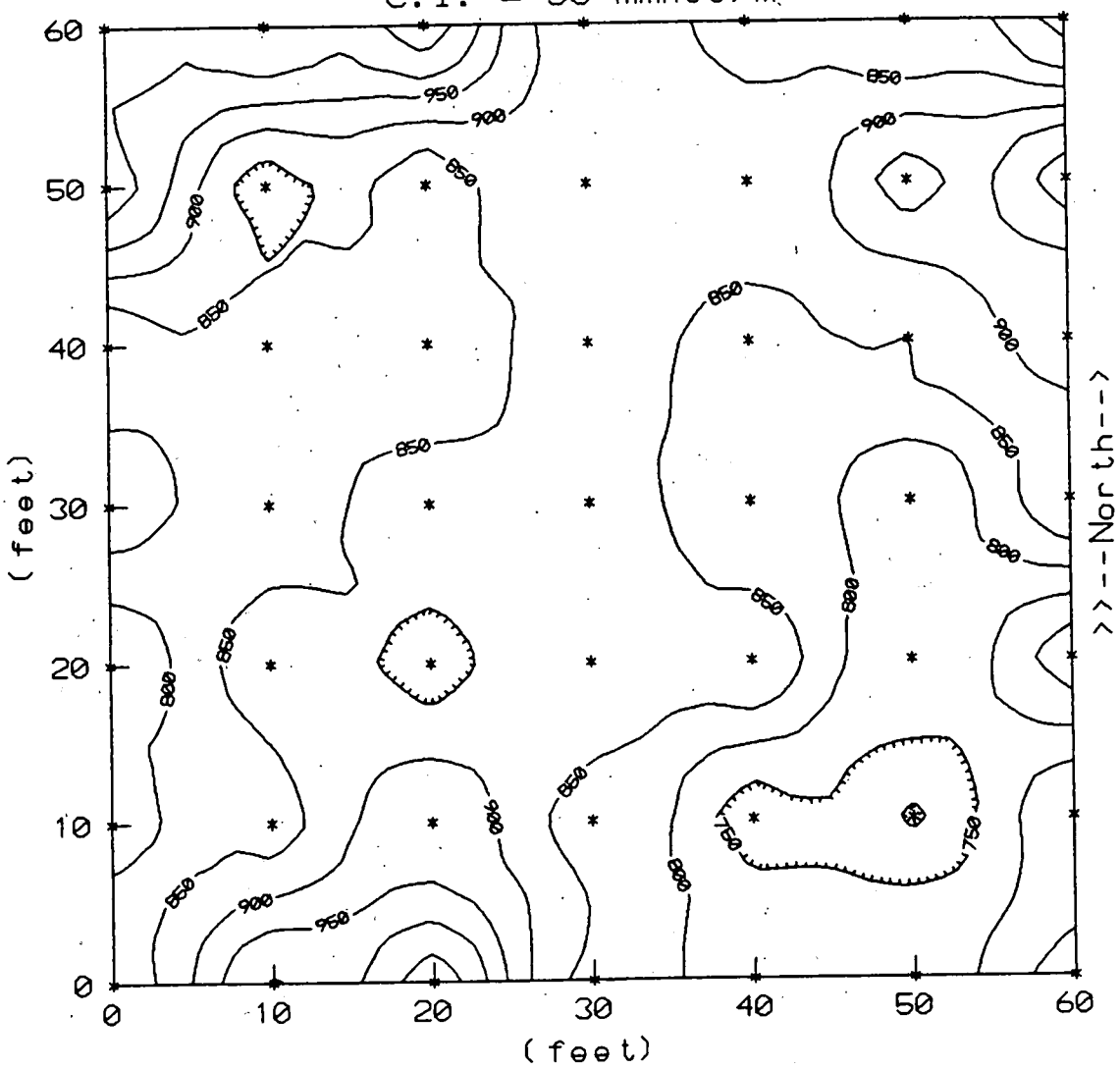
UCar V2 Conductivity GW-10A/B

C.I. = 50 mmhos/m



UCar H2 Conductivity GW-10A/B

C.I. = 50 mmhos/m



# APPENDIX C

# SUBSURFACE BORING LOGS AND WELL DIAGRAMS

# DRILLING LOG OF BORING NO. B-1



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, N.Y.
Boring Coordinates/Reference System: N 5933 E 5025
Drilling Company: BUFFALO DRILLING
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 12
Ground Elevation (feet above MSL): 599.44
Refusal at (feet BGS): NA
Date Started / Finished: 22 SEPT 93 / 22 SEPT 93
Job#: YR-9000

| DEPTH | GRAPHIC LOG | OVERBURDEN DESCRIPTION | SAMPLE NUMBER | BLOW COUNT | SAMPLE RECOVERY (feet) | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|
| 1 | | 0.0-0.3' CLAY; reddish brown, minor organics, minor gravel; moist. | SS#1 | 13 25 25 17 | 1.5 | 0/0 | Borehole grouted to surface upon completion of drilling. |
| 2 | | 0.3-8.1' FILL: | | | | | |
| | | 0.3-0.5' Red brick gravel; dry. | SS#2 | 27 25 14 12 | 1.1 | 5.2/ 0.2 | |
| 3 | | 0.5-0.9' Blackish red brick gravel; dry. | | | | | |
| 4 | | 0.9-1.3' Tan sand with gravel; dry. | | | | | |
| | | 2.0-2.2' Black sand and gravel; dry. | SS#3 | 4 2 3 2 | 0.5 | 0/0.8 | |
| 5 | | 2.2-2.4' Yellow sand with gravel; dry. | | | | | |
| 6 | | 4.0-4.3' Black silt, clay sized graphite material with gravel sized particles; moist. | SS#4 | 4 2 1 2 | 1.1 | 0/0.8 | 6.0-8.0' Sample collected for full TCL, EP toxicity, and RCRA characteristics, analysis. |
| 7 | | 4.3-4.5' Black gravelly sand with brick particles (red); moist. | | | | | |
| 8 | | 6.0-6.7' Clay with some silt; wet. | SS#5 | 3 5 10 12 | 1.6 | 0/0.2 | |
| 9 | | 6.7-7.1' Gravelly sand black with carbon; wet. | | | | | |
| 10 | | 8.0-8.1' Gravelly sand black with carbon (fill material) with oily sheen on water; wet. | SS#6 | 8 15 13 14 | 1.8 | 0/0.2 | |
| 11 | | 8.1-9.6' CLAY; reddish brown, native clay; wet. | | | | | |
| | | 10.0-11.8' CLAY; reddish brown, native clay; moist. | | | | | |
| 12 | | | | | | | |
| 13 | | Total depth at 12 feet below ground surface. | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |

UNION CARBIDE - TOWN OF NIAGARA, N.Y.

Ecology and Environment Engineering, P.C.

E&ESTDB1

# DRILLING LOG OF BORING NO. B-2



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, N.Y.
Boring Coordinates/Reference System: N 5839 E 5023
Drilling Company: BUFFALO DRILLING
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 10
Ground Elevation (feet above MSL): 598.93
Refusal at (feet BGS): NA
Date Started / Finished: 22 SEPT 93 / 22 SEPT 93
Job#: YR-9000

| DEPTH | GRAPHIC LOG | OVERBURDEN DESCRIPTION | SAMPLE NUMBER | BLOW COUNT | SAMPLE RECOVERY (feet) | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|
| | | 0.0-0.3' CLAY; reddish brown, minor organics; moist. | SS#1 | 10 24 59 43 | 1.4 | 0/1.2 | Borehole grouted to surface upon completion of drilling. |
| 1 | | 0.3-8.0' FILL: | | | | | |
| 2 | | 0.3-1.4' Gray, sandy gravel, black carbon material (graphite), foundry sand with some ash toward bottom; moist. | SS#2 | 9 10 12 9 | 1.2 | 0/0.2 | 2.0-4.0' Sample collected for full TCL analysis. |
| 3 | | 2.0-2.4' Sandy clay fill with carbon; moist. | | | | | |
| 4 | | 2.4-2.6' Gray gravel and sand (broken brick or concrete); moist. | SS#3 | 2 1 1 1 | 0.7 | 0/1.8 | |
| 5 | | 2.6-3.2' Black clay with silt and sand (carbon graphite); moist. | | | | | |
| 6 | | 4.0-4.7' Black gravel with sand, silt, and clay (carbon graphite), more silt and clay in top 0.1-0.3'; wet. | SS#4 | * * 3 5 | 1.1 | 0/50 | Split-spoon fell due to weight of hammer. |
| 7 | | | | | | | 8.0-8.0' Sample collected for full TCL, EP toxicity, and RCRA characteristics, analysis. |
| 8 | | 6.0-6.2' Black gravel with sand; graphite carbon material. | SS#5 | 4 5 6 7 | 1.1 | 0/8.8 | |
| 9 | | 6.2-7.1' Grayish black stained clay, oily sheen on water; wet. | | | | | |
| 10 | | 8.0-9.1' CLAY; gray grades to reddish brown, native clay; moist to wet upper 0.1-0.2', moist below 0.2'. | | | | | |
| 11 | | | | | | | |
| 12 | | Total depth at 10 feet below ground surface. | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |

UNION CARBIDE - TOWN OF NIAGARA, N.Y.

Ecology and Environment Engineering, P.C.

E&ESTDBI

# DRILLING LOG OF WELL NO. GW-7B



Project: UNION CARBIDE - SITE ID 932036
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 5083.8110 E 7227.4801
Date Started/Finished: 9-27-93 / 10-1-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 29.66
Ground Elevation (feet above MSL): 600.22
Inner Casing Stick-Up (feet above GS): 2.86
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 4.66

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 600.22 ft. | | | *ground surface (gs)* | | | | | | | | |
| 1–4 | CEMENT | | 0.0-4.0' SILT WITH CLAY: brown, moist (more dry between 0.4' and 0.9'), brittle. | SS 1 | 4 8 14 20 | 13:33 13:35 | 1.4 | | | 0/0 | |
| 3–4 | | | | SS 2 | 12 21 27 25 | 13:37 13:40 | 0.8 | | | 0/0 | |
| 4–10.5 | GROUT | | 4.0-10.5' CLAY: reddish brown with some silt, grey and tan mottling, little bedding strucures observed, no gravel. | SS 3 | 7 11 17 17 | 13:48 13:50 | 1.8 | | | 0/0 | |
| 6–7 | | | same as above with isolated gravel pebbles in clay. | SS 4 | 7 10 14 16 | 13:58 13:59 | 2.0 | | | 0/0 | |
| 8–9 | | | same as above with alternating red and tan layers (<0.5") | SS 5 | 4 5 8 12 | 14:07 14:08 | 1.8 | | | 0/0 | |
| 10–11 | | | 10.5-12.0' TILL: brown, gravel, sand and clay, moist. | SS 6 | 6 29 24 51 | 14:15 14:17 | 1.6 | | | 0/0 | |
| 12–13 | | | 12.0-14.0' TILL: reddish brown clay with grey dolostone gravel, broken dolostone at base. | SS 7 | 16 20 18 15 | 14:24 14:26 | 1.7 | | | 0/0 | Sample collected for grain size, Atterberg limits, and moisture content. |
| 14–15 | | | 14.0-14.7' TILL: dolostone fragments with clay. | SS 8 | 100 /4" | 14:32 | 0.3 | 76 | | 0/0 | Auger refusal at 14.7' BGS. |

UNION CARBIDE - TOWN OF NIAGARA, N.Y.

Ecology and Environment Engineering, P.C.

CARBCORE

# DRILLING LOG OF WELL NO. GW-7B



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 29.66

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | GROUT | | 14.7-29.66' DOLOSTONE: grey horizontal bedding, solution cavity (0.15' diameter) at 18.95' BGS. Core contains vertical and diagonal solution cavities, some mineralization in cavities (white calcite), black organic layer in horizontal fracture at 15.1' BGS (possible fossil exposed). | SS 8 | NO NO | 14:33 | | | | 0/0 | |
| 17 | | | | RUN 1 | | | 4.6 | 78 | | | 0.15' diameter solution cavity at 18.95' BGS. |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | OPEN CORE HOLE | | | RUN 2 | | | 9.85 | 90 | | | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | | | | | | | | | |
| 29 | | | | | | | | | | | |
| 30 | | | | | | | | | | | NOTE: 2" ID schedule 40 PVC casing set in a 5 foot rock socket to a depth of 19.4 feet BGS. |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |

UNION CARBIDE - TOWN OF NIAGARA, N.Y.

Ecology and Environment Engineering, P.C.

CARBCORE

# DRILLING LOG OF WELL NO. GW-8A



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 8107.3832 E 5985.7024
Date Started/Finished: 9-23-93 / 9-23-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 17.50
Ground Elevation (feet above MSL): 601.46
Inner Casing Stick-Up (feet above GS): 2.58
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 4.01

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 601.46 ft. | | | *ground surface (gs)* | | | | | | | | |
| 1–15 | CEMENT; GROUT; BENTONITE; SAND PACK | | 0.0-3.0' FILL: black graphite (carbon) material prevalent, gravel, sand and clay mixture. No sample taken description is based on auger cuttings. | | | | | | | | Hollow stem auger cuttings from 0-14.5'. |
| | | | 3.0-14.5' CLAY: reddish brown with gravel. No sample taken description is based on auger cuttings. | | | | | | | | |
| 15 | | | TILL: see next page. | | | 14:15 | 1.8 | | | | |

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# DRILLING LOG OF WELL NO. GW-8A



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 17.50

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | SAND PACK | | 14.5-16.5' TILL: reddish brown clay with sand and gravel. | SS 1 | 10 9 | 14:15 | 1.8 | | | / | Sample collected for grain size, Atterberg limits, and moisture content. |
| 17 | | | 16.5-17.5' no sample | | | | | | | | |
| 18 | | | | | | | | | | | NOTE: A 2"ID schedule 40 PVC slotted screen set from 12.4 to 17.4 feet BGS. |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | | | | | |
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| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |

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# DRILLING LOG OF WELL NO. GW-8B



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 8102.3864 E 5985.1602
Date Started/Finished: 9-22-93 / 9-23-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 27.5
Ground Elevation (feet above MSL): 601.53
Inner Casing Stick-Up (feet above GS): 2.37
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 5.79

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 601.53 ft. | | | *ground surface (gs)* | | | | | | | | |
| 1–2 | CEMENT | | 0.0-2.6' FILL: black, gravel with silt and clay. Fill material (graphite & carbon) with organics and red gravel material at base. | SS 1 | 3 7 10 7 | 13:07 13:09 | 1.4 | | | 0/0 | |
| 3–4 | | | 2.6-6.0 CLAY: reddish-brown, with minor gravel. | SS 2 | 8 6 4 7 | 13:12 13:15 | 1.4 | | | 0/3 | |
| 5–6 | | | | SS 3 | 5 5 8 10 | 13:17 13:20 | 1.3 | | | 0/0.2 | Sample collected for grain size, Atterberg limits, and moisture content. |
| 7–8 | GROUT | | 6.0-12.8 CLAY and GRAVEL: reddish brown, siltstone gravel, moist. | SS 4 | 3 3 5 5 | 13:22 13:25 | 0.7 | | | 0/0 | |
| 9–10 | | | | SS 5 | 0 2 2 4 | 13:27 13:30 | 0.8 | | | 0/0 | |
| 11–12 | | | | SS 6 | 2 2 3 8 | 13:32 13:35 | 1.3 | | | 0/0 | |
| 13–14 | | | | SS 7 | 7 25 12 11 | 13:45 | 0.8 | | | 0/0 | |
| 15 | | | 14.0-17.5' CLAYEY SAND: red with dolomite gravel chips. | SS 8 | 8 10 | | 1.3 | | | 0/2.8 | |

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# DRILLING LOG OF WELL NO. GW-8B



Project: UNION CARBIDE - SITE ID 932035

Total Depth of Hole (feet BGS): 27.5

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | GROUT | | | SS 8 | 8 8 | 13:54 | 1.3 | | | 0/2.8 | Sample collected for full TCL analysis. |
| 17 | | | | SS 9 | 100 /5" | 13:55 14:00 | 0.8 | | | 0/2 | |
| 18 | | | 17.5-27.5' DOLOSTONE: grey, competent rock, horizontal bedding, vertical fractures (<3") filled with precipitated minerals, some small (<0.1mm) solution cavities in rock. | RUN 1 | | 09:20 09:40 | 0.5 | 0 | | 0/0 | Auger refusal at 17.4' BGS. |
| 19 | | | | RUN 2 | | 10:20 | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | 4.4 | 100 | | 0/0 | |
| 22 | | | | | | 10:44 | | | | | |
| 23 | OPEN CORE HOLE | | | RUN 3 | | | | | | | |
| 24 | | | solution cavity .75" at 23.8' BGS. | | | | | | | | |
| 25 | | | | | | | 4.75 | 80 | | | |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | | | | | | | | | Total depth at 27.5' BGS. |
| 29 | | | | | | | | | | | |
| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | NOTE: 2"ID schedule 40 PVC casing set at 22.7' BGS into a 5 foot rock socket. |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |

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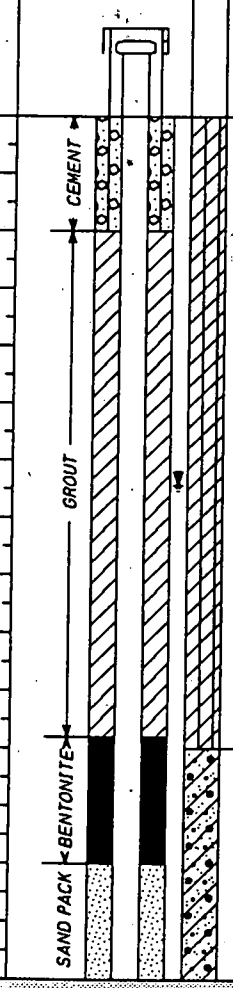
# DRILLING LOG OF WELL NO. GW-9A



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 4979.8362 E 5519.7902
Date Started/Finished: 9-28-93 / 10-1-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 20.25
Ground Elevation (feet above MSL): 601.48
Inner Casing Stick-Up (feet above GS): 1.81
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 6.45

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 601.48 ft. |  | | *ground surface (gs)* | | | | | | | | |
| | | | CLAY and SILT: reddish-brown. Description based on auger cuttings. | | | | | | | | |
| | | | TILL: reddish brown gravely silt with clay and sand. Description based on auger cuttings. | | | | | | | | |



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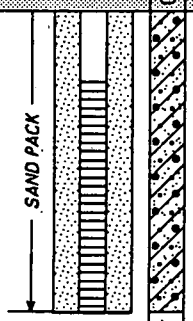
# DRILLING LOG OF WELL NO. GW-9A



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 20.25

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 |  | | | | | | | | | | NOTE: A 2"ID schedule 40 PVC slotted screen set from 15.25 to 20.25 feet BGS> |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |
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| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
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| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |



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# DRILLING LOG OF WELL NO. GW-9B



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 4974.4918 E 5525.4738
Date Started/Finished: 9-28-93 / 10-1-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 29.5
Ground Elevation (feet above MSL): 601.24
Inner Casing Stick-Up (feet above GS): 2.16
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 8.50

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 601.24 ft. | | | *ground surface (gs)* | | | | | | | | |
| 1–2 | CEMENT | | 0.0-2.0' CLAY; brown grading to reddish-brown, increasing silt in lowest 0.5'. Brittle, core breaks along silt layers. | SS 1 | 3 11 16 15 | 10:44 10:45 | 1.1 | | | 0/0 | |
| 2–4 | | | 2.0-4.0' CLAY and SILT; reddish-brown, grey mottling in upper 5-6" of core. Small gravel size fragments, and layers of silt, moist. | SS 2 | 11 20 17 35 | 10:49 10:50 | 1.8 | | | 0/0 | |
| 4–6 | | | 4.0-6.0' CLAY; reddish-brown, with some silt, no noticeable structures. | SS 3 | 12 26 23 19 | 10:57 10:59 | 2.0 | | | 0/0 | |
| 6–8 | | | 6.0-11.35' CLAY and SILT; reddish-brown, iron staining observed near base. | SS 4 | 8 10 13 13 | 11:05 11:08 | 2.0 | | | 0/0 | |
| 8–10 | GROUT | | 8.0-10.0' same as above with alternating grey and red bands (<0.5" thick). red bands siltier than grey, wet. | SS 5 | 5 6 6 7 | 11:10 11:11 | 2.0 | | | 0/0 | Sample collected for grain size, Atterberg limits, and moisture content. |
| 10–11 | | | | SS 6 | 6 8 7 8 | 11:17 11:18 | 2.0 | | | 0/0 | |
| 11–13 | | | 11.35-19.9' TILL; clayey silt with gravel and some sand. | SS 7 | 8 7 18 20 | 11:23 11:24 | 1.7 | | | 0/0 | |
| 13–15 | | | | SS 8 | 4 5 | | 0.6 | | | 0/0 | |

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# DRILLING LOG OF WELL NO. GW-9B



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 29.5

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | GROUT | | 16.2-19.9' gravel is dolostone fragments | SS 8 | 8 17 | 11:42 | 0.8 | | | 0/0 | |
| 17 | | | | SS 9 | 20 35 30 30 | 11:57 11:59 | 0.4 | | | 0/0.2 | |
| 18 | | | | | | | | | | | |
| 19 | | | | SS 10 | 50 36 25 50 /1" | 12:07 12:11 | 1.25 | | | 0/0 | |
| 20 | | | 19.9-29.5' DOLOSTONE: grey, horizontal bedding, competent, thin (<1mm thick). Organic layers visible in core, irregularly spaced and not always horizontal. | RUN 1 | | | 4.5 | 78 | | 0/0 | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | OPEN CORE HOLE | | | | | | | | | | |
| 26 | | | solution cavity at 26.4' BGS. | RUN 2 | | | 4.8 | 81 | | 0/0 | |
| 27 | | | | | | | | | | | |
| 28 | | | | | | | | | | | |
| 29 | | | | | | | | | | | Total depth at 29.5' BGS. |
| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | NOTE: 2"ID schedule 40 PVC casing set into a rock socket to a depth of 24.8' BGS. Open rock hole from 24.8' tp 29.5' BGS. |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |

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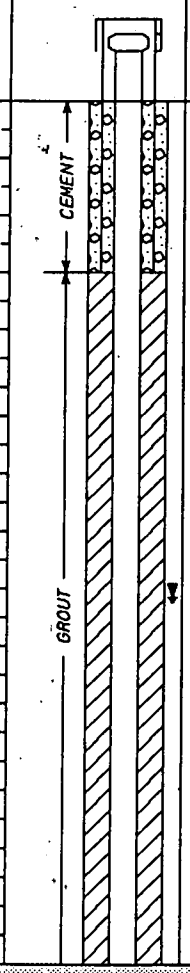
# DRILLING LOG OF WELL NO. GW-10A



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 5801.1811 E 4945.5088
Date Started/Finished: 9-30-93 / 9-30-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 27.7
Ground Elevation (feet above MSL): 600.48
Inner Casing Stick-Up (feet above GS): 2.69
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 8.67

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 600.48 ft. |  | | *ground surface (gs)* | | | | | | | | |
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | | | Hollow stem auger used to place well, see log of GW-10B for geologic description. | | | | | | | | |



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# DRILLING LOG OF WELL NO. GW-10A



Project: UNION CARBIDE - SITE ID 932035

Total Depth of Hole (feet BGS): 27.7

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | GROUT | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | BENTONITE | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | NOTE: A 2"ID schedule 40 PVC slotted screen set from 22.7 to 27.7 feet BGS. |
| 23 | SAND PACK | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |
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| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |

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# DRILLING LOG OF WELL NO. GW-10B



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 5807.3388 E 4945.7879
Date Started/Finished: 9-29-93 / 10-1-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 36.25
Ground Elevation (feet above MSL): 600.45
Inner Casing Stick-Up (feet above GS): 2.84
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 8.65

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 600.45 ft. | | | *ground surface (gs)* | | | | | | | | |
| 1–3 | CEMENT | | FILL: gravely silt with sand clay and greasy black graphite carbon. | SS 1 | 8 14 17 24 | 13:40 13:42 | 1.4 | | | 0/0 | |
| 3–4 | | | | SS 2 | 3 7 10 10 | 13:48 13:49 | 1.8 | | | 7.5/22 | Sample collected for full TCL analysis. |
| 4–5 | | | 4.3-5.1' CLAY and SILT: brown | SS 3 | 3 5 9 12 | 13:54 13:55 | 1.1 | | | 0/4.8 | |
| 6–7 | | | 6.0-8.0' CLAY reddish brown some horizontal banding, red & tan, red is possible iron staining. | SS 4 | 8 17 18 21 | 14:00 14:02 | 1.8 | | | 0/0.2 | |
| 8–9 | GROUT | | 8.0-14.0' CLAY and SILT reddish-brown, red tan and grey bands (<0.5" thick) observed. | SS 5 | 8 13 19 19 | 14:09 14:10 | 1.2 | | | 0/0 | |
| 10–11 | | | 10.5' same as above, moist. | SS 6 | 9 13 15 14 | 14:21 14:22 | 1.8 | | | 0/0 | |
| 12–13 | | | | SS 7 | 5 9 11 11 | 14:30 14:31 | 1.8 | | | 0/1 | Sample collected for grain size, Atterberg limits, and moisture content. |
| 14–15 | | | 14.0-17.8' CLAY: reddish-brown, see next page. | SS 8 | 8 9 | | 1.9 | | | 0/0 | |

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# DRILLING LOG OF WELL NO. GW-10B



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 36.25

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | GROUT | | 14.0-17.6' CLAY: (continued) with silty clay layers, some red iron staining. | SS 8 | 17 20 | 14:38 | 1.9 | | | 0/0 | |
| 17 | | | | SS 9 | 8 9 10 14 | 14:47 14:48 | 2.0 | | | 0/0 | |
| 18 | | | 17.6-22.7' CLAY and SILT: same as above (8.0-14.0'). | | | | | | | | |
| 19 | | | | SS 10 | 5 6 6 8 | 14:56 14:57 | 2.0 | | | 0/0 | |
| 20 | | | | | | | | | | | |
| 21 | | | | SS 11 | 4 5 6 8 | 15:07 15:07 | 2.0 | | | 0/0 | |
| 22 | | | | | | | | | | | |
| 23 | | | 22.7-25.7' TILL: reddish brown, gravelly silty sand with clay. Dolostone fragments at base. | SS 12 | 0 0 7 8 | 15:34 15:34 | 2.0 | | | 0/0 | Sample collected for grain size, Atterberg limits, and moisture content. |
| 24 | | | | | | | | | | | |
| 25 | | | | SS 13 | 6 10 57 50 /2" | 15:43 15:47 | 0.8 | | | 0/0 | |
| 26 | | | 25.7-36.25' DOLOSTONE: grey, horizontal bedding, with solution cavities at 30.7 and 34.7 BGS. | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | | RUN 1 | | 08:37 | | | | | Auger refusal at 27.2' BGS. |
| 29 | | | | | | | 3.85 | 82 | | 0/0 | |
| 30 | | | | | | 08:08 | | | | | |
| 31 | OPEN CORE HOLE | | | | | | | | | | |
| 32 | | | | RUN 2 | | 12:00 | | | | | |
| 33 | | | | | | | 4.85 | 58 | | 0/0 | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | 12:30 | | | | | |
| 36 | | | | | | | | | | | |

# DRILLING LOG OF WELL NO. GW-10B



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 36.25

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 4.85 | 5R | | 0/0 | NOTE: A 2"ID schedule 40 PVC casing set into a rock socket to a depth of 30.70 feet. Open hole from 30.70 to 36.25 feet BGS. |
| 37 | | | | | | | | | | | |
| 38 | | | | | | | | | | | |
| 39 | | | | | | | | | | | |
| 40 | | | | | | | | | | | |
| 41 | | | | | | | | | | | |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | | | | | | | | | | | |
| 45 | | | | | | | | | | | |
| 46 | | | | | | | | | | | |
| 47 | | | | | | | | | | | |
| 48 | | | | | | | | | | | |
| 49 | | | | | | | | | | | |
| 50 | | | | | | | | | | | |
| 51 | | | | | | | | | | | |
| 52 | | | | | | | | | | | |
| 53 | | | | | | | | | | | |
| 54 | | | | | | | | | | | |
| 55 | | | | | | | | | | | |
| 56 | | | | | | | | | | | |
| 57 | | | | | | | | | | | |

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# DRILLING LOG OF WELL NO. GW-11B



Project: UNION CARBIDE - SITE ID 932035
Location: TOWN OF NIAGARA, NIAGARA COUNTY, N.Y.
Well Coordinates: N 5498.9959 E 7273.0477
Date Started/Finished: 9-24-93 / 10-1-93
Drilling Company: BUFFALO DRILLING COMPANY
Driller/Geologist: DON RIMBECK / KEVIN HAYES

Total Depth of Hole (feet BGS): 25.4
Ground Elevation (feet above MSL): 599.35
Inner Casing Stick-Up (feet above GS): 2.54
Groundwater Depth (feet BGS):
Date Of Water Level Meas.: 8 DEC 93
Water Level: 3.79

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| gs elevation 599.35 ft. | | | *ground surface (gs)* | | | | | | | | |
| 1–4 | CEMENT | | 0.0-0.8' SILT and CLAY: brown, tightly compacted, organic matter present in the split-spoon. | SS 1 | 2 11 15 24 | 09:20 09:23 | 0.8 | | | 0/0 | |
| 4–6 | | | 2.0-3.4' SILT and CLAY: brown, layering horizontal with organic material (roots) present in sample. | SS 2 | 20 27 31 47 | 09:24 09:27 | 1.4 | | | 0/0 | |
| 6–7 | | | 4.0-4.9' SILT: with minor clay, heavily fractured/ brittle from 4.3-4.9' BGS. | SS 3 | 17 30 32 22 | 09:36 09:38 | 0.9 | | | 0/0 | Sample collected for full TCL analysis. |
| 7–8 | | | 6.0-7.4' SILT and CLAY: reddish-brown, moist, increasing moisture below 6.5' BGS. | SS 4 | 8 8 13 100/3" | 09:51 09:53 | 1.6 | | | 0/0 | Sample collected for grain size, Atterberg limits, and moisture content. |
| 8–11 | GROUT | | 7.4-7.6' SILT: reddish-brown, gravel sized dolostone fragments in silt matrix. 8.5-11.9' no sample/recovery. | | | 12:43 13:08 | | | | | Auger refusal at 8.5' BGS. |
| 12–15 | | | 11.9-25.4' DOLOSTONE: grey, horizontal bedding, solution cavities (1.5") at 12.8' BGS. Horizontal fractures intermittent, vertical fracture at 22.8 BGS 0.5' in lenght. | RUN 1 | | 13:52 | 3.9 | 51 | | 0/0 | |

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# DRILLING LOG OF WELL NO. GW-11B



Project: UNION CARBIDE - SITE ID 932035 Total Depth of Hole (feet BGS): 25.4

| ELEVATION / DEPTH | WELL COMPLETION DIAGRAM | GRAPHIC LOG | SOIL/ROCK DESCRIPTION | SAMPLE/RUN NO. | BLOW COUNT | PENETRATION TIMES | SS/CORE RECOVERY (FT) | RQD | FRACTURE SKETCH | HNu/OVA (ppm) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | GROUT | | DOLOSTONE: same as above. | RUN 1 | | 14:03 | 3.8 | 51 | | 0/0 | Open hole from 16.0-25.4'. |
| 17 | | | | | | | | | | | Rock socket drilled to 16.8'. |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | OPEN CORE HOLE | | | RUN 2 | | | 9.2 | 70 | | 0/0 | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | Total depth is 25.4' BGS. |
| 26 | | | | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | | | | | | | | | NOTE: 2"ID schedule 40 PVC casing set into rock socket to a depth of 16.0'. |
| 29 | | | | | | | | | | | |
| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | |
| 32 | | | | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | | | | | | | | | | | |

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# APPENDIX D

# GEOTECHNICAL SAMPLE ANALYSIS RESULTS

# ATLANTIC TESTING LABORATORIES, Limited

P.O. Box 29
Canton-Potsdam Road
Canton, NY 13617
Phone: (315) 386-4578
Fax: (315) 386-1012

P.O. Box 91
23685 Cemetery Road
Felts Mills, NY 13638
Phone: (315) 773-5390
Fax: (315) 773-0334

5866 East Seymour Street
Cicero, NY 13039
Phone: (315) 699-5281
Fax: (315) 6993374

January 31, 1994

Ecology and Environment Engineering, P.C.
Buffalo Corporate Center
368 Pleasantview Drive
Lancaster, NY 14086

Attn: Mr. Richard M. Watt

Re: Soil Testing
Union Carbide, Project No. YR9963
ATL Report No. CT1033S-1-12-93

Ladies/Gentlemen:

On December 14, 1993, we received eight soil samples at our Canton, NY facility.

See the enclosed Tabulation of Laboratory Test Results and Gradation Curves.

A copy of your Chain-of-Custody Record is also enclosed for your convenience.

Please contact our office should you have any questions or if we may be of further service.

Respectfully submitted,

Judy A. Ames

Judy A. Ames, C.E.T.
Assistant Manager
Canton Technical Services Division

JAA/baw

Enc.



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PROJECT: Union Carbide, Project No. YR9963

REPORT NO.: CT1033S-1-12-93

CLIENT: Ecology and Environment Engineering, P.C.

DATE: January 31, 1994

TABULATION OF LABORATORY TEST RESULTS

| ATL SAMPLE NO. | CLIENT SAMPLE ID | DEPTH (ft.) | GRADATION ANALYSIS (ASTM D 422) SIEVE SIZES (% PASSING) | | | | | | | | | | ATTERBERG LIMITS (ASTM D 4318) | | | NAT. MOIST. CONT. (ASTM D 2216) (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1" | 3/4" | 1/2" | #4 | #10 | #20 | #40 | #80 | #200 | .005mm | LL | PL | PI | |
| J018 | GW-7B | 12-14 | | 100 | 90 | 81 | 81 | 73 | 67 | 61 | 52 | 15 | NP | NP | NP | 8.1 |
| J019 | GW-8A | 14.5-16.5 | 100 | 94 | 91 | 87 | 87 | 83 | 78 | 70 | 54 | 12 | NP | NP | NP | 10.7 |
| J020 | GW-8B | 4-6 | | 100 | 95 | 91 | 91 | 87 | 84 | 81 | 74 | 34 | 31 | 15 | 16 | 18.0 |
| J021 | GW-9B | 8-10 | | | | | | 100 | 99 | 98 | 98 | 53 | 40 | 17 | 23 | 23.3 |
| J022 | GW-9B | 18-20 | 100 | 92 | 78 | 68 | 65 | 59 | 55 | 51 | 44 | 14 | NP | NP | NP | 8.9 |
| J023 | GW-10B | 12-14 | | | | | | | 100 | 99 | 99 | 22 | 27 | 16 | 11 | 24.1 |
| J024 | GW-10B | 22-24 | | 100 | 99 | 94 | 94 | 86 | 77 | 56 | 45 | 15 | NP | NP | NP | 15.2 |
| J025 | GW-11B | 6-8 | | | | | | 100 | 99 | 98 | 97 | 44 | 25 | 15 | 10 | 24.6 |

Note: In some instances, the sample quantities provided are not sufficient to perform all the specified testing in accordance with ASTM. In these cases, testing may be performed with sample quantities less than ASTM requirements.

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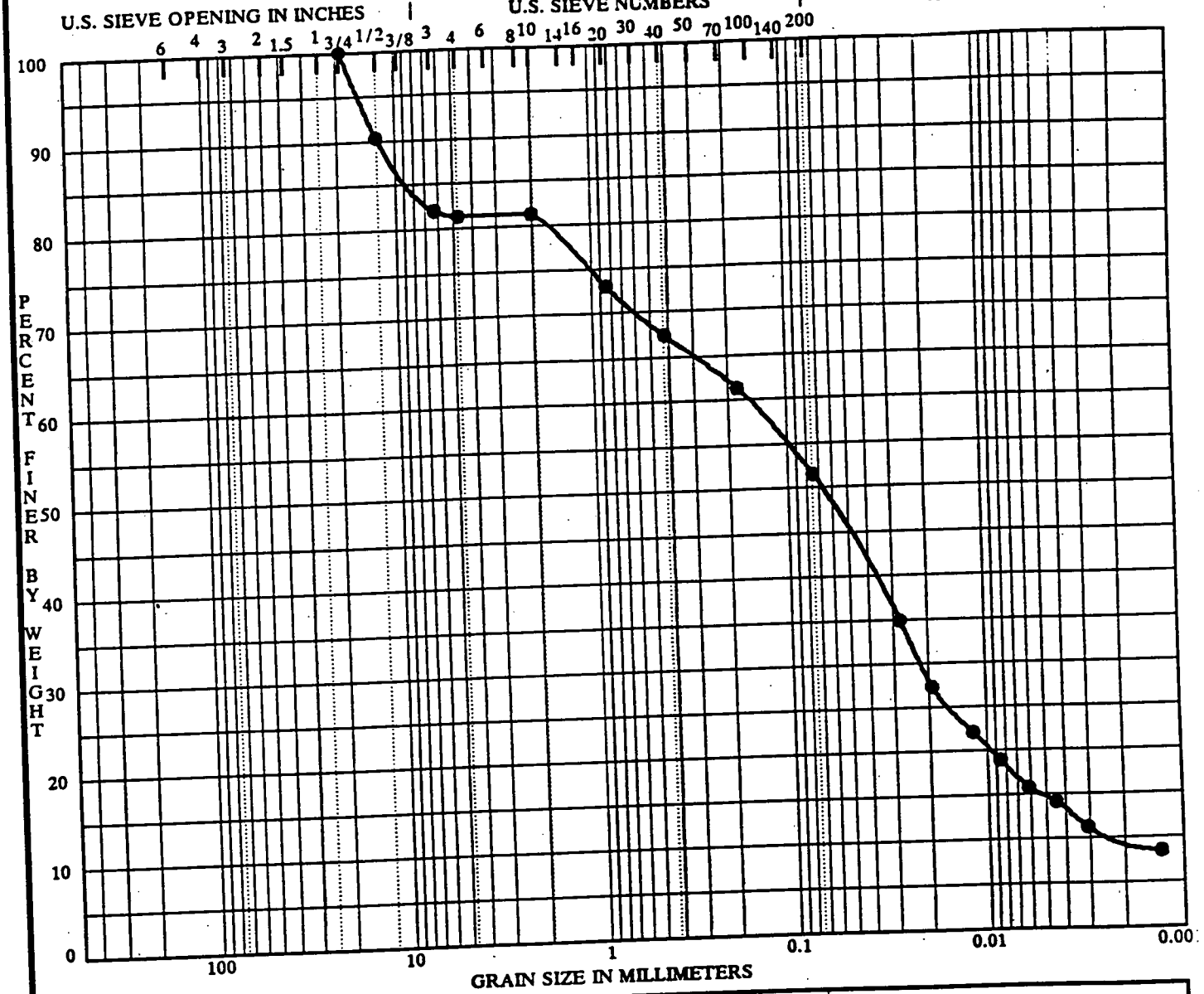
## GRADATION CURVES

PROJECT Union Carbide, Project No. YP9963
CLIENT Ecology & Environment Engineering, P.C.

REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J018 | Reddish-Brown SILT; some mf SAND; little mf | 8.1 | NP | NP | NP | | |
| ID: GW-7B | GRAVEL; little CLAY | | | | | | |
| Depth: 12'-14' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|
| ● J018 | 19.00 | 0.16 | 0.022 | 0.0021 | 19 | 30 | 37 | 15 |
| ID: GW-7B | | | | | | | | |
| Depth: 12'-14' | | | | | | | | |

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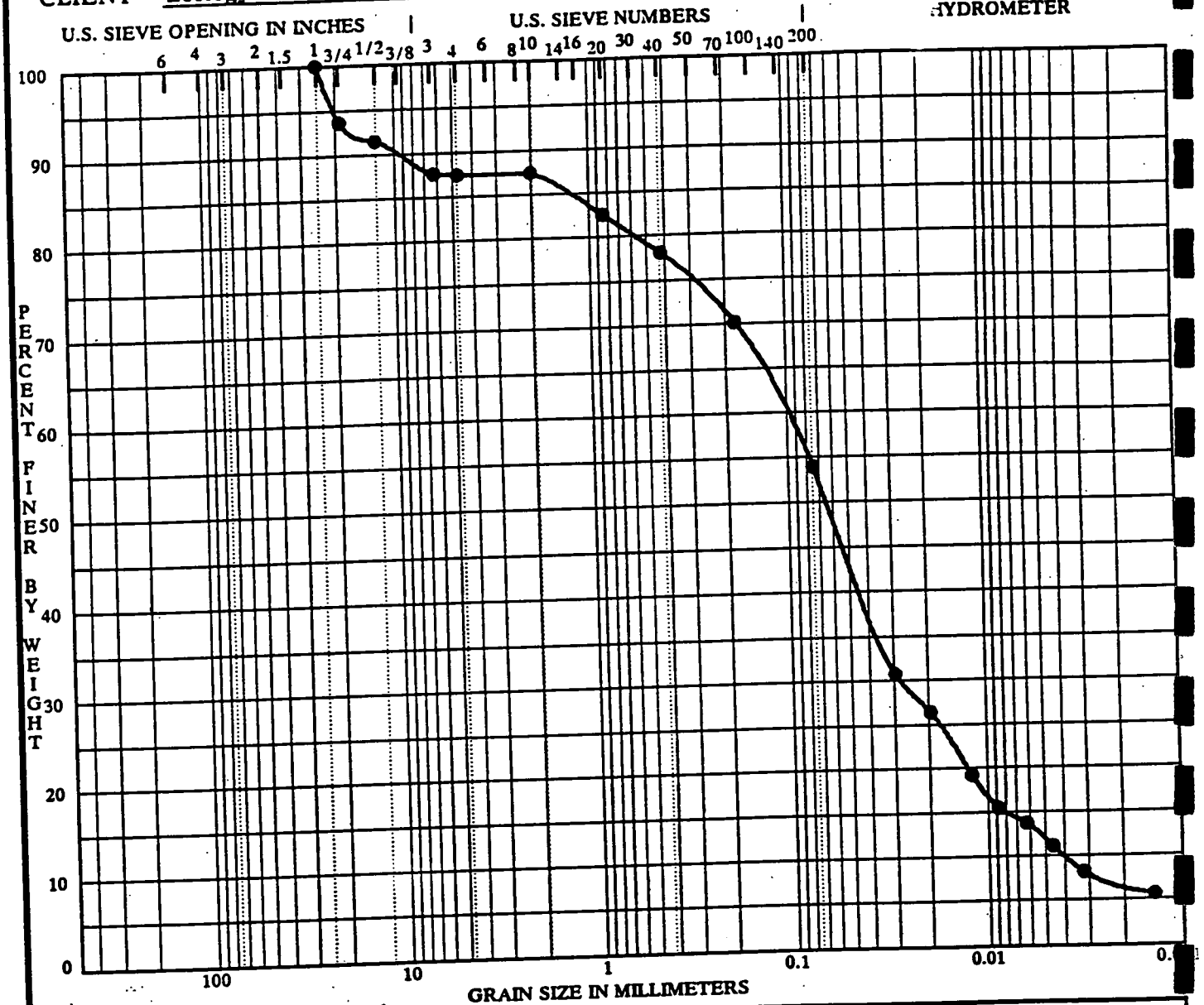
## GRADATION CURVES

PROJECT Union Carbide, Project No. YP9963
CLIENT Ecology & Environment Engineering, P.C.

REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J019 | Reddish-Brown SILT; some mf+ SAND; little mf | 10.7 | NP | NP | NP | | |
| ID: GW-8A | GRAVEL; little CLAY | | | | | | |
| Depth:14.5-16.5 | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Cl |
|---|---|---|---|---|---|---|---|---|
| ● J019 | 25.00 | 0.10 | 0.028 | 0.0040 | 13 | 34 | 42 | 12 |
| ID: GW-8A | | | | | | | | |
| Depth:14.5-16.5 | | | | | | | | |

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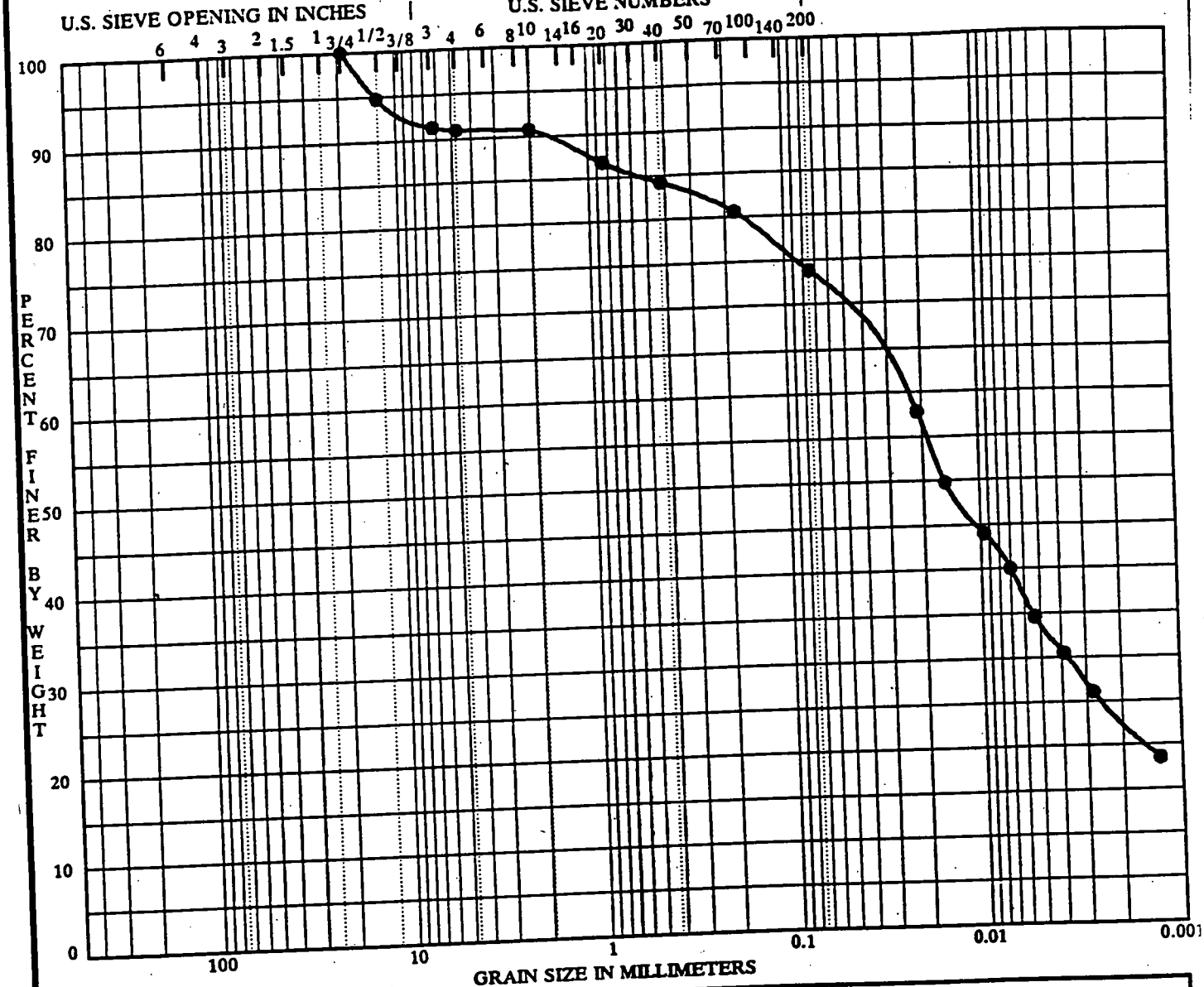
REPORT NO. CT1033S-1-12-93
DATE 12/14/93

HYDROMETER




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J020 | Reddish-Brown SILT; some CLAY; little mf | 18.0 | 31 | 15 | 16 | | |
| ID: GW-8B | SAND; trace mf GRAVEL | | | | | | |
| Depth: 4'-6' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|
| ● J020 | 19.00 | 0.03 | 0.004 | | 9 | 17 | 40 | 34 |
| ID: GW-8B | | | | | | | | |
| Depth: 4'-6' | | | | | | | | |

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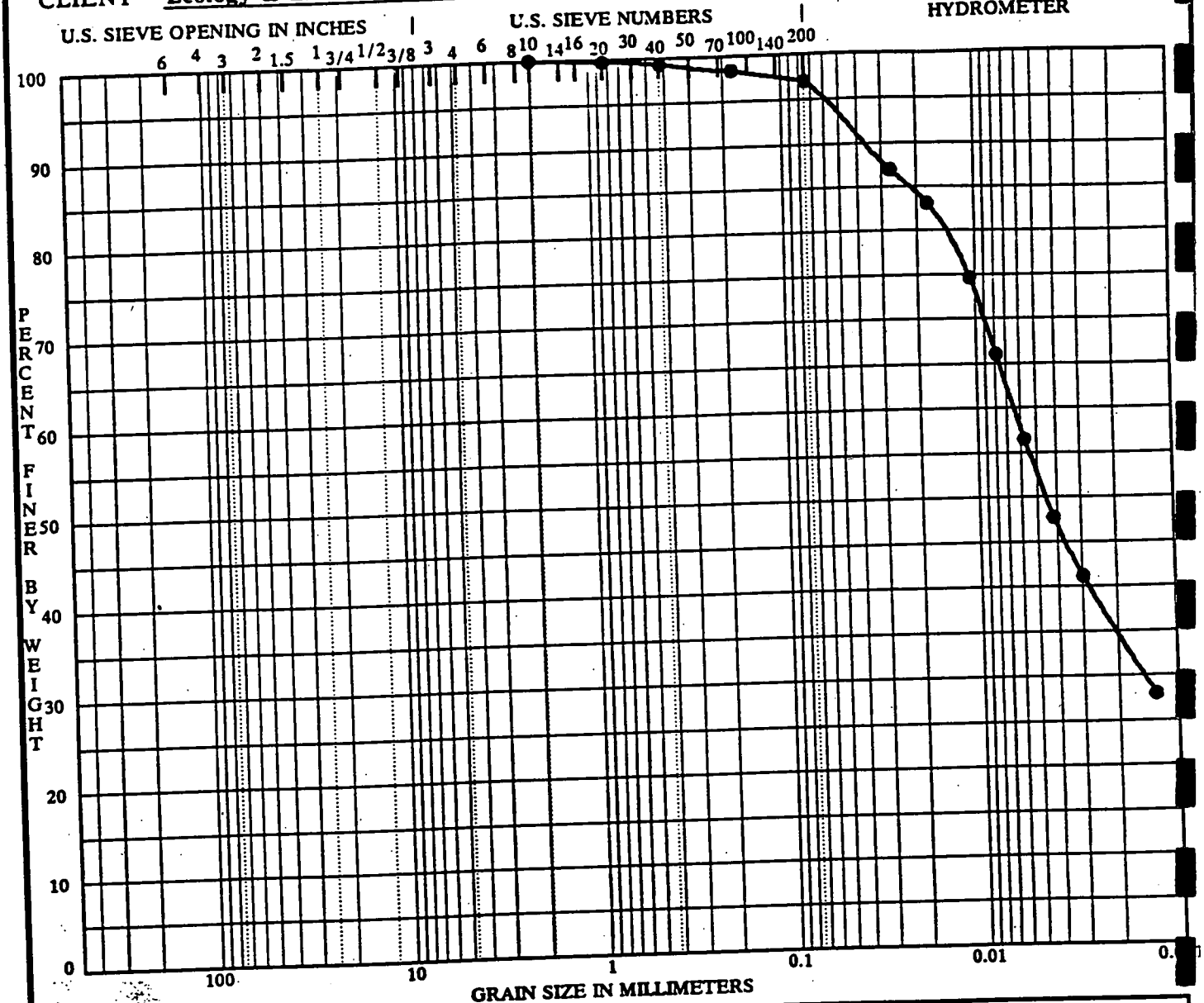
## GRADATION CURVES

PROJECT Union Carbide, Project No. YP9963
CLIENT Ecology & Environment Engineering, P.C.

REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J021 | Reddish-Brown CLAY; and SILT; trace mf SAND | 23.3 | 40 | 17 | 23 | | |
| ID: GW-9B | | | | | | | |
| Depth: 8'-10' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Cl |
|---|---|---|---|---|---|---|---|---|
| ● J021 | 2.00 | 0.01 | 0.002 | | 0 | 3 | 45 | 53 |
| ID: GW-9B | | | | | | | | |
| Depth: 8'-10' | | | | | | | | |

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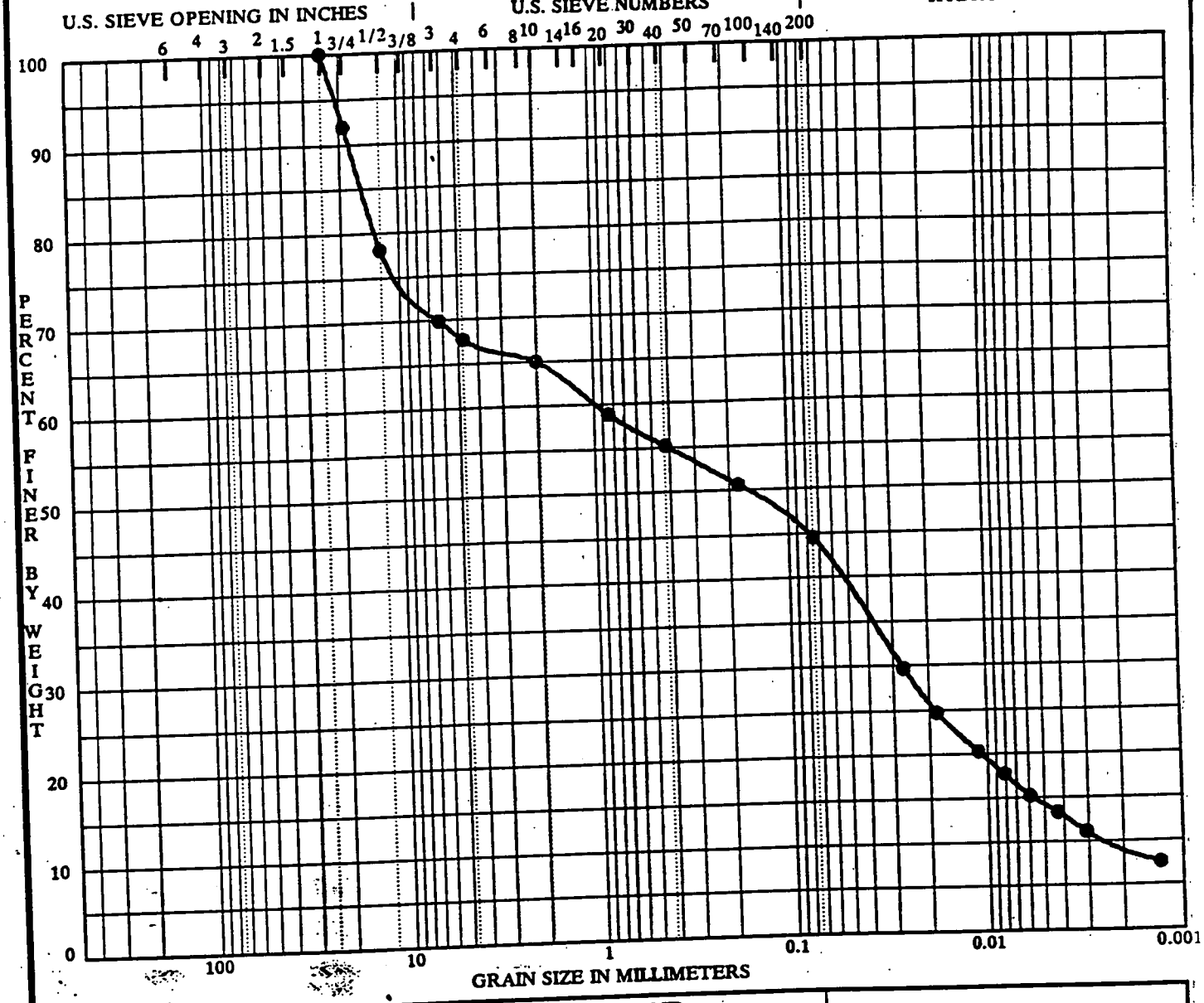
## GRADATION CURVES

PROJECT Union Carbide, Project No. YP9963
CLIENT Ecology & Environment Engineering, P.C.

REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J022 | Reddish-Brown mf- GRAVEL; some SILT; some | 8.9 | NP | NP | NP | | |
| ID: GW-9B | c-mf SAND; little CLAY | | | | | | |
| Depth: 18'-20' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|
| ● J022 | 25.00 | 0.99 | 0.027 | 0.0024 | 32 | 23 | 30 | 14 |
| ID: GW-9B | | | | | | | | |
| Depth: 18'-20' | | | | | | | | |

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PROJECT Union Carbide, Project No. YP9963
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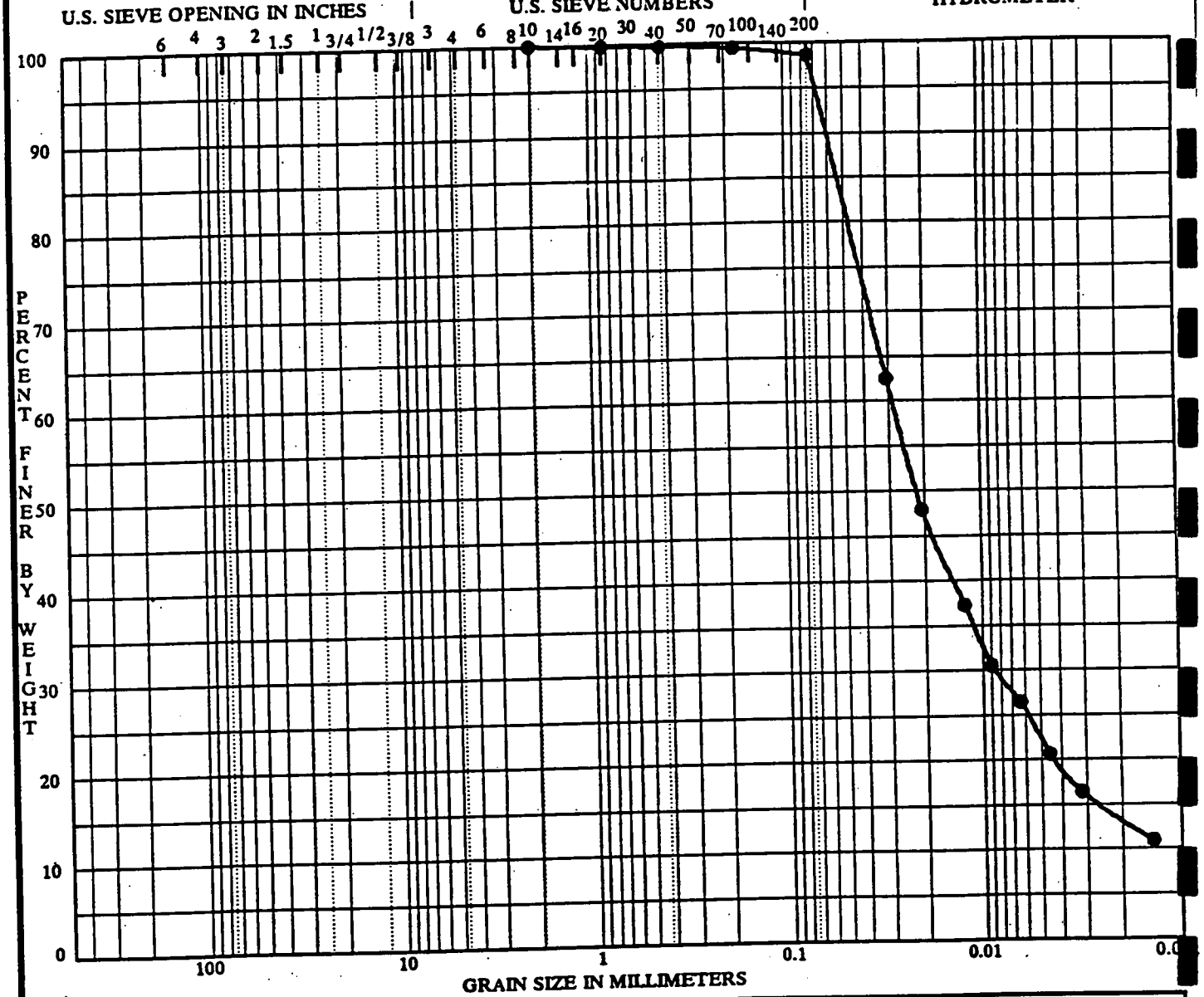
REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J023 | Reddish-Brown SILT; some CLAY; trace f SAND | 24.1 | 27 | 16 | 11 | | |
| ID: GW-10B | | | | | | | |
| Depth: 12'-14' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Cla |
|---|---|---|---|---|---|---|---|---|
| ● J023 | 2.00 | 0.03 | 0.009 | | 0 | 1 | 77 | 22 |
| ID: GW-10B | | | | | | | | |
| Depth: 12'-14' | | | | | | | | |

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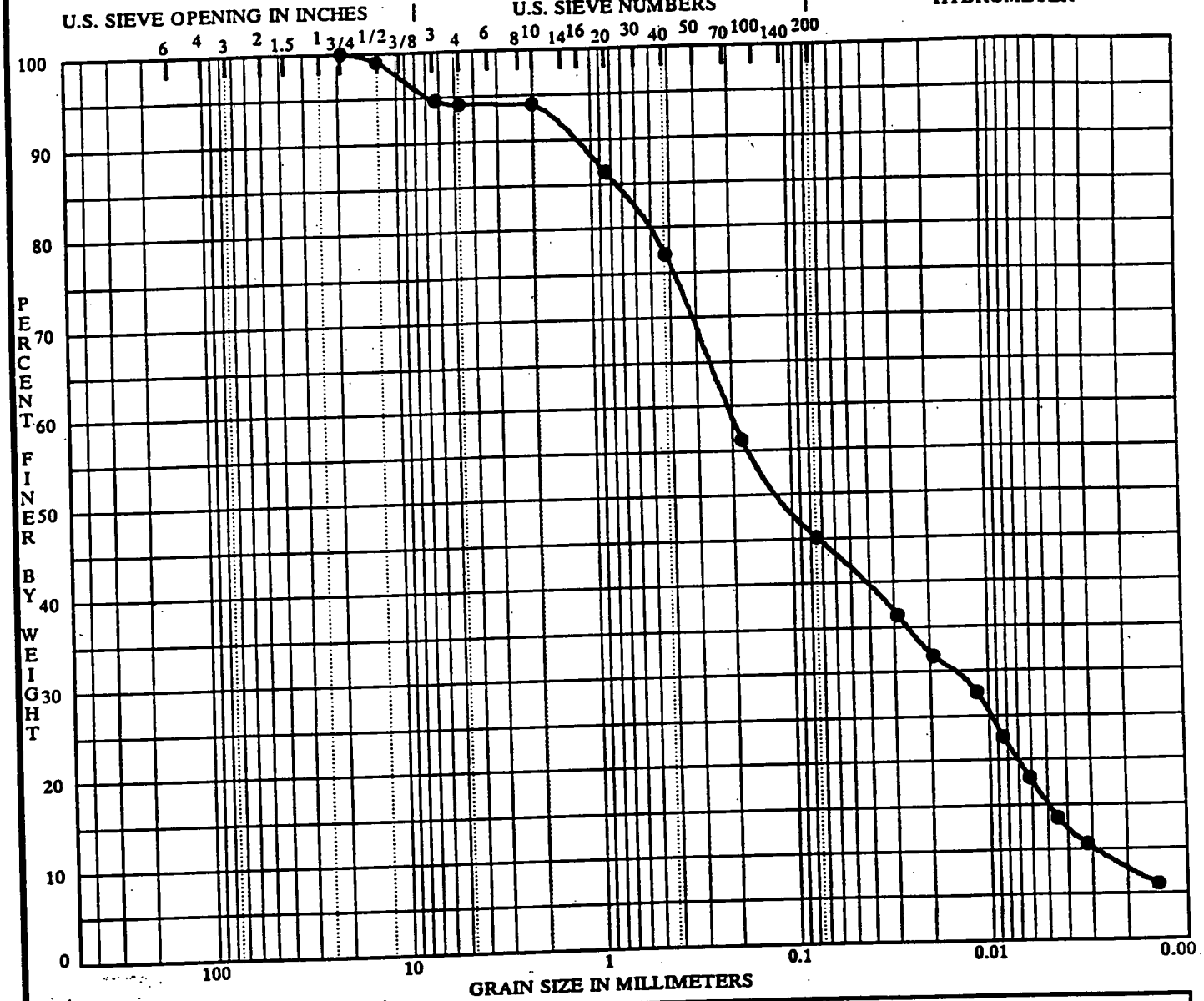
PROJECT Union Carbide, Project No. YP9963
CLIENT Ecology & Environment Engineering, P.C.

REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J024 | Reddish-Brown mf+ SAND; some SILT; little | 15.2 | NP | NP | NP | | |
| ID: GW-10B | CLAY; trace m-f GRAVEL | | | | | | |
| Depth: 22'-24' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|
| ● J024 | 19.00 | 0.21 | 0.016 | 0.0029 | 6 | 49 | 30 | 15 |
| ID: GW-10B | | | | | | | | |
| Depth: 22'-24' | | | | | | | | |

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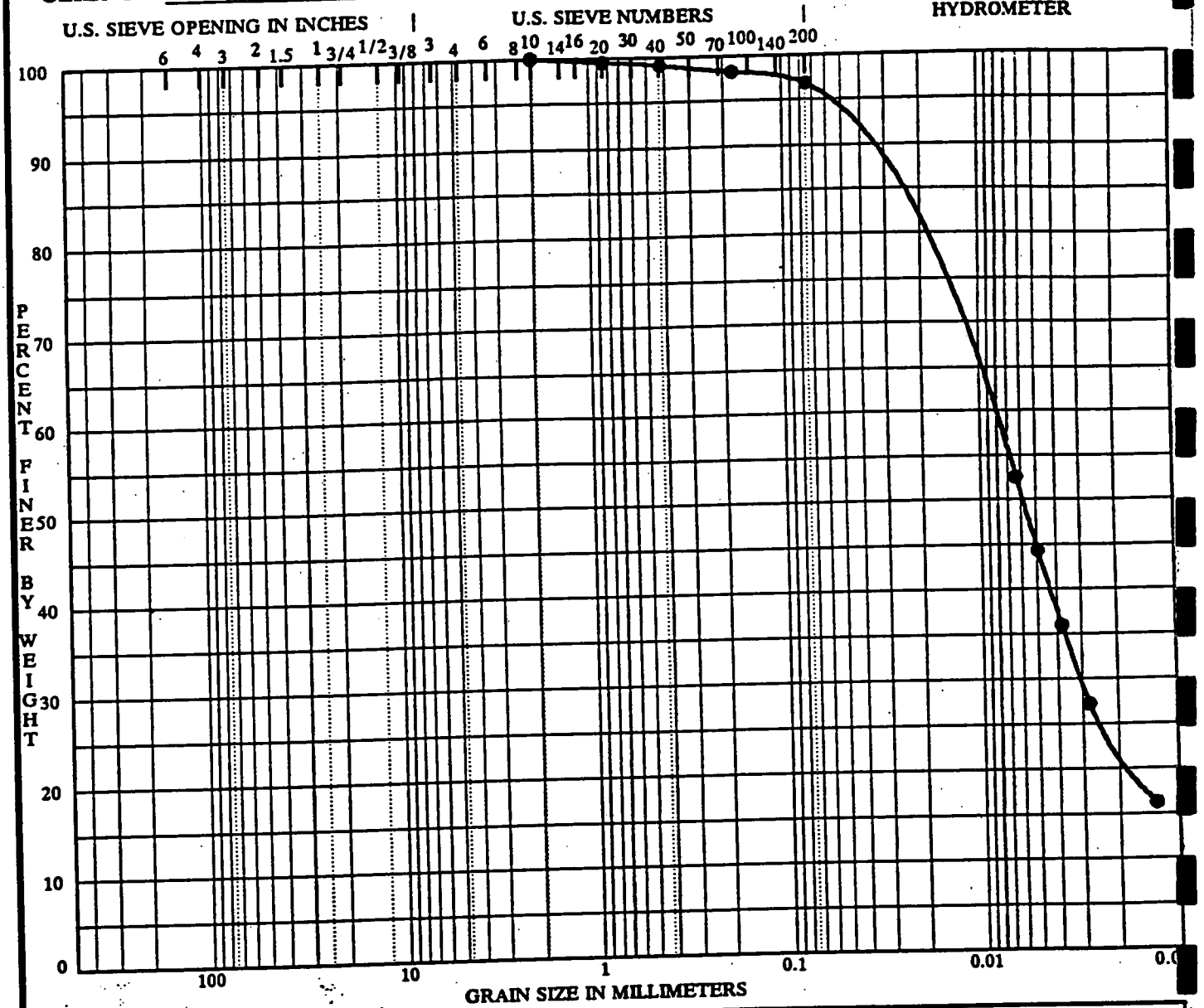
## GRADATION CURVES

PROJECT Union Carbide, Project No. YP9963
CLIENT Ecology & Environment Engineering, P.C.

REPORT NO. CT1033S-1-12-93
DATE 12/14/93




| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY |
|---|---|---|---|---|---|---|---|
| | coarse | med. | fine | coarse | medium | fine | |

| Specimen Identification | Classification | MC% | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● J025 | Reddish-Brown SILT; and CLAY; trace mf SAND | 24.6 | 25 | 15 | 10 | | |
| ID: GW-11B | | | | | | | |
| Depth: 6'-8' | | | | | | | |

| Specimen Identification | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Cla |
|---|---|---|---|---|---|---|---|---|
| ● J025 | 2.00 | 0.01 | 0.003 | | 0 | 3 | 53 | 44 |
| ID: GW-11B | | | | | | | | |
| Depth: 6'-8' | | | | | | | | |

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368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

CJ 4633 CTK

# CHAIN-OF-CUSTODY RECORD

| Project No.: | Project Name: | Project Manager: |
|---|---|---|
| YR9963 | UNION CARBIDE | Jim Richert |
| Samplers: (Signatures) E&E | | Field Team Leader: Jim Richert |

| STATION NUMBER | DATE 1993 | TIME | SAMPLE TYPE COMP | GRAB | AIR | SAMPLE INFORMATION EXPECTED COMPOUNDS (Concentration)* | ATL No. | ~~STATION LOCATION~~ SAMPLE ID |
|---|---|---|---|---|---|---|---|---|
| | 9-27 | | | X | | NA | J018 | GW-7B (12-14') |
| | 9-23 | | | X | | | J019 | GW-8A (14.5-16.5 |
| | 9-22 | | | X | | | J020 | GW-8B (4-6') |
| | 9-28 | | | X | | | J021 | GW-9B (8-10') |
| | 9-28 | | | X | | | J022 | GW-9B (18-20') |
| | 9-29 | | | X | | | J023 | GW-10B (12-14') |
| | 9-29 | | | X | | | J024 | GW-10B (22-24') |
| | 9-24 | | | X | | | J025 | GW-11B (6-8') |

| Relinquished By: (Signature) | Date/Time: | Received By: (Signature) | Relinquished By: (Signature) | Date/Time: |
|---|---|---|---|---|
| Richard M. Watts | 12-8-93/1200 | | | |
| Relinquished By: (Signature) | Date/Time: | Received By: (Signature) | Relinquished By: (Signature) | Date/Time: |
| Relinquished By: (Signature) | Date/Time: | Received For Laboratory By: (Signature) | Relinquished By: (Signature) | Date/Time: |

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

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# APPENDIX E

# DATA USABILITY SUMMARY AND DATA SUMMARY FORMS

**Data Usability Review**

The data usability review for the Union Carbide site consisted of: Checking chain-of-custody forms and analytical logs to confirm that samples were analyzed for the parameters requested on the chain-of-custody; and reviewing the data to confirm that NYSDEC and laboratory quality control criteria were met.

These quality control criteria included: holding times; laboratory blank contamination; surrogate recoveries; internal standards area and retention times; matrix spike/matrix spike duplicate (MS/MSD) results; instrument calibration (initial and continuing); and for metals, the specific criteria were reviewed and problems noted. These criteria included laboratory method blanks, MS/MSDs, instrument calibration, and ICP interference check samples.

Based on the review described above, a memorandum was generated outlining any problems affecting the usability of the data collected prior to October 18, 1994. This memorandum was submitted to NYSDEC under separate cover as part of the reduced data package. The general problems commented on included blank contamination and holding-time violation, and did not constitute a full data validation effort. Results from the resampling effort conducted on October 18, 1994, including one upgradient and two downgradient wells, are included with the data summary forms.

For the Union Carbide site, all data including data from the resampling event were considered usable as qualified by the data review except for the semivolatile results for sample GW-11B. The sample was reanalyzed due to low surrogate recoveries in the initial analysis. The sample was reextracted 36 days outside of the holding time for reanalysis due to a laboratory scheduling error. This data was qualified "R," as rejected and unusable by ChemWorld Environmental; however, the sample was stored at 4°C in the sample coolers before reanalysis. Since the reanalysis had acceptable surrogate recoveries and no positive results (except for some phthalate compounds) were detected in either the initial or reanalyzed sample, it is suggested for the purpose of the report that the semivolatile reanalysis for sample GW-11B be used. All analytical data pertaining to the site with the exception of the groundwater samples (BW-2, BW-3, BW-4) collected on October 18, 1994 were then third-party qualified by ChemWorld Environmental, Inc. The qualified data are discussed below.

**Data Validation**

All analytical data pertaining to the Union Carbide site with the exception of the groundwater samples (BW-2, BW-3, BW-4) collected on October 18, 1994, have been third-party validated by ChemWorld Environmental, Inc. for compliance, accuracy, and completeness. The Union Carbide Validation Report provides a summary of data acceptability and deviations in accordance with the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses (July 1988) and the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (June 1991). Quality Assurance/Quality Control deviations cited in the Union Carbide Validation Report are summarized below. Table E-1 which follows provides a list of the PAHs analyzed for (as base/neutral extractables) and show which are considered carcinogenic.

**Volatile Organics**

Samples S-1-RE, S-2-RE, S-7-RE, S-8-RE, and S-13-RE were qualified "J," as estimated for the positive results due to high surrogate recovery.

The samples associated with the continuing calibrations run on August 14, 1993 at 13:44 for vinyl chloride and September 27, 1993 at 19:55 for 1,1-DEC were qualified "UJ," as estimated for the non-detectable results due to the percent difference falling outside acceptable limits. Positive results were not detected for these compounds.

The xylene result for sample S-2-RE was qualified "J," as estimated due to percent relative standard deviation falling outside acceptable limits.

Trip blanks and method blanks were found to contain acetone, methylene chloride, 1,2-DCA, chloroform, bromodichloromethane, 1,1,1-TCA, and/or dibromochloromethane. A limit of 10 times the acetone and methylene chloride values and five times the 1,2-DCA, chloroform, bromodichloromethane, and dibromochloromethane values were used for qualification of the associated samples. Sample results found to be less than the blank limits were qualified "B," to denote their presence in the blanks.

Samples S-1 through S-4, S-7, S-8, S-11, S-13, S-2-RE, S-7-RE, S-8-RE, and S-13-RE, were qualified "J," as estimated for the positive results and "UJ," as estimated for the non-detectable results for the compounds associated with particular internal standards that were generated outside acceptable specifications for area counts and retention time variations.

Sample BW-4 should have been diluted and reanalyzed to accurately quantitate the compounds 1,2-DCE (total) and TCE. These compounds exceeded the calibration range and were not reanalyzed. Both are qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results. One upgradient well (BW-4) and two downgradient wells were resampled on October 18, 1994.

**Semivolatiles**

Sample GW-11B-RE was extracted 36 days beyond the acceptable holding time for semivolatile analysis. This sample is qualified "R," as rejected and unusable. Positive results were not detected for this sample.

Sample GW-11B was qualified "R," as rejected and unusable due to low surrogate recovery. Positive results were not detected in the sample.

Sample BW-2 was qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results for the BNA compounds, only due to low surrogate recoveries.

Sample MW-1 was qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results, due to low surrogate recovery.

The samples associated with the continuing calibrations run on January 13, 1994 at 11:27, January 14, 1994 at 05:36, January 17, 1994 at 07:18, and January 25, 1994 at 10:33 were qualified "UJ," as estimated for the non-detectable results due to low percent difference.

The samples associated with the continuing calibrations run on August 25, 1993 at 03:21, August 31, 1993 at 08:54 and 21:01, October 2, 1993 at 02:14, October 6, 1993 at 15:40, October 9, 1993 at 09:05, October 11, 1993 at 12:48, October 15, 1993 at 09:33, October 16, 1993 at 05:07, October 18, 1993 at 09:28 and 22:21, October 19, 1993 at 13:09, October 27, 1993 at 09:17, and January 14, 1994 at 05:36 were qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results due to percent difference or relative response factor falling outside acceptable limits.

Method blanks were found to contain bis(2-ethylhexyl)phthalate and di-n-butylphthalate. A limit of 10 times the bis(2-ethylhexyl)phthalate value and five times the d-n-butylphthalate value was used for qualification of the associated samples. Sample results found to be less than the blank limits were qualified "B" to denote their presence in the blanks.

**Pesticides/PCBs**

Samples S-12, S-3, SED-1, BW-2, and GW-8B were qualified "J," as estimated for the positive results and "UJ," as estimated for the non-detectable results due to the percent recovery for surrogate compounds falling outside acceptable limits.

Sample S-2 was qualified "J," as estimated for the positive results, only, due to high surrogate recovery.

The associated sample results for the performance evaluation mixtures performed on September 10, 1993 at 12:44 of alpha-BHC, beta-BHC, and gamma-BHC were qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results due to the relative percent difference falling outside acceptable limits.

The associated sample results for the performance evaluation mixtures performed on October 18, 1993 at 15:18 and October 20, 1993 at 01:23 and 23:40 of methoxychlor were qualified "UJ," as estimated for the non-detectable results due to the relative percent difference falling outside acceptable limits. Positive results were not detected for this compound.

Samples associated with the linearity calibration performed on October 18, 1993 were qualified "UJ," as estimated for the non-detectable results for endrin aldehyde due to the percent relative standard deviation falling outside acceptable limits. No positive results were detected for this compound.

Samples associated with the linearity calibration performed on September 7, 1993 were qualified "J," as estimated for the positive results and "UJ," as estimated for the non-detectable results for endrin aldehyde due to the percent relative standard deviation falling outside acceptable limits.

Samples associated with the individual standard mixtures performed on September 10, 1993 at 06:07 and 06:54, October 19, 1993 at 13:26, October 20, 1993 at 12:12, and October 21, 1993 at 04:04, 04:05, and 04:58, were qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results, due to the relative percent difference falling outside of acceptable limits.

Samples S-1 through S-3, S-7 through S-14, S-8DL, B-2-1, B-2-2, and GW-10B, were qualified "J," as estimated for certain compound due to their percent difference falling outside acceptable levels.

**Inorganics**

Sample BW-2 was not properly field preserved for metals analyses. The sample was preserved at the laboratory prior to analysis. This sample is qualified "J," as estimated for the positive results and "UJ," as estimated for the non-detectable results for metals.

The closing standard performed on October 22, 1993 at 23:46 for aluminum and zinc for the drill water sample 92993C was qualified "J" as estimated for positive results due to high recovery for this calibration standard.

Sample S-2 was qualified "J," as estimated for silver due to low recovery of the Contract Required Detection Limit (CRDL) standard for silver.

Samples in case number 9302.121 were qualified "J," as estimated for zinc and lead due to the CRDL standards falling outside acceptable limits.

Preparation blanks were found to contain aluminum, potassium, zinc, iron, manganese, and copper. A limit of five times these detected concentrations was used for qualification of the associated samples. Sample results found to be less than the blank limits were qualified "B" to denote their presence in the blanks.

Sample SW-1 was qualified "J," as estimated for barium and iron due to ICP interference check samples falling outside the acceptable range.

Samples S-7 and SW-1 were qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results for selenium due to the low spike recovery.

Sample S-7 was qualified "J," as estimated for chromium, due to high spike recovery.

Sample GW-10B was qualified "J," as estimated for the positive results, and "UJ," as estimated for the non-detectable results for antimony, manganese, selenium, and cyanide, due to percent recovery falling outside acceptable limits.

Sample GW-10B was qualified "J," as estimated for calcium and vanadium due to the relative percent difference falling outside acceptable limits.

Sample SS-2 was qualified "J," as estimated for lead, due to poor precision for the lab duplicate.

The manganese result for sample DW92393B, and the calcium result for sample GW-9B, were qualified "J," as estimated, due to percent difference falling outside acceptable limits.

The manganese and zinc results for sample BW-4 were qualified "J," as estimated due to results exceeding 50 times the instrument detection limit.



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The selenium results in samples B-2-1 and GW-10B were qualified "J," as estimated due to the correlation coefficient falling outside acceptable limits.

**Miscellaneous Analyses**

Samples S-2, S-2, S-3, S-13, and S-14 were analyzed for pH, ignitability, and sulfides. Samples S-10 and SS-2 were analyzed for EPTOX lead. Samples B-1.1 and B-2.2 were analyzed for EPTOX pesticides and herbicides, EPTOX metals, pH, and sulfide. Sample B-2.2 was analyzed for ignitability. Limited sample volume remained for sample B-1.1, therefore ignitability could not be evaluated. Sample SS-2 was qualified "J," as estimated for the positive results for EPTOX lead due to high spike recovery and samples B-1.1 and B-2.2 were qualified "UJ," as estimated for the non-detectable results for EPTOX pesticides due to the samples being extracted one day beyond the holding time. No positive results were detected in these pesticide samples.

These data validation reports have been reviewed for content and consistency by an E & E QA/QC chemist. All analytical data are considered usable for the purposes of this report, with the exception of the initial semivolatile analysis of sample GW-11B, as discussed previously. However, for the purpose of this report the reanalysis of this sample, GW-11B-RE, is considered usable.

The qualifiers "UJ" and "B" were changed to "ND" in the report tables to show that actual site contamination was not detected in the associated samples.

**Defined Qualifiers**

| | |
|---|---|
| B | Indicates the analyte is found in the associated blank as well as in the sample. |
| J | Indicates the value is estimated. |
| UJ | Indicates the quantitation limits are estimated. |
| A | Indicates that a TIC is a suspected aldol-condensation product. |
| N | Indicates presumptive evidence of a compound. Used only for TICs where the identification is based on a mass spectral library search. |

E Indicates that the instrument calibration range for that compound was exceeded and the value was estimated.

R Indicates data is rejected and unusable.

**Table E-1**

**POLYNUCLEAR AROMATIC HYDROCARBON (PAH) ANALYSIS LIST**

| |
|---|
| Naphthalene |
| 2-Methylnaphthalene |
| 2-Chloronaphthalene |
| Acenaphthylene |
| Acenaphthene |
| Fluorene |
| Phenanthrene |
| Anthracene |
| Fluoranthene |
| Pyrene |
| Benzo(a)anthracene[a] |
| Chrysene[a] |
| Benzo(b)fluoranthene[a] |
| Benzo(k)fluoranthene[a] |
| Benzo(a)pyrene[a] |
| Indeno(1,2,3-cd)pyrene[a] |
| Dibenz(a,h)anthracene[a] |
| Benzo(g,h,i)perylene |

[a] Considered carcinogenic (Department of Health and Human Services, 1993).

# SURFACE WATER

**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9301..742 Sampling Date(s): 8-10 & 8-11/93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | SW-1 | | TB-YR9 | | VBLKW1 | | VBLKW2 | | MSB | | SW-1MS | | SW-1MSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | Trip blank | | | | | | | | | | | |
| 10 | Chloromethane | | | 9 | J | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | UJ | | | | | | |
| 10 | Vinyl chloride | | | | UJ | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 16 | B | | | 19 | | 2 | J | 2 | BJ | 2 | BJ | | |
| 10 | Acetone | | | | | | | | | | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | 50 | | 47 | | 46 | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | 21 | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: VOLATILES 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | SW-1 | TB-YR9 | VBLKW1 | VBLKW2 | MSB | SW-1MS | SW-1MSD |
|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | Location: | | Trip blank | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | |
| 10 | Trichloroethene | | | | | 47 | 46 | 45 |
| 10 | Dibromochloromethane | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | |
| 10 | Benzene | | | | | 49 | 50 | 51 |
| 10 | trans-1,3-Dichloropropene | | | | | | | |
| 10 | Bromoform | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | |
| 10 | 2-Hexanone | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | |
| 10 | Toluene | | | | | 45 | 49 | 46 |
| 10 | Chlorobenzene | | | | | 48 | 49 | 50 |
| 10 | Ethylbenzene | | | | | | | |
| 10 | Styrene | | | | | | | |
| 10 | Total xylenes | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | SW-1 | SBLKW1 | MSB1 | SW-1MS | SW-1MSD | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | |
| | Location: | | | | | | | | |
| 10 | Phenol | | | 44 | 43 | 34 | | | |
| 10 | bis(2-Chloroethyl)ether | | | | | | | | |
| 10 | 2-Chlorophenol | | | 51 | 48 | 41 | | | |
| 10 | 1,3-Dichlorobenzene | | | | | | | | |
| 10 | 1,4-Dichlorobenzene | | | 32 | 30 | 27 | | | |
| 10 | 1,2-Dichlorobenzene | | | | | | | | |
| 10 | 2-Methylphenol | | | | | | | | |
| 10 | 2,2'-oxybis(1-chloropropane) | | | | | | | | |
| 10 | 4-Methylphenol | | | | | | | | |
| 10 | N-Nitroso-di-n-propylamine | | | 38 | 37 | 31 | | | |
| 10 | Hexachloroethane | | | | | | | | |
| 10 | Nitrobenzene | | | | | | | | |
| 10 | Isophorone | | | | | | | | |
| 10 | 2-Nitrophenol | | | | | | | | |
| 10 | 2,4-Dimethylphenol | | | | | | | | |
| 10 | bis(2-Chloroethoxy)methane | | | | | | | | |
| 10 | 2,4-Dichlorophenol | | | | | | | | |
| 10 | 1,2,4-Trichlorobenzene | | | 32 | 29 | 28 | | | |
| 10 | Naphthalene | | | | | | | | |
| 10 | 4-Chloroaniline | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SW-1 | | SBLKW1 | | MSB1 | | SW-1MS | | SW-1MSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobutadiene | | | | | | | | | | | | | | | | | | |
| 10 | 4-Chloro-3-methylphenol | | | | | 52 | | 49 | | 41 | | | | | | | | | |
| 10 | 2-Methylnaphthalene | | | | | | | | | | | | | | | | | | |
| 10 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | | | |
| 10 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | | | |
| 25 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | | | |
| 10 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | | | |
| 25 | 2-Nitroaniline | | | | | | | | | | | | | | | | | | |
| 10 | Dimethylphthalate | | | | | | | | | | | | | | | | | | |
| 10 | Acenaphthylene | | | | | | | | | | | | | | | | | | |
| 10 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | | | |
| 25 | 3-Nitroaniline | | | | | | | | | | | | | | | | | | |
| 10 | Acenaphthene | | | | | 37 | | 33 | | 30 | | | | | | | | | |
| 25 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | | | |
| 25 | 4-Nitrophenol | | | | | 41 | | 43 | | 30 | | | | | | | | | |
| 10 | Dibenzofuran | | | | | | | | | | | | | | | | | | |
| 10 | 2,4-Dinitrotoluene | | | | | 33 | | 32 | | 26 | | | | | | | | | |
| 10 | Diethylphthalate | | | | | | | | | | | | | | | | | | |
| 10 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | | | |
| 10 | Fluorene | | | | | | | | | | | | | | | | | | |
| 25 | 4-Nitroaniline | | | | | | | | | | | | | | | | | | |
| 25 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 3**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | SW-1 | | SBLKW1 | | MSB1 | | SW-1MS | | SW-1MSD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | |
| 10 | 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobenzene | | | | | | | | | | | | | | | | |
| 25 | Pentachlorophenol | | | | | 51 | | 59 | | 43 | | | | | | | |
| 10 | Phenanthrene | | | | | | | | | | | | | | | | |
| 10 | Anthracene | | | | | | | | | | | | | | | | |
| 10 | Carbazole | | | | | | | | | | | | | | | | |
| 10 | Di-n-butylphthalate | | | | | | | | | | | | | | | | |
| 10 | Fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Pyrene | | | | | 44 | | 38 | | 31 | | | | | | | |
| 10 | Butylbenzylphthalate | | | | | | | | | | | | | | | | |
| 10 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | |
| 10 | Benzo(a)anthracene | | | | | | | | | | | | | | | | |
| 10 | Chrysene | | | | | | | | | | | | | | | | |
| 10 | bis(2-Ethylhexyl)phthalate | 1 | BJ | 1 | J | | | 7 | BJ | 1 | BJ | | | | | | |
| 10 | Di-n-octylphthalate | | | | | | | | | | | | | | | | |
| 10 | Benzo(b)fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Benzo(k)fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Benzo(a)pyrene | | | | | | | | | | | | | | | | |
| 10 | Indeno(1,2,3-cd)pyrene | | | | | | | | | | | | | | | | |
| 10 | Dibenz(a,h)anthracene | | | | | | | | | | | | | | | | |
| 10 | Benzo(g,h,i)perylene | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SW-1 | | PIBLK01 | | PIBLK02 | | PIBLK03 | | PIBLK04 | | PIBLK05 | | PIBLK06 | | PIBLK07 | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 0.05 | alpha-BHC | | UJ | | | | | | | | | | | | | | | | |
| 0.05 | beta-BHC | 0.055 | J | | | | | | | | | | | | | | | | |
| 0.05 | delta-BHC | | UJ | | | | | | | | | | | | | | | | |
| 0.05 | gamma-BHC (Lindane) | | UJ | | | | | | | | | | | | | | | | |
| 0.05 | Heptachlor | | | | | | | | | | | | | | | | | | |
| 0.05 | Aldrin | | | | | | | | | | | | | | | | | | |
| 0.05 | Heptachlor epoxide | | | | | | | | | | | | | | | | | | |
| 0.05 | Endosulfan I | | | | | | | | | | | | | | | | | | |
| 0.10 | Dieldrin | | | | | | | | | | | | | | | | | | |
| 0.10 | 4,4'-DDE | | | | | | | | | | | | | | | | | | |
| 0.10 | Endrin | | | | | | | | | | | | | | | | | | |
| 0.10 | Endosulfan II | | UJ | | | | | | | | | | | | | | | | |
| 0.10 | 4,4'-DDD | | | | | | | | | | | | | | | | | | |
| 0.10 | Endosulfan sulfate | | | | | | | | | | | | | | | | | | |
| 0.10 | 4,4'-DDT | | | | | | | | | | | | | | | | | | |
| 0.50 | Methoxychlor | | | | | | | | | | | | | | | | | | |
| 0.10 | Endrin ketone | | UJ | | | | | | | | | | | | | | | | |
| 0.10 | Endrin aldehyde | | UJ | | | | | | | | | | | | | | | | |
| 0.05 | alpha-Chlordane | | | | | | | | | | | | | | | | | | |
| 0.05 | gamma-Chlordane | | | | | | | | | | | | | | | | | | |
| 5.0 | Toxaphene | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SW-1 | | PIBLK01 | | PIBLK02 | | PIBLK03 | | PIBLK04 | | PIBLK05 | | PIBLK06 | | PIBLK07 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1016 | | | | | | | | | | | | | | | | |
| 2.0 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1260 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | PIBLK08 | | PBLKW1 | | MSB1 | | SW-1MS | | SW-1MSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 0.05 | alpha-BHC | | | | | | | | UJ | | UJ | | | | | | | | |
| 0.05 | beta-BHC | | | | | | | 0.044 | J | 0.046 | J | | | | | | | | |
| 0.05 | delta-BHC | | | | | | | | UJ | | | | | | | | | | |
| 0.05 | gamma-BHC (Lindane) | | | | | 0.40 | | 0.39 | J | 0.40 | J | | | | | | | | |
| 0.05 | Heptachlor | | | | | 0.40 | | 0.36 | | 0.36 | | | | | | | | | |
| 0.05 | Aldrin | | | | | 0.48 | | 0.35 | | 0.34 | | | | | | | | | |
| 0.05 | Heptachlor epoxide | | | | | | | | | | | | | | | | | | |
| 0.05 | Endosulfan I | | | | | | | | | | | | | | | | | | |
| 0.10 | Dieldrin | | | | | 0.92 | | 0.93 | | 0.92 | | | | | | | | | |
| 0.10 | 4,4'-DDE | | | | | | | | | | | | | | | | | | |
| 0.10 | Endrin | | | | | 0.98 | | 1.0 | | 1.0 | | | | | | | | | |
| 0.10 | Endosulfan II | | | | | | | 0.10 | UJ | | UJ | | | | | | | | |
| 0.10 | 4,4'-DDD | | | | | | | | | | | | | | | | | | |
| 0.10 | Endosulfan sulfate | | | | | | | | | | | | | | | | | | |
| 0.10 | 4,4'-DDT | | | | | 0.90 | | 0.90 | | 0.87 | | | | | | | | | |
| 0.50 | Methoxychlor | | | | | | | | | | | | | | | | | | |
| 0.10 | Endrin ketone | | | | | | | | UJ | | UJ | | | | | | | | |
| 0.10 | Endrin aldehyde | | | | | | UJ | | UJ | | UJ | | | | | | | | |
| 0.05 | alpha-Chlordane | | | | | | | | | | | | | | | | | | |
| 0.05 | gamma-Chlordane | | | | | | | | | | | | | | | | | | |
| 5.0 | Toxaphene | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | PIBLK08 | | PBLKW1 | | MSB1 | | SW-1MS | | SW-1MSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1016 | | | | | | | | | | | | | | | | | | |
| 2.0 | Aroclor-1221 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1232 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1242 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1248 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1254 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1260 | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: INORGANICS**

Site Name: Union Carbide

Job Number: 930.1.742 Sampling Date(s): 8-10 & 8-11-93

**WATER SAMPLES**
(µg/L)

Due to dilution, sample quantitation limit is effected. See dilution table for specifics.

| CRQL | Compound | Sample Number: SW-1 | |
|---|---|---|---|
| | Dilution Factor: | | |
| | Location: | | |
| 200 | Aluminum | 12,600 | |
| 60 | Antimony | | |
| 10 | Arsenic | 5.8 | J |
| 200 | Barium | 182 | J |
| 5 | Beryllium | | |
| 5 | Cadmium | | |
| 5000 | Calcium | 94,800 | |
| 10 | Chromium | 22.7 | |
| 50 | Cobalt | 15.5 | J |
| 25 | Copper | 46.2 | |
| 100 | Iron | 23,000 | J |
| 3 | Lead | 26.7 | |
| 5000 | Magnesium | 31,100 | |
| 15 | Manganese | 891 | |
| 0.2 | Mercury | | |
| 40 | Nickel | 37.5 | J |
| 5000 | Potassium | 2,820 | J |
| 5 | Selenium | | UJ |
| 10 | Silver | | |
| 5000 | Sodium | 1,410 | J |
| 10 | Thallium | | |
| 50 | Vanadium | 22.4 | J |
| 20 | Zinc | 188 | |
| 10 | Cyanide | | |

CRQL = Contract Required Quantitation Limit.



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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SW-1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) WATER Lab Sample ID: 69096

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E4449

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: decanted: (Y/N) Date Extracted: 08/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/18/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-Butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)Anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 1 | BJ |
| 117-84-0 | Di-n-Octyl Phthalate | 10 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)Pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

SW-1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) WATER Lab Sample ID: 69096

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E4449

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: decanted: (Y/N) Date Extracted: 08/16/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/18/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 4.98 | 6 | J |
| 2. | UNKNOWN | 5.92 | 4 | J |
| 3. 10-54-4500 | Molecular Sulfur | 28.09 | 5 | JN |
| 4. | UNKNOWN | 35.07 | 12 | J |
| 5. | UNKNOWN | 35.43 | 4 | J |



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# SURFACE SOIL AND SEDIMENT

**DATA SUMMARY FORM: VOLATILES 1**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

**SOIL SAMPLES**
**(µg/kg)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-1RE | | S-2 | | S-2 RE | | S-3 | | S-4 | | S-5 | | S-6 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 11 | | 11 | | 11 | | 11 | | 27 | | 27 | | 14 | | 22 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | UJ | | | | | | | | | | | | | | |
| 10 | Bromomethane | | UJ | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | UJ | | | | | | | | | | | | | | |
| 10 | Chloroethane | | UJ | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 45 | BJ | 12 | BJ | 41 | B | 14 | BJ | 17 | B | 20 | B | 16 | B | 19 | B |
| 10 | Acetone | | UJ | 25 | BJ | | | 15 | BJ | 5 | BJ | | | | | | |
| 10 | Carbon disulfide | | UJ | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | UJ | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | UJ | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | UJ | | | | | | | | | | | | | | |
| 10 | Chloroform | | UJ | | | | | 9 | J | | | | | | | | |
| 10 | 1,2-Dichloroethane | | UJ | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | UJ | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | 15 | BJ | | | 9 | BJ | | UJ | | UJ | | | | | | |
| 10 | Carbon tetrachloride | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | Bromodichloromethane | | UJ | | | | | | UJ | | UJ | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: VOLATILES 2

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-1 | | S-1RE | | S-2 | | S-2RE | | S-3 | | S-4 | | S-5 | | S-6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-1RE | | S-2 | | S-2RE | | S-3 | | S-4 | | S-5 | | S-6 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 11 | | 11 | | 11 | | 11 | | 27 | | 27 | | 14 | | 22 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | cis-1,3-Dichloropropene | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | Trichloroethene | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | Dibromochloromethane | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | 1,1,2-Trichloroethane | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | Benzene | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | trans-1,3-Dichloropropene | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | Bromoform | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | 4-Methyl-2-pentanone | | UJ | | | | UJ | | UJ | | UJ | | UJ | | | | |
| 10 | 2-Hexanone | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | Tetrachloroethene | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | Toluene | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | Chlorobenzene | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | Ethylbenzene | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | Styrene | | UJ | | | | | | UJ | | UJ | | UJ | | | | |
| 10 | Total xylenes | | UJ | | | | | | UJ | | UJ | | UJ | | | | |

CRQL = Contract Required Quantitation Limit.



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# DATA SUMMARY FORM: VOLATILES 1

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-7 | | S-7RE | | S-8 | | S-8RE | | S-9 | | S-10 | | S-11 | | S-12 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-7 | | S-7RE | | S-8 | | S-8RE | | S-9 | | S-10 | | S-11 | | S-12 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 11 | | 10 | | 10 | | 21 | | 7 | | 7 | | 17 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | UJ | | | | | | | | |
| 10 | Bromomethane | | | | | | | | UJ | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | UJ | | | | | | | | |
| 10 | Chloroethane | | | | | | | | UJ | | | | | | | | |
| 10 | Methylene chloride | | | 14 | BJ | 26 | B | 21 | BJ | 28 | B | 24 | B | 26 | B | 30 | B |
| 10 | Acetone | | | 10 | BJ | 6 | BJ | | UJ | 5 | BJ | 6 | BJ | 10 | BJ | 4 | BJ |
| 10 | Carbon disulfide | | | | | | | | UJ | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | UJ | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | UJ | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | UJ | | | | | | | | |
| 10 | Chloroform | | | 8 | J | | | 3 | J | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | UJ | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | UJ | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Carbon tetrachloride | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Bromodichloromethane | | UJ | | UJ | | UJ | | UJ | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: VOLATILES 2

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-7 | | S-7RE | | S-8 | | S-8RE | | S-9 | | S-10 | | S-11 | | S-12 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 11 | | 10 | | 10 | | 21 | | 7 | | 7 | | 17 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Trichloroethene | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Dibromochloromethane | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Benzene | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Bromoform | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | 4-Methyl-2-pentanone | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | 2-Hexanone | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | Tetrachloroethene | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | 1,1,2,2-Tetrachloroethane | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | Toluene | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | Chlorobenzene | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | Ethylbenzene | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | Styrene | | UJ | | UJ | | UJ | | UJ | | | | | | UJ | | |
| 10 | Total xylenes | | UJ | | UJ | | UJ | | UJ | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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# DATA SUMMARY FORM: VOLATILES 1

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-13 | | S-13 RE | | S-14 | | SED-1 | | Storage Blk | | S-7MS | | S-7MSD | | VBLKS1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-13 | | S-13 RE | | S-14 | | SED-1 | | Storage Blk | | S-7MS | | S-7MSD | | VBLKS1 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 9 | | 9 | | 12 | | 16 | | – | | 21 | | 21 | | – | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | UJ | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 31 | B | 17 | BJ | 49 | B | 17 | B | | | 27 | BJ | 29 | B | 22 | |
| 10 | Acetone | 9 | BJ | 10 | BJ | 9 | BJ | 89 | | | | | | 16 | BJ | 5 | J |
| 10 | Carbon disulfide | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | | | 65 | J | 66 | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | 3 | J | | | 3 | J | | | 14 | J | 8 | J | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | 180 | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | UJ | | UJ | 4 | J |
| 10 | Carbon tetrachloride | | | | | | | | | | | | UJ | | UJ | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | UJ | | UJ | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: VOLATILES 2

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-13 | | S-13 RE | | S-14 | | SED-1 | | Storage Blk | | S-7 MS | | S-7 MSD | | VBLKS1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-13 | | S-13 RE | | S-14 | | SED-1 | | Storage Blk | | S-7 MS | | S-7 MSD | | VBLKS1 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 9 | | 9 | | 12 | | 16 | | — | | 21 | | 21 | | — | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | UJ | | UJ | | |
| 10 | cis-1,3-Dichloropropene * | | | | | | | | | | | | UJ | | UJ | | |
| 10 | Trichloroethene | | | | | | | | | | | 81 | J | 79 | J | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | UJ | | UJ | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | UJ | | UJ | | |
| 10 | Benzene | | | | | | | | | | | 83 | J | 80 | J | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | UJ | | UJ | | |
| 10 | Bromoform | | | | | | | | | | | | UJ | | UJ | | |
| 10 | 4-Methyl-2-pentanone | | UJ | | | | | | | | | | UJ | | UJ | | |
| 10 | 2-Hexanone | | UJ | | UJ | | | | | | | | UJ | | UJ | | |
| 10 | Tetrachloroethene | | UJ | | UJ | | | | | | | | UJ | | UJ | | |
| 10 | 1,1,2,2-Tetrachloroethane | | UJ | | UJ | | | | | | | | UJ | | UJ | | |
| 10 | Toluene | | UJ | | UJ | | | | | | | 91 | J | 85 | J | | |
| 10 | Chlorobenzene | | UJ | | UJ | | | | | | | 92 | J | 89 | J | | |
| 10 | Ethylbenzene | | UJ | | UJ | | | | | | | | UJ | | UJ | | |
| 10 | Styrene | | UJ | | UJ | | | | | | | | UJ | | UJ | | |
| 10 | Total xylenes | | UJ | | UJ | | | | | | | | UJ | | | | |

CRQL = Contract Required Quantitation Limit.



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# DATA SUMMARY FORM: VOLATILES 1

Site Name: Union Carbide

Job Number: 230.1.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | VBLKS2 | | VBLKS3 | | MSB1 | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | | | |
| | % Moisture: | - | | - | | - | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 11 | | 17 | | 12 | B | | | | | | | | | | | | |
| 10 | Acetone | 5 | J | 4 | J | 7 | BJ | | | | | | | | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | 54 | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit

## DATA SUMMARY FORM: VOLATILES 2

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | VBLKS2 | | VBLKS3 | | MSB1 | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | | | |
| | % Moisture: | – | | – | | – | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | 55 | | | | | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | 54 | | | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | 55 | | | | | | | | | | | | | |
| 10 | Chlorobenzene | | | | | 54 | | | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 1**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([1 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
| | Dilution Factor: | 50.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 50.0 | |
| | % Moisture: | 11 | | 11 | | 27 | | 27 | | 14 | | 22 | | 21 | | 10 | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | Phenol | | | 980 | J | | | | | | | | | | | | |
| 330 | bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | |
| 330 | 2-Chlorophenol | | | | | | | | | | | | | | | | |
| 330 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 1,4-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 2-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | |
| 330 | 4-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | N-Nitroso-di-n-propylamine | | | | | | | | | | | | | | | | |
| 330 | Hexachloroethane | | | | | | | | | | | | | | | | |
| 330 | Nitrobenzene | | | | | | | | | | | | | | | | |
| 330 | Isophorone | | | | | | | | | | | | | | | | |
| 330 | 2-Nitrophenol | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | 14,000 | J |
| 330 | 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | 5,400 | J |
| 330 | Naphthalene | | | | | | | | | | | | | | | | |
| 330 | 4-Chloroaniline | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 2**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
| | Dilution Factor: | 50.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 50.0 | |
| | % Moisture: | 11 | | 11 | | 27 | | 27 | | 14 | | 22 | | 21 | | 10 | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobutadiene | | | | | | | | | | | | | | | | |
| 330 | 4-Chloro-3-methylphenol | | | | | | | | | | | | | | | 1,500 | J |
| 330 | 2-Methylnaphthalene | | | | | | | | | | | | | | | | |
| 330 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | |
| 330 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | |
| 800 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | |
| 330 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | |
| 800 | 2-Nitroaniline | | | | | | | | | | | | | | | | |
| 330 | Dimethylphthalate | | | | | | | | | | | | | | | | |
| 330 | Acenaphthylene | | | | | | | | | | | | | | | | |
| 330 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 800 | 3-Nitroaniline | | | | | | | | | | | | | 64 | J | 17,000 | J |
| 330 | Acenaphthene | 1,300 | J | | | 100 | J | | | | | | | | | | |
| 800 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | |
| 800 | 4-Nitrophenol | | | | | | | | | | | | | | | 5,000 | J |
| 330 | Dibenzofuran | 400 | J | | | | UJ | | UJ | | UJ | | UJ | | | | |
| 330 | 2,4-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 330 | Diethylphthalate | | | | | | | | | | | | | | | | |
| 330 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | 9,600 | J |
| 330 | Fluorene | 480 | J | 150 | J | 47 | J | | | | | | | | | | |
| 800 | 4-Nitroaniline | | | | | | | | | | | | | | | | |
| 800 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 3**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
| | Dilution Factor: | 50.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 50.0 | |
| | % Moisture: | 11 | | 11 | | 27 | | 27 | | 14 | | 22 | | 21 | | 10 | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | |
| 330 | 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobenzene | | | | | | | | | | | | | | | 1,300 | J |
| 800 | Pentachlorophenol | | | | | | | | | | | | | | | | |
| 330 | Phenanthrene | 19,000 | | 2,200 | | 520 | | 170 | J | | | | | 380 | J | 79,000 | |
| 330 | Anthracene | 4,200 | J | 520 | J | 95 | J | | | | | | | 61 | J | 22,000 | |
| 330 | Carbazole | 2,400 | J | | | 87 | J | | | | | | | 58 | J | 17,000 | J |
| 330 | Di-n-butylphthalate | | | | | | | 48 | J | | | | | 42 | J | | |
| 330 | Fluoranthene | 77,000 | | 6,300 | | 930 | | 310 | J | 43 | J | | | 550 | | 130,000 | |
| 330 | Pyrene | 66,000 | | 5,100 | | 940 | | 250 | J | | | | | 560 | | 120,000 | |
| 330 | Butylbenzylphthalate | | | | | | | | | | | | | | | | |
| 330 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | |
| 330 | Benzo(a)anthracene | 56,000 | | 4,500 | | 560 | | 160 | J | | | | | 350 | J | 94,000 | |
| 330 | Chrysene | 65,000 | | 4,300 | | 650 | | 190 | J | | | | | 450 | | 100,000 | |
| 330 | bis(2-Ethylhexyl)phthalate | | | | | | | | | | | | | | | | |
| 330 | Di-n-octylphthalate | | | | | | | | | | | | | | | | |
| 330 | Benzo(b)fluoranthene | 64,000 | | 7,400 | | 850 | | 270 | J | 36 | J | 25 | J | 590 | | 140,000 | |
| 330 | Benzo(k)fluoranthene | 13,000 | J | 2,200 | | 300 | J | 79 | J | | | | | 190 | J | 32,000 | |
| 330 | Benzo(a)pyrene | 22,000 | | 6,100 | | 710 | | 200 | J | | | | | 340 | J | 86,000 | |
| 330 | Indeno(1,2,3-cd)pyrene | 14,000 | J | 5,500 | J | 670 | | 200 | J | | | | | 360 | J | 76,000 | J |
| 330 | Dibenz(a,h)anthracene | 4,800 | J | 1,300 | J | 110 | J | | | | | | | 80 | J | 23,000 | J |
| 330 | Benzo(g,h,i)perylene | 12,000 | J | 4,900 | J | 670 | | 210 | J | | | | | 330 | J | 67,000 | J |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 1**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([1 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-9 | | S-9DL | | S-10 | | S-11 | | S-12 | | S-13 | | S-14 | | SED-1 | | | |
| | Dilution Factor: | 100.0 | | 200.0 | | 10.0 | | 25.0 | | 25.0 | | 100.0 | | 25.0 | | 1.0 | | | |
| | % Moisture: | 12 | | 12 | | 7 | | 7 | | 17 | | 8 | | 12 | | 16 | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 330 | Phenol | | | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | | | |
| 330 | 2-Chlorophenol | | | | | | | | | | | | | | | | | | |
| 330 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 330 | 1,4-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 330 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 330 | 2-Methylphenol | | | | | | | | | | | | | | | | | | |
| 330 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | | | |
| 330 | 4-Methylphenol | | | | | | | | | | | | | | | | | | |
| 330 | N-Nitroso-di-n-propylamine | | | | | | | | | | | | | | | | | | |
| 330 | Hexachloroethane | | | | | | | | | | | | | | | | | | |
| 330 | Nitrobenzene | | | | | | | | | | | | | | | | | | |
| 330 | Isophorone | | | | | | | | | | | | | | | | | | |
| 330 | 2-Nitrophenol | | | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | | | | |
| 330 | 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | | | | |
| 330 | Naphthalene | 2,500 | J | | | 720 | J | 1,100 | J | 2,800 | J | 14,000 | J | 5,000 | J | | | | |
| 330 | 4-Chloroaniline | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 2**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-9 | | S-9DL | | S-10 | | S-11 | | S-12 | | S-13 | | S-14 | | SED-1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-9 | | S-9DL | | S-10 | | S-11 | | S-12 | | S-13 | | S-14 | | SED-1 | |
| | Dilution Factor: | 100.0 | | 200.0 | | 10.0 | | 25.0 | | 25.0 | | 100.0 | | 25.0 | | 1.0 | |
| | % Moisture: | 12 | | 12 | | 7 | | 7 | | 17 | | 8 | | 12 | | 16 | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobutadiene | | | | | | | | | | | | | | | | |
| 330 | 4-Chloro-3-methylphenol | | | | | | | | | | | | | | | | |
| 330 | 2-Methylnaphthalene | | | | | 220 | J | 280 | J | 520 | J | 3,600 | J | 2,500 | J | | |
| 330 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | |
| 330 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | |
| 800 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | |
| 330 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | |
| 800 | 2-Nitroaniline | | | | | | | | | | | | | | | | |
| 330 | Dimethylphthalate | | | | | | | | | | | | | | | | |
| 330 | Acenaphthylene | 3,100 | J | | | | | | | | | 3,900 | J | 180 | J | | |
| 330 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 800 | 3-Nitroaniline | | | | | | | | | | | | | | | | |
| 330 | Acenaphthene | 10,000 | J | 9,900 | J | 2,200 | J | 8,400 | J | 8,300 | J | 11,000 | J | 10,000 | | | |
| 800 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | |
| 800 | 4-Nitrophenol | | | | | | | | | | | | | | | | |
| 330 | Dibenzofuran | 2,100 | J | 1,800 | J | 550 | J | 1,600 | J | 1,900 | J | 12,000 | J | 4,900 | J | | |
| 330 | 2,4-Dinitrotoluene | | | | | | | | | | | | | | | 450 | |
| 330 | Diethylphthalate | 1,300 | J | | | | | | | | | | | | | | |
| 330 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | |
| 330 | Fluorene | 4,200 | J | 3,500 | J | 970 | J | 3,800 | J | 4,100 | J | 24,000 | J | 9,000 | J | | |
| 800 | 4-Nitroaniline | | | | | | | | | | | | | | | | |
| 800 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit

**DATA SUMMARY FORM: B N A S 3**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 930L.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-9 | | S-9DL | | S-10 | | S-11 | | S-12 | | S-13 | | S-14 | | SED-1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 100.0 | | 200.0 | | 10.0 | | 25.0 | | 25.0 | | 100.0 | | 25.0 | | 1.0 | |
| | % Moisture: | 11 | | 11 | | 7 | | 7 | | 17 | | 8 | | 12 | | 16 | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | |
| 330 | 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobenzene | | | | | | | | | | | | | | | | |
| 800 | Pentachlorophenol | | | | | | | | | | | | | | | | |
| 330 | Phenanthrene | 48,000 | | 48,000 | J | 8,900 | | 36,000 | | 36,000 | | 130,000 | | 49,000 | | 110 | J |
| 330 | Anthracene | 22,000 | J | 20,000 | J | 2,200 | J | 10,000 | | 11,000 | | 36,000 | | 16,000 | | | |
| 330 | Carbazole | 8,200 | J | | | 1,500 | J | 6,900 | J | 7,400 | J | 21,000 | J | 8,800 | J | | |
| 330 | Di-n-butylphthalate | | | | | | | | | | | | | | | | |
| 330 | Fluoranthene | 250,000 | | 290,000 | | 12,000 | | 60,000 | | 64,000 | | 190,000 | | 67,000 | | 160 | J |
| 330 | Pyrene | 240,000 | | 240,000 | | 15,000 | | 52,000 | | 53,000 | | 160,000 | | 52,000 | | 190 | J |
| 330 | Butylbenzylphthalate | | | | | | | | | | | | | | | | |
| 330 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | |
| 330 | Benzo(a)anthracene | 230,000 | | 230,000 | | 12,000 | | 42,000 | | 41,000 | | 110,000 | | 44,000 | | 110 | J |
| 330 | Chrysene | 360,000 | E | 250,000 | | 15,000 | | 42,000 | | 45,000 | | 98,000 | | 44,000 | | 130 | J |
| 330 | bis(2-Ethylhexyl)phthalate | | | | | | | | | | | | | | | | |
| 330 | Di-n-octylphthalate | | | | | | | | | | | | | | | | |
| 330 | Benzo(b)fluoranthene | 360,000 | E | 390,000 | | 22,000 | | 52,000 | | 57,000 | | 120,000 | | 51,000 | | 190 | J |
| 330 | Benzo(k)fluoranthene | 91,000 | | 77,000 | | 7,000 | | 21,000 | | 15,000 | | 39,000 | | 18,000 | | 57 | J |
| 330 | Benzo(a)pyrene | 430,000 | E | 150,000 | | 13,000 | | 39,000 | | 38,000 | | 94,000 | | 34,000 | | 100 | J |
| 330 | Indeno(1,2,3-cd)pyrene | 110,000 | J | 110,000 | J | 19,000 | | 32,000 | J | 31,000 | J | 69,000 | J | 26,000 | J | 93 | J |
| 330 | Dibenz(a,h)anthracene | 46,000 | J | 35,000 | J | 5,200 | | 9,400 | J | 8,500 | J | 15,000 | J | 7,900 | J | | |
| 330 | Benzo(g,h,i)perylene | 120,000 | J | 120,000 | J | 12,000 | | 32,000 | J | 31,000 | J | 49,000 | J | 20,000 | J | 86 | J |

CRQL = Contract Required Quantitation Limit.



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DATA SUMMARY FORM: B N A S 1

SOIL SAMPLES
(µg/kg)

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([1 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SBLKS1 | | MSB' | | S-7 MS | | S-7MSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | % Moisture: | — | | — | | 21 | | 21 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | Phenol | | | 1,500 | | 2,800 | | 2,700 | | | | | | | | | |
| 330 | bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | |
| 330 | 2-Chlorophenol | | | 1,500 | | 2,300 | | 2,200 | | | | | | | | | |
| 330 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 1,4-Dichlorobenzene | | | 1,200 | | 1,800 | | 1,700 | | | | | | | | | |
| 330 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 2-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | |
| 330 | 4-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | N-Nitroso-di-n-propylamine | | | 1,300 | | 1,800 | | 1,800 | | | | | | | | | |
| 330 | Hexachloroethane | | | | | | | | | | | | | | | | |
| 330 | Nitrobenzene | | | | | | | | | | | | | | | | |
| 330 | Isophorone | | | | | | | | | | | | | | | | |
| 330 | 2-Nitrophenol | | | 40 | J | | | | | | | | | | | | |
| 330 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | | |
| 330 | 1,2,4-Trichlorobenzene | | | 1,400 | | 1,800 | | 1,700 | | | | | | | | | |
| 330 | Naphthalene | | | | | | | | | | | | | | | | |
| 330 | 4-Chloroaniline | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 2**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SBLKS1 | | MSB | | S-7MS | | S-7MSD | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | | | |
| | % Moisture: | – | | – | | 21 | | 21 | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobutadiene | | | | | | | | | | | | | | | | | | | | |
| 330 | 4-Chloro-3-methylphenol | | | 1,900 | | 2,700 | | 2,700 | | | | | | | | | | | | | |
| 330 | 2-Methylnaphthalene | | | | | | | | | | | | | | | | | | | | |
| 330 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | | | | | |
| 330 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | | | | | |
| 800 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | | | | | |
| 330 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | | | | | |
| 800 | 2-Nitroaniline | | | | | | | | | | | | | | | | | | | | |
| 330 | Dimethylphthalate | | | | | | | | | | | | | | | | | | | | |
| 330 | Acenaphthylene | | | | | | | | | | | | | | | | | | | | |
| 330 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | | | | | |
| 800 | 3-Nitroaniline | | | | | | | | | | | | | | | | | | | | |
| 330 | Acenaphthene | | | 1,500 | | 1,900 | | 1,800 | | | | | | | | | | | | | |
| 800 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | | | | | |
| 800 | 4-Nitrophenol | | | 2,300 | | 3,300 | | 3,100 | | | | | | | | | | | | | |
| 330 | Dibenzofuran | | | | | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dinitrotoluene | | | 1,600 | J | 2,100 | J | 2,000 | J | | | | | | | | | | | | |
| 330 | Diethylphthalate | | | | | | | | | | | | | | | | | | | | |
| 330 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | | | | | |
| 330 | Fluorene | | | | | | | 64 | J | | | | | | | | | | | | |
| 800 | 4-Nitroaniline | | | | | | | | | | | | | | | | | | | | |
| 800 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 3**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

**SOIL SAMPLES**
**(µg/kg)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SBLKS1 | | MSB | | S-7MS | | S-7MSD | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | |
| | % Moisture: | – | | – | | 21 | | 21 | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 330 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | | | |
| 330 | 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobenzene | | | | | | | | | | | | | | | | | | |
| 800 | Pentachlorophenol | | | 2,200 | | 3,000 | | 2,900 | | | | | | | | | | | |
| 330 | Phenanthrene | | | | | 380 | J | 600 | | | | | | | | | | | |
| 330 | Anthracene | | | | | 60 | J | 97 | J | | | | | | | | | | |
| 330 | Carbazole | | | | | | | | | | | | | | | | | | |
| 330 | Di-n-butylphthalate | | | | | 49 | J | | | | | | | | | | | | |
| 330 | Fluoranthene | | | | | 630 | | 930 | | | | | | | | | | | |
| 330 | Pyrene | | | 1,500 | | 2,500 | | 2,400 | | | | | | | | | | | |
| 330 | Butylbenzylphthalate | | | | | | | | | | | | | | | | | | |
| 330 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | | | |
| 330 | Benzo(a)anthracene | | | | | 330 | J | 450 | | | | | | | | | | | |
| 330 | Chrysene | | | | | 420 | | 590 | | | | | | | | | | | |
| 330 | bis(2-Ethylhexyl)phthalate | | | | | 44 | J | | | | | | | | | | | | |
| 330 | Di-n-octylphthalate | | | | | | | | | | | | | | | | | | |
| 330 | Benzo(b)fluoranthene | | | | | 540 | | 740 | | | | | | | | | | | |
| 330 | Benzo(k)fluoranthene | | | | | 200 | J | 280 | J | | | | | | | | | | |
| 330 | Benzo(a)pyrene | | | | | 350 | J | 510 | | | | | | | | | | | |
| 330 | Indeno(1,2,3-cd)pyrene | | | | | 280 | J | 430 | J | | | | | | | | | | |
| 330 | Dibenz(a,h)anthracene | | | | | 67 | J | 100 | J | | | | | | | | | | |
| 330 | Benzo(g,h,i)perylene | | | | | 260 | J | 400 | J | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

CRQL: Contract Required Quantitation Limit

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 930 1742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
| | Dilution Factor: | 10.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 100 | |
| | % Moisture: | | | | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 1.7 | alpha-BHC | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | 4,900 | UJ |
| 1.7 | beta-BHC | | UJ | | UJ | | | | | | | | | | | 4,100 | UJ |
| 1.7 | delta-BHC | | UJ | | UJ | | | | | | | | | | | | |
| 1.7 | gamma-BHC (Lindane) | | UJ | | UJ | | | | | | | | | | | 730 | J |
| 1.7 | Heptachlor | | | 11 | J | | | | | | | | | | | | |
| 1.7 | Aldrin | | | | | | | | | | | | | | | | |
| 1.7 | Heptachlor epoxide | | | | | | | | | | | | | | | | |
| 1.7 | Endosulfan I | | | | | | | | | | | | | | | | |
| 3.3 | Dieldrin | | | | | | | | | | | | | 5.3 | J | | |
| 3.3 | 4,4'-DDE | | | | | | | | | | | | | | | | |
| 3.3 | Endrin | | | | | | | | | | | | | | | | |
| 3.3 | Endosulfan II | | UJ | | | | | | UJ | | UJ | | UJ | | UJ | | |
| 3.3 | 4,4'-DDD | | | | | | | | | | | | | | | | |
| 3.3 | Endosulfan sulfate | | | | | | | | | | | | | 4.3 | J | | |
| 3.3 | 4,4'-DDT | | | | | | | | | | | | | | | | |
| 17 | Methoxychlor | | | | | | | | | | | | | | | | |
| 3.3 | Endrin ketone | 79 | J | 53 | J | 5.9 | J | | UJ | | UJ | | UJ | 6.0 | J | 820 | |
| 3.3 | Endrin aldehyde | | UJ | 35 | | | UJ | | UJ | | UJ | | UJ | | UJ | 380 | J |
| 1.7 | alpha-Chlordane | | | | | | UJ | | | | | | | | | 710 | |
| 1.7 | gamma-Chlordane | | | | | | | | | | | | | | | | |
| 170 | Toxaphene | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: UNION CARBIDE

Job Number: 9301.74 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
| | Dilution Factor: | 10.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 100 | |
| | % Moisture: | | | | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1016 | | | | | | UJ | | | | | | | | | | |
| 62 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1260 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

# DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-8 DL | | S-9 | | S-9 DL | | S-10 | | S-11 | | S-12 | | S-12 DL | | S-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-8 DL | | S-9 | | S-9 DL | | S-10 | | S-11 | | S-12 | | S-12 DL | | S-13 | |
| | Dilution Factor: | 1000 | | 10.0 | | 100 | | 10.0 | | 10.0 | | 10.0 | | 100 | | 10.0 | |
| | % Moisture: | 10 | | | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 1.7 | alpha-BHC | 5,800 | J | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ |
| 1.7 | beta-BHC | 4,000 | J | | UJ | | UJ | | UJ | | UJ | | | | UJ | | UJ |
| 1.7 | delta-BHC | | | | | | | | | | | | | | | 19 | J |
| 1.7 | gamma-BHC (Lindane) | 910 | DJ | | UJ | | UJ | | UJ | | UJ | | | | UJ | | UJ |
| 1.7 | Heptachlor | | | | | | | | | | | | | | | | |
| 1.7 | Aldrin | | | | | | | | | | | | | | | | |
| 1.7 | Heptachlor epoxide | | | | | | | | | | | | | | | | |
| 1.7 | Endosulfan I | | | | | | | 170 | | 47 | | 420 | J | 690 | D | | |
| 3.3 | Dieldrin | | | | | | | 43 | J | 51 | | 54 | J | | | 37 | J |
| 3.3 | 4,4'-DDE | | | 130 | | | | | | | | | UJ | | | | |
| 3.3 | Endrin | | | 110 | J | | | | | 39 | J | | | | | 110 | J |
| 3.3 | Endosulfan II | | | 110 | J | | | | | | | | | | | 52 | J |
| 3.3 | 4,4'-DDD | | | | | | | | | | | | | | | | |
| 3.3 | Endosulfan sulfate | | | | | | | | | | | | | | | | |
| 3.3 | 4,4'-DDT | | | | | | | | | | | | | | | | |
| 17 | Methoxychlor | | | 920 | | 1,200 | D | 150 | | 190 | | 140 | | | | 230 | J |
| 3.3 | Endrin ketone | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ |
| 3.3 | Endrin aldehyde | | | | UJ | | | 120 | J | 27 | J | 350 | J | | | | |
| 1.7 | alpha-Chlordane | | | | | | | | | | | | | | | | |
| 1.7 | gamma-Chlordane | | | | | | | | | | | | | | | | |
| 170 | Toxaphene | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: Union Carbide

Job Number: 93DL742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-8DL | | S-9 | | S-9DL | | S-10 | | S-11 | | S-12 | | S-12DL | | S-13 | |
| | Dilution Factor: | | | | | | | | | | | | | | | | |
| | % Moisture: | | | | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1016 | | | | | | | | | | | | | | | | |
| 62 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1260 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

# DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-14 | | SED-1 | | PBLKS1 | | PBLKS2 | | PBLKS3 | | PBLKS4 | | MSB2 | | S-7MS | | | | | | | | | |
| | Dilution Factor: | 10.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | % Moisture: | 12 | | 16 | | — | | — | | — | | — | | — | | 21 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | Matrix spike | | | | | | | | | |
| 1.7 | alpha-BHC | | UJ | | UJ | | | | | | | | | | | | | | | | | | | | UJ |
| 1.7 | beta-BHC | | UJ | | | | | | | | | | | | | | | | | | | | | | UJ |
| 1.7 | delta-BHC | | | | | | | | | | | | | | | | | | | | | | | | UJ |
| 1.7 | gamma-BHC (Lindane) | | UJ | | | | | | | | | | | | | 13 | | 19 | | | | | | | J |
| 1.7 | Heptachlor | | | | | | | | | | | | | | | 13 | | 18 | | | | | | | J |
| 1.7 | Aldrin | | | | | | | | | | | | | | | 14 | | 22 | | | | | | | J |
| 1.7 | Heptachlor epoxide | | | | | | | | | | | | | | | | | | | | | | | | UJ |
| 1.7 | Endosulfan I | | | | | | | | | | | | | | | | | | | | | | | | UJ |
| 3.3 | Dieldrin | | | | | | | | | | | | | | | 27 | | 38 | | | | | | | J |
| 3.3 | 4,4'-DDE | 39 | J | | | | | | | | | | | | | | | 4.5 | | | | | | | J |
| 3.3 | Endrin | | | | | | | | | | | | | | | 30 | | 46 | | | | | | | J |
| 3.3 | Endosulfan II | 47 | J | | | | | | | | | | | | | | | | | | | | | | UJ |
| 3.3 | 4,4'-DDD | | | | | | | | | | | | | | | | | | | | | | | | UJ |
| 3.3 | Endosulfan sulfate | | | | | | | | | | | | | | | | | | | | | | | | UJ |
| 3.3 | 4,4'-DDT | | | | | | | | | | | | | | | 27 | | 39 | | | | | | | J |
| 17 | Methoxychlor | | | | | | | | | | | | | | | | | | | | | | | | UJ |
| 3.3 | Endrin ketone | 210 | | | | | | | | | | | | | | | | 5.7 | | | | | | | J |
| 3.3 | Endrin aldehyde | | UJ | | | | UJ | | UJ | | UJ | | UJ | | UJ | | | | | | | | | | UJ |
| 1.7 | alpha-Chlordane | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.7 | gamma-Chlordane | | | | | | | | | | | | | | | | | | | | | | | | |
| 170 | Toxaphene | | | | | | | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-14 | | SED-1 | | PBLKS1 | | PBLKS2 | | PBLKS3 | | PBLKS4 | | MSB2 | | S-7MS | | |
| | Dilution Factor: | 10.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | |
| | % Moisture: | 12 | | 16 | | — | | — | | — | | — | | — | | 21 | | |
| | Location: | | | | | | | | | | | | | | | Matrix spike | | |
| 33 | Aroclor-1016 | | | | | | | | | | | | | | | | UJ | |
| 62 | Aroclor-1221 | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1232 | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1242 | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1248 | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1254 | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1260 | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | |
|---|---|---|---|
| | Sample Number: | S-7 MSD | |
| | Dilution Factor: | 1.0 | |
| | % Moisture: | 21 | |
| | Location: | Matrix spike duplicate | |
| 1.7 | alpha-BHC | | UJ |
| 1.7 | beta-BHC | | UJ |
| 1.7 | delta-BHC | | UJ |
| 1.7 | gamma-BHC (Lindane) | 16 | J |
| 1.7 | Heptachlor | 16 | |
| 1.7 | Aldrin | 17 | J |
| 1.7 | Heptachlor epoxide | | |
| 1.7 | Endosulfan I | | |
| 3.3 | Dieldrin | 29 | |
| 3.3 | 4,4'-DDE | 3.7 | J |
| 3.3 | Endrin | 38 | |
| 3.3 | Endosulfan II | | UJ |
| 3.3 | 4,4'-DDD | | |
| 3.3 | Endosulfan sulfate | | |
| 3.3 | 4,4'-DDT | 33 | |
| 17 | Methoxychlor | | |
| 3.3 | Endrin ketone | 4.8 | J |
| 3.3 | Endrin aldehyde | | UJ |
| 1.7 | alpha-Chlordane | | |
| 1.7 | gamma-Chlordane | | |
| 170 | Toxaphene | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-7MSD | | | | | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | | | | | | | | | | | | | | | | |
| | % Moisture: | 21 | | | | | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1016 | | | | | | | | | | | | | | | | | | |
| 62 | Aroclor-1221 | | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1232 | | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1242 | | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1248 | | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1254 | | | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1260 | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: INORGANICS

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

SOIL SAMPLES (mg/kg)

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | | S-2 | | S-3 | | S-4 | | S-5 | | S-6 | | S-7 | | S-8 | |
| | Dilution Factor: | | | | | | | | | | | | | | | | |
| | % Solids: | 89.3 | | 89.4 | | 72.9 | | 73.4 | | 86.3 | | 78.4 | | 79.1 | | 89.7 | |
| | Location: | | | | | | | | | | | | | | | | |
| 40 | Aluminum | 4,870 | | 9,750 | | 13,000 | | 16,300 | | 8,060 | | 23,200 | | 9,860 | | 3,140 | |
| 12 | Antimony | | | | | | | | | | | | | | | | |
| 2 | Arsenic | 4.2 | | 5.7 | | 7.9 | | 7.0 | | 5.1 | | 6.9 | | 7.9 | | 10.1 | |
| 40 | Barium | 85.1 | | 301 | | 141 | | 157 | | 59.3 | | 183 | | 134 | | 70.7 | |
| 1 | Beryllium | 0.28 | J | 0.29 | J | 0.89 | J | 1.2 | J | 0.41 | J | 1.8 | | 0.89 | J | 0.35 | J |
| 1 | Cadmium | 0.96 | J | 2.5 | | 1.3 | J | 1.6 | | 0.72 | J | 2.0 | | 0.86 | J | 1.3 | |
| 1000 | Calcium | 50,600 | | 13,200 | | 6,110 | | 5,940 | | 52,600 | | 2,440 | | 4,550 | | 26,100 | |
| 2 | Chromium | 25.9 | J | 38.7 | J | 47.5 | J | 37.8 | J | 15.7 | J | 37.4 | J | 33.6 | J | 48.3 | J |
| 10 | Cobalt | 7.4 | J | 13.3 | | 15.0 | | 16.8 | | 12.5 | | 27.1 | | 12.7 | | 7.9 | J |
| 5 | Copper | 31.0 | | 205 | | 31.7 | | 26.5 | | 23.2 | | 38.4 | | 29.6 | | 193 | |
| 20 | Iron | 11,900 | | 24,200 | | 37,900 | | 28,400 | | 19,800 | | 37,200 | | 18,900 | | 9,670 | |
| 0.6 | Lead | 54.6 | | 498 | | 46.4 | | 75.1 | | 5.1 | | 14.5 | | 55.4 | | 79.7 | |
| 1000 | Magnesium | 15,800 | | 1,580 | | 3,110 | | 5,400 | | 8,380 | | 8,410 | | 2,300 | | 5,900 | |
| 3 | Manganese | 446 | | 499 | | 604 | | 466 | | 726 | | 892 | | 1,620 | | 380 | |
| 0.2 | Mercury | | | 0.18 | | | | | | | | | | | | 0.31 | |
| 8 | Nickel | 26.0 | | 35.2 | | 28.9 | | 28.8 | | 24.1 | | 49.8 | | 20.9 | | 27.1 | |
| 1000 | Potassium | 751 | J | 703 | J | 1,330 | J | 1,130 | J | 765 | J | 1,690 | | 1,090 | J | 311 | J |
| 1 | Selenium | | UJ | | UJ | 0.37 | J | | UJ | | UJ | | UJ | 0.33 | J | 0.56 | J |
| 2 | Silver | | | 1.1 | J | | | | | | | | | | | | |
| 1000 | Sodium | 192 | J | 492 | J | 177 | J | 94.6 | J | 129 | J | 119 | J | | | 112 | J |
| 2 | Thallium | 0.28 | J | | | 0.42 | J | 0.51 | J | | | 0.37 | J | 0.46 | J | 0.48 | J |
| 10 | Vanadium | 13.3 | | 16.6 | | 30.4 | | 36.0 | | 20.6 | | 48.0 | | 24.9 | | 26.6 | |
| 4 | Zinc | 130 | | 682 | | 82.2 | | 113 | | 45.4 | | 86.0 | | 64.2 | | 126 | |
| 2 | Cyanide | | | 0.58 | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: INORGANICS**

**SOIL SAMPLES**
**(mg/kg)**

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | S-9 | | S-10 | | S-11 | | S-12 | | S-13 | | S-14 | | SED-1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-9 | | S-10 | | S-11 | | S-12 | | S-13 | | S-14 | | SED-1 | |
| | Dilution Factor: | | | | | | | | | | | | | | |
| | % Solids: | 87.8 | | 92.9 | | 93.0 | | 83.2 | | 91.5 | | 87.7 | | 83.9 | |
| | Location: | | | | | | | | | | | | | | |
| 40 | Aluminum | 1,220 | | 1,330 | | 2,200 | | 5,460 | | 1,260 | | 3,580 | | 7,640 | |
| 12 | Antimony | | | | | | | | | | | | | | |
| 2 | Arsenic | 6.0 | | 6.4 | | 4.3 | | 8.5 | | 3.2 | | 6.5 | | 4.0 | |
| 40 | Barium | 24.5 | J | 38.0 | J | 35.7 | J | 72.3 | | 38.0 | J | 88.2 | | 90.9 | |
| 1 | Beryllium | | | | | | | 0.51 | J | | | 0.35 | J | 0.49 | J |
| 1 | Cadmium | | | 1.1 | | 0.76 | J | 0.94 | J | 0.69 | J | 1.0 | J | 0.98 | J |
| 1000 | Calcium | 2,260 | | 10,800 | | 19500 | | 25,700 | | 4,410 | | 19,100 | | 51,900 | |
| 2 | Chromium | 61.8 | J | 60.0 | J | 42.1 | J | 86.9 | J | 32.7 | J | 38.9 | J | 16.4 | J |
| 10 | Cobalt | 4.3 | J | 85.0 | | 6.8 | J | 22.3 | | 2.8 | J | 8.9 | J | 11.6 | J |
| 5 | Copper | 116 | | 105 | | 41.0 | | 108 | | 64.3 | | 97.9 | | 23.9 | |
| 20 | Iron | 3,360 | | 6,940 | | 3,740 | | 13,700 | | 6,000 | | 13,400 | | 16,200 | |
| 0.6 | Lead | 44.8 | | 117 | | 61.0 | | 59.8 | | 42.8 | | 56.4 | | 121 | |
| 1000 | Magnesium | 692 | J | 61,700 | | 9,600 | | 5,100 | | 1,230 | | 5,910 | | 16,400 | |
| 3 | Manganese | 93.2 | | 374 | | 159 | | 381 | | 38.4 | | 380 | | 493 | |
| 0.2 | Mercury | | | | | | | | | 1.3 | | 0.25 | | | |
| 8 | Nickel | 28.8 | | 98.1 | | 27.3 | | 48.3 | | 16.3 | | 34.3 | | 19.9 | |
| 1000 | Potassium | 137 | J | 258 | J | 281 | J | 622 | J | 188 | J | 763 | J | 964 | J |
| 1 | Selenium | 0.41 | J | | UJ | | UJ | 0.55 | J | | UJ | 0.29 | J | | UJ |
| 2 | Silver | | | | | | | | | | | | | | |
| 1000 | Sodium | | | 161 | J | 174 | J | 169 | J | 137 | J | 109 | J | 134 | J |
| 2 | Thallium | 0.24 | J | 0.22 | J | 0.33 | J | 0.63 | J | | | 0.24 | J | | |
| 10 | Vanadium | 16.7 | | 15.8 | | 26.6 | | 30.4 | | 45.3 | | 20.2 | | 20.2 | |
| 4 | Zinc | 53.5 | | 325 | | 59.6 | | 133 | | 63.3 | | 312 | | 93.0 | |
| 2 | Cyanide | | | | | 0.73 | | | | | | 0.81 | | | |

CRQL = Contract Required Quantitation Limit

DATA SUMMARY FORM: RCRA CHARACTERISTICS

SOIL SAMPLES

Site Name: Union Carbide

Job Number: 9301.742 Sampling Date(s): 8-10 & 8-11-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | S-1 | S-2 | S-3 | S-13 | S-14 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | S-1 | S-2 | S-3 | S-13 | S-14 | | | | | | | |
| | Dilution Factor: | | | | | | | | | | | | |
| | % Moisture: | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | |
| | Ignitability | No flash at 140° | No flash at 140° | No flash at 140° | No flash at 140° | No flash at 140° | | | | | | | |
| | pH (in standard units) | 8.6 | 7.9 | 6.8 | 8.6 | 8.4 | | | | | | | |
| | Total sulfide (in mg/kg) | | | 52 | 65 | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM:** EP TOXICITY - LEAD

**WATER SAMPLES**
**(µg/L)**

**To calculate sample quantitation limit:**
**(CRQL * Dilution Factor)**

**Site Name:** Union Carbide

**Job Number:** 9301.742 **Sampling Date(s):** 8-10 & 8-11-93

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Sample Number:** | S-10 | | | | | | | | | | | | | | | |
| | **Dilution Factor:** | | | | | | | | | | | | | | | | |
| | **Location:** | | | | | | | | | | | | | | | | |
| 40 | Lead | | | | | | | | | | | | | | | | |

CRQL = Contract Required Detection Limit.

DATA SUMMARY FORM: EP Tox - Lead

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | Sample Number: SS-2 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dilution Factor: | | | | | | | | | | | | | | | |
| | | Location: | | | | | | | | | | | | | | | |
| | Lead | 389 | | | | | | | | | | | | | | | |

CRQL = Contract Required Detection Limit.



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**DATA SUMMARY FORM:** LEAD

**SOIL SAMPLES**
**(mg/kg)**

**Site Name:** Union Carbide

**Job Number:** 9302.887 **Sampling Date(s):** 12-10-93

**To calculate sample quantitation limit:**
**(CRQL * Dilution Factor) / ([100 - % moisture]/100)**

| CRQL | Compound | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SS-2 | | | | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | | | | | | | | | | | | | | | |
| | % Moisture: | 69.0 | | | | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | |
| | Lead | 1,560.0 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69081

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2828

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 11 Date Analyzed: 08/14/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 11-05-43 | Hexane | 5.66 | 10 | JNB |
| 2. | UNKNOWN | 22.45 | 34 | BJ |
| 3. | UNKNOWN | 24.90 | 9 | J |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-1RE

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69081RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2860

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 11 Date Analyzed: 08/16/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNKOWN | 22.43 | 16 | J |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-2

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69082

Sample wt/vol: 4.9 (g/mL) G Lab File ID: F2829

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 11 Date Analyzed: 08/14/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 3

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 11-05-43 | Hexane | 5.65 | 13 | JNB |
| 2. | UNKNOWN | 21.09 | 11 | J |
| 3. | UNKNOWN | 22.45 | 66 | J |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-2RE

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69082RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2861

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 11 Date Analyzed: 08/16/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 21.04 | 9 | J |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-3

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69083

Sample wt/vol: 4.9 (g/mL) G Lab File ID: F2839

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 27 Date Analyzed: 08/15/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.41 | 7 | BJ |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-4

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69084

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2840

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 27 Date Analyzed: 08/15/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.38 | 7 | BJ |
| 2. | UNKNOWN | 24.05 | 12 | J |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-5

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69085

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2841

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 14 Date Analyzed: 08/15/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.38 | 7 | BJ |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-6

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69086

Sample wt/vol: 4.9 (g/mL) G Lab File ID: F2842

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 22 Date Analyzed: 08/15/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.39 | 7 | BJ |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-7

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69087

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2843

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 27 Date Analyzed: 08/15/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.38 | 9 | BJ |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-8

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69088

Sample wt/vol: 4.9 (g/mL) G Lab File ID: F2851

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 10 Date Analyzed: 08/16/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.39 | 7 | BJ |
| 2. | Dichlorobenzene Isomer | 24.14 | 6 | J |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-13

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69093

Sample wt/vol: 5.1 (g/mL) G Lab File ID: F2850

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 9 Date Analyzed: 08/15/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.42 | 9 | BJ |



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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-13RE

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69093RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2866

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 9 Date Analyzed: 08/16/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.40 | 12 | J |

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-14

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69094

Sample wt/vol: 4.9 (g/mL) G Lab File ID: F2855

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: not dec. 12 Date Analyzed: 08/16/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 22.44 | 19 | J |



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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69081

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4682

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 11 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) Y pH: 8.5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 12

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.66 | 65000 | ABJN |
| 2. | UNKNOWN PAH | 25.11 | 5000 | J |
| 3. | UNKNOWN OXY. PAH | 26.84 | 8000 | J |
| 4. | UNKNOWN OXY. PAH | 27.24 | 4700 | J |
| 5. | UNKNOWN PAH | 27.80 | 5000 | J |
| 6. | UNKNOWN PAH | 28.11 | 3700 | J |
| 7. | BENZONAPHTHOTHIOPHENE ISOMER | 29.67 | 4800 | J |
| 8. | UNKNOWN PAH | 29.80 | 5600 | J |
| 9. | UNKNOWN PAH | 34.10 | 45000 | J |
| 10. | UNKNOWN PAH | 36.73 | 6200 | J |
| 11. | UNKNOWN PAH | 39.68 | 6200 | J |
| 12. | UNKNOWN PAH | 39.83 | 6700 | J |

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-2

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69082

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4683

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 11 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/01/93

Injection Volume: 2.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.82 | 48000 | ABJN |
| 2. | BUTYLPHENOL ISOMER | 15.21 | 6200 | J |
| 3. | UNKNOWN | 18.26 | 1000 | J |
| 4. | OCTYLPHENOL ISOMER | 18.80 | 1400 | J |
| 5. | OCTYLPHENOL ISOMER | 20.21 | 9100 | J |
| 6. | UNKNOWN | 21.42 | 1700 | J |
| 7. | UNKNOWN CARBOXYLIC ACID | 25.21 | 1000 | J |
| 8. | UNKNOWN OXY. PAH | 27.25 | 600 | J |
| 9. | UNKNOWN | 29.64 | 670 | J |
| 10. | UNKNOWN | 29.78 | 1100 | J |
| 11. | UNKNOWN PAH | 30.70 | 600 | J |
| 12. | UNKNOWN | 31.26 | 580 | J |
| 13. | UNKNOWN PAH | 33.70 | 1800 | J |
| 14. | UNKNOWN PAH | 34.12 | 6700 | J |
| 15. | UNKNOWN | 34.98 | 3500 | J |
| 16. | UNKNOWN PAH | 36.68 | 1500 | J |
| 17. | UNKNOWN PAH | 37.67 | 2400 | J |
| 18. | UNKNOWN PAH | 39.71 | 3400 | J |
| 19. | UNKNOWN PAH | 39.86 | 4800 | J |
| 20. | UNKNOWN PAH | 40.67 | 3700 | J |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-3

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69083

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4568

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 27 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/25/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 6.43 | 4500 | ABJN |
| 2. | UNKNOWN | 8.10 | 700 | J |
| 3. | UNKNOWN | 8.17 | 390 | J |
| 4. | UNKNOWN CARBOXYLIC ACID | 26.39 | 160 | BJ |
| 5. | UNKNOWN HYDROCARBON | 28.11 | 160 | J |
| 6. | UNKNOWN HYDROCARBON | 30.40 | 250 | J |
| 7. | UNKNOWN PAH | 31.44 | 160 | J |
| 8. | UNKNOWN HYDROCARBON | 32.52 | 180 | J |
| 9. | UNKNOWN HYDROCARBON | 32.83 | 250 | J |
| 10. | UNKNOWN HYDROCARBON | 34.47 | 610 | J |
| 11. | UNKNOWN OXY. HYDROCARBON | 34.82 | 1800 | J |
| 12. | UNKNOWN OXY. HYDROCARBON | 35.75 | 590 | J |
| 13. | UNKNOWN PAH | 35.89 | 550 | J |
| 14. | UNKNOWN OXY. HYDROCARBON | 36.81 | 590 | J |
| 15. | UNKNOWN OXY. HYDROCARBON | 37.55 | 570 | J |
| 16. | UNKNOWN HYDROCARBON | 38.02 | 1300 | J |
| 17. | UNKNOWN HYDROCARBON | 39.98 | 360 | J |
| 18. | UNKNOWN | 40.24 | 390 | J |
| 19. | UNKNOWN | 41.84 | 340 | J |
| 20. | UNKNOWN | 43.18 | 1700 | J |

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-4

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69084

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4569

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 27 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/25/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 5.60 | 1500 | J |
| 2. | UNKNOWN | 5.75 | 550 | J |
| 3. 12-34-22 | Aldol Condensation Product | 6.47 | 45000 | ABJN |
| 4. | UNKNOWN | 8.10 | 680 | J |
| 5. | UNKNOWN | 8.18 | 410 | J |
| 6. | UNKNOWN CARBOXYLIC ACID | 26.37 | 110 | BJ |
| 7. | UNKNOWN CARBOXYLIC ACID | 28.83 | 91 | J |
| 8. | UNKNOWN HYDROCARBON | 32.51 | 140 | J |
| 9. | UNKNOWN OXY. HYDROCARBON | 32.84 | 320 | J |
| 10. | UNKNOWN HYDROCARBON | 34.48 | 390 | J |
| 11. | UNKNOWN OXY. HYDROCARBON | 34.82 | 1500 | J |
| 12. | UNKNOWN OXY. HYDROCARBON | 35.76 | 570 | J |
| 13. | UNKNOWN PAH | 35.89 | 160 | J |
| 14. | UNKNOWN OXY. HYDROCARBON | 36.79 | 300 | J |
| 15. | UNKNOWN OXY. HYDROCARBON | 37.53 | 480 | J |
| 16. | UNKNOWN HYDROCARBON | 38.02 | 860 | J |
| 17. | UNKNOWN HYDROCARBON | 39.98 | 160 | J |
| 18. | UNKNOWN | 40.80 | 230 | J |
| 19. | UNKNOWN | 41.84 | 360 | J |
| 20. | UNKNOWN | 43.19 | 2000 | J |

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-5

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69085

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4570

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 14 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/25/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 6.56 | 41000 | ABJN |
| 2. | UNKNOWN | 8.00 | 77 | J |
| 3. | UNKNOWN | 8.13 | 730 | J |
| 4. | UNKNOWN | 8.20 | 150 | J |
| 5. | UNKNOWN | 13.36 | 140 | BJ |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-6

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69086

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4571

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 22 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/25/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 8

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 6.57 | 47000 | ABJN |
| 2. | UNKNOWN | 8.12 | 810 | J |
| 3. | UNKNOWN | 8.19 | 300 | J |
| 4. | UNKNOWN | 13.36 | 150 | BJ |
| 5. | UNKNOWN CARBOXYLIC ACID | 26.38 | 110 | BJ |
| 6. | UNKNOWN HYDROCARBON | 34.47 | 150 | J |
| 7. | UNKNOWN OXY. HYDROCARBON | 35.75 | 280 | J |
| 8. | UNKNOWN HYDROCARBON | 38.02 | 150 | J |



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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-7

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69087

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4656

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/30/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 4.82 | 120000 | ABJN |
| 2. | UNKNOWN | 13.31 | 150 | J |
| 3. | UNKNOWN CARBOXYLIC ACID | 25.27 | 170 | BJ |
| 4. | UNKNOWN PAH | 28.15 | 170 | J |
| 5. | UNKNOWN HYDROCARBON | 29.22 | 270 | J |
| 6. | UNKNOWN HYDROCARBON | 31.32 | 360 | J |
| 7. | UNKNOWN OXY. HYDROCARBON | 32.60 | 290 | J |
| 8. | UNKNOWN HYDROCARBON | 33.24 | 190 | J |
| 9. | UNKNOWN OXY. HYDROACARBON | 33.34 | 460 | J |
| 10. | UNKNOWN CARBOXYLIC ACID | 33.89 | 380 | J |
| 11. | UNKNOWN PAH | 34.17 | 270 | J |
| 12. | UNKNOWN HYDROCARBON | 35.06 | 460 | J |
| 13. | UNKNOWN OXY. HYDROCARBON | 35.39 | 740 | J |
| 14. | UNKNOWN HYDROCARBON | 36.77 | 630 | J |
| 15. | UNKNOWN | 37.16 | 170 | J |
| 16. | UNKNOWN HYDROCARBON | 38.37 | 190 | J |
| 17. | UNKNOWN | 38.53 | 550 | J |
| 18. | UNKNOWN | 39.18 | 150 | J |
| 19. | UNKNOWN | 39.87 | 360 | J |
| 20. | UNKNOWN | 40.15 | 190 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-8

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69088

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4672

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 10 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) Y pH: 8.4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.76 | 83000 | ABJN |
| 2. | TETRACHLOROBENZENE ISOMER | 15.68 | 15000 | J |
| 3. 13-26-50 | Dibenzothiophene | 22.28 | 77000 | JN |
| 4. | UNKNOWN PAH | 24.40 | 96000 | J |
| 5. | UNKNOWN PAH | 25.19 | 50000 | J |
| 6. | UNKNOWN OXY. HYDROCARBON | 27.33 | 6100 | J |
| 7. | UNKNOWN PAH | 27.96 | 10000 | J |
| 8. | UNKNOWN PAH | 28.17 | 8900 | J |
| 9. | UNKNOWN | 28.32 | 4200 | J |
| 10. | UNKNOWN | 29.48 | 5000 | J |
| 11. | BENZONAPHTHOTHIOPHENE ISOMER | 29.76 | 5900 | J |
| 12. | UNKNOWN PAH | 29.86 | 7400 | J |
| 13. | UNKNOWN PAH | 30.80 | 5900 | J |
| 14. | UNKNOWN | 32.12 | 4200 | J |
| 15. | UNKNOWN PAH | 33.81 | 28000 | J |
| 16. | UNKNOWN PAH | 34.24 | 100000 | J |
| 17. | UNKNOWN PAH | 35.05 | 24000 | J |
| 18. | UNKNOWN PAH | 37.79 | 28000 | J |
| 19. | UNKNOWN PAH | 39.83 | 41000 | J |
| 20. | UNKNOWN PAH | 40.00 | 50000 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-9

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69089

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4673

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 12 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.7

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.72 | 57000 | ABJN |
| 2. | UNKNOWN OXY. PAH | 27.33 | 11000 | J |
| 3. | UNKNOWN PAH | 27.89 | 13000 | J |
| 4. | UNKNOWN PAH | 28.21 | 9800 | J |
| 5. | UNKNOWN PAH | 28.45 | 18000 | J |
| 6. | BENZONAPHTHOTHIOPHENE ISOMER | 29.77 | 16000 | J |
| 7. | UNKNOWN PAH | 29.88 | 13000 | J |
| 8. | UNKNOWN OXY. PAH | 30.81 | 13000 | J |
| 9. | UNKNOWN PAH | 31.12 | 8100 | J |
| 10. | UNKNOWN PAH | 31.80 | 8300 | J |
| 11. | UNKNOWN | 33.15 | 41000 | J |
| 12. | UNKNOWN PAH | 33.81 | 30000 | J |
| 13. | UNKNOWN | 34.11 | 32000 | J |
| 14. | UNKNOWN PAH | 34.24 | 230000 | J |
| 15. | DINAPHTHOTHIOPHENE ISOMER | 36.62 | 32000 | J |
| 16. | UNKNOWN PAH | 36.83 | 51000 | J |
| 17. | UNKNOWN PAH | 37.38 | 40000 | J |
| 18. | UNKNOWN PAH | 39.83 | 55000 | J |
| 19. | UNKNOWN PAH | 39.98 | 62000 | J |
| 20. | UNKNOWN PAH | 40.79 | 55000 | J |

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-9DL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69089DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4684

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 12 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/01/93

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 5.7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 15

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 2.60 | 40000 | J |
| 2. | UNKNOWN | 3.33 | 38000 | J |
| 3. 12-34-22 | Aldol Condensation Product | 3.58 | 57000 | ABJN |
| 4. | UNKNOWN OXY. PAH | 26.84 | 23000 | J |
| 5. | UNKNOWN OXY. PAH | 27.24 | 18000 | J |
| 6. | UNKNOWN PAH | 27.79 | 23000 | J |
| 7. | UNKNOWN PAH | 28.11 | 16000 | J |
| 8. | BENZONAPHOTHIOPHENE ISOMER | 29.66 | 25000 | J |
| 9. | UNKNOWN PAH | 29.79 | 25000 | J |
| 10. | UNKNOWN | 33.05 | 28000 | J |
| 11. | UNKNOWN | 33.70 | 26000 | J |
| 12. | UNKNOWN PAH | 34.11 | 250000 | J |
| 13. | UNKNOWN PAH | 39.68 | 41000 | J |
| 14. | UNKNOWN PAH | 39.85 | 49000 | J |
| 15. | UNKNOWN PAH | 40.60 | 45000 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-10

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69090

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4659

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.90 | 86000 | ABJN |
| 2. | UNKNOWN PAH | 24.23 | 950 | J |
| 3. | UNKNOWN PAH | 24.38 | 1800 | J |
| 4. | UNKNOWN PAH | 25.17 | 1200 | J |
| 5. | UNKNOWN CARBOXYLIC ACID | 25.30 | 3600 | BJ |
| 6. | UNKNOWN | 26.90 | 2100 | J |
| 7. | UNKNOWN CARBOXYLIC ACID | 27.42 | 9500 | J |
| 8. | UNKNOWN PAH | 27.95 | 1200 | J |
| 9. | UNKNOWN PAH | 28.15 | 1500 | J |
| 10. | UNKNOWN OXY. PAH | 29.45 | 820 | J |
| 11. | BENZONAPHTHOTHIOPHENE ISOMER | 29.75 | 1100 | J |
| 12. | UNKNOWN PAH | 29.83 | 1300 | J |
| 13. | UNKNOWN PAH | 30.78 | 1100 | J |
| 14. | UNKNOWN PAH | 33.79 | 3900 | J |
| 15. | UNKNOWN PAH | 34.20 | 15000 | J |
| 16. | UNKNOWN | 36.61 | 3000 | J |
| 17. | UNKNOWN PAH | 36.76 | 3600 | J |
| 18. | UNKNOWN | 38.41 | 2500 | J |
| 19. | UNKNOWN PAH | 39.83 | 8700 | J |
| 20. | UNKNOWN PAH | 39.98 | 11000 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-11

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69091

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4674

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 25.0

GPC Cleanup: (Y/N) Y pH: 8.7

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.79 | 75000 | ABJN |
| 2. | UNKNOWN PAH | 24.41 | 6600 | J |
| 3. | UNKNOWN PAH | 25.18 | 3200 | J |
| 4. | UNKNOWN OXY. PAH | 26.92 | 3600 | J |
| 5. | UNKNOWN OXY. PAH | 27.33 | 2300 | J |
| 6. | UNKNOWN PAH | 27.96 | 3900 | J |
| 7. | UNKNOWN PAH | 28.17 | 3700 | J |
| 8. | UNKNOWN PAH | 28.32 | 3000 | J |
| 9. | BENZONAPHTHOTHIOPHENE ISOMER | 29.76 | 2100 | J |
| 10. | UNKNOWN PAH | 29.86 | 3000 | J |
| 11. | UNKNOWN PAH | 30.80 | 2700 | J |
| 12. | UNKNOWN PAH | 31.11 | 2700 | J |
| 13. | UNKNOWN PAH | 33.81 | 14000 | J |
| 14. | UNKNOWN PAH | 34.24 | 52000 | J |
| 15. | UNKNOWN PAH | 35.03 | 11000 | J |
| 16. | UNKNOWN PAH | 37.32 | 7700 | J |
| 17. | UNKNOWN PAH | 37.79 | 16000 | J |
| 18. | UNKNOWN PAH | 39.85 | 18000 | J |
| 19. | UNKNOWN PAH | 40.00 | 17000 | J |
| 20. | UNKNOWN PAH | 40.83 | 23000 | J |



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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-12

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69092

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4675

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 17 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 25.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.81 | 100000 | ABJN |
| 2. | UNKNOWN PAH | 24.26 | 3200 | J |
| 3. | UNKNOWN PAH | 24.41 | 7000 | J |
| 4. | UNKNOWN PAH | 25.18 | 3600 | J |
| 5. | UNKNOWN OXY. PAH | 26.92 | 4000 | J |
| 6. | UNKNOWN OXY. PAH | 27.34 | 3200 | J |
| 7. | UNKNOWN PAH | 27.96 | 4800 | J |
| 8. | UNKNOWN PAH | 28.18 | 4400 | J |
| 9. | UNKNOWN | 29.51 | 3200 | J |
| 10. | BENZONAPHTHOTHIOPHENE ISOMER | 29.76 | 2800 | J |
| 11. | UNKNOWN PAH | 29.86 | 3400 | J |
| 12. | UNKNOWN PAH | 30.80 | 3400 | J |
| 13. | UNKNOWN PAH | 31.80 | 2800 | J |
| 14. | UNKNOWN PAH | 33.80 | 14000 | J |
| 15. | UNKNOWN PAH | 34.23 | 54000 | J |
| 16. | UNKNOWN PAH | 35.04 | 13000 | J |
| 17. | UNKNOWN PAH | 37.78 | 14000 | J |
| 18. | UNKNOWN PAH | 39.84 | 17000 | J |
| 19. | UNKNOWN PAH | 39.98 | 16000 | J |
| 20. | UNKNOWN PAH | 40.75 | 11000 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

S-13

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69093

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4676

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 8 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 8.8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.71 | 60000 | ABJN |
| 2. | UNKNOWN PAH | 24.17 | 10000 | J |
| 3. | UNKNOWN PAH | 24.26 | 12000 | J |
| 4. | UNKNOWN PAH | 24.40 | 29000 | J |
| 5. | UNKNOWN PAH | 25.18 | 11000 | J |
| 6. | UNKNOWN OXY. PAH | 26.92 | 14000 | J |
| 7. | UNKNOWN OXY. PAH | 27.33 | 10000 | J |
| 8. | UNKNOWN PAH | 27.95 | 18000 | J |
| 9. | UNKNOWN PAH | 28.17 | 20000 | J |
| 10. | BENZONAPHTHOTHIOPHENE ISOMER | 29.75 | 7200 | J |
| 11. | UNKNOWN PAH | 29.85 | 11000 | J |
| 12. | UNKNOWN PAH | 30.79 | 8500 | J |
| 13. | UNKNOWN | 32.11 | 8100 | J |
| 14. | UNKNOWN PAH | 33.79 | 23000 | J |
| 15. | UNKNOWN PAH | 34.20 | 83000 | J |
| 16. | UNKNOWN PAH | 35.03 | 23000 | J |
| 17. | UNKNOWN PAH | 37.76 | 22000 | J |
| 18. | UNKNOWN PAH | 39.82 | 23000 | J |
| 19. | UNKNOWN PAH | 39.97 | 34000 | J |
| 20. | UNKNOWN PAH | 40.78 | 25000 | J |



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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

S-14

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69094

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4677

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 12 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 25.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.80 | 100000 | ABJN |
| 2. | UNKNOWN PAH | 24.26 | 7400 | J |
| 3. | UNKNOWN PAH | 24.40 | 14000 | J |
| 4. | UNKNOWN OXY. PAH | 26.94 | 13000 | J |
| 5. | UNKNOWN OXY. PAH | 27.34 | 9200 | J |
| 6. | UNKNOWN PAH | 27.97 | 16000 | J |
| 7. | UNKNONW PAH | 28.18 | 15000 | J |
| 8. | UNKNOWN | 28.33 | 6400 | J |
| 9. | UNKNOWN OXY. PAH | 29.49 | 7200 | J |
| 10. | BENZONAPHTHOTHIOPHENE ISOMER | 29.77 | 9200 | J |
| 11. | UNKNOWN PAH | 29.89 | 9200 | J |
| 12. | UNKNOWN PAH | 30.81 | 9100 | J |
| 13. | UNKNOWN PAH | 33.82 | 12000 | J |
| 14. | UNKNOWN PAH | 34.24 | 43000 | J |
| 15. | UNKNOWN PAH | 35.07 | 12000 | J |
| 16. | UNKNOWN PAH | 37.80 | 11000 | J |
| 17. | UNKNOWN PAH | 39.84 | 13000 | J |
| 18. | UNKNOWN PAH | 40.01 | 23000 | J |
| 19. | UNKNOWN PAH | 40.77 | 8900 | J |
| 20. | UNKNOWN | 42.73 | 11000 | J |

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED-1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 742 SAS No.: SDG No.: S-1

Matrix: (soil/water) SOIL Lab Sample ID: 69095

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E4664

Level: (low/med) LOW Date Received: 08/11/93

% Moisture: 16 decanted: (Y/N) N Date Extracted: 08/16/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/31/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 18

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 1.91 | 160 | J |
| 2. | UNKNOWN | 2.01 | 650 | J |
| 3. | UNKNOWN | 2.09 | 120 | J |
| 4. | UNKNOWN | 2.43 | 140 | J |
| 5. 12-34-22 | Aldol Condensation Product | 4.64 | 99000 | ABJN |
| 6. | UNKNOWN | 13.32 | 140 | J |
| 7. | UNKNOWN | 19.80 | 79 | J |
| 8. | UNKNOWN CARBOXYLIC ACID | 25.28 | 160 | BJ |
| 9. 10-54-4500 | Molecular Sulfur | 25.97 | 400 | JN |
| 10. | UNKNOWN OXY. HYDROCARBON | 28.38 | 590 | J |
| 11. | UNKNOWN OXY. HYDROCARBON | 29.22 | 300 | J |
| 12. | UNKNWON OXY. HYDROCARBON | 31.36 | 260 | J |
| 13. | UNKNOWN OXY. HYDROCARBON | 32.61 | 300 | J |
| 14. | UNKNOWN PAH | 34.19 | 140 | J |
| 15. | UNKNOWN HYDROCARBON | 35.06 | 140 | J |
| 16. | UNKNOWN OXY. HYDROCARBON | 35.32 | 120 | J |
| 17. | UNKNOWN HYDROCARBON | 36.77 | 160 | J |
| 18. | UNKNOWN | 38.49 | 220 | J |



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# SUBSURFACE SOIL DATA

## DATA SUMMARY FORM: VOLATILES 1

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-22-93

**SOIL SAMPLES**
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-11B (4-6') | | VBLKS1 | | VBLKS2 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 8 | | – | | – | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 3 | BJ | 6 | BJ | 8 | BJ | 6 | BJ | 10 | BJ | 11 | B | 5 | J | 9 | J |
| 10 | Acetone | | | 11 | BJ | | | | | 29 | B | 2 | JB | 3 | J | | |
| 10 | Carbon disulfide | | | | | | | | | 3 | J | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | | | | UJ | | | | UJ |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | 21 | | | | 15 | J | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | |

CROL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: VOLATILES 2

Site Name: Union Carbide

Job Number: 9301.121 Sampling Date(s): 9-22-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-11B (4-6') | | VBLKS1 | | VBLKS2 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 8 | | – | | – | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | | | | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | 1 | J | | | | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | 4 | J | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: VOLATILES 1**

Site Name: Union Carbide

Job Number: 9301.121 Sampling Date(s): 9-22-93

**SOIL SAMPLES**
**(µg/kg)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | VBLKS3 | | MSB | | GIN-10B MS | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | | | |
| | % Moisture: | — | | — | | — | | | | | | | | | | | | | |
| | Location: | | | Spike blank | | Matrix spike | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 13 | | 8 | BJ | 10 | BJ | | | | | | | | | | | | |
| 10 | Acetone | 10 | | 7 | BJ | 33 | B | | | | | | | | | | | | |
| 10 | Carbon disulfide | | | | | 2 | J | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | 52 | | 76 | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: VOLATILES 2**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

**SOIL SAMPLES**
**(µg/kg)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | VBLKS3 | | MSB | | GW-10BMS | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | |
| | % Moisture: | — | | — | | — | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | 48 | | 68 | | | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | 55 | | 80 | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | 52 | | 83 | | | | | | | | | | | |
| 10 | Chlorobenzene | | | 51 | | 78 | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 1**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([1 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-11B (4-6') | | SBLKS1 | | SBLKS2 | |
| | Dilution Factor: | 20 | | 200 | | 20 | | 2.0 | | 5.0 | | | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 8 | | – | | – | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | Phenol | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | |
| 330 | 2-Chlorophenol | | | | | | | | | | | | | | | | |
| 330 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 1,4-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 2-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | |
| 330 | 4-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | N-Nitroso-di-n-propylamine | | UJ | | UJ | | | | | | | | | | | | |
| 330 | Hexachloroethane | | | | | | | | | | | | | | | | |
| 330 | Nitrobenzene | | | | | | | | | | | | | | | | |
| 330 | Isophorone | | | | | | | | | | | | | | | | |
| 330 | 2-Nitrophenol | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | | |
| 330 | 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | Naphthalene | 1400 | J | | | | | 230 | J | 240 | J | | | | | | |
| 330 | 4-Chloroaniline | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation L...

**DATA SUMMARY FORM: B N A S 2**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

**SOIL SAMPLES**
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-11B (4-6') | | SBLKS1 | | SBLKS2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 20 | | 200 | | 20 | | 2.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 8 | | – | | – | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobutadiene | | | | | | | | | | | | | | | | |
| 330 | 4-Chloro-3-methylphenol | | | | | | | | | | | | | | | | |
| 330 | 2-Methylnaphthalene | 330 | J | | | | | 63 | J | 162 | J | | | | | | |
| 330 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | |
| 330 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | |
| 800 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | |
| 330 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | |
| 800 | 2-Nitroaniline | | | | | | | | | | | | | | | | |
| 330 | Dimethylphthalate | | | | | | | | | | | | | | | | |
| 330 | Acenaphthylene | 120 | J | | | 250 | J | | | | | | | | | | |
| 330 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 800 | 3-Nitroaniline | | | | | | | | | | | | | | | | |
| 330 | Acenaphthene | 6,500 | J | 58,000 | J | 5,300 | J | 610 | J | 1,200 | J | | | | | | |
| 800 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | |
| 800 | 4-Nitrophenol | | | | | | | | | | | | | | | | |
| 330 | Dibenzofuran | 2,600 | J | 10,000 | J | 1,700 | J | 270 | J | 340 | J | | | | | | |
| 330 | 2,4-Dinitrotoluene | | | | | | | | | | | | | | | | UJ |
| 330 | Diethylphthalate | | | | | | | | | 42 | J | 49 | J | | | | |
| 330 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | |
| 330 | Fluorene | 6,400 | J | 24,000 | J | 5,300 | J | 530 | J | 910 | J | | | | | | |
| 800 | 4-Nitroaniline | | | | | | | | | | | | | | | | |
| 800 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 3**

Site Name: Union Carbide

Job Number: 9301.121 Sampling Date(s): 9-23-93

**SOIL SAMPLES**
**(µg/kg)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-11B (4-6') | | SBLKS1 | | SBLKS2 | |
| | Dilution Factor: | 20 | | 200 | | 20 | | 2.0 | | 5.0 | | 1.0 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 8 | | — | | — | |
| | Location: | | | | | | | | | | | | | | | | |
| 330 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | |
| 330 | 4-Bromophenyl-phenylether | | | | | | | | | | UJ | | UJ | | | | UJ |
| 330 | Hexachlorobenzene | | | | | | | | | | UJ | | UJ | | | | UJ |
| 800 | Pentachlorophenol | | | | | | | | | | | | | | | | |
| 330 | Phenanthrene | 36,000 | | 190,000 | | 34,000 | | 3,200 | | 3,800 | | | | | | 64 | J |
| 330 | Anthracene | 11,000 | | 53,000 | J | 7,400 | J | 840 | | 1,100 | J | | | | | | |
| 330 | Carbazole | 8,200 | J | 37,000 | J | 6,400 | J | 730 | J | 770 | J | | | | | | |
| 330 | Di-n-butylphthalate | 130 | BJ | | | 160 | J | 70 | BJ | 47 | JB | 23 | JB | 26 | J | | |
| 330 | Fluoranthene | 55,000 | | 240,000 | | 64,000 | | 4,200 | | 6,300 | | | | | | 97 | J |
| 330 | Pyrene | 50,000 | J | 210,000 | J | 49,000 | | 5,100 | | 5,400 | | | | | | 110 | J |
| 330 | Butylbenzylphthalate | | | | | | | | | | | | | | | | |
| 330 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | |
| 330 | Benzo(a)anthracene | 36,000 | | 170,000 | | 30,000 | | 2,900 | | 3,300 | | | | | | | |
| 330 | Chrysene | 39,000 | | 150,000 | | 34,000 | | 2,500 | | 3,300 | | | | | | 67 | J |
| 330 | bis(2-Ethylhexyl)phthalate | | | | | | | 100 | J | | | 27 | J | | | | |
| 330 | Di-n-octylphthalate | | | | | | | | | | | | | | | | |
| 330 | Benzo(b)fluoranthene | 51,000 | | 210,000 | J | 40,000 | | 3,800 | J | 5,900 | | | | | UJ | 87 | J |
| 330 | Benzo(k)fluoranthene | 14,000 | | 98,000 | | 12,000 | | 1,400 | | 2,400 | | | | | | 34 | J |
| 330 | Benzo(a)pyrene | 37,000 | | 170,000 | | 25,000 | | 2,700 | | 4,500 | | | | | | 63 | J |
| 330 | Indeno(1,2,3-cd)pyrene | 38,000 | | 110,000 | | 25,000 | | 2,000 | | 2,600 | J | | | | | 40 | J |
| 330 | Dibenz(a,h)anthracene | 7,900 | J | 26,000 | J | 6,300 | J | 470 | J | 700 | J | | | | | - | |
| 330 | Benzo(g,h,i)perylene | 36,000 | | 92,000 | | 24,000 | | 1,600 | | 2,000 | J | | | | | 36 | J |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 1**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([1 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SBLKS3 | | SBLKS4 | | MSB | | GW-10BMS | | GW-10BMSD | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | |
| | % Moisture: | — | | — | | — | | 20 | | 20 | | | | | | | |
| | Location: | | | | | Spike blank | | Matrix spike | | Matrix spike duplicate | | | | | | | |
| 330 | Phenol | | | | | 1,700 | | 2,000 | | 250 | J | | | | | | |
| 330 | bis(2-Chloroethyl)ether | | | | UJ | | | | | | UJ | | | | | | |
| 330 | 2-Chlorophenol | | | | | 1,800 | | 2,500 | | 410 | R | | | | | | |
| 330 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 1,4-Dichlorobenzene | | | | UJ | 1,100 | | 1,200 | | 410 | R | | | | | | |
| 330 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 330 | 2-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | |
| 330 | 4-Methylphenol | | | | | | | | | | | | | | | | |
| 330 | N-Nitroso-di-n-propylamine | | | | | 1,100 | | 1,200 | | 410 | R | | | | | | |
| 330 | Hexachloroethane | | | | | | | | | | | | | | | | |
| 330 | Nitrobenzene | | | | | | | | | | | | | | | | |
| 330 | Isophorone | | | | | | | | | | | | | | | | |
| 330 | 2-Nitrophenol | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | |
| 330 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | |
| 330 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | | |
| 330 | 1,2,4-Trichlorobenzene | | | | | 1,200 | | 1,400 | | 410 | R | | | | | | |
| 330 | Naphthalene | | | | | | | 1,600 | | 4,200 | E | | | | | | |
| 330 | 4-Chloroaniline | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 2**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SBLKS3 | | SBLKS4 | | MSB | | GW-10BMS | | GW-10BMSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | % Moisture: | – | | – | | – | | 20 | | 20 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 330 | Hexachlorobutadiene | | | | | | | | | | | | | | | | | | |
| 330 | 4-Chloro-3-methylphenol | | | | | 1,400 | | 2,400 | | 410 | R | | | | | | | | |
| 330 | 2-Methylnaphthalene | | | | | | | 480 | | 1,700 | J | | | | | | | | |
| 330 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | | | |
| 330 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | | | |
| 800 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | | | |
| 330 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | | | |
| 800 | 2-Nitroaniline | | | | | | | | | | | | | | | | | | |
| 330 | Dimethylphthalate | | | | | | | | | | | | | | | | | | |
| 330 | Acenaphthylene | | | | | | | | | | | | | | | | | | |
| 330 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | | | |
| 800 | 3-Nitroaniline | | | | | | | | | | | | | | | | | | |
| 330 | Acenaphthene | | | | | 1,300 | | 8,400 | E | 4,200 | E | | | | | | | | |
| 800 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | | | |
| 800 | 4-Nitrophenol | | | | | 970 | | 3,500 | E | 1,200 | J | | | | | | | | |
| 330 | Dibenzofuran | | | | | | | 1,300 | | 300 | J | | | | | | | | |
| 330 | 2,4-Dinitrotoluene | | UJ | | | 1,400 | J | 1,500 | J | 1,400 | J | | | | | | | | |
| 330 | Diethylphthalate | | | | | | | | | | | | | | | | | | |
| 330 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | | | |
| 330 | Fluorene | | | | | | | 3,000 | | | | | | | | | | | |
| 800 | 4-Nitroaniline | | UJ | | | | UJ | | | | | | | | | | | | |
| 800 | 4,6-Dinitro-2-methylphenol | | | | | | | | | 1000 | R | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 3**

**SOIL SAMPLES**
**(µg/kg)**

Site Name: Union Carbide

Job Number: 9301.121 Sampling Date(s): 9-23-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | SBLKS3 | | SBLKS4 | | MSB | | GW-10BMS | | GW-10BMSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | % Moisture: | — | | — | | — | | 20 | | 20 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 330 | N-Nitrosodiphenylamine | | | | | | | | | 410 | R | | | | | | | | |
| 330 | 4-Bromophenyl-phenylether | | | | | | | | | 410 | R | | | | | | | | |
| 330 | Hexachlorobenzene | | | | | | | | | 410 | R | | | | | | | | |
| 800 | Pentachlorophenol | | | | | 1,000 | | 1,500 | | 1000 | R | | | | | | | | |
| 330 | Phenanthrene | | | | | | | 5,000 | E | 670 | J | | | | | | | | |
| 330 | Anthracene | | | | | | | 380 | J | 1,900 | J | | | | | | | | |
| 330 | Carbazole | | | | | | | 4,900 | E | 55,000 | E | | | | | | | | |
| 330 | Di-n-butylphthalate | | | | | | | 49 | JB | 410 | R | | | | | | | | |
| 330 | Fluoranthene | | | | | | | 410 | J | 6,800 | E | | | | | | | | |
| 330 | Pyrene | | | | | 1,200 | | 510 | | 2,900 | E | | | | | | | | |
| 330 | Butylbenzylphthalate | | | | | | | | | | UJ | | | | | | | | |
| 330 | 3,3'-Dichlorobenzidine | | | | | | | | | 2,200 | J | | | | | | | | |
| 330 | Benzo(a)anthracene | | | | | | | | | 340 | J | | | | | | | | |
| 330 | Chrysene | | | | | | | | | 360 | J | | | | | | | | |
| 330 | bis(2-Ethylhexyl)phthalate | | | | | | | 62 | J | 130 | J | | | | | | | | |
| 330 | Di-n-octylphthalate | | | | | | | | | | UJ | | | | | | | | |
| 330 | Benzo(b)fluoranthene | | | | | | | 1,900 | J | | | | | | | | | | |
| 330 | Benzo(k)fluoranthene | | | | | | | 4,000 | E | | | | | | | | | | |
| 330 | Benzo(a)pyrene | | | | | | | 3,000 | J | | | | | | | | | | |
| 330 | Indeno(1,2,3-cd)pyrene | | | | | | | 5,400 | E | | | | | | | | | | |
| 330 | Dibenz(a,h)anthracene | | | | | | | 900 | J | | | | | | | | | | |
| 330 | Benzo(g,h,i)perylene | | | | | | | 2,300 | J | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-10B DL | | GW-11B (4-6') | | PBLKS1 | |
| | Dilution Factor: | 5.0 | | 10.0 | | 10.0 | | 5.0 | | 10.0 | | 100 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 20 | | 8 | | – | |
| | Location: | | | | | | | | | | | Dilution | | | | | |
| 1.7 | alpha-BHC | | | | | | | | UJ | | | | | | | | |
| 1.7 | beta-BHC | | | | | | | | | | | | | | | | |
| 1.7 | delta-BHC | | | | | | | | | | | | | | | | |
| 1.7 | gamma-BHC (Lindane) | | | | | | | | | | | | | | | | |
| 1.7 | Heptachlor | | | 25 | J | | | | | | | | | | | | |
| 1.7 | Aldrin | | | | | 57 | J | | | | | | | | | | |
| 1.7 | Heptachlor epoxide | | | 94 | J | 290 | J | 26 | J | | | | | | | | |
| 1.7 | Endosulfan I | | | | | | | | UJ | | | | | | | | |
| 3.3 | Dieldrin | | UJ | 420 | J | 120 | J | | | 300 | J | | UJ | | UJ | | |
| 3.3 | 4,4'-DDE | | | 49 | J | 62 | J | | | | | | | | | | |
| 3.3 | Endrin | | | | | | | | | | | | | | | | |
| 3.3 | Endosulfan II | | | | | | | | | | | | | | | | |
| 3.3 | 4,4'-DDD | | UJ | | UJ | | UJ | | | | UJ | | UJ | | UJ | | |
| 3.3 | Endosulfan sulfate | | | | | | | | | | | | | | | | |
| 3.3 | 4,4'-DDT | | | | | | | | | | | | | | | | |
| 17 | Methoxychlor | | UJ | | UJ | | UJ | | | | UJ | | UJ | | UJ | | UJ |
| 3.3 | Endrin ketone | | UJ | | UJ | | UJ | | | | UJ | | UJ | | UJ | | |
| 3.3 | Endrin aldehyde | | UJ | | UJ | | UJ | | | | UJ | | UJ | | UJ | | UJ |
| 1.7 | alpha-Chlordane | | | 310 | | 73 | J | | | 170 | J | 280 | D | | | | |
| 1.7 | gamma-Chlordane | | | | | | | | | | | | | | | | |
| 170 | Toxaphene | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-10B DL | | GW-11B (4-6') | | PBLKS1 | |
| | Dilution Factor: | 5.0 | | 10.0 | | 10.0 | | 5.0 | | 10.0 | | 100 | | 1.0 | | 1.0 | |
| | % Moisture: | 27 | | 20 | | 35 | | 18 | | 20 | | 20 | | 8 | | — | |
| | Location: | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1016 | | | | | | | | | | | | | | | | |
| 62 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1260 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

SOIL SAMPLES (µg/kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | PBLKS3 | | PBLKS4 | | PBLKS5 | | GW-10BMS | | GW-10BMSD | | MSB1 | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 100 | | 100 | | 1.0 | | | | | | | |
| | % Moisture: | - | | - | | - | | 20 | | 20 | | - | | | | | | | |
| | Location: | | | | | | | Matrix spike | | Matrix spike duplicate | | | | | | | | | |
| 1.7 | alpha-BHC | | | | | | | | | | | | | | | | | | |
| 1.7 | beta-BHC | | | | | | | | | | | | | | | | | | |
| 1.7 | delta-BHC | | | | | | | | | | | 12 | | | | | | | |
| 1.7 | gamma-BHC (Lindane) | | | | | | | | | | | 13 | | | | | | | |
| 1.7 | Heptachlor | | | | | | | | | | | 11 | J | | | | | | |
| 1.7 | Aldrin | | | | | | | | | | | | | | | | | | |
| 1.7 | Heptachlor epoxide | | | | | | | | | | | | | | | | | | |
| 1.7 | Endosulfan I | | | | | | | | | | | | | | | | | | |
| 3.3 | Dieldrin | | | | UJ | | | 420 | J | 470 | J | 27 | J | | | | | | |
| 3.3 | 4,4'-DDE | | | | | | | | | | | 28 | J | | | | | | |
| 3.3 | Endrin | | | | | | | | | | | | | | | | | | |
| 3.3 | Endosulfan II | | | | | | | | | | | | | | | | | | |
| 3.3 | 4,4'-DDD | | | | UJ | | | | UJ | | UJ | | UJ | | | | | | |
| 3.3 | Endosulfan sulfate | | | | | | | | | | | | | | | | | | |
| 3.3 | 4,4'-DDT | | | | | | | | | | | 26 | | | | | | | |
| 17 | Methoxychlor | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | | | | | | |
| 3.3 | Endrin ketone | | | | | | | | UJ | | UJ | | | | | | | | |
| 3.3 | Endrin aldehyde | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | | | | | | |
| 1.7 | alpha-Chlordane | | | | | | | 230 | | 270 | | | | | | | | | |
| 1.7 | gamma-Chlordane | | | | | | | | | | | | | | | | | | |
| 170 | Toxaphene | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23-93

SOIL SAMPLES
(µg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | PBLKS3 | | PBLKS4 | | PBLKS5 | | GW-10BMS | | GW-10BMSD | | MSB1 | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 100 | | 100 | | 1.0 | | | | | |
| | % Moisture: | — | | — | | — | | 20 | | 20 | | — | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1016 | | | | | | | | | | | | | | | | |
| 62 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 33 | Aroclor-1260 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: INORGANICS**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-22, -24, & -29/93

**SOIL SAMPLES**
(mg/kg)

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | B-1.1 (6-8') | | B-2.1 (2-4') | | B-2.2 (6-8') | | GW-8B (14-16') | | GW-10B (2-4') | | GW-11B (4-6') | | GW-10BMS | | GW-10BMSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | | | | | | | | | | | | | | | | |
| | Dilution Factor: | | | | | | | | | | | | | | | | |
| | % Solids: | 73.4 | | 80.0 | | 65.0 | | 81.5 | | 80.0 | | 92.3 | | 80.0 | | 80.0 | |
| | Location: | | | | | | | | | | | | | Matrix spike | | Matrix spike duplicate | |
| 40 | Aluminum | 965 | | 4,650 | | 21,600 | | 7,260 | | 3,650 | | 11,700 | | | | 3,073 | |
| 12 | Antimony | | UJ | | UJ | | UJ | | UJ | | UJ | | UJ | 90 | | | |
| 2 | Arsenic | 4.0 | | 7.7 | | 9.5 | | 1.6 | J | 9.1 | | 4.6 | | 18 | | 10 | |
| 40 | Barium | 25.8 | J | 46.6 | J | 127 | | 38.4 | J | 47.1 | J | 62.2 | | 515 | | 44.7 | |
| 1 | Beryllium | | | 0.32 | J | 1.1 | J | 0.30 | J | 0.47 | J | 0.54 | J | 13 | | 0.36 | |
| 1 | Cadmium | | | 0.94 | J | 1.2 | J | 1.1 | J | 0.67 | | 0.81 | J | 12 | | | |
| 1000 | Calcium | 2,130 | J | 35,400 | J | 5,700 | J | 87,500 | J | 10,200 | J | 51,900 | J | | | 6,903 | |
| 2 | Chromium | 24.8 | | 23.5 | | 65.1 | | 10.7 | | 162 | | 18.0 | | 225 | | 164 | |
| 10 | Cobalt | 5.8 | J | 7.7 | J | 20.9 | | 6.6 | J | 7.0 | J | 13.7 | | 125 | | 7.3 | |
| 5 | Copper | 54.7 | | 119 | | 42.6 | | 15.2 | | 106 | | 23.7 | | 171 | | 99 | |
| 20 | Iron | 10,200 | | 10,100 | | 29,700 | | 10,800 | | 12,700 | | 20,900 | | | | 10,905 | |
| 0.6 | Lead | 35.0 | | 129 | | 54.2 | | 29.7 | | 68.1 | | 5.7 | | 163 | | 71 | |
| 1000 | Magnesium | 695 | J | 10,100 | | 5,080 | | 37,700 | | 3,740 | | 9,470 | | | | 1,670 | |
| 3 | Manganese | 113 | J | 212 | J | 928 | J | 444 | J | 212 | J | 750 | J | 304 | | 178 | |
| 0.2 | Mercury | | | | | | | | | | | | | 0.68 | | | |
| 8 | Nickel | 36.5 | | 23.4 | | 35.2 | | 12.5 | | 46.0 | | 25.0 | | 166 | | 47 | |
| 1000 | Potassium | 379 | B | 877 | J | 2,500 | | 2,050 | | 522 | B | 1,810 | | | | 434 | |
| 1 | Selenium | 0.72 | J | 1.8 | J | 0.9 | J | | UJ | 1.5 | J | | UJ | 2.2 | | 0.52 | |
| 2 | Silver | | | | | | | | | | | | | 10 | | | |
| 1000 | Sodium | | | 250 | J | | | 258 | J | | | 219 | J | | | | |
| 2 | Thallium | | | 1.1 | J | 0.43 | J | | | | | | | 14 | | | |
| 10 | Vanadium | 40.3 | J | 59.5 | J | 46.0 | J | 17.1 | J | 56.2 | J | 28.0 | J | 150 | | 38 | |
| 4 | Zinc | 174 | | 94.1 | | 132 | | 193 | | 92.9 | | 64.6 | | 218 | | 86 | |
| 2 | Cyanide | | UJ | | UJ | | UJ | | UJ | 0.94 | J | 1.1 | J | 21 | | | |

CRQL = Contract Required Quantitation Limit.

DATA SUMMARY FORM: RCRA CHARACTERISTICS

SOIL SAMPLES

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-22-93

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ([100 - % moisture]/100)

| CRQL | Compound | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 | B-1.2 | | | | | | |
| | Dilution Factor: | | | | | | | | |
| | % Moisture: | | | | | | | | |
| | Location: | | | | | | | | |
| | Ignitability | No flash at 140° | No flash at 140° | | | | | | |
| | pH (in standard units) | 8.3 | 7.9 | | | | | | |
| | Total sulfide (in mg/kg) | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

B-2_1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 71980

Sample wt/vol: 5.3 (g/mL) G Lab File ID: D8412

Level: (low/med) LOW Date Received: 09/22/93

% Moisture: not dec. 20 Date Analyzed: 09/25/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 8

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN HYDROCARBON | 21.86 | 11 | J |
| 2. | UNKNOWN ALKYLATED BENZENE | 22.36 | 9 | J |
| 3. | UNKNOWN | 22.67 | 11 | J |
| 4. 49-61-17 | 2,3-Dihydro-1H-Indene | 23.62 | 28 | JN |
| 5. | UNKNOWN HYDROCARBON | 24.63 | 31 | J |
| 6. | UNKNOWN | 25.02 | 15 | J |
| 7. | UNKNOWN | 25.40 | 14 | J |
| 8. | UNKNOWN | 25.94 | 8 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

B-1_1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 71979

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E5433

Level: (low/med) LOW Date Received: 09/22/93

% Moisture: 27 decanted: (Y/N) N Date Extracted: 09/25/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/09/93

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 2.62 | 9100 | J |
| 2. 12-34-22 | Aldol Condensation Product | 3.31 | 250000 | ABJN |
| 3. 13-26-50 | Dibenzothiphene | 21.63 | 2500 | JN |
| 4. | UNKNOWN PAH | 23.62 | 2000 | J |
| 5. | UNKNOWN PAH | 23.75 | 6400 | J |
| 6. | UNKNOWN PAH | 26.24 | 5500 | J |
| 7. | UNKNOWN | 26.69 | 3200 | J |
| 8. | UNKNOWN PAH | 27.30 | 4500 | J |
| 9. | UNKNOWN PAH | 27.51 | 5000 | J |
| 10. | UNKNOWN PAH | 29.18 | 2500 | J |
| 11. | UNKNOWN PAH | 30.10 | 3000 | J |
| 12. | UNKNOWN | 31.44 | 1900 | J |
| 13. | UNKNOWN PAH | 33.10 | 12000 | J |
| 14. | UNKNOWN PAH | 33.51 | 43000 | J |
| 15. | UNKNOWN PAH | 37.08 | 12000 | J |
| 16. | UNKNOWN PAH | 39.06 | 13000 | J |
| 17. | UNKNOWN PAH | 39.21 | 16000 | J |
| 18. | UNKNOWN PAH | 39.92 | 13000 | J |



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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

GW-8B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 71982

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E5445

Level: (low/med) LOW Date Received: 09/22/93

% Moisture: 18 decanted: (Y/N) N Date Extracted: 09/25/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/11/93

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 8.1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 21

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 1.53 | 340 | J |
| 2. | UNKNOWN | 1.62 | 1300 | J |
| 3. | UNKNOWN | 1.68 | 220 | J |
| 4. | UNKNOWN | 1.96 | 200 | J |
| 5. | UNKNOWN | 2.53 | 320 | J |
| 6. 12-34-22 | Aldol Condensation Product | 3.83 | 93000 | ABJN |
| 7. | UNKNOWN | 5.78 | 1600 | BJ |
| 8. | UNKNOWN | 12.68 | 300 | BJ |
| 9. 13-26-50 | Dibenzothiophene | 21.48 | 180 | JN |
| 10. | UNKNOWN PAH | 23.45 | 200 | J |
| 11. | UNKNOWN PAH | 23.60 | 430 | J |
| 12. | UNKNOWN PAH | 26.07 | 530 | J |
| 13. | UNKNOWN | 26.52 | 240 | J |
| 14. | UNKNOWN PAH | 27.14 | 400 | J |
| 15. | UNKNOWN PAH | 27.34 | 570 | J |
| 16. | UNKNOWN PAH | 27.47 | 240 | J |
| 17. | UNKNOWN PAH | 28.90 | 180 | J |
| 18. | UNKNOWN PAH | 29.04 | 260 | J |
| 19. | UNKNOWN PAH | 29.93 | 300 | J |
| 20. | UNKNOWN PAH | 33.31 | 2000 | J |
| 21. | UNKNOWN PAH | 39.03 | 730 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

GW-10B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 72525

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E5588

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: 20 decanted: (Y/N) N Date Extracted: 10/01/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/19/93

Injection Volume: 2.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 13

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.05 | 31000 | ABJN |
| 2. | UNKNOWN | 4.81 | 1200 | BJ |
| 3. | UNKNOWN PAH | 23.04 | 680 | J |
| 4. | UNKNOWN PAH | 25.49 | 1100 | J |
| 5. | UNKNOWN OXY. PAH | 25.93 | 460 | J |
| 6. | UNKNOWN PAH | 26.74 | 1000 | J |
| 7. | UNKNOWN PAH | 28.08 | 460 | J |
| 8. | UNKNOWN PAH | 28.42 | 580 | J |
| 9. | UNKNOWN PAH | 29.31 | 890 | J |
| 10. | UNKNOWN PAH | 32.30 | 1000 | J |
| 11. | UNKNOWN PAH | 32.68 | 3700 | J |
| 12. | UNKNOWN PAH | 38.24 | 910 | J |
| 13. | UNKNOWN PAH | 38.38 | 1100 | J |



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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW-11B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 72264

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B9500

Level: (low/med) LOW Date Received: 09/24/93

% Moisture: 8 decanted: (Y/N) N Date Extracted: 09/27/93

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/18/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 12-34-22 | Aldol Condensation Product | 3.20 | 250000 | ABJN |
| 2. | UNKNOWN | 4.67 | 1100 | BJ |
| 3. | UNKNOWN | 11.16 | 130 | BJ |
| 4. | UNKNOWN ALKANE | 31.18 | 72 | J |
| 5. | UNKNOWN ALKANE | 32.10 | 72 | J |

# GROUNDWATER DATA

**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-1 | | BW-2 | | BW-5 | | BW-6 | | MW-2 | | OW-1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-1 | | BW-2 | | BW-5 | | BW-6 | | MW-2 | | OW-1 | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | 7 | J | | | | | | | | | | | | |
| 10 | Methylene chloride | 4 | BJ | 4 | BJ | 21 | B | 3 | BJ | 4 | BJ | 4 | BJ | | | | |
| 10 | Acetone | 10 | | | | 29 | | 13 | B | 36 | | 9 | J | | | | |
| 10 | Carbon disulfide | 3 | J | 5 | J | | | | | 5 | J | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | 11 | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: VOLATILES 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-1 | | BW-2 | | BW-5 | | BW-6 | | MW-2 | | OW-1 | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | 3 | J | | | | | | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | | | | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

02:YS7900_D4452-TWDS-02/15/94-D1



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**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | STORAGE BLK | | TB-YR1210 | | VBLKW1 | | MSB | | BW-5MS | | BW-5MSD | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | |
| | Location: | | | Trip blank | | | | Matrix spike blank | | Matrix spike | | Matrix spike duplicate | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 5 | BJ | 5 | BJ | 7 | J | 4 | BJ | 5 | BJ | 5 | BJ | | | | | | |
| 10 | Acetone | | | | | | | 5 | J | 14 | | 14 | | | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | 3 | J | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | 45 | | 42 | | 43 | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: VOLATILES 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | STORAGE BLK | | TB-YR1210 | | VBLKW1 | | MSB | | BW-SMS | | BW-SMSD | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | | | 48 | | 48 | | 46 | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | 48 | | 49 | | 47 | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | | | 48 | | 47 | | 47 | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | 49 | | 48 | | 48 | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.871 863 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-3 | | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-3 | | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | 42 | | 70 | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 4 | BJ | 4 | BJ | 5 | BJ | 3 | BJ | 3 | BJ | 3 | BJ | 3 | BJ | 4 | BJ |
| 10 | Acetone | 9 | J | | | | | 18 | | 14 | | 11 | | 5 | J | 8 | J |
| 10 | Carbon disulfide | | | | | | | 3 | J | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | 5 | J | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | 19 | | 350 | E | | | | | 9 | J | | | | | 2 | J |
| 10 | Chloroform | | | 6 | J | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: VOLATILES 2

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-3 | BW-4 | GW-7B | GW-8A | GW-8B | GW-9A | GW-9B | GW-10A |
|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | Location: | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | |
| 10 | Trichloroethene | | 270 E | | | 13 | | | |
| 10 | Dibromochloromethane | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | |
| 10 | Benzene | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | |
| 10 | Bromoform | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | |
| 10 | Tetrachloroethene | | 110 | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | |
| 10 | Toluene | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | |
| 10 | Styrene | | | | | | | | |
| 10 | Total xylenes | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

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**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.871 863 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | GW-10B | | GW-11B | | MW-1 | | MW-3 | | OW-2 | | WW-1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-10B | | GW-11B | | MW-1 | | MW-3 | | OW-2 | | WW-1 | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 4 | BJ | 3 | BJ | 3 | BJ | 3 | BJ | 3 | BJ | 3 | BJ | | | | |
| 10 | Acetone | 7 | J | | | 15 | | 10 | | | | 17 | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | 1 | J | 5 | J | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | 1 | J | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: VOLATILES 2**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

**WATER SAMPLES**
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-10B | | GW-11B | | MW-1 | | MW-3 | | OW-2 | | WW-1 | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | | | | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | | | | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | 2 | J | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.

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## DATA SUMMARY FORM: VOLATILES 1

Site Name: Union Carbide

Job Number: 9302.871 863 Sampling Date(s): 12-8 & 12-9-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | Sample Number: STORAGE BLK | | TB-YR912893 | | TB-YR912993 | | VBLKW1 | | VBLKW2 | | MSB | | GW-7BMS | | GW-7BMSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | Trip blank | | Trip blank | | | | | | Matrix spike blank | | Matrix spike | | Matrix spike duplicate | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | 4 | BJ | 4 | BJ | 3 | BJ | 13 | | 6 | J | 14 | B | 12 | B | 12 | B |
| 10 | Acetone | | | | | | | | | | | | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | 1 | J | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | | | 49 | | 46 | | 48 | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | Chloroform | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: VOLATILES 2

Site Name: Union Carbide

Job Number: 9302.863.871 Sampling Date(s): 12-8 & 12-9-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | STORAGE BLK | TB-YR912893 | TB-YR912993 | VBLKW1 | VBLKW2 | MSB | GW-7BMS | GW-7BMSD |
|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | Location: | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | |
| 10 | Trichloroethene | | | | | | 48 | 46 | 48 |
| 10 | Dibromochloromethane | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | |
| 10 | Benzene | | | | | | 49 | 47 | 49 |
| 10 | trans-1,3-Dichloropropene | | | | | | | | |
| 10 | Bromoform | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | |
| 10 | Toluene | | | | | | 50 | 47 | 49 |
| 10 | Chlorobenzene | | | | | | 49 | 46 | 49 |
| 10 | Ethylbenzene | | | | | | | | |
| 10 | Styrene | | | | | | | | |
| 10 | Total xylenes | | | | | | | | |

CRQL = Contract Required Quantitation Limit.





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**DATA SUMMARY FORM: B N A S 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-2 | | MW-1 | | SBLKW1 | | MSB | | BW-2MS | | BW-2MSD | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | |
| | Location: | | | | | | | Matrix spike blank | | Matrix spike | | Matrix spike blank | | | | | | | |
| 10 | Phenol | | | | UJ | | | 20 | | 71 | J | 54 | J | | | | | | |
| 10 | bis(2-Chloroethyl)ether | | UJ | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | 2-Chlorophenol | | | | UJ | | | 29 | | 58 | J | 51 | J | | | | | | |
| 10 | 1,3-Dichlorobenzene | | UJ | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | 1,4-Dichlorobenzene | | UJ | | UJ | | | 19 | | 42 | J | 38 | J | | | | | | |
| 10 | 1,2-Dichlorobenzene | | UJ | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | 2-Methylphenol | | | | UJ | | | | | | | | | | | | | | |
| 10 | 2,2'-oxybis(1-chloropropane) | | UJ | | UJ | | | | | | | | | | | | | | |
| 10 | 4-Methylphenol | | | | UJ | | | | | | | | | | | | | | |
| 10 | N-Nitroso-di-n-propylamine | | UJ | | UJ | | | 18 | | 66 | J | 51 | J | | | | | | |
| 10 | Hexachloroethane | | UJ | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | Nitrobenzene | | UJ | | UJ | | | | | | | | | | | | | | |
| 10 | Isophorone | | UJ | | UJ | | | | | | | | | | | | | | |
| 10 | 2-Nitrophenol | | | | UJ | | | | | | | | | | | | | | |
| 10 | 2,4-Dimethylphenol | | | | UJ | | | | | | | | | | | | | | |
| 10 | bis(2-Chloroethoxy)methane | | UJ | | UJ | | | | | | | | | | | | | | |
| 10 | 2,4-Dichlorophenol | | | | UJ | | | | | | | | | | | | | | |
| 10 | 1,2,4-Trichlorobenzene | | UJ | | UJ | | | 20 | | 46 | J | 40 | J | | | | | | |
| 10 | Naphthalene | | UJ | | UJ | | | | | | UJ | | UJ | | | | | | |
| 10 | 4-Chloroaniline | | UJ | | | | | | | | UJ | | UJ | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-2 | | MW-1 | | SBLKW1 | | MSB | | BW-2MS | | BW-2MSD | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobutadiene | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | 4-Chloro-3-methylphenol | | | | UJ | | | 25 | | 120 | E | 93 | E | | | | |
| 10 | 2-Methylnaphthalene | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | Hexachlorocyclopentadiene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | 2,4,6-Trichlorophenol | | | | UJ | | | | | | | | | | | | |
| 25 | 2,4,5-Trichlorophenol | | | | UJ | | | | | | | | | | | | |
| 10 | 2-Chloronaphthalene | | UJ | | UJ | | | | | | | | | | | | |
| 25 | 2-Nitroaniline | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Dimethylphthalate | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Acenaphthylene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | 2,6-Dinitrotoluene | | UJ | | UJ | | | | | | | | | | | | |
| 25 | 3-Nitroaniline | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Acenaphthene | | UJ | | J | | | 21 | | 59 | J | 47 | J | | | | |
| 25 | 2,4-Dinitrophenol | | | | UJ | | | | | | UJ | | UJ | | | | |
| 25 | 4-Nitrophenol | | | | UJ | | | 16 | J | 110 | E | 79 | J | | | | |
| 10 | Dibenzofuran | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | 2,4-Dinitrotoluene | | UJ | | UJ | | UJ | 17 | J | 69 | J | 57 | J | | | | |
| 10 | Diethylphthalate | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | 4-Chlorophenyl-phenylether | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Fluorene | | UJ | | UJ | | | | | | | | | | | | |
| 25 | 4-Nitroaniline | | UJ | | UJ | | | | | | | | | | | | |
| 25 | 4,6-Dinitro-2-methylphenol | | | | UJ | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 3**

**WATER SAMPLES**
**(µg/L)**

**To calculate sample quantitation limit:**
**(CRQL * Dilution Factor)**

**Site Name:** Union Carbide

**Job Number:** 9302.887 **Sampling Date(s):** 12-10-93

| CRQL | Compound | BW-2 | | MW-1 | | SBLKW1 | | MSB | | BW-2MS | | BW-2MSD | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | N-Nitrosodiphenylamine | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | 4-Bromophenyl-phenylether | | UJ | | UJ | | | | | | ⊥ | | ⊥ | | | | |
| 10 | Hexachlorobenzene | | UJ | | UJ | | | | | | | | | | | | |
| 25 | Pentachlorophenol | | | | UJ | | | 25 | | 120 | E | 100 | E | | | | |
| 10 | Phenanthrene | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | Anthracene | | UJ | | UJ | | | | | | ⊥ | | ⊥ | | | | |
| 10 | Carbazole | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Di-n-butylphthalate | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Fluoranthene | | UJ | | UJ | | | | | | ⊥ | | ⊥ | | | | |
| 10 | Pyrene | | UJ | | UJ | | | 22 | | 62 | J | 62 | J | | | | |
| 10 | Butylbenzylphthalate | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | 3,3'-Dichlorobenzidine | | UJ | | UJ | | | | | | ⊥ | | ⊥ | | | | |
| 10 | Benzo(a)anthracene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Chrysene | | UJ | | UJ | | | | | | ⊥ | | ⊥ | | | | |
| 10 | bis(2-Ethylhexyl)phthalate | 1 | J | 1 | J | | | | | .3 | J | 4 | J | | | | |
| 10 | Di-n-octylphthalate | | UJ | | UJ | | | | | | UJ | | UJ | | | | |
| 10 | Benzo(b)fluoranthene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Benzo(k)fluoranthene | | UJ | | UJ | | UJ | | UJ | | | | | | | | |
| 10 | Benzo(a)pyrene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Indeno(1,2,3-cd)pyrene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Dibenz(a,h)anthracene | | UJ | | UJ | | | | | | | | | | | | |
| 10 | Benzo(g,h,i)perylene | | UJ | | UJ | | | | | | ⊥ | | ⊥ | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863.871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Phenol | | | | | | | | | | | | | | | | |
| 10 | bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | |
| 10 | 2-Chlorophenol | | | | | | | | | | | | | | | | |
| 10 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 10 | 1,4-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | |
| 10 | 2-Methylphenol | | | | | | | | | | | | | | | | |
| 10 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | |
| 10 | 4-Methylphenol | | | | | | | | | | | | | | | | |
| 10 | N-Nitroso-di-n-propylamine | | | | | | | | | | | | | | | | |
| 10 | Hexachloroethane | | | | | | | | | | | | | | | | |
| 10 | Nitrobenzene | | | | | | | | | | | | | | | | |
| 10 | Isophorone | | | | | | | | | | | | | | | | |
| 10 | 2-Nitrophenol | | | | | | | | | | | | | | | | |
| 10 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | |
| 10 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | |
| 10 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | | |
| 10 | 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | | |
| 10 | Naphthalene | | | | | | | | | | | | | | | | |
| 10 | 4-Chloroaniline | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.

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**DATA SUMMARY FORM: B N A S 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobutadiene | 20 | | | | | | | | | | | | | | | |
| 10 | 4-Chloro-3-methylphenol | | | | | | | | | | | | | | | | |
| 10 | 2-Methylnaphthalene | | | | | | | | | | | | | | | | |
| 10 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | |
| 10 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | |
| 25 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | |
| 10 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | |
| 25 | 2-Nitroaniline | | | | | | | | | | | | | | | | |
| 10 | Dimethylphthalate | | | | | | | | | | | | | | | | |
| 10 | Acenaphthylene | | | | | | | | | | | | | | UJ | | |
| 10 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 25 | 3-Nitroaniline | | | | | | | | | | | | | | | | |
| 10 | Acenaphthene | | | | | | | | | | | | | | | | |
| 25 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | |
| 25 | 4-Nitrophenol | | | | | | | | | | | | | | | | |
| 10 | Dibenzofuran | | | | | | | | | | | | | | UJ | | UJ |
| 10 | 2,4-Dinitrotoluene | | UJ | | | | | | | | | | | | | | |
| 10 | Diethylphthalate | 1 | J | | | | | | | | | | | | | | |
| 10 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | |
| 10 | Fluorene | | | | | | | | | | | | | | | | |
| 25 | 4-Nitroaniline | | | | | | | | | | | | | | | | |
| 25 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 3**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | |
| 10 | 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobenzene | | | | | | | | | | | | | | UJ | | |
| 25 | Pentachlorophenol | | | | | | | | | | | | | | | | |
| 10 | Phenanthrene | | | | | | | | | | | | | | | | |
| 10 | Anthracene | | | | | | | | | | | | | | | | |
| 10 | Carbazole | | | | | | | | | | | | | | | | |
| 10 | Di-n-butylphthalate | | | | | | | | | | | | | | | | |
| 10 | Fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Pyrene | | | | | | | | | | | | | | | | |
| 10 | Butylbenzylphthalate | | | | | | | | | | | | | | | | |
| 10 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | |
| 10 | Benzo(a)anthracene | | | | | | | | | | | | | | | | |
| 10 | Chrysene | | | | | | | | | | | | | | | | |
| 10 | bis(2-Ethylhexyl)phthalate | | | 2 | J | | | 4 | J | 1 | J | 1 | J | 2 | J | 3 | J |
| 10 | Di-n-octylphthalate | | | | | | | | | | | | | | | | |
| 10 | Benzo(b)fluoranthene | | | | | | | | | | | | | | | | UJ |
| 10 | Benzo(k)fluoranthene | | UJ | | | | | | | | | | | | | | |
| 10 | Benzo(a)pyrene | | | | | | | | | | | | | | | | |
| 10 | Indeno(1,2,3-cd)pyrene | | | | | | | | | | | | | | | | |
| 10 | Dibenz(a,h)anthracene | | | | | | | | | | | | | | | | |
| 10 | Benzo(g,h,i)perylene | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.

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**DATA SUMMARY FORM: B N A S 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863.871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | GW-11B | | GW-11BRE | | SBLKW1 | | SBLKW2 | | SBLKW3 | | MSB | | GW-7BMS | | GW-7BMSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-11B | | GW-11BRE | | SBLKW1 | | SBLKW2 | | SBLKW3 | | MSB | | GW-7BMS | | GW-7BMSD | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | More appropriate | | | | | | | | Matrix spike blank | | Matrix spike | | Matrix spike duplicate | |
| 10 | Phenol | | R | | R | | | | | | R | 41 | | 40 | | 25 | |
| 10 | bis(2-Chloroethyl)ether | | R | | | | | | | | | | | | | | |
| 10 | 2-Chlorophenol | | R | | | | | | | | | 50 | | 65 | | 53 | |
| 10 | 1,3-Dichlorobenzene | | R | | | | | | | | | | | | | | |
| 10 | 1,4-Dichlorobenzene | | R | | | | | | | | | 32 | | 36 | J | 31 | |
| 10 | 1,2-Dichlorobenzene | | R | | | | | | | | | | | | | | |
| 10 | 2-Methylphenol | | R | | | | | | | | | | | | | | |
| 10 | 2,2'-oxybis(1-chloropropane) | | R | | | | | | | | | | | | | | |
| 10 | 4-Methylphenol | | R | | | | | | | | | | | | | | |
| 10 | N-Nitroso-di-n-propylamine | | R | | | | | | | | | 35 | | 10 | R | 39 | |
| 10 | Hexachloroethane | | R | | | | | | | | | | | | | | |
| 10 | Nitrobenzene | | R | | | | | | | | | | | | | | |
| 10 | Isophorone | | R | | | | | | | | | | | | | | |
| 10 | 2-Nitrophenol | | R | | | | | | | | | | | | | | |
| 10 | 2,4-Dimethylphenol | | R | | | | | | | | | | | | | | |
| 10 | bis(2-Chloroethoxy)methane | | R | | | | | | | | | | | | | | |
| 10 | 2,4-Dichlorophenol | | R | | | | | | | | | | | | | | |
| 10 | 1,2,4-Trichlorobenzene | | R | | | | | | | | | 34 | | 39 | J | 34 | |
| 10 | Naphthalene | | R | | | | | | | | | | | | | | |
| 10 | 4-Chloroaniline | | R | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: B N A S 2**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | GW-11B | | GW-11BRE | | SBLKW1 | | SBLKW2 | | SBLKW3 | | MSB | | GW-7BMS | | GW-7BMSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-11B | | GW-11BRE | | SBLKW1 | | SBLKW2 | | SBLKW3 | | MSB | | GW-7BMS | | GW-7BMSD | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobutadiene | | R | | R | | | | | | R | | | | | | |
| 10 | 4-Chloro-3-methylphenol | | R | | | | | | | | | 51 | | 40 | | 8 | J |
| 10 | 2-Methylnaphthalene | | R | | | | | | | | | | | | | | |
| 10 | Hexachlorocyclopentadiene | | R | | | | | | | | | | | | UJ | | |
| 10 | 2,4,6-Trichlorophenol | | R | | | | | | | | | | | | | | |
| 25 | 2,4,5-Trichlorophenol | | R | | | | | | | | | | | | | | |
| 10 | 2-Chloronaphthalene | | R | | | | | | | | | | | | | | |
| 25 | 2-Nitroaniline | | R | | | | | | | | | | | | | | |
| 10 | Dimethylphthalate | | R | | | | | | | | | | | | | | |
| 10 | Acenaphthylene | | R | | | | | | | | | | | | | | |
| 10 | 2,6-Dinitrotoluene | | R | | | | | | | | | | | | | | |
| 25 | 3-Nitroaniline | | R | | | | | | | | | | | | | | |
| 10 | Acenaphthene | | R | | | | | | | | | 36 | | 62 | J | 38 | |
| 25 | 2,4-Dinitrophenol | | R | | | | | | | | | | | | UJ | | |
| 25 | 4-Nitrophenol | | R | | | | | | | | | 41 | | 95 | E | 21 | J |
| 10 | Dibenzofuran | | R | | | | | | | | | | | | UJ | | |
| 10 | 2,4-Dinitrotoluene | | R | | | | | | UJ | | | 35 | | 72 | J | 36 | |
| 10 | Diethylphthalate | | R | | | | | | | | | | | 1 | J | | |
| 10 | 4-Chlorophenyl-phenylether | | R | | | | | | | | | | | | UJ | | |
| 10 | Fluorene | | R | | | | | | | | | | | | UJ | | |
| 25 | 4-Nitroaniline | | R | | | | | | | | | | | | UJ | | |
| 25 | 4,6-Dinitro-2-methylphenol | | R | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

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**DATA SUMMARY FORM: B N A S 3**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | GW-11B | | GW-11BRE | | SBLKW1 | | SBLKW2 | | SBLKW3 | | MSB | | GW-7BMS | | GW-7BMSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-11B | | GW-11BRE | | SBLKW1 | | SBLKW2 | | SBLKW3 | | MSB | | GW-7BMS | | GW-7BMSD | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | N-Nitrosodiphenylamine | | R | | R | | | | | | R | | | | | | |
| 10 | 4-Bromophenyl-phenylether | | R | | | | | | | | | | | | | | |
| 10 | Hexachlorobenzene | | R | | | | | | | | | | | | | | |
| 25 | Pentachlorophenol | | R | | | | | | UJ | | | 56 | | 74 | | 25 | |
| 10 | Phenanthrene | | R | | | | | | | | | | | | | | |
| 10 | Anthracene | | R | | | | | | | | | | | | | | |
| 10 | Carbazole | | R | | | | | | | | | | | | | | |
| 10 | Di-n-butylphthalate | | R | | | | | | | | | | | | | | |
| 10 | Fluoranthene | | R | | | | | | | | | 36 | | 34 | J | 40 | |
| 10 | Pyrene | | R | | | | | | | | | | | | UJ | | |
| 10 | Butylbenzylphthalate | | R | | | | | | | | | | | | | | |
| 10 | 3,3'-Dichlorobenzidine | | R | | | | | | | | | | | | | | |
| 10 | Benzo(a)anthracene | | R | | | | | | | | | | | | | | |
| 10 | Chrysene | | R | | | | | | | | | 1 | J | 2 | J | 2 | J |
| 10 | bis(2-Ethylhexyl)phthalate | | R | | | | | | | | | | | | R | | |
| 10 | Di-n-octylphthalate | | R | | | | | | | | | | | | | | |
| 10 | Benzo(b)fluoranthene | | R | | | | | | | | | | | | | | |
| 10 | Benzo(k)fluoranthene | | R | | | | | | | | | | | | | | |
| 10 | Benzo(a)pyrene | | R | | | | | | | | | | | | | | |
| 10 | Indeno(1,2,3-cd)pyrene | | R | | | | | | | | | | | | | | |
| 10 | Dibenz(a,h)anthracene | | R | | | | | | | | | | | | | | |
| 10 | Benzo(g,h,i)perylene | | R | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

WATER SAMPLES (µg/L)

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
| | Dilution Factor: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| | Location: | | | | | | | | | | | | | | | | |
| 0.05 | alpha-BHC | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | beta-BHC | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | delta-BHC | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | gamma-BHC (Lindane) | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | Heptachlor | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | Aldrin | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | Heptachlor epoxide | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | Endosulfan I | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | Dieldrin | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | 4,4'-DDE | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | Endrin | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | Endosulfan II | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | 4,4'-DDD | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | Endosulfan sulfate | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | 4,4'-DDT | | | | U | | U | | U | | U | | U | | U | | U |
| 0.50 | Methoxychlor | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | Endrin ketone | | | | U | | U | | U | | U | | U | | U | | U |
| 0.10 | Endrin aldehyde | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | alpha-Chlordane | | | | U | | U | | U | | U | | U | | U | | U |
| 0.05 | gamma-Chlordane | | | | U | | U | | U | | U | | U | | U | | U |
| 5.0 | Toxaphene | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.





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**DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)**

Site Name: Union Carbide

Job Number: 9302.863 871 Sampling Date(s): 12-8 & 12-9-93

**WATER SAMPLES**
**(µg/L)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-4 | | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10A | | GW-10B | |
| | Dilution Factor: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| | Location: | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1016 | | | | | | | | | | | | | | | | |
| 2.0 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1260 | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9302.871 863 Sampling Date(s): 12-8 & 12-9-93

WATER SAMPLES (µg/L)

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | GW-11B | | PBLKW1 | | GW-7BMS | | GW-7BMSD | | MSB1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.00 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | Matrix spike | | Matrix spike duplicate | | Matrix spike blank | |
| 0.05 | alpha-BHC | | | | | | | | | | UJ |
| 0.05 | beta-BHC | | | | | | | | | | J |
| 0.05 | delta-BHC | | | | | | | | | | |
| 0.05 | gamma-BHC (Lindane) | | | | | 0.34 | | 0.36 | | 0.29 | J |
| 0.05 | Heptachlor | | | | | 0.32 | | 0.35 | | 0.30 | J |
| 0.05 | Aldrin | | | | | 0.32 | | 0.34 | | 0.29 | J |
| 0.05 | Heptachlor epoxide | | | | | | | | | | UJ |
| 0.05 | Endosulfan I | | | | | | | | | | UJ |
| 0.10 | Dieldrin | | UJ | | | 0.75 | | 0.79 | | 0.67 | J |
| 0.10 | 4,4'-DDE | | | | | | | | | | UJ |
| 0.10 | Endrin | | | | | 0.79 | | 0.84 | | 0.64 | J |
| 0.10 | Endosulfan II | | | | | | | | | | UJ |
| 0.10 | 4,4'-DDD | | UJ | | | | | | | | J |
| 0.10 | Endosulfan sulfate | | | | | | | | | | |
| 0.10 | 4,4'-DDT | | | | | 0.79 | | 0.81 | | 0.79 | J |
| 0.50 | Methoxychlor | | UJ | | UJ | | | | | | UJ |
| 0.10 | Endrin ketone | | UJ | | | | | | | | J |
| 0.10 | Endrin aldehyde | | UJ | | UJ | | | | | | J |
| 0.05 | alpha-Chlordane | | | | | | | | | | J |
| 0.05 | gamma-Chlordane | | | | | | | | | | J |
| 5.0 | Toxaphene | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)**

Site Name: Union Carbide

Job Number: 9302.871 863 Sampling Date(s): 12-8 & 12-9-93

**WATER SAMPLES**
**(µg/L)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-11B | | PBLKW1 | | GW-7BMS | | GW-7BMSD | | MSB1 | | | | | | | | | |
| | Dilution Factor: | 1.00 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1016 | | | | | | | | | | UJ | | | | | | | | |
| 2.0 | Aroclor-1221 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1232 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1242 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1248 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1254 | | | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1260 | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

WATER SAMPLES (µg/L)

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | BW-2 | | PBLKW1 | | BW-2 MS | | BW-2 MSD | | MSB1 | | MW-1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.00 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | Matrix spike | | Matrix spike duplicate | | Matrix spike blank | | | | | | | |
| 0.05 | alpha-BHC | | UJ | | | | UJ | | UJ | | | | | | | | |
| 0.05 | beta-BHC | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |
| 0.05 | delta-BHC | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |
| 0.05 | gamma-BHC (Lindane) | | UJ | | | 0.32 | J | 0.36 | J | 0.37 | | | | | | | |
| 0.05 | Heptachlor | | UJ | | | 0.29 | J | 0.31 | J | 0.32 | | | | | | | |
| 0.05 | Aldrin | | UJ | | | 0.27 | J | 0.28 | J | 0.30 | | | | | | | |
| 0.05 | Heptachlor epoxide | | UJ | | | | UJ | | UJ | | | | | | | | |
| 0.05 | Endosulfan I | | UJ | | | | UJ | | UJ | | | | | | | | |
| 0.10 | Dieldrin | | UJ | | | 0.76 | J | 0.73 | J | 0.74 | | | | | | | |
| 0.10 | 4,4'-DDE | | UJ | | | | UJ | | UJ | | | | | | | | |
| 0.10 | Endrin | | UJ | | | 0.74 | J | 0.66 | J | 0.76 | | | | | | | |
| 0.10 | Endosulfan II | | UJ | | | | UJ | | UJ | | | | | | | | |
| 0.10 | 4,4'-DDD | | UJ | | | | ⊥ | | UJ | | | | | | | | |
| 0.10 | Endosulfan sulfate | | UJ | | | | ⊥ | | UJ | | | | | | | | |
| 0.10 | 4,4'-DDT | | UJ | | | 0.85 | J | 0.84 | J | 0.86 | | | | | | | |
| 0.50 | Methoxychlor | | UJ | | | | UJ | | UJ | | | | | | | | |
| 0.10 | Endrin ketone | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |
| 0.10 | Endrin aldehyde | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |
| 0.05 | alpha-Chlordane | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |
| 0.05 | gamma-Chlordane | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |
| 5.0 | Toxaphene | | UJ | | | | ⊥ | | ⊥ | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)**

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

**WATER SAMPLES**
**(µg/L)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-2 | | PBLKW1 | | BW-2MS | | BW-2MSD | | MSB1 | | MW-1 | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1016 | | UJ | | | | UJ | | UJ | | | | | | | | |
| 2.0 | Aroclor-1221 | | UJ | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1232 | | UJ | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1242 | | UJ | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1248 | | UJ | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1254 | | UJ | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1260 | | UJ | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: INORGANICS

Site Name: Union Carbide

Job Number: 9302.887 Sampling Date(s): 12-10-93

WATER SAMPLES
(µg/L)

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | MW-1 | | BW-2 | | GW-10A | | BW-4 | |
|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | MW-1 | | BW-2 | | GW-10A | | BW-4 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | | | | | | | | |
| 200 | Aluminum | 159 | J | 1,330 | J | 413 | | 188 | J |
| 60 | Antimony | | | | UJ | | | | |
| 10 | Arsenic | 2.0 | J | 4.6 | J | 1.5 | J | 4.4 | J |
| 200 | Barium | 91.6 | J | 292 | J | 82.5 | J | 375 | |
| 5 | Beryllium | | | | UJ | | | | |
| 5 | Cadmium | | | 5.2 | J | | | 2.6 | J |
| 5000 | Calcium | 33,900 | | 273,000 | J | 135,000 | | 97,900 | |
| 10 | Chromium | 60.9 | | 5.5 | J | | | | |
| 50 | Cobalt | | | | UJ | | | | |
| 25 | Copper | 71.9 | | 4.5 | J | | | | |
| 100 | Iron | 9,840 | | 10,700 | J | 1,040 | | 3,730 | |
| 3 | Lead | 12.4 | | 603 | J | 11.5 | | 18.7 | |
| 5000 | Magnesium | 84,400 | | 132,000 | J | 55,700 | | 70,200 | |
| 15 | Manganese | 114 | J | 418 | J | 149 | J | 139 | J |
| 0.2 | Mercury | | | | UJ | | | | |
| 40 | Nickel | 22.0 | J | 20.5 | J | 4.7 | J | 8.8 | J |
| 5000 | Potassium | 39,400 | | 7,420 | J | 145,000 | | 19,500 | |
| 5 | Selenium | | | | UJ | | | | |
| 10 | Silver | | | | UJ | | | | |
| 5000 | Sodium | 91,600 | | 198,000 | J | 52,800 | | 65,800 | |
| 10 | Thallium | | | | UJ | | | | |
| 50 | Vanadium | | | | UJ | | | | |
| 20 | Zinc | 249 | J | 18,500 | J | 43.1 | B | 3,200 | J |
| 10 | Cyanide | | | | UJ | * | | * | |

CRQL = Contract Required Quantitation Limit.

* Cyanide analysis for GW-10A and BW-4 performed as part of data pack 9302.871

02:Y57900_D4452-TWD6-02/15/94-D1

**DATA SUMMARY FORM: INORGANICS**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.871 Sampling Date(s): 12-8 & 12-9-93

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10B | | GW-11B | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | GW-7B | | GW-8A | | GW-8B | | GW-9A | | GW-9B | | GW-10B | | GW-11B | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 200 | Aluminum | 316 | | 233 | | 107 | J | 252 | | 233 | | 138 | J | 306 | | | |
| 60 | Antimony | | | | | | | | | | | | | | | | |
| 10 | Arsenic | 9.2 | J | 4.5 | J | 1.4 | J | | | | | | | 1.0 | J | | |
| 200 | Barium | 88.4 | J | 279 | | 34.0 | J | 30.7 | | 221 | | 107 | J | 63.0 | J | | |
| 5 | Beryllium | | | | | | | | | | | | | | | | |
| 5 | Cadmium | | | | | | | | | | | | | | | | |
| 5000 | Calcium | 97,900 | J | 167,000 | | 61,100 | J | 137,000 | | 291,000 | J | 123,000 | J | 115,000 | J | | |
| 10 | Chromium | | | | | | | | | | | | | | | | |
| 50 | Cobalt | | | | | | | | | | | | | | | | |
| 25 | Copper | | | 4.6 | B | 8.2 | B | 3.6 | B | | | | | 4.0 | B | | |
| 100 | Iron | 1,120 | | 9,350 | | 32.1 | B | 374 | | 253 | | 16.0 | | 431 | | | |
| 3 | Lead | 8.7 | | 1.4 | J | 1.5 | J | 1.3 | | 1.3 | J | 1.2 | J | 50.8 | | | |
| 5000 | Magnesium | 43,800 | | 99,500 | | 71,900 | | 49,600 | | 114,000 | | 49,800 | | 57,500 | | | |
| 15 | Manganese | 85.2 | | 456 | | 12.3 | J | 111 | | 64.9 | | | | 229 | | | |
| 0.2 | Mercury | | | | | | | | | | | | | | | | |
| 40 | Nickel | | | 6.1 | J | | | | | | | | | | | | |
| 5000 | Potassium | | | 26,600 | | 17,200 | | 8,090 | | 4,750 | J | 10,500 | | 2,250 | J | | |
| 5 | Selenium | | | | | | | | | | | | | | | | |
| 10 | Silver | | | | | | | | | | | | | | | | |
| 5000 | Sodium | 14,900 | | 188,000 | | 106,000 | | 14,600 | | 214,000 | | 55,200 | | 51,300 | | | |
| 10 | Thallium | | | | | | | | | | | | | | | | |
| 50 | Vanadium | | | | | | | | | | | | | | | | |
| 20 | Zinc | 148 | | 44.6 | | 52.7 | | 11.5 | | 5.5 | J | 9.8 | J | 380 | | | |
| 10 | Cyanide | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

## DATA SUMMARY FORM: INORGANICS

Site Name: Union Carbide

Job Number: 9302.871 Sampling Date(s): 12-8 & 12-9-93

WATER SAMPLES (µg/L)

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | GW-7BMS | GW-7BMSD |
|---|---|---|---|
| | Sample Number: | GW-7BMS | GW-7BMSD |
| | Dilution Factor: | 1.0 | 1.0 |
| | Location: | Matrix spike | Matrix spike duplicate |
| 200 | Aluminum | | 321 |
| 60 | Antimony | 535 | |
| 10 | Arsenic | 53 | 9.5 |
| 200 | Barium | 2,280 | 90 |
| 5 | Beryllium | 54 | |
| 5 | Cadmium | 54 | |
| 5000 | Calcium | | 97,500 |
| 10 | Chromium | 215 | |
| 50 | Cobalt | 502 | |
| 25 | Copper | 260 | |
| 100 | Iron | | 1,120 |
| 3 | Lead | 29 | 8.9 |
| 5000 | Magnesium | | 43,600 |
| 15 | Manganese | 610 | 85 |
| 0.2 | Mercury | 1.1 | |
| 40 | Nickel | 502 | |
| 5000 | Potassium | | 1,130 |
| 5 | Selenium | 8.9 | |
| 10 | Silver | 52 | |
| 5000 | Sodium | | 14,630 |
| 10 | Thallium | 43 | |
| 50 | Vanadium | 490 | |
| 20 | Zinc | 680 | 148 |
| 10 | Cyanide | 420 | |

CRQL = Contract Required Quantitation Limit.

02:YS7900_D4452-TWDS-02/15/94-D1



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**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9402.278 Sampling Date(s): 10-18-94

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | Sample Number: BW-2 | | Sample Number: BW-3 | | Sample Number: BW-4 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 2.0 | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | 7 | J | 52 | | | | | | | | | | | |
| 10 | Chloroethane | 8 | J | | | | | | | | | | | | | | |
| 10 | Methylene chloride | | | | | | | | | | | | | | | | |
| 10 | Acetone | | | | | | | | | | | | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | 2 | J | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | 8 | J | 230 | | | | | | | | | | | |
| 10 | Chloroform | | | | | 8 | J | | | | | | | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

02:Y87900_D4452-TWD6-02/15/94-D1

**DATA SUMMARY FORM: VOLATILES 2**

Site Name: Union Carbide

Job Number: 9402.278 Sampling Date(s): 10-18-94

**WATER SAMPLES**
**(µg/L)**

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BW-2 | | BW-3 | | BW-4 | | | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 2.0 | | | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | 310 | | | | | | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | 230 | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | | | | | | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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CRQL = Contract Required Quantitation Limit.

02:YS7900_D4452-TWDS-02/15/94-D1

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**DATA SUMMARY FORM: VOLATILES 1**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9402.278 Sampling Date(s): 10-18-94

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | Sample Number: BWTB1017 | | STORAGE BLK | | VBLKW1 | | MSB | | BW-4MSD | | BW-4MS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 2.0 | | 2.0 | | | | | |
| | Location: | | | | | | | | | | | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | 58 | | 59 | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | | 1 | J | | | | | | | | | | | | | | |
| 10 | Acetone | | | | | | | | | | 4 | J | 3 | J | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | 46 | | 110 | | 110 | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | 250 | | 250 | | | | | |
| 10 | Chloroform | | | | | | | | | | 9 | J | 9 | J | | | | |
| 10 | 1,2-Dichloroethane | | | | | | | | | | | | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

# DATA SUMMARY FORM: VOLATILES 2

WATER SAMPLES
(µg/L)

Site Name: Union Carbide

Job Number: 9402.278 Sampling Date(s): 10-18-94

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | BWTB1017 | | STORAGE BLK | | VBLKW1 | | MGB | | BW-4MSD | | BW-4MS | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 2.0 | | 2.0 | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | | | 46 | | 440 | E | 440 | E | | | | | | | | |
| 10 | Dibromochloromethane | | | | | | | | | | | | | | | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | 47 | | 100 | | 97 | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | 250 | | 280 | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | | | 49 | | 100 | | 100 | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | 48 | | 95 | | 96 | | | | | | | | | |
| 10 | Ethylbenzene | | | | | | | | | | | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.

02:VS7900 D4452-TWDS-02/15/94-D1



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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

BW-1

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 887 SAS No.: SDG No.: BW-1

Matrix: (soil/water) WATER Lab Sample ID: 76998

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: H5918

Level: (low/med) LOW Date Received: 12/10/93

% Moisture: not dec. Date Analyzed: 12/17/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 62-53-3 | Aniline | 24.53 | 25 | JN |

FORM I VOA-TIC 3/90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

GW-8A

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 863 SAS No.: SDG No.: GW-7B

Matrix: (soil/water) WATER Lab Sample ID: 76897

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: H5832

Level: (low/med) LOW Date Received: 12/08/93

% Moisture: not dec. Date Analyzed: 12/14/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 49-61-17 | Indane | 24.81 | 6 | JN |

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

GW-8B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 71982

Sample wt/vol: 5.1 (g/mL) G Lab File ID: D8414

Level: (low/med) LOW Date Received: 09/22/93

% Moisture: not dec. 18 Date Analyzed: 09/25/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 49-61-17 | 2,3-Dihydro-1H-Indene | 23.62 | 11 | JN |
| 2. | UNKNOWN | 25.77 | 7 | BJ |

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# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

GW-10B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) SOIL Lab Sample ID: 72525

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8575

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. 20 Date Analyzed: 09/30/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 49-61-17 | Indane . | 23.56 | 12 | JN |



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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

BW-2

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 887 SAS No.: SDG No.: BW-1

Matrix: (soil/water) WATER Lab Sample ID: 76997

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6745

Level: (low/med) LOW Date Received: 12/10/93

% Moisture: decanted: (Y/N) Date Extracted: 12/15/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/14/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 6

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 12.47 | 13 | J |
| 2. | BUTYLPHENOL ISOMER | 15.28 | 11 | J |
| 3. | UNKNOWN | 18.73 | 2 | J |
| 4. 77-04-349 | Pharmaceutical Sulfur | 18.92 | 3 | JN |
| 5. | Sulfur | 23.24 | 4 | JN |
| 6. 10-54-4500 | Molecular Sulfur | 26.75 | 90 | JN |

1F

DEC SAMPLE NO.

BW-4

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 863 SAS No.: SDG No.: GW-7B

Matrix: (soil/water) WATER Lab Sample ID: 76928

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6736

Level: (low/med) LOW Date Received: 12/09/93

% Moisture: decanted: (Y/N) Date Extracted: 12/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/14/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 11

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 3.89 | 2 | J |
| 2. | PENTACHLOROBUTADIENE ISOMER | 12.03 | 3 | J |
| 3. | UNKNOWN | 12.46 | 3 | J |
| 4. | PENTACHLOROBUTADIENE ISOMER | 12.66 | 4 | J |
| 5. | PENTACHLOROBUTADIENE ISOMER | 12.85 | 4 | J |
| 6. | UNKNOWN | 16.42 | 4 | J |
| 7. | UNKNOWN | 19.95 | 15 | J |
| 8. 10-54-4500 | Molecular Sulfur | 26.57 | 10 | JN |
| 9. | UNKNOWN | 32.59 | 7 | J |
| 10. | UNKNOWN | 35.04 | 2 | J |
| 11. | UNKNOWN | 37.36 | 3 | J |

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DEC SAMPLE NO.

GW-9A

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 863 SAS No.: SDG No.: GW-7B

Matrix: (soil/water) WATER Lab Sample ID: 76899

Sample wt/vol: 1000 (g/mL) ML Lab File ID: G5551

Level: (low/med) LOW Date Received: 12/08/93

% Moisture: decanted: (Y/N) Date Extracted: 12/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/08/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.8

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 5.08 | 4 | J |
| 2. | UNKNOWN | 5.37 | 2 | J |
| 3. | UNKNOWN | 23.81 | 4 | J |
| 4. | UNKNOWN | 24.98 | 4 | J |
| 5. | UNKNOWN | 27.95 | 8 | J |
| 6. | UNKNOWN | 30.62 | 8 | J |
| 7. | UNKNOWN | 31.60 | 5 | J |
| 8. | UNKNOWN | 31.91 | 2 | J |
| 9. | UNKNOWN | 33.00 | 12 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

GW-9B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 863 SAS No.: SDG No.: GW-7B

Matrix: (soil/water) WATER Lab Sample ID: 76900

Sample wt/vol: 1000 (g/mL) ML Lab File ID: G5552

Level: (low/med) LOW Date Received: 12/08/93

% Moisture: decanted: (Y/N) Date Extracted: 12/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/08/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.3

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 5.09 | 4 | J |
| 2. | UNKNOWN CARBOXYLIC ACID | 23.11 | 3 | J |
| 3. | UNKNOWN | 23.81 | 3 | J |
| 4. | UNKNOWN | 24.94 | 4 | J |
| 5. | UNKNOWN | 30.47 | 6 | J |
| 6. | UNKNOWN | 31.61 | 6 | J |
| 7. | UNKNOWN | 31.91 | 3 | J |
| 8. | UNKNOWN | 32.94 | 24 | J |

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.: GW-10A

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 863 SAS No.: SDG No.: GW-7B

Matrix: (soil/water) WATER Lab Sample ID: 76929

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6780

Level: (low/med) LOW Date Received: 12/09/93

% Moisture: decanted: (Y/N) Date Extracted: 12/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/17/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: 5

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 3.59 | 4 | J |
| 2. | UNKNOWN | 3.64 | 4 | BJ |
| 3. | UNKNOWN | 3.85 | 4 | BJ |
| 4. | UNKNOWN | 4.46 | 4 | J |
| 5. | UNKNOWN | 16.37 | 2 | J |

DEC SAMPLE NO.

GW-10B

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# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 863 SAS No.: SDG No.: GW-7B

Matrix: (soil/water) WATER Lab Sample ID: 76930

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6738

Level: (low/med) LOW Date Received: 12/09/93

% Moisture: decanted: (Y/N) Date Extracted: 12/13/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/14/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.9

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 3.59 | 4 | J |
| 2. | UNKNOWN | 3.85 | 2 | BJ |
| 3. | UNKNOWN | 4.48 | 2 | J |



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DEC SAMPLE NO.

MW-1

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 887 SAS No.: SDG No.: BW-1

Matrix: (soil/water) WATER Lab Sample ID: 76996

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E6744

Level: (low/med) LOW Date Received: 12/10/93

% Moisture: decanted: (Y/N) Date Extracted: 12/15/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/14/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.4

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 3.61 | 2 | J |
| 2. | UNKNOWN HYDROCARBON | 33.54 | 2 | J |
| 3. | THIOBISPENTYLPHENOL ISOMER | 34.07 | 2 | J |

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BW-2

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 278 SAS No.: SDG No.: BWTB1017

Matrix: (soil/water) WATER Lab Sample ID: 14958

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: F8506

Level: (low/med) LOW Date Received: 10/18/94

% Moisture: not dec. Date Analyzed: 10/22/94

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 60-29-7 | Ethylether | 2.47 | 220 | JN |

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BW-3

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 278 SAS No.: SDG No.: BWTB1017

Matrix: (soil/water) WATER Lab Sample ID: 14957

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: F8505

Level: (low/med) LOW Date Received: 10/18/94

% Moisture: not dec. Date Analyzed: 10/22/94

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 60-29-7 | Ethylether | 2.48 | 13 | JN |

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BW-4

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 278 SAS No.: SDG No.: BWTB1017

Matrix: (soil/water) WATER Lab Sample ID: 14956

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: F8507

Level: (low/med) LOW Date Received: 10/18/94

% Moisture: not dec. Date Analyzed: 10/22/94

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 2.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

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# DRILL WATER

## DATA SUMMARY FORM: VOLATILES 1

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23 & 9-29-93

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

| CRQL | Compound | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | Storage Blk | | TB-YR992-993 | | VBLKW1 | | VBLKW2 | | VBLKW3 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | Storage Blk | | TB-YR992-993 | | VBLKW1 | | VBLKW2 | | VBLKW3 | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | Drill water | | Drill water | | Drill water | | | | Trip blank | | | | | | | |
| 10 | Chloromethane | | | | | | | | | | | | | | | | |
| 10 | Bromomethane | | | | | | | | | | | | | | | | |
| 10 | Vinyl chloride | | | | | | | | | | | | | | | | |
| 10 | Chloroethane | | | | | | | | | | | | | | | | |
| 10 | Methylene chloride | | | | | | | 2 | BJ | | | 2 | J | | | | |
| 10 | Acetone | | | | | | | | | | | | | | | | |
| 10 | Carbon disulfide | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1-Dichloroethane | | | | | | | | | | | | | | | | |
| 10 | Total 1,2-Dichloroethene | | | | | | | | | | | | | | | | |
| 10 | Chloroform | 13 | | 18 | | 17 | | | | 3 | J | | | | | | |
| 10 | 1,2-Dichloroethane | 3 | JB | 2 | JB | 4 | JB | | | 6 | J | | | | | | |
| 10 | 2-Butanone | | | | | | | | | | | | | | | | |
| 10 | 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Carbon tetrachloride | | | | | | | | | | | | | | | | |
| 10 | Bromodichloromethane | 7 | J | 8 | J | 9 | J | | | 1 | J | | | | | | |

CRQL = Contract Required Quantitation Limit.

**DATA SUMMARY FORM: VOLATILES 2**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23 & 9-29-93

**WATER SAMPLES**
(µg/L)

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound / Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993-C | | Storage Blk | | TB-YR992-993 | | VBLKW1 | | VBLKW2 | | VBLKW3 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| | Location: | Drill water | | Drill water | | Drill water | | | | Trip blank | | | | | | | |
| 10 | 1,2-Dichloropropane | | | | | | | | | | | | | | | | |
| 10 | cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Trichloroethene | | | | | | | | | | | | | | | | |
| 10 | Dibromochloromethane | 3 | J | 4 | J | 4 | J | | | 1 | J | | | | | | |
| 10 | 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | |
| 10 | Benzene | | | | | | | | | | | | | | | | |
| 10 | trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | |
| 10 | Bromoform | | | | | | | | | | | | | | | | |
| 10 | 4-Methyl-2-pentanone | | | | | | | | | | | | | | | | |
| 10 | 2-Hexanone | | | | | | | | | | | | | | | | |
| 10 | Tetrachloroethene | | | | | | | | | | | | | | | | |
| 10 | 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | |
| 10 | Toluene | | | | | 8 | J | | | | | | | | | | |
| 10 | Chlorobenzene | | | | | | | | | | | | | | | | |
| 10 | Ethylbenzene | | | | | 2 | J | | | | | | | | | | |
| 10 | Styrene | | | | | | | | | | | | | | | | |
| 10 | Total xylenes | | | | | 5 | J | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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DATA SUMMARY FORM: B N A S 1

WATER SAMPLES
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9/23, & 9/29/93

| CRQL | Compound | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | SBLKW1 | | SBLKW2 | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | | | |
| | Location: | Drill water | | Drill water | | Drill water | | | | | | | | | | | | | |
| 10 | Phenol | | | | | | | | | | | | | | | | | | |
| 10 | bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | | | |
| 10 | 2-Chlorophenol | | | | | | | | | | | | | | | | | | |
| 10 | 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 10 | 1,4-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 10 | 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 10 | 2-Methylphenol | | | | | | | | | | | | | | | | | | |
| 10 | 2,2'-oxybis(1-chloropropane) | | | | | | | | | | | | | | | | | | |
| 10 | 4-Methylphenol | | | | | | | | | | | | | | | | | | |
| 10 | N-Nitroso-di-n-propylamine | | | | | | | | UJ | | | | | | | | | | |
| 10 | Hexachloroethane | | | | | | | | | | | | | | | | | | |
| 10 | Nitrobenzene | | | | | | | | | | | | | | | | | | |
| 10 | Isophorone | | | | | | | | | | | | | | | | | | |
| 10 | 2-Nitrophenol | | | | | | | | | | | | | | | | | | |
| 10 | 2,4-Dimethylphenol | | | | | | | | | | | | | | | | | | |
| 10 | bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | | | |
| 10 | 2,4-Dichlorophenol | | | | | | | | | | | | | | | | | | |
| 10 | 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | | | | |
| 10 | Naphthalene | 1 | J | | | | | | | | | | | | | | | | |
| 10 | 4-Chloroaniline | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

Cl[redacted]: Co[redacted]equir[redacted]titation[redacted]

**DATA SUMMARY FORM: B N A S 2**

**WATER SAMPLES**
**(µg/L)**

**To calculate sample quantitation limit:**
**(CRQL * Dilution Factor)**

**Site Name:** Union Carbide

**Job Number:** 9302.121 **Sampling Date(s):** 9/23 & 9/29/93

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | SBLKW1 | | SBLKW2 | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobutadiene | | | | | | | | | | | | | | | | |
| 10 | 4-Chloro-3-methylphenol | | | | | | | | | | | | | | | | |
| 10 | 2-Methylnaphthalene | | | | | | | | | | | | | | | | |
| 10 | Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | |
| 10 | 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | | |
| 25 | 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | | |
| 10 | 2-Chloronaphthalene | | | | | | | | | | | | | | | | |
| 25 | 2-Nitroaniline | | | | | | | | | | | | | | | | |
| 10 | Dimethylphthalate | 1 | J | | | | | | | | | | | | | | |
| 10 | Acenaphthylene | | | | | | | | | | | | | | | | |
| 10 | 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 25 | 3-Nitroaniline | | | | | | | | | | | | | | | | |
| 10 | Acenaphthene | | | | | | | | | | | | | | | | |
| 25 | 2,4-Dinitrophenol | | | | | | | | | | | | | | | | |
| 25 | 4-Nitrophenol | | | | | | | | | | | | | | | | |
| 10 | Dibenzofuran | | | | | | | | | | | | | | | | |
| 10 | 2,4-Dinitrotoluene | | | | | | | | | | | | | | | | |
| 10 | Diethylphthalate | | | | | | | | | | | | | | | | |
| 10 | 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | | |
| 10 | Fluorene | | | | | | | | | | | | | | | | |
| 25 | 4-Nitroaniline | | | | | | | | | | | | | | | | |
| 25 | 4,6-Dinitro-2-methylphenol | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: B N A S 3**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23 & 9-29-93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | SBLKW1 | | SBLKW2 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | SBLKW1 | | SBLKW2 | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 10 | N-Nitrosodiphenylamine | | | | | | | | | | | | | | | | |
| 10 | 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | | |
| 10 | Hexachlorobenzene | | | | | | UJ | | | | UJ | | | | | | |
| 25 | Pentachlorophenol | | | | | | UJ | | | | UJ | | | | | | |
| 10 | Phenanthrene | | | | | | | | | | | | | | | | |
| 10 | Anthracene | | | | | | | | | | | | | | | | |
| 10 | Carbazole | | | | | | | | | | | | | | | | |
| 10 | Di-n-butylphthalate | | | | | | | | | | | | | | | | |
| 10 | Fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Pyrene | | | | | | | | | | | | | | | | |
| 10 | Butylbenzylphthalate | | | | | | | | | | | | | | | | |
| 10 | 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | |
| 10 | Benzo(a)anthracene | | | | | | | | | | | | | | | | |
| 10 | Chrysene | | | | | | | | | | | | | | | | |
| 10 | bis(2-Ethylhexyl)phthalate | 5 | J | 1 | J | 5 | J | | | | | | | | | | |
| 10 | Di-n-octylphthalate | | | | | | | | | | | | | | | | |
| 10 | Benzo(b)fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Benzo(k)fluoranthene | | | | | | | | | | | | | | | | |
| 10 | Benzo(a)pyrene | | | | | | | | | | | | | | | | |
| 10 | Indeno(1,2,3-cd)pyrene | | | | | | | | | | | | | | | | |
| 10 | Dibenz(a,h)anthracene | | | | | | | | | | | | | | | | |
| 10 | Benzo(g,h,i)perylene | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

## DATA SUMMARY FORM: PESTICIDES AND PCBS

**WATER SAMPLES**
(µg/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23 & 9-29-93

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993.C | | PBLKW1 | | PBLKW2 | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | | | | | |
| | Location: | Drill water | | Drill water | | Drill water | | | | | | | | | | | |
| 0.05 | alpha-BHC | | | | | | | | | | | | | | | | |
| 0.05 | beta-BHC | | | | | | | | | | | | | | | | |
| 0.05 | delta-BHC | | | | | | | | | | | | | | | | |
| 0.05 | gamma-BHC (Lindane) | | | | | | | | | | | | | | | | |
| 0.05 | Heptachlor | | | | | | | | | | | | | | | | |
| 0.05 | Aldrin | | | | | | | | | | | | | | | | |
| 0.05 | Heptachlor epoxide | | | | | | | | | | | | | | | | |
| 0.05 | Endosulfan I | | | | | | | | | | | | | | | | |
| 0.10 | Dieldrin | | UJ | | UJ | | UJ | | | | | | | | | | |
| 0.10 | 4,4'-DDE | | | | | | | | | | | | | | | | |
| 0.10 | Endrin | | | | | | | | | | | | | | | | |
| 0.10 | Endosulfan II | | | | | | | | | | | | | | | | |
| 0.10 | 4,4'-DDD | | UJ | | UJ | | UJ | | | | | | | | | | |
| 0.10 | Endosulfan sulfate | | | | | | | | | | | | | | | | |
| 0.10 | 4,4'-DDT | | | | | | | | | | | | | | | | |
| 0.50 | Methoxychlor | | UJ | | UJ | | UJ | | UJ | | UJ | | | | | | |
| 0.10 | Endrin ketone | | | | UJ | | UJ | | | | | | | | | | |
| 0.10 | Endrin aldehyde | | UJ | | UJ | | UJ | | UJ | | UJ | | | | | | |
| 0.05 | alpha-Chlordane | | | | | | | | | | | | | | | | |
| 0.05 | gamma-Chlordane | | | | | | | | | | | | | | | | |
| 5.0 | Toxaphene | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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**DATA SUMMARY FORM: PESTICIDES AND PCBS (Cont.)**

**WATER SAMPLES**
**(µg/L)**

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9/23 & 29/93

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | | | | | | | | | | |
| | Dilution Factor: | 1.0 | | 1.0 | | 1.0 | | | | | | | | | | | |
| | Location: | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1016 | | | | | | | | | | | | | | | | |
| 2.0 | Aroclor-1221 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1232 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1242 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1248 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1254 | | | | | | | | | | | | | | | | |
| 1.0 | Aroclor-1260 | | | | | | | | | | | | | | | | |

[redacted] = Co[redacted]equire[redacted]itatio[redacted]

## DATA SUMMARY FORM: INORGANICS

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-23 & 9-29-93

WATER SAMPLES
(µg/L)

Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

| CRQL | Compound | DW-YR992-393A | | DW-YR992-393B | | DW-YR992-993C | | DW-YR992-393AS | | DW-YR992-393AD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | | | | | | | | | | | | | | | | | |
| | Dilution Factor: | | | | | | | | | | | | | | | | | |
| | Location: | Drill water | | Drill water | | Drill water | | Spike | | Duplicate | | | | | | | | |
| 200 | Aluminum | 349 | | 3,000 | | 1,280 | J | 2,720 | | 288 | | | | | | | | |
| 60 | Antimony | | | | | | | 536 | | | | | | | | | | |
| 10 | Arsenic | | | 1.5 | J | 1.2 | J | 43 | | | | | | | | | | |
| 200 | Barium | 21.1 | J | 32.1 | J | 29.7 | J | 2,244 | | 23.8 | | | | | | | | |
| 5 | Beryllium | | | | | | | 54 | | | | | | | | | | |
| 5 | Cadmium | | | | | | | 52 | | | | | | | | | | |
| 5000 | Calcium | 32,100 | | 81,400 | | 59,100 | | | | 35,170 | | | | | | | | |
| 10 | Chromium | 7.6 | J | 23.0 | | 13.7 | | 224 | | 8.5 | | | | | | | | |
| 50 | Cobalt | | | | | | | 516 | | | | | | | | | | |
| 25 | Copper | 3.6 | J | 5.2 | J | 3.1 | J | 258 | | 3.5 | | | | | | | | |
| 100 | Iron | 106 | | 2,290 | | 1,280 | | 1,189 | | 118 | | | | | | | | |
| 3 | Lead | 1.1 | J | 2.2 | J | | | 23 | | 1.2 | | | | | | | | |
| 5000 | Magnesium | 8,360 | | 9,690 | | 9,450 | | | | 9,187 | | | | | | | | |
| 15 | Manganese | 3.4 | B | 47.7 | J | 31.2 | B | 535 | | 4.0 | | | | | | | | |
| 0.2 | Mercury | | | | | | | | | | | | | | | | | |
| 40 | Nickel | | | | | | | 507 | | | | | | | | | | |
| 5000 | Potassium | 1,380 | J | 2,230 | J | 1,950 | J | | | 1,402 | | | | | | | | |
| 5 | Selenium | | | | | | | 11 | | | | | | | | | | |
| 10 | Silver | | | | | | | 52 | | | | | | | | | | |
| 5000 | Sodium | 9,720 | | 9,990 | | 11,200 | | | | 10,510 | | | | | | | | |
| 10 | Thallium | | | | | | | 52 | | | | | | | | | | |
| 50 | Vanadium | | | 8.5 | J | | | 481 | | | | | | | | | | |
| 20 | Zinc | 24.0 | J | 39.9 | J | 33.3 | J | 547 | | 36.6 | | | | | | | | |
| 10 | Cyanide | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

CRQL = Contract Required Quantitation Limit.



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DATA SUMMARY FORM: EP TOXICITY

Site Name: Union Carbide

Job Number: 9302.121 Sampling Date(s): 9-22-93

WATER SAMPLES (µg/L)

To calculate sample quantitation limit: (CRQL * Dilution Factor)

| CRQL | Compound | B-1.1 | B-2.2 | B-1.1S | B-2.2S | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Sample Number: | B-1.1 | B-2.2 | B-1.1S | B-2.2S | | | | |
| | Dilution Factor: | | | | | | | | |
| | Location: | | | spike | spike | | | | |
| | Arsenic | | | 2,132 | 2,160 | | | | |
| | Barium | 592 | 641 | 2,621 | 2,682 | | | | |
| | Cadmium | | 5.7 | 2,062 | 2,066 | | | | |
| | Chromium | | 7.2 | 2,061 | 2,073 | | | | |
| | Lead | | | 2,041 | 2,073 | | | | |
| | Mercury | | | 1.0 | 1.1 | | | | |
| | Selenium | | | 2,185 | 2,274 | | | | |
| | Silver | | | 119 | 116 | | | | |
| | | | | | | | | | |
| | EP Tox - Pesticides | | | NA | NA | | | | |
| | EP Tox - Herbicides | | | NA | NA | | | | |

CRQL = Contract Required Detection Limit.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

DW-YR992393A

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) WATER Lab Sample ID: 72152

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C2752

Level: (low/med) LOW Date Received: 09/23/93

%. Moisture: not dec. Date Analyzed: 09/28/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 24.96 | 7 | J |

FORM I VOA-TIC 3/90

78



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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

DW-YR992393B

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) WATER Lab Sample ID: 72153

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C2753

Level: (low/med) LOW Date Received: 09/23/93

% Moisture: not dec. Date Analyzed: 09/28/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 24.94 | 6 | J |

FORM I VOA-TIC 3/90

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.: DW-YR992993C

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) WATER Lab Sample ID: 72526

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C2845

Level: (low/med) LOW Date Received: 09/29/93

% Moisture: not dec. Date Analyzed: 10/01/93

GC Column: VOCOL ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 17.15 | 5 | J |
| 2. | UNKNOWN | 23.35 | 5 | J |
| 3. | UNKNOWN | 24.96 | 10 | J |



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1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

DW-YR992393A

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 121 SAS No.: SDG No.: B-1_1

Matrix: (soil/water) WATER Lab Sample ID: 72152

Sample wt/vol: 1000 (g/mL) ML Lab File ID: G4106

Level: (low/med) LOW Date Received: 09/23/93

% Moisture: decanted: (Y/N) Date Extracted: 09/26/93

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/02/93

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 7

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 1.68 | 46 | BJ |
| 2. 12-34-22 | Aldol Condensation Product | 2.11 | 6 | ABJN |
| 3. | UNKNOWN | 11.27 | 12 | J |
| 4. | UNKNOWN | 26.97 | 2 | J |
| 5. | UNKNOWN | 29.53 | 4 | J |
| 6. | UNKNOWN | 30.80 | 2 | J |
| 7. | UNKNOWN | 31.97 | 4 | J |

# APPENDIX F

# PA SCORESHEETS

OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

# PA-Score

## PA Scoresheets

Site Name: UNION CARBIDE CORP., CARBON PRODS.
CERCLIS ID No.: NYD002106896
Street Address: 3625 HIGHLAND AVE. PO BOX 887
City/State/Zip: NIAGARA FALLS, NY 14302

Investigator:
Agency/Organization: ECOLOGY AND ENVIRONMENT, ENG
Street Address: 368 PLEASANTVIEW DR.
City/State: LANCASTER, NY

Date: 06-23-94

WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations:

| | | | | |
|---|---|---|---|---|
| 1 UCC LANDFILL | Landfill | Ref: 1 | WQ value | maximum |
| Area | 1.65E+01 acres | | 2.12E+02 | 2.12E+02 |

THE UCC LANDFILL COVERS APPROXIMATELY 16.5 ACRES. WASTES DISPOSED OF NCLUDE CARBONACEOUS DUST, COAL TAR, PITCH, COKE, DEGREASING AGENTS, HALOWAX, OILY WASTES AND METALS.
Ref: 1

| | |
|---|---|
| ** Only First WC Page Is Printed ** | Waste Characteristics Score: WC = 32 |

Ground Water Pathway Criteria List
Suspected Release

| | |
|---|---|
| Are sources poorly contained? (y/n/u) | Y |
| Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u) | Y |
| Is waste quantity particularly large? (y/n/u) | U |
| Is precipitation heavy? (y/n/u) | N |
| Is the infiltration rate high? (y/n/u) | Y |
| Is the site located in an area of karst terrain? (y/n) | N |
| Is the subsurface highly permeable or conductive? (y/n/u) | Y |
| Is drinking water drawn from a shallow aquifer? (y/n/u) | N |
| Are suspected contaminants highly mobile in ground water? (y/n/u) | Y |
| Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u) | Y |

Other criteria? (y/n) N

SUSPECTED RELEASE? (y/n) Y

Summarize the rationale for Suspected Release:

WATER QUALITY DATA HISTORICALLY (1978-1984) AND RECENTLY (1988-1993) AS INDICATED THAT PHENOLS, HEAVY METALS AND HALOGENATED ORGANICS ARE PRESENT IN THE GROUNDWATER. THE LANDFILL HAS BEEN CAPPED, THEREFORE INFILTRATION OF RAINWATER THROUGH THE LANDFILL SHOULD BE IMPEDED. HOWEVER, THE LANDFILL IS UNLINED AND THE CARBONACEOUS FILL MATERIAL IS HIGHLY CONDUCTIVE, AS DEMONSTRATED BY THE RAPID INFILTRATION RATE NOTED BY EARTH DIMENSIONS, INC., IN 1979, FOLLOWING AN INTENSE THUNDERSTORM.

Ref: 1,2

Ground Water Pathway Criteria List
Primary Targets

| | |
|---|---|
| Is any drinking water well nearby? (y/n/u) | N |
| Has any nearby drinking water well been closed? (y/n/u) | N |
| Has any nearby drinking water well user reported foul-testing or foul-smelling water? (y/n/u) | N |
| Does any nearby well have a large drawdown/high production rate? (y/n/u) | U |
| Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? (y/n/u) | N |
| Does analytical or circumstantial evidence suggest contamination at a drinking water well? (y/n/u) | N |
| Does any drinking water well warrant sampling? (y/n/u) | N |

Other criteria? (y/n) N

PRIMARY TARGET(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Targets:

THERE ARE NO DRINKING WATER WELLS USED WITHIN THE TARGET DISTANCE LIMIT OF 4 MILES.

Ref: 1

GROUND WATER PATHWAY SCORESHEETS

| Pathway Characteristics | | Ref. |
|---|---|---|
| Do you suspect a release? (y/n) | Yes | |
| Is the site located in karst terrain? (y/n) | No | 1 |
| Depth to aquifer (feet): | 4 | 6 |
| Distance to the nearest drinking water well (feet): | 22000 | 1 |

| LIKELIHOOD OF RELEASE | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 1. SUSPECTED RELEASE | 550 | | |
| 2. NO SUSPECTED RELEASE | | 0 | |
| LR = | 550 | 0 | |

Targets

| TARGETS | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 3. PRIMARY TARGET POPULATION 0 person(s) | 0 | | |
| 4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N | 0 | 0 | |
| 5. NEAREST WELL | 0 | 0 | |
| 6. WELLHEAD PROTECTION AREA None within 4 Miles | 0 | 0 | |
| 7. RESOURCES | 5 | 0 | |
| T = | 5 | 0 | |

WASTE CHARACTERISTICS

| | | |
|---|---|---|
| WC = | 32 | 0 |

GROUND WATER PATHWAY SCORE: 1

Ground Water Target Populations

| Primary Target Population Drinking Water Well ID | Dist. (miles) | Population Served | Reference | Value |
|---|---|---|---|---|
| None | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| *** Note : Maximum of 5 Wells Are Printed *** | | | Total | |

| Secondary Target Population Distance Categories | Population Served | Reference | Value |
|---|---|---|---|
| 0 to 1/4 mile | 0 | 1 | 0 |
| Greater than 1/4 to 1/2 mile | 0 | 1 | 0 |
| Greater than 1/2 to 1 mile | 0 | 1 | 0 |
| Greater than 1 to 2 miles | 0 | 1 | 0 |
| Greater than 2 to 3 miles | 0 | 1 | 0 |
| Greater than 3 to 4 miles | 0 | 1 | 0 |
| | | Total | 0 |

Apportionment Documentation for a Blended System

NO DRINKING WATER WELLS USED WITHIN 4 MILES OF THE SITE

Ref: 1



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Surface Water Pathway Criteria List
Suspected Release

| | |
|---|---|
| Is surface water nearby? (y/n/u) | Y |
| Is waste quantity particularly large? (y/n/u) | U |
| Is the drainage area large? (y/n/u) | Y |
| Is rainfall heavy? (y/n/u) | N |
| Is the infiltration rate low? (y/n/u) | N |
| Are sources poorly contained or prone to runoff or flooding? (y/n/u) | Y |
| Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u) | N |
| Is vegetation stressed along the probable runoff path? (y/n/u) | N |
| Are sediments or water unnaturally discolored? (y/n/u) | N |
| Is wildlife unnaturally absent? (y/n/u) | N |
| Has deposition of waste into surface water been observed? (y/n/u) | N |
| Is ground water discharge to surface water likely? (y/n/u) | Y |
| Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u) | N |
| Other criteria? (y/n) N | |
| SUSPECTED RELEASE? (y/n) | N |

Summarize the rationale for Suspected Release:

THERE IS NO DEFINED OVERLAND MIGRATION PATH FOR SURFACE RUNOFF TO FOLLOW TO A SURFACE WATER BODY. THE NEAREST SURFACE WATER IS GILL CREEK LOCATED APPROXIMATELY 0.5 MILES TO THE EAST. THERE IS NO EVIDENCE THAT THE UNION CARBIDE SITE HAS OR POTENTIALLY MAY AFFECT THE CREEK. GILL CREEK FLOWS SOUTH TO THE NIAGARA RIVER, A DISTANCE OF APPROXIMATELY 2 MILES. A SURFACE WATER SAMPLE COLLECTED ON SITE DID NOT SHOW SIGNIFICANT CONTAMINATION.

Ref: 1,3,4

Surface Water Pathway Criteria List
Primary Targets

Is any target nearby? (y/n/u) If yes: Y
N Drinking water intake
Y Fishery
Y Sensitive environment

Has any intake, fishery, or recreational area been closed? (y/n/u) N

Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? (y/n/u) N

Does any target warrant sampling? (y/n/u) If yes: N
N Drinking water intake
N Fishery
N Sensitive environment

Other criteria? (y/n) N

PRIMARY INTAKE(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Intakes:

THERE ARE NO DRINKING WATER INTAKES LOCATED DOWNSTREAM OF THE SITE WITHIN THE 15 MILE TARGET DISTANCE LIMIT. THE NIAGARA RIVER IS A PUBLIC FISHERY, AND HEALTH ADVISORIES HAVE BEEN ISSUED AGAINST CONSUMING FISH FROM THE RIVER, BUT THE RESTRICTION IS NOT DUE TO PAST OR PRESENT UNION CARBIDE ACTIVITIES.

Ref: 1
continued -------



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continued -------

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Fisheries:

NO PRIMARY SURFACE WATER TARGETS HAVE BEEN IDENTIFIED.

Ref: 1,3,4

Other criteria? (y/n) N

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Sensitive Environments:

NO PRIMARY ENVIRONMENTAL TARGETS HAVE BEEN IDENTIFIED. SEVERAL FEDERAL WETLANDS HAVE BEEN IDENTIFIED IN GILL CREEK, WITHIN THE VICINITY OF THE SITE, BUT THERE IS NO OVERLAND MIGRATION PATH WHICH COULD TRANSPORT SITE RELATED CONTAMINANTS TO THE WETLANDS. NO OTHER SENSITIVE ENVIRONMENTS EXIST WITHIN THE VICINITY OF THE SITE.

Ref: 1,7,8

SURFACE WATER PATHWAY SCORESHEETS

| Pathway Characteristics | | Ref. |
|---|---|---|
| Do you suspect a release? (y/n) | No | |
| Distance to surface water (feet): | 2640 | 3 |
| Flood frequency (years): | >500 | 9 |
| What is the downstream distance (miles) to: | | |
| a. the nearest drinking water intake? | N.A. | 1 |
| b. the nearest fishery? | 1.0 | 3,4 |
| c. the nearest sensitive environment? | 0.8 | 3,4,7 |

| LIKELIHOOD OF RELEASE | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 1. SUSPECTED RELEASE | 0 | | |
| 2. NO SUSPECTED RELEASE | | 100 | |
| LR = | 0 | 100 | |



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Drinking Water Threat Targets

| TARGETS | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake. | | | |
| 4. PRIMARY TARGET POPULATION 0 person(s) | 0 | | |
| 5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N | 0 | 0 | |
| 6. NEAREST INTAKE | 0 | 0 | |
| 7. RESOURCES | 0 | 5 | |
| T = | 0 | 5 | |

Drinking Water Threat Target Populations

| Intake Name | Primary (y/n) | Water Body Type/Flow | Population Served | Ref. | Value |
|---|---|---|---|---|---|
| None | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| Total Primary Target Population Value | 0 |
| Total Secondary Target Population Value | 0 |

*** Note : Maximum of 6 Intakes Are Printed ***

Apportionment Documentation for a Blended System

N/A



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Human Food Chain Threat Targets

| TARGETS | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 8. Determine the water body type and flow for each fishery within the target limit. | | | |
| 9. PRIMARY FISHERIES | 0 | | |
| 10. SECONDARY FISHERIES | 0 | 12 | |
| T = | 0 | 12 | |

Human Food Chain Threat Targets

| Fishery Name | Primary (y/n) | Water Body Type/Flow | Ref. | Value |
|---|---|---|---|---|
| 1 NIAGARA RIVER | N | >10000 cfs | 1 | 12 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| | |
|---|---|
| Total Primary Fisheries Value | 0 |
| Total Secondary Fisheries Value | 0 |

*** Note : Maximum of 6 Fisheries Are Printed ***

Environmental Threat Targets

| TARGETS | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 11. Determine the water body type and flow (if applicable) for each sensitive environment. | | | |
| 12. PRIMARY SENSITIVE ENVIRONMENTS | 0 | | |
| 13. SECONDARY SENSITIVE ENVIRONS. | 0 | 75 | |
| T = | 0 | 75 | |

Environmental Threat Targets

| Sensitive Environment Name | Primary (y/n) | Water Body Type/Flow | Ref. | Value |
|---|---|---|---|---|
| 1 WETLAND PF01A | N | <10 cfs | 7 | 25 |
| 2 WETLAND R2OWH | N | | 7 | 0 |
| 3 WETLAND POWHh | N | <10 cfs | 7 | 25 |
| 4 WETLAND PF01F | N | <10 cfs | 7 | 25 |
| | | | | |
| | | | | |

| | |
|---|---|
| Total Primary Sensitive Environments Value | 0 |
| Total Secondary Sensitive Environments Value | 0 |

*** Note: Maximum of 6 Sensitive Environments Are Printed ***

Surface Water Pathway Threat Scores

| Threat | Likelihood of Release(LR) Score | Targets(T) Score | Pathway Waste Characteristics (WC) Score | Threat Score LR x T x WC / 82,500 |
|---|---|---|---|---|
| Drinking Water | 100 | 5 | 32 | 0 |
| Human Food Chain | 100 | 12 | 32 | 0 |
| Environmental | 100 | 75 | 32 | 3 |

SURFACE WATER PATHWAY SCORE: 4

Soil Exposure Pathway Criteria List
Resident Population

| | |
|---|---|
| Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u) | N |
| Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u) | Y |
| Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u) | Y |
| Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u) | N |
| Does any neighboring property warrant sampling? (y/n/u) | Y |

Other criteria? (y/n) N

RESIDENT POPULATION IDENTIFIED? (y/n) N

Summarize the rationale for Resident Population:

NO RESIDENT POPULATION HAS BEEN IDENTIFIED. THE NEAREST RESIDENCE IS LOCATED APPROXIMATELY 500 FEET FROM THE LANDFILL. SEVERAL RESIDENCES EXIST NEAR THE SITE ON PROPERTY FORMERLY OWNED BY UNION CARBIDE. THESE RESIDENCES WERE NOT SAMPLED TO DETERMINE IF THEIR SOILS ARE CONTAMINATED AND THEY ARE NOT WITHIN 200 FEET OF THE AREA OF KNOWN CONTAMINATION, AND THEREFORE, ARE NOT CONSIDERED RESIDENT POPULATION. A NEIGHBORING PROPERTY, ONCE OWNED BY UNION CARBIDE AND NOW OWNED BY NIAGARA MOHAWK, SHOWED EVIDENCE OF LANDFILLING ACTIVITIES AND MAY WARRANT ADDITIONAL INVESTIGATION.

Ref: 1,3,4

SOIL EXPOSURE PATHWAY SCORESHEETS

| Pathway Characteristics | | Ref. |
|---|---|---|
| Do any people live on or within 200 ft of areas of suspected contamination? (y/n) | No | 1,3,4 |
| Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n) | No | 1,3,4 |
| Is the facility active? (y/n): | Yes | 1 |

| LIKELIHOOD OF EXPOSURE | Suspected Contamination | References |
|---|---|---|
| 1. SUSPECTED CONTAMINATION LE = | 550 | |

Targets

| | | |
|---|---|---|
| 2. RESIDENT POPULATION<br>0 resident(s)<br>0 school/daycare student(s) | 0 | 1,3,5<br>1,3,5 |
| 3. RESIDENT INDIVIDUAL | 0 | |
| 4. WORKERS<br>1 - 100 | 5 | 5 |
| 5. TERRES. SENSITIVE ENVIRONMENTS | 0 | |
| 6. RESOURCES | 5 | |
| T = | 10 | |

WASTE CHARACTERISTICS

WC = 32

RESIDENT POPULATION THREAT SCORE: 2

NEARBY POPULATION THREAT SCORE: 1

Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE: 3

Soil Exposure Pathway Terrestrial Sensitive Environments

| Terrestrial Sensitive Environment Name | Reference | Value |
|---|---|---|
| None | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Total Terrestrial Sensitive Environments Value | | |

*** Note : Maximum of 7 Sensitive Environments Are Printed ***



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Air Pathway Criteria List
Suspected Release

| | |
|---|---|
| Are odors currently reported? (y/n/u) | N |
| Has release of a hazardous substance to the air been directly observed? (y/n/u) | N |
| Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u) | N |
| Does analytical/circumstantial evidence suggest release to air? (y/n/u) | N |
| Other criteria? (y/n) N | |
| SUSPECTED RELEASE? (y/n) | N |

Summarize the rationale for Suspected Release:

THERE IS NO DOCUMENTATION OR ANALYTICAL EVIDENCE TO SUPPORT A CLAIM OF A RELEASE VIA THE AIR ROUTE.

Ref: 1,5

AIR PATHWAY SCORESHEETS

Pathway Characteristics

| | | Ref. |
|---|---|---|
| Do you suspect a release? (y/n) | No | |
| Distance to the nearest individual (feet): | 500 | 3,5 |

| LIKELIHOOD OF RELEASE | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 1. SUSPECTED RELEASE | 0 | | |
| 2. NO SUSPECTED RELEASE | | 500 | |
| LR = | 0 | 500 | |

Targets

| TARGETS | Suspected Release | No Suspected Release | References |
|---|---|---|---|
| 3. PRIMARY TARGET POPULATION 0 person(s) | 0 | | |
| 4. SECONDARY TARGET POPULATION | 0 | 20 | |
| 5. NEAREST INDIVIDUAL | 0 | 1 | |
| 6. PRIMARY SENSITIVE ENVIRONS. | 0 | | |
| 7. SECONDARY SENSITIVE ENVIRONS. | 0 | 0 | |
| 8. RESOURCES | 0 | 5 | |
| T = | 0 | 26 | |

WASTE CHARACTERISTICS

| | | |
|---|---|---|
| WC = | 0 | 32 |

AIR PATHWAY SCORE: 5



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Air Pathway Secondary Target Populations

| Distance Categories | Population | References | Value |
|---|---|---|---|
| Onsite | 0 | | 0 |
| Greater than 0 to 1/4 mile | 0 | | 0 |
| Greater than 1/4 to 1/2 mile | 0 | | 0 |
| Greater than 1/2 to 1 mile | 5994 | 1 | 8 |
| Greater than 1 to 2 miles | 29000 | 1 | 8 |
| Greater than 2 to 3 miles | 23500 | 1 | 4 |
| Greater than 3 to 4 miles | 0 | | 0 |
| | Total Secondary Population Value | | 20 |

Air Pathway Primary Sensitive Environments

| Sensitive Environment Name | Reference | Value |
|---|---|---|
| None | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Total Primary Sensitive Environments Value

*** Note : Maximum of 7 Sensitive Environments Are Printed***

Air Pathway Secondary Sensitive Environments

| Sensitive Environment Name | Distance | Reference | Value |
|---|---|---|---|
| None | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Total Secondary Sensitive Environments Value



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| SITE SCORE CALCULATION | SCORE |
|---|---|
| GROUND WATER PATHWAY SCORE: | 1 |
| SURFACE WATER PATHWAY SCORE: | 4 |
| SOIL EXPOSURE PATHWAY SCORE: | 3 |
| AIR PATHWAY SCORE: | 5 |
| SITE SCORE: | 4 |

SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? No

   If yes, identify the well(s).

   If yes, how many people are served by the threatened well(s)? 0

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?
   A. Drinking water intake No
   B. Fishery No
   C. Sensitive environment (wetland, critical habitat, others) No

   If yes, identity the target(s).

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? No

   If yes, identify the properties and estimate the associated population(s)

4. Are there public health concerns at this site that are not addressed by PA scoring considerations? No

   If yes, explain:

REFERENCE LIST

1. NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, OCTOBER 1991 ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK, PSA TASK 1, UNION CARBIDE CORP., SITE NO. 932035

2. NUS CORPORATION, INC., JUNE 1988, FINAL DRAFT SITE INSPECTION REPORT UNION CARBIDE, NIAGARA FALLS, NEW YORK, PREPARED FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

3. UNITED STATES GEOLOGICAL SURVEY, 1980, 7.5 MINUTE SERIES (TOPOGRAPHIC) QUADRANGLE: NIAGARA FALLS, NY

4. _____, 1980, 7.5 MINUTE SERIES (TOPOGRAPHIC) QUADRANGLE, LEWISTON, NY

5. ECOLOGY AND ENVIRONMENT ENGINEERING P.C., 1993, SITE RECONNAISSANCE

6. ----------, 1993, SOIL BORING LOGS FROM THE UNION CARBIDE SITE

7. UNITED STATES DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE 1978, NATIONAL WETLANDS INVENTORY MAP, NIAGARA FALLS, ONT.-N.Y.

8. SPANN,G., 1993, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, FISH AND WILDLIFE DIVISION, PERSONAL COMMUNICATION

9. FEDERAL EMERGENCY MANAGEMENT AGENCY, 1984, FLOOD INSURANCE RATE MAP, MAP NO. 360507-0001-B

OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

## 1. General Site Information

| Name: | | Street Address: | | | |
|---|---|---|---|---|---|
| UNION CARBIDE CORP., CARBON PRODS. | | 3625 HIGHLAND AVE. PO BOX 887 | | | |
| City: NIAGARA FALLS | State: NY | Zip Code: 14302 | County: NIAGARA | Co. Code: 063 | Cong. Dist: 32 |
| Latitude: 43° 7' 14.0" Longitude: 79° 1' 35.0" | | Approx. Area of Site: 16 acres | | Status of Site: Inactive | |

## 2. Owner/Operator Information

| Owner: | | | Operator: | | |
|---|---|---|---|---|---|
| UNION CARBIDE CORPORATION | | | UNION CARBIDE CORPORATION | | |
| Street Address: 3625 HIGHLAND AVE. PO BOX 887 | | | Street Address: 3625 HIGHLAND AVE. PO BOX 887 | | |
| City: NIAGARA FALLS | | | City: NIAGARA FALLS | | |
| State: NY | Zip Code: 14302 | Telephone: 716/278-3542 | State: NY | Zip Code: 14302 | Telephone: 716/278-3542 |
| Type of Ownership: Private | | | How Initially Identified: State/Local Program | | |



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| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

| 3. Site Evaluator Information | | |
|---|---|---|
| Name of Evaluator: | Agency/Organization: ECOLOGY AND ENVIRONMENT, EN | Date Prepared: 06-23-94 |

| Street Address: | City: | State: |
|---|---|---|
| 368 PLEASANTVIEW DR. | LANCASTER | NY |
| Name of EPA or State Agency Contact: MS. VALERIE WOODWARD | Telephone: 518/457-9538 | |
| Street Address: 50 WOLF RD. | City: ALBANY | State: NY |

| 4. Site Disposition (for EPA use only) | | |
|---|---|---|
| Emergency Response/Removal Assessment Recommendation: No<br>Date: | CERCLIS Recommendation: Higher Priority SI<br>Date: | Signature:<br>Name:<br>Position: |

| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

## 5. General Site Characteristics

| Predominant Land Uses Within 1 Mile of Site: | Site Setting: | Years of Operation: |
|---|---|---|
| Industrial<br>Commercial<br>Residential | Urban | Beginning Year: 1934<br>Ending Year: 1987 |

| Type of Site Operations: | |
|---|---|
| Manufacturing<br>Other Manufacturing<br>Other Landfill<br>Other:<br>CARBON AND GRAPHITE MANUFACTURING, | Waste Generated:<br>Onsite |
| | Waste Deposition Authorized By: Present Owner |
| | Waste Accessible to the Public<br>Yes |
| | Distance to Nearest Dwelling, School, or Workplace:<br>500 Feet |

## 6. Waste Characteristics Information

| Source Type | Quantity | Tier |
|---|---|---|
| Landfill | 1.65e+01 acres | A |

General Types of Waste:
- Metals
- Organics
- Oily Waste
- Other:
  COAL TAR, PETROLEUM TAR, PITCH
  CARBONACEOUS DUST, COKE

Physical State of Waste as Deposited
- Solid
- Sludge
- Powder

Tier Legend
C = Constituent W = Wastestream
V = Volume A = Area



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| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

## 7. Ground Water Pathway

| | | |
|---|---|---|
| Is Ground Water Used for Drinking Water Within 4 Miles: No | Is There a Suspected Release to Ground Water: Yes | List Secondary Target Population Served by Ground Water Withdrawn From: |
| Type of Ground Water Wells Within 4 Miles: None | Have Primary Target Drinking Water Wells Been Identified: No | 0 - 1/4 Mile 0<br>>1/4 - 1/2 Mile 0<br>>1/2 - 1 Mile 0<br>>1 - 2 Miles 0<br>>2 - 3 Miles 0<br>>3 - 4 Miles 0<br>Total 0 |
| Depth to Shallowest Aquifer: 4 Feet | | |
| Karst Terrain/Aquifer Present: No | Nearest Designated Wellhead Protection Area: None within 4 Miles | |

| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

8. Surface Water Pathway — Part 1 of 4

| | |
|---|---|
| Type of Surface Water Draining Site and 15 Miles Downstream:<br>River<br>Lake | Shortest Overland Distance From Any Source to Surface Water:<br>2640 Feet<br>0.5 Miles |
| Is there a Suspected Release to Surface Water: No | Site is Located in:<br>> 500 yr floodplain |

8. Surface Water Pathway — Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: No

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:
None



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| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

8. Surface Water Pathway — Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:

| Fishery Name | Water Body Type/Flow(cfs) |
|---|---|
| NIAGARA RIVER | large river/ >10000 |

8. Surface Water Pathway — Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) Yes

Have Primary Target Wetlands Been Identified? (y/n) No

Secondary Target Wetlands:

| Water Body/Flow(cfs) | Frontage(mi) |
|---|---|
| minimal stream/ <10 | 0.1 to 1 |
| minimal stream/ <10 | <0.1 |

Other Sensitive Environments Along the Surface Water Migration Path: No

Have Primary Target Sensitive Environments Been Identified: No

Secondary Target Sensitive Environments:
None

| POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM | IDENTIFICATION | |
|---|---|---|
| | State: NY | CERCLIS Number: NYD002106896 |
| | CERCLIS Discovery Date: | |

## 9. Soil Exposure Pathway

| | |
|---|---|
| Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination: No | Number of Workers Onsite: 1 - 100 |

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: No

## 10. Air Pathway

| Total Population on or Within: | |
|---|---|
| Onsite | 0 |
| 0 - 1/4 Mile | 0 |
| >1/4 - 1/2 Mile | 0 |
| >1/2 - 1 Mile | 5994 |
| >1 - 2 Miles | 29000 |
| >2 - 3 Miles | 23500 |
| >3 - 4 Miles | 0 |
| Total | 58494 |

Is There a Suspected Release to Air: No

Wetlands Located Within 4 Miles of the Site: No

Other Sensitive Environments Located Within 4 Miles of the Site: No

Sensitive Environments Within 1/2 Mile of the Site:
None

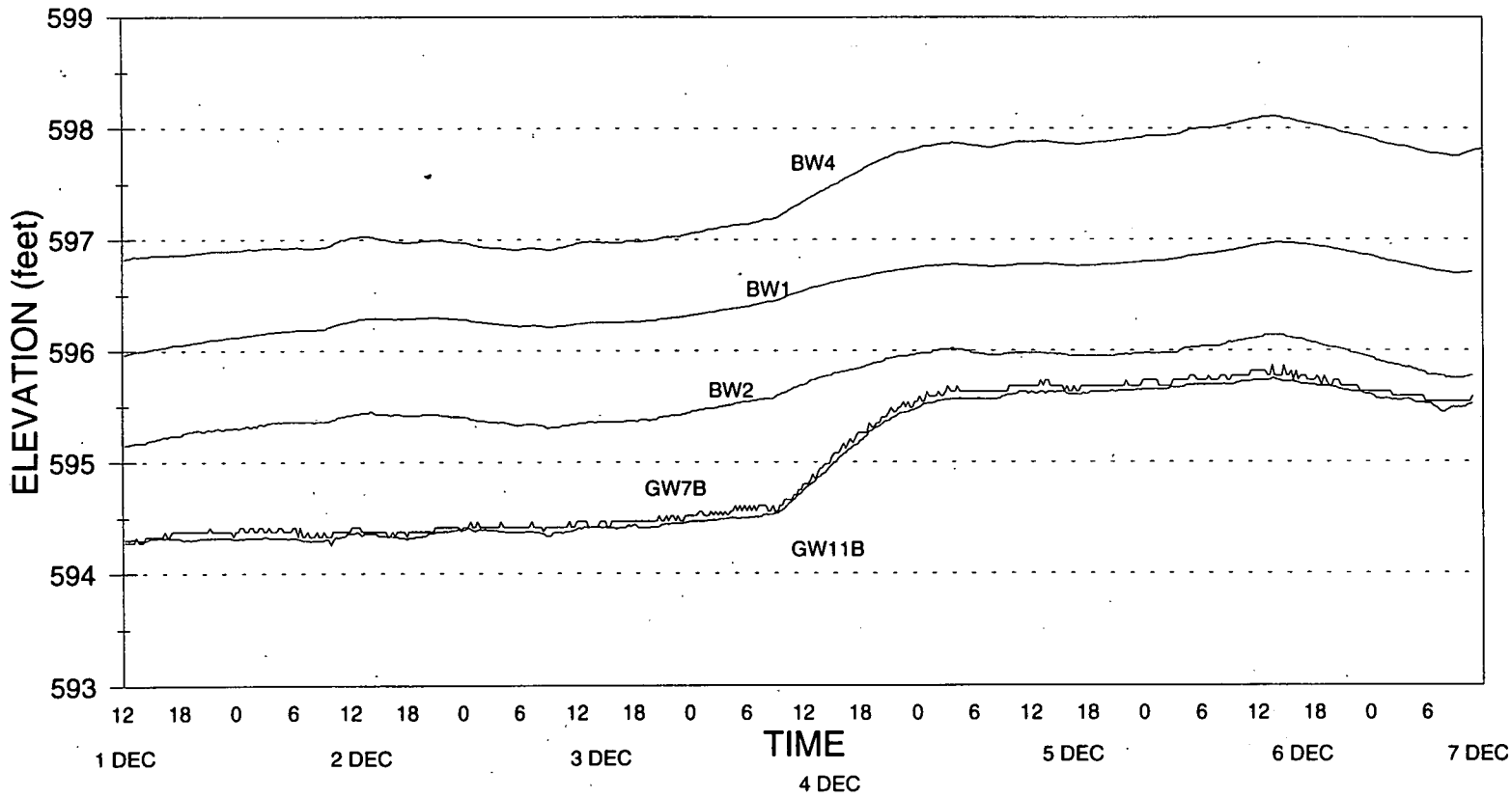
# APPENDIX G

# HYDROLOGIC DATA

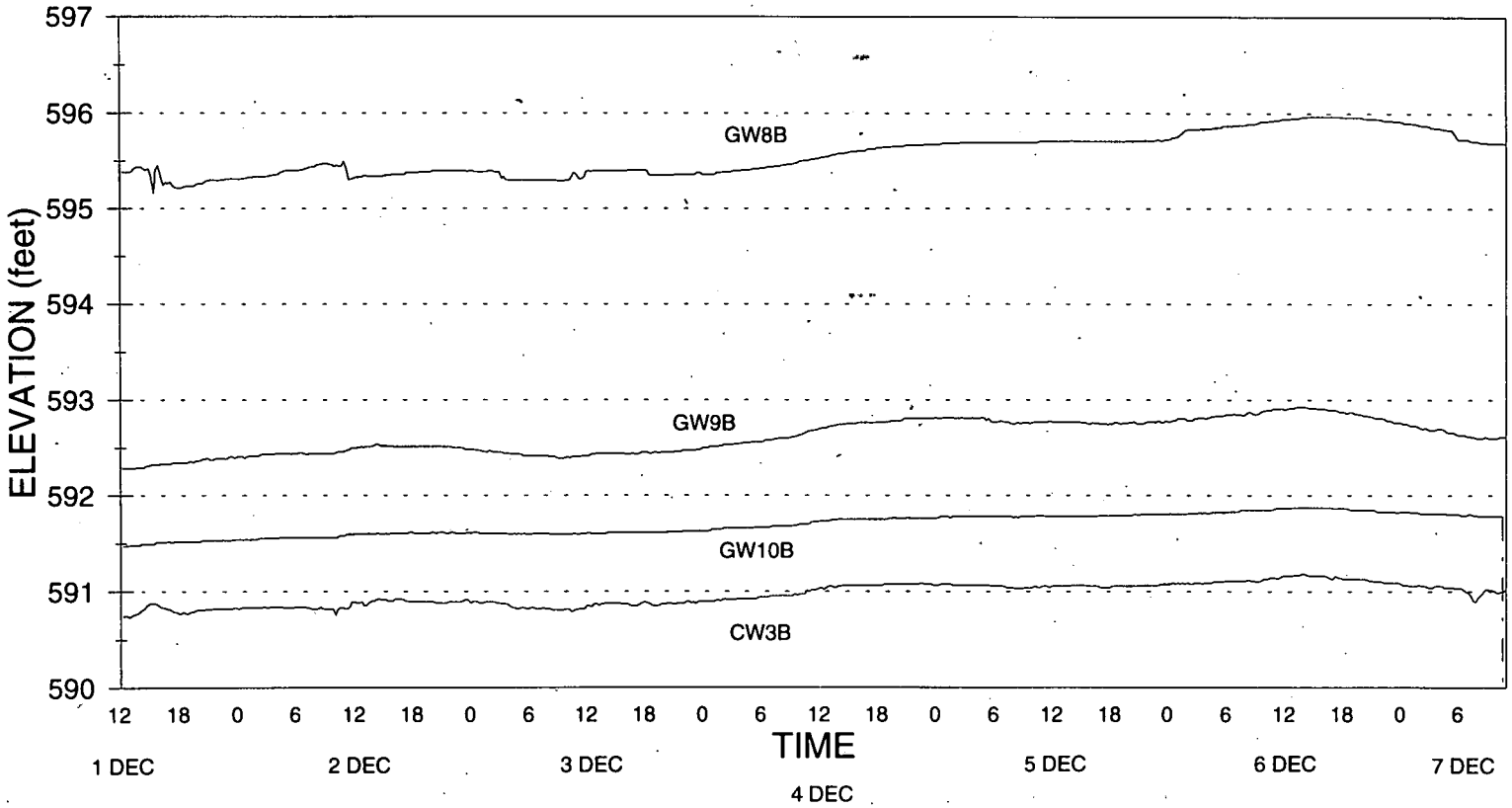
## NYSDEC DATALOGGER DATA

**(Water elevations of nine wells at the Union Carbide site)**

# UNION CARBIDE SITE
## WATER ELEVATIONS
1 DEC 93 - 7 DEC 93



# UNION CARBIDE SITE
## WATER ELEVATIONS
1 DEC 93 - 7 DEC 93



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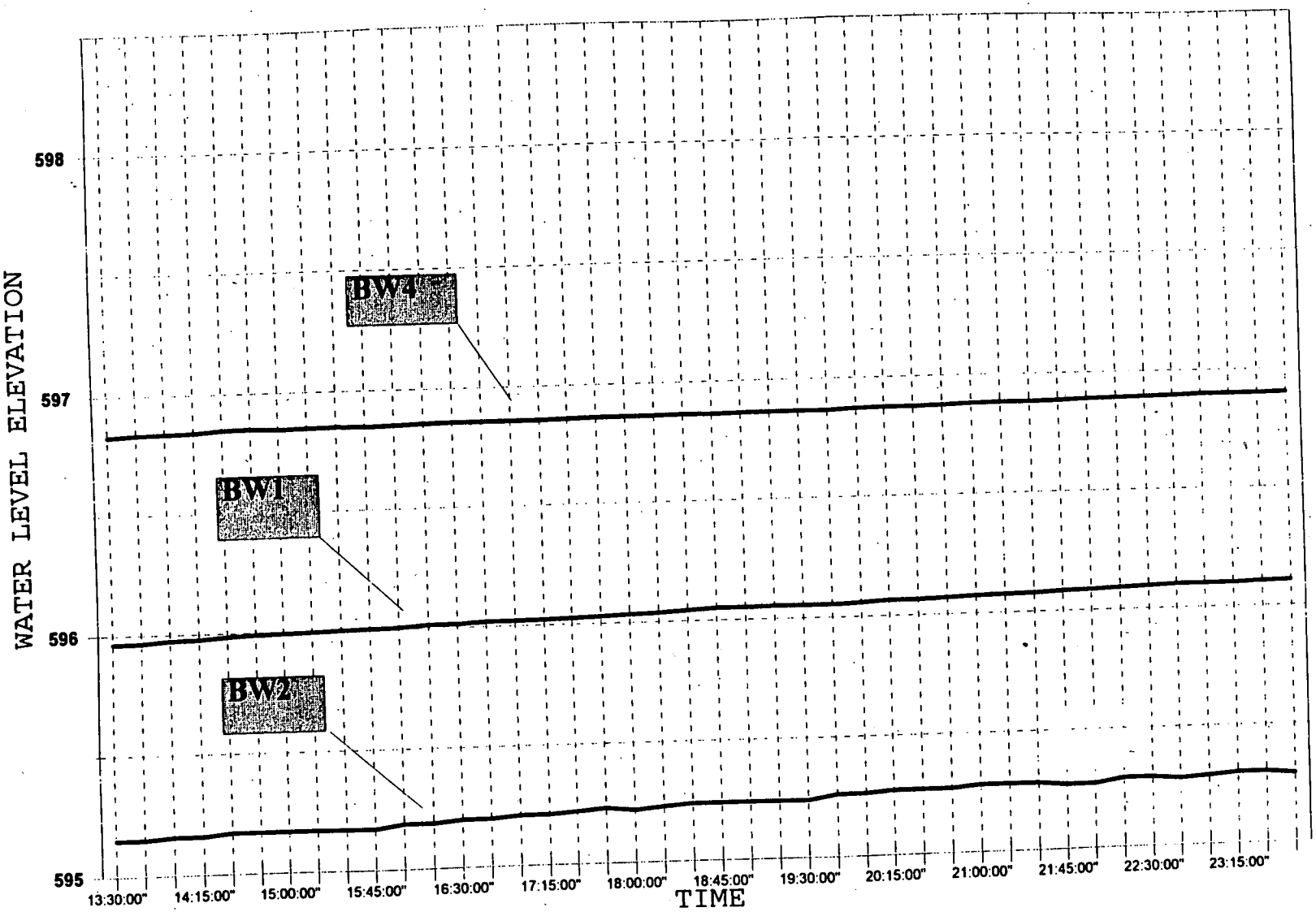
# WATER LEVELS 12/01/93



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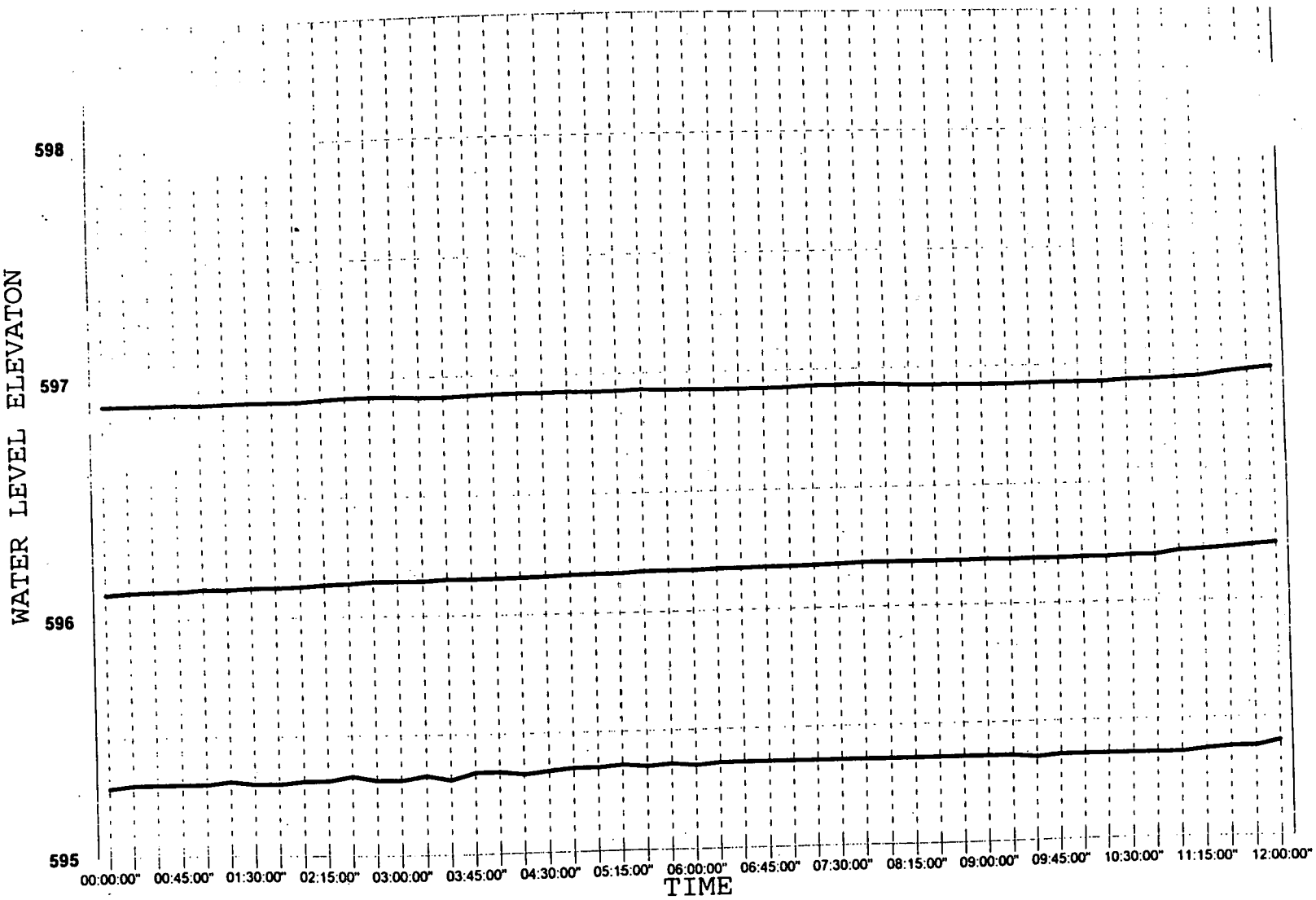
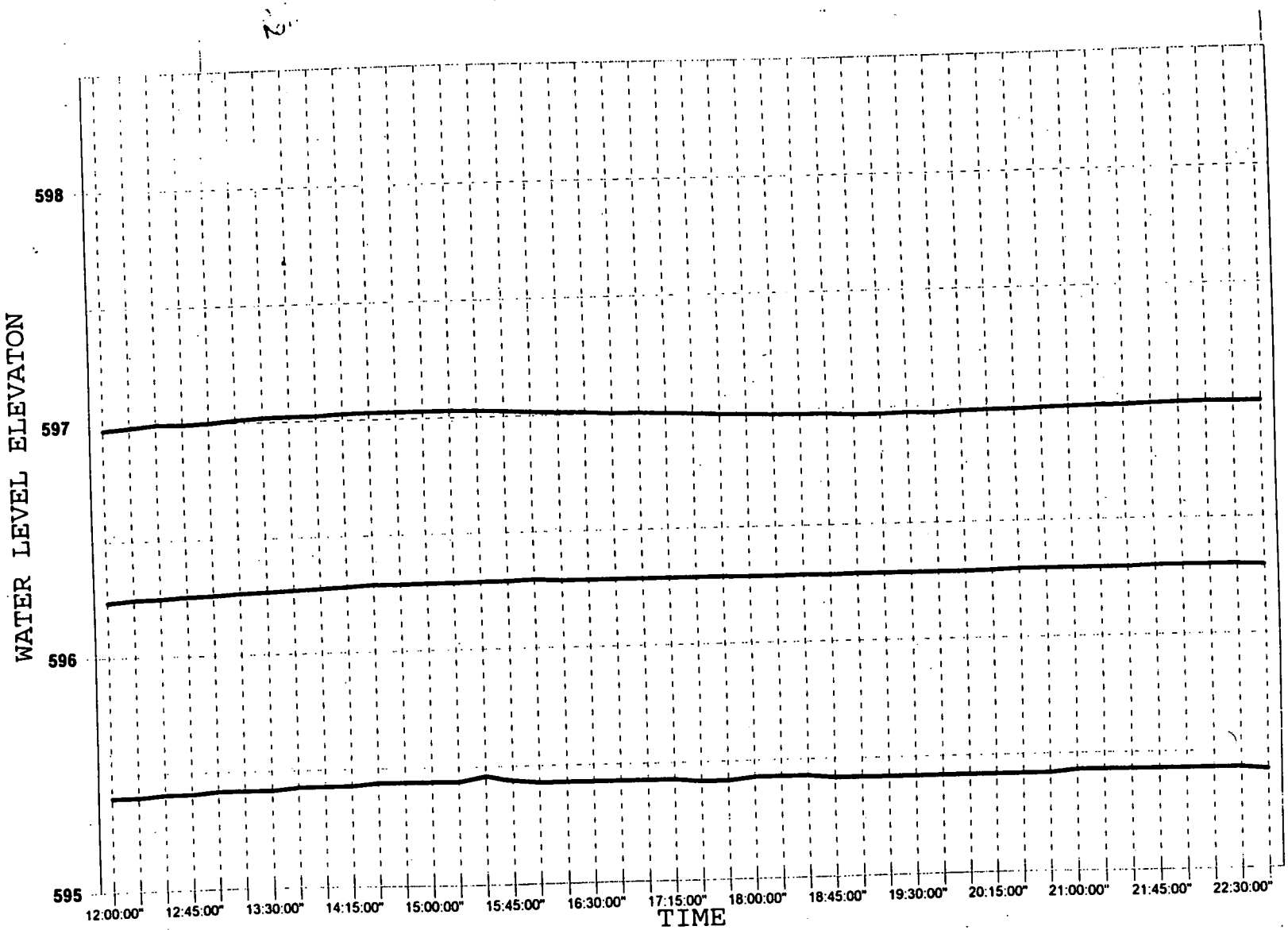
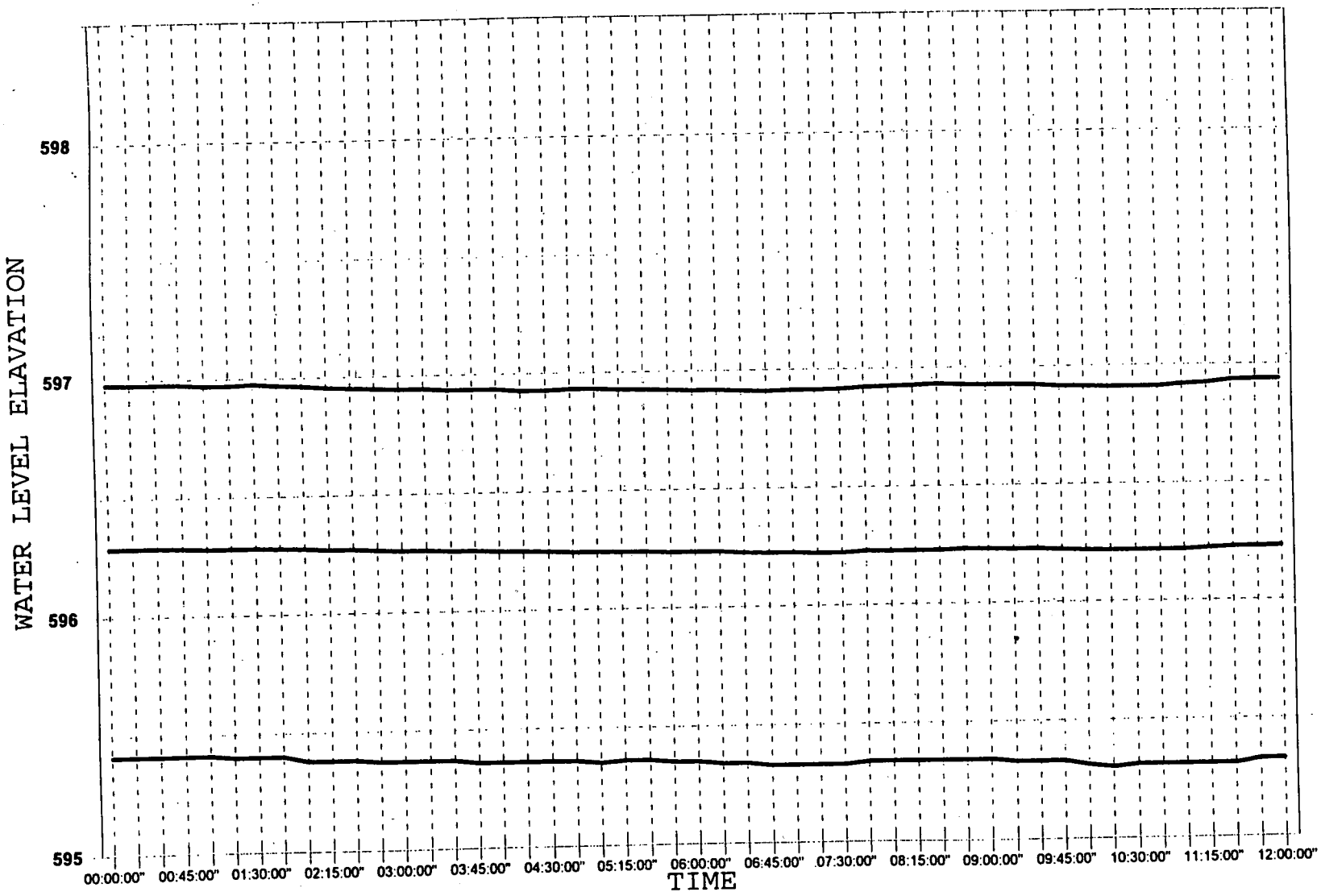


# WATER LEVELS 12/02/93



# WATER LEVELS 12/03/93



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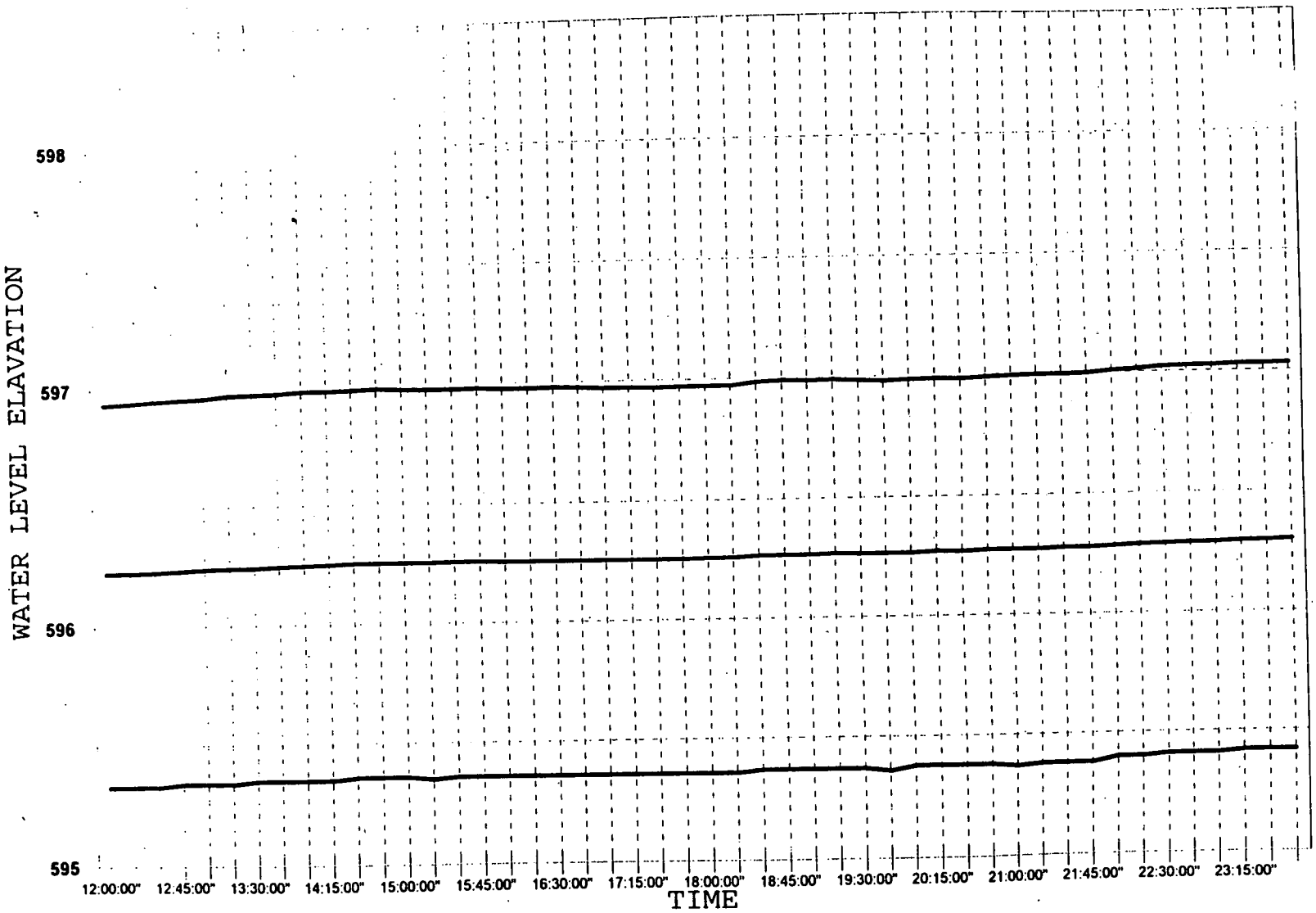
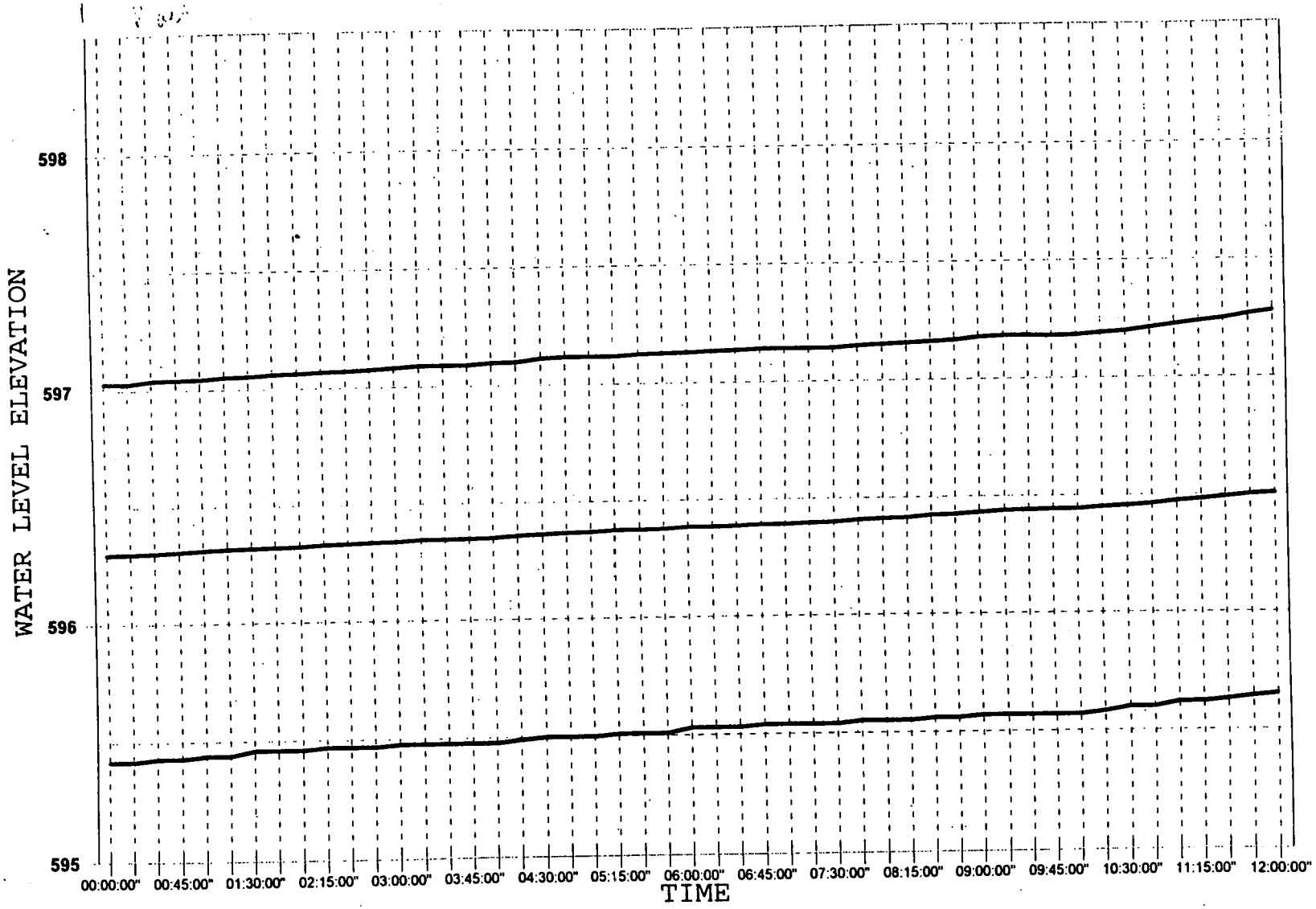
# WATER LEVELS 12/03/93



# WATER LEVELS 12/04/93



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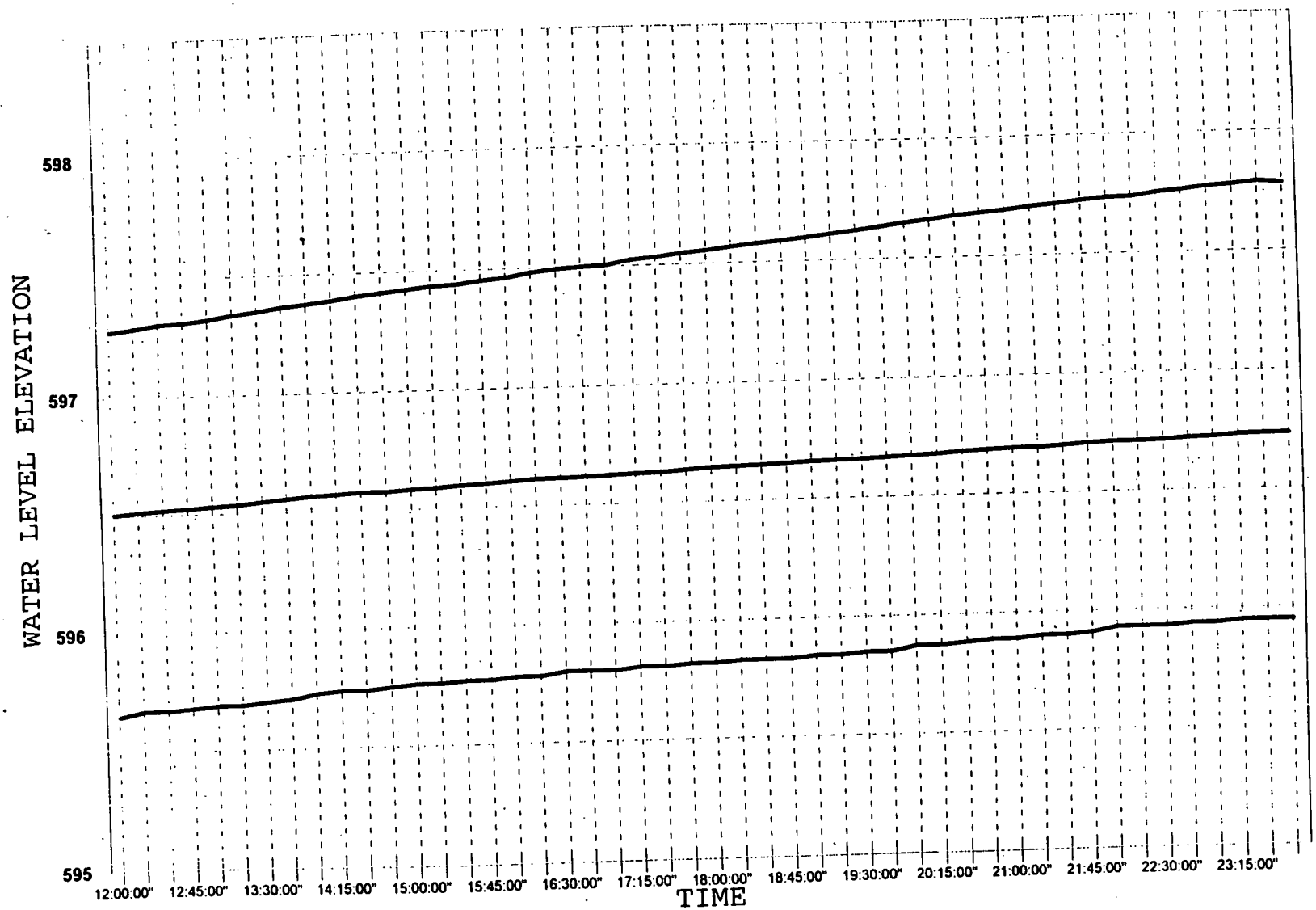
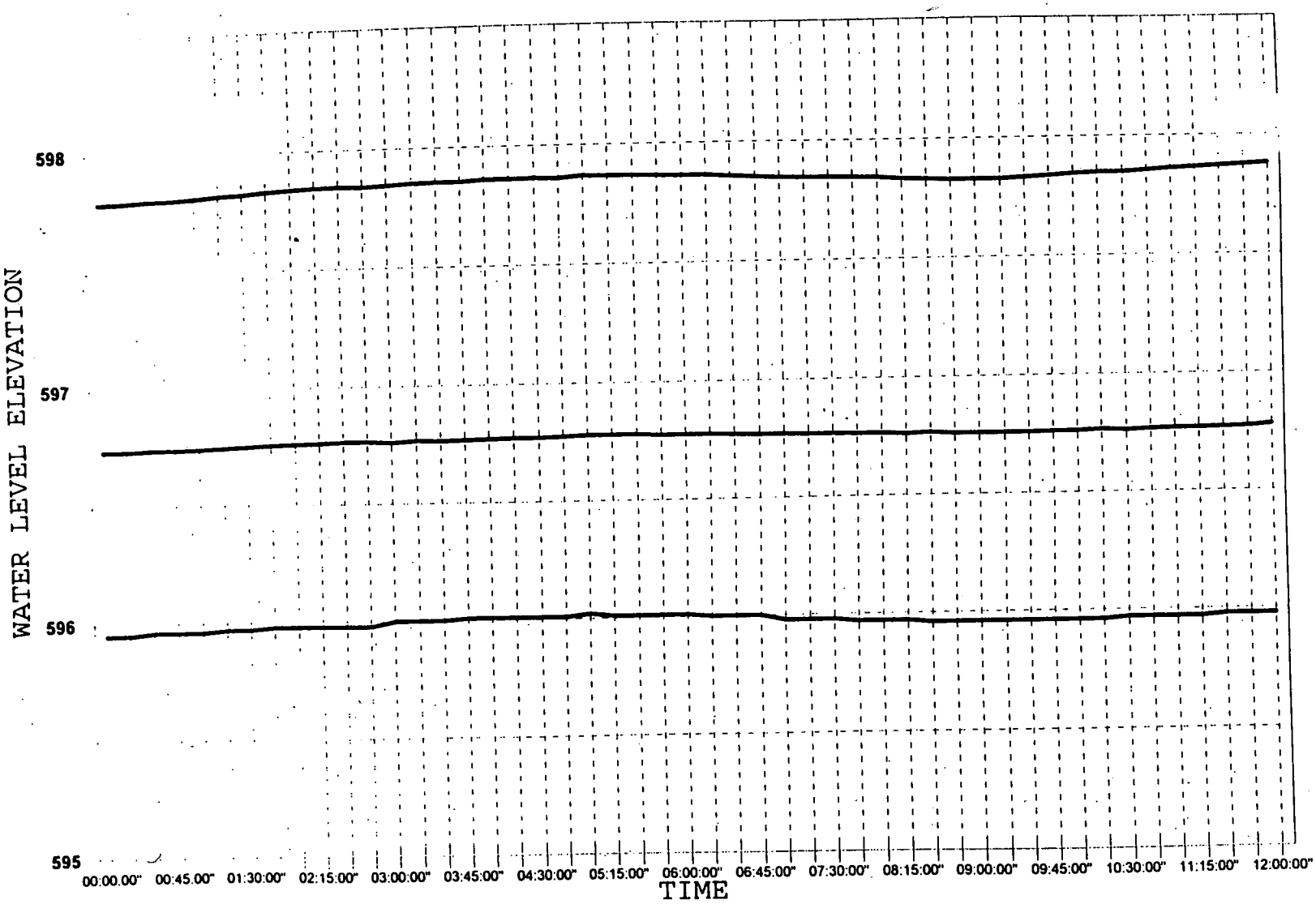
# WATER LEVELS 12/04/93

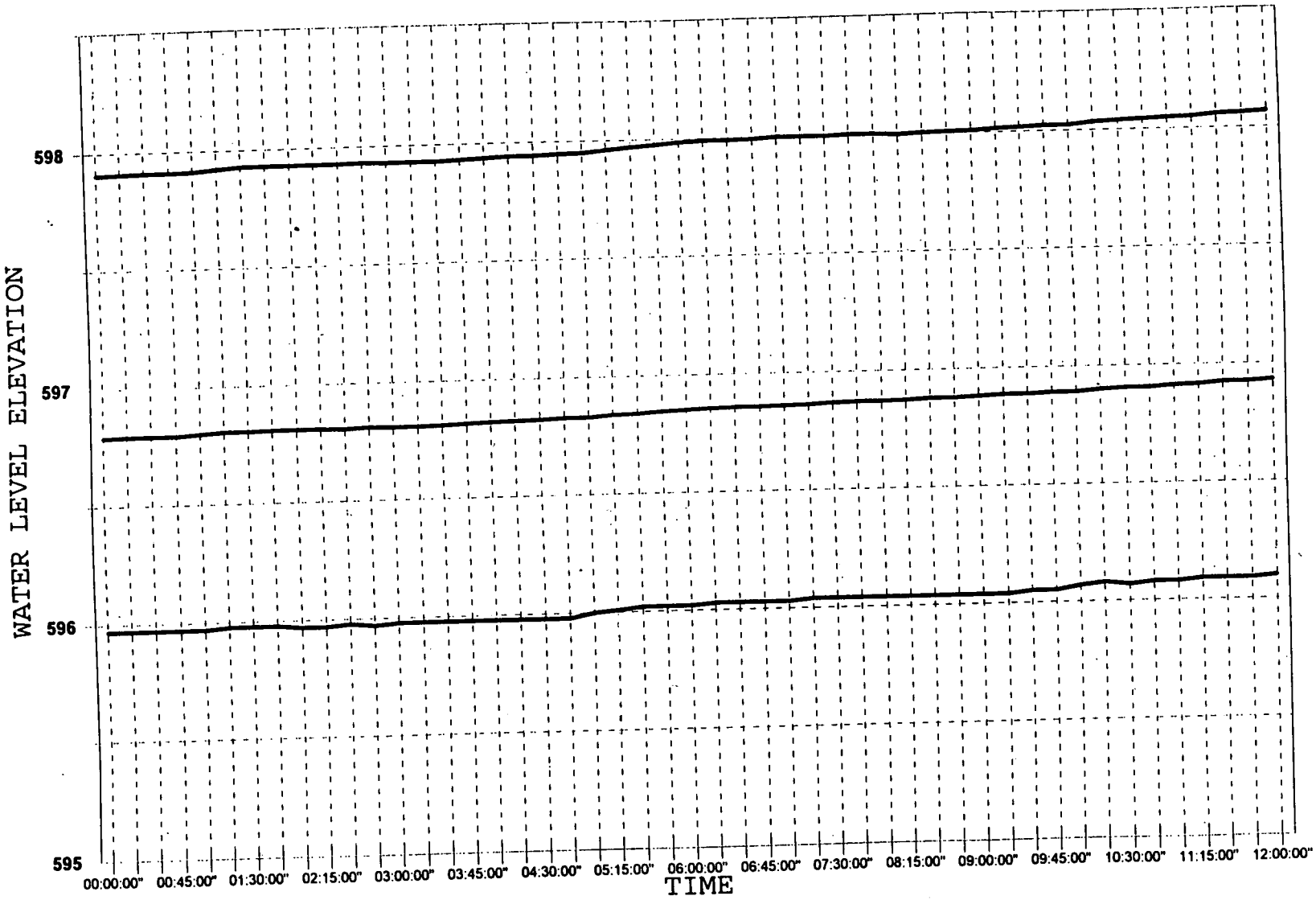


# WATER LEVELS 12/05/93



# WATER LEVELS 12/05/93

# WATER LEVELS 12/06/93



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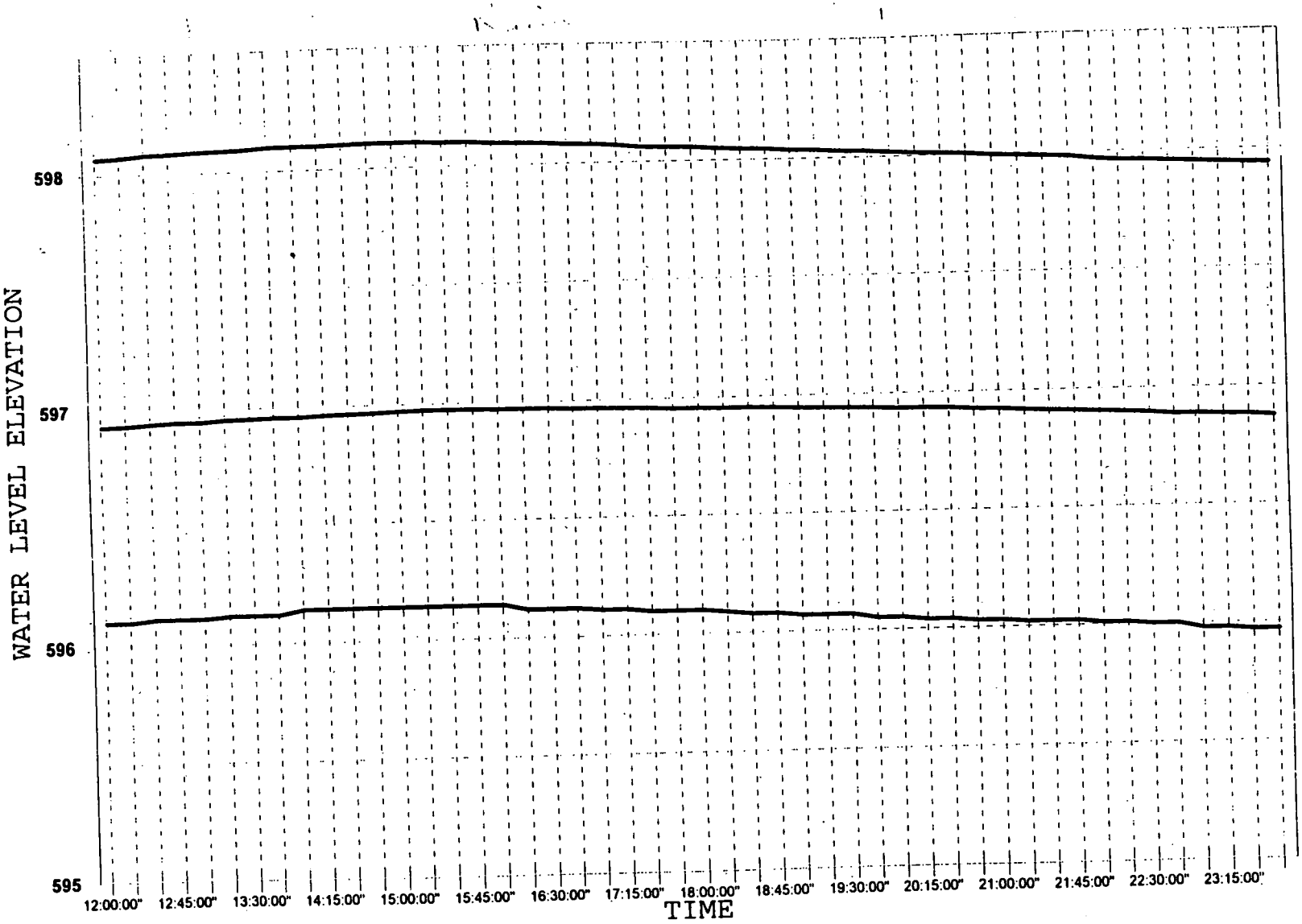
# WATER LEVELS 12/06/93



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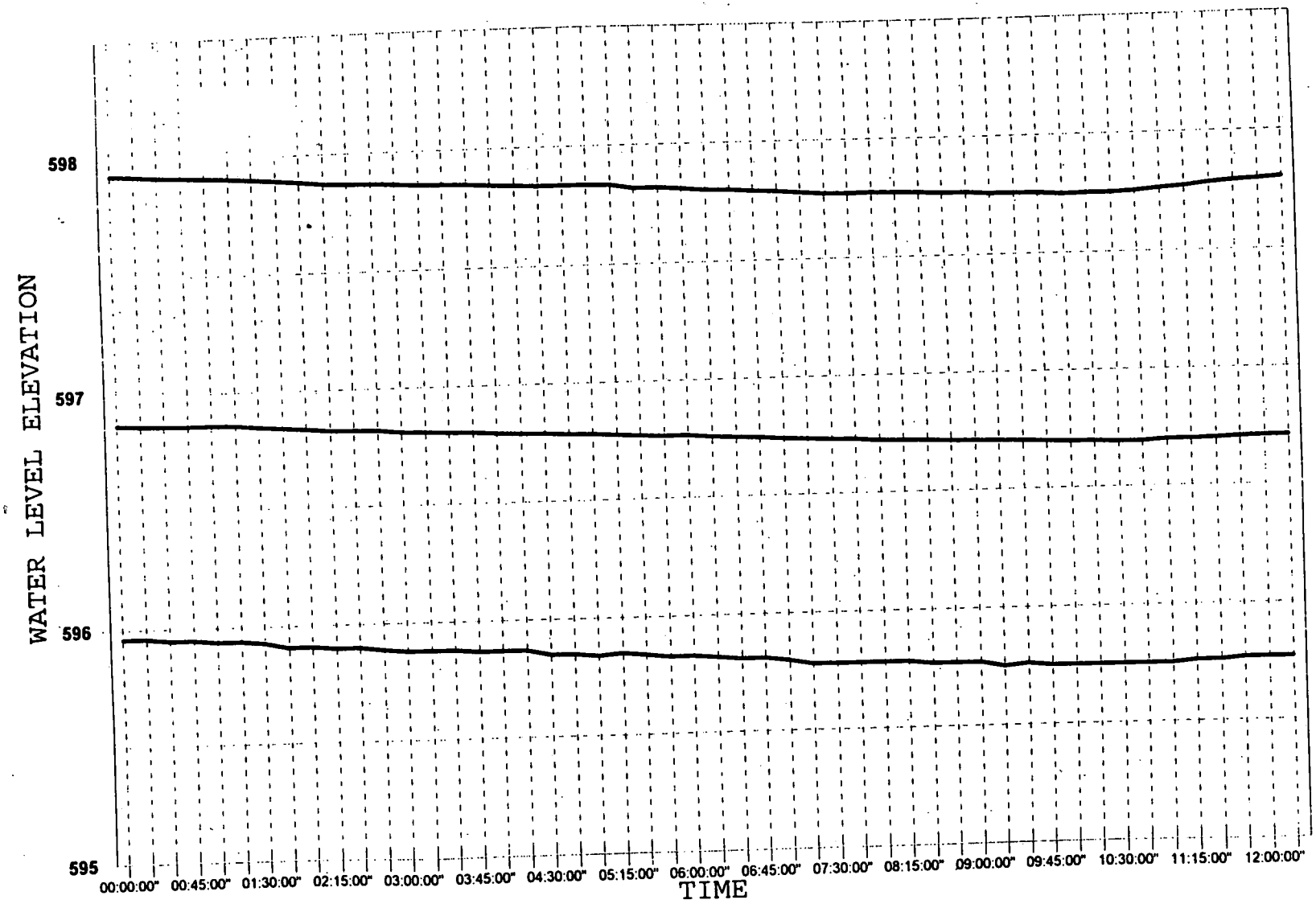

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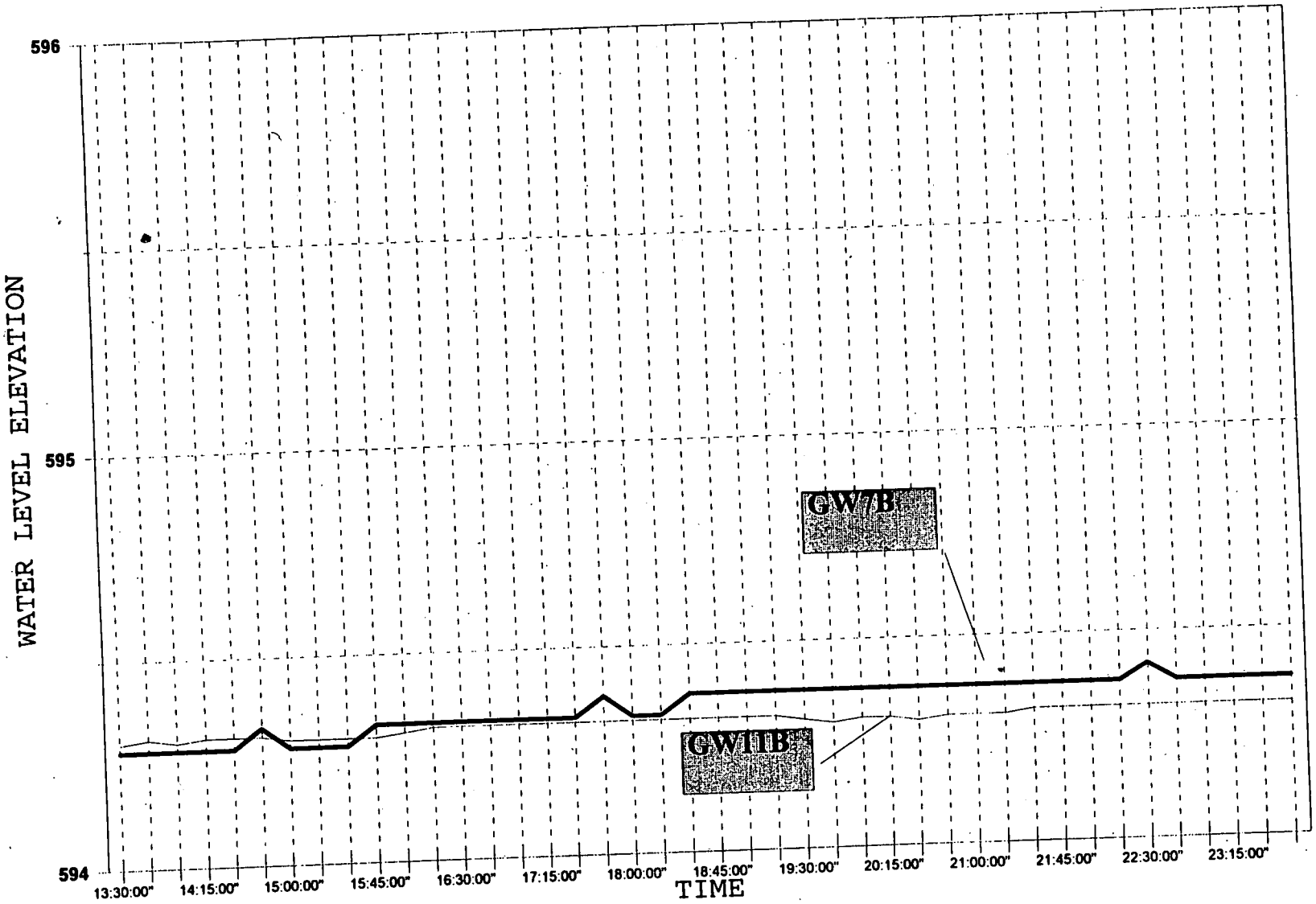

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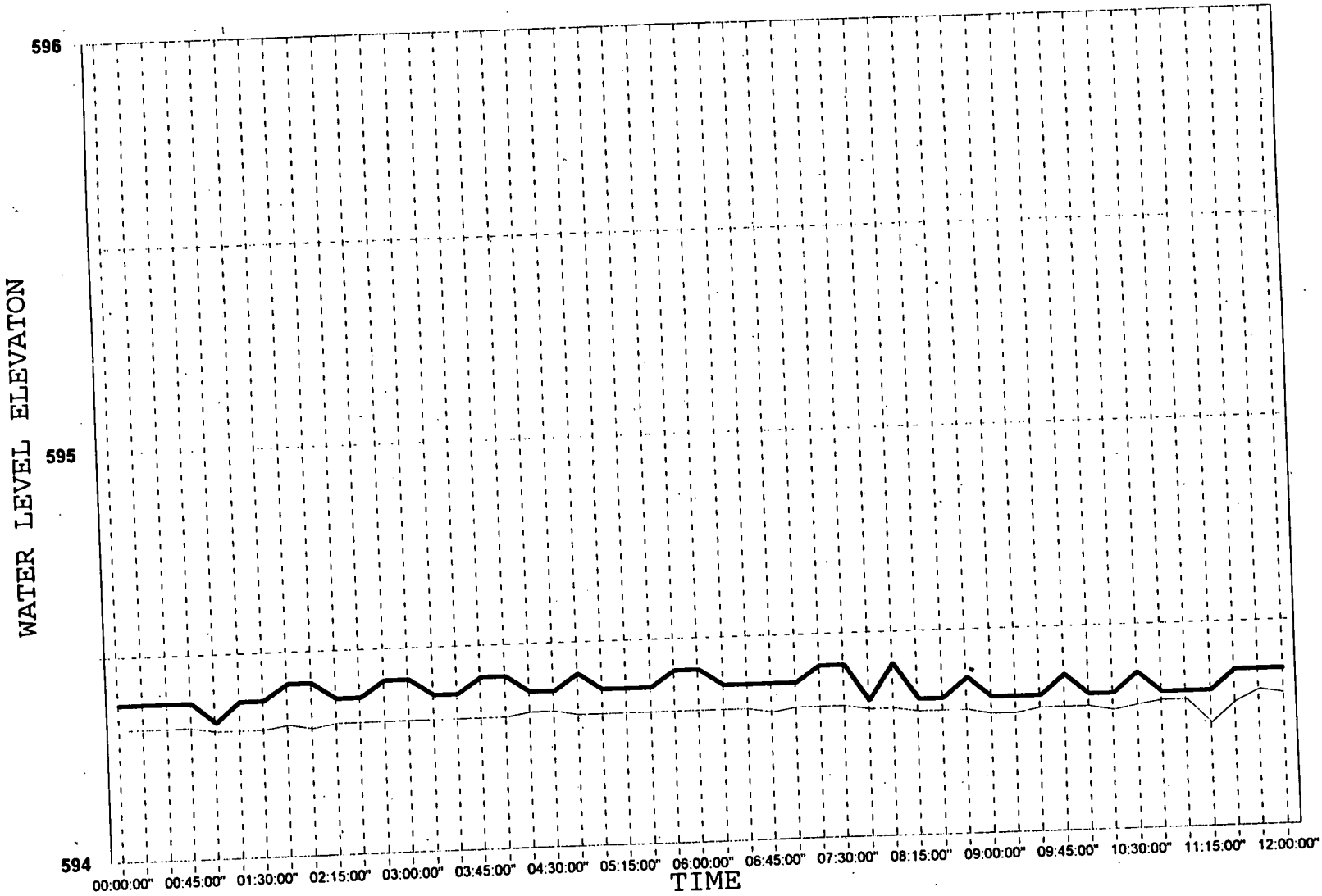




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ecology and environment

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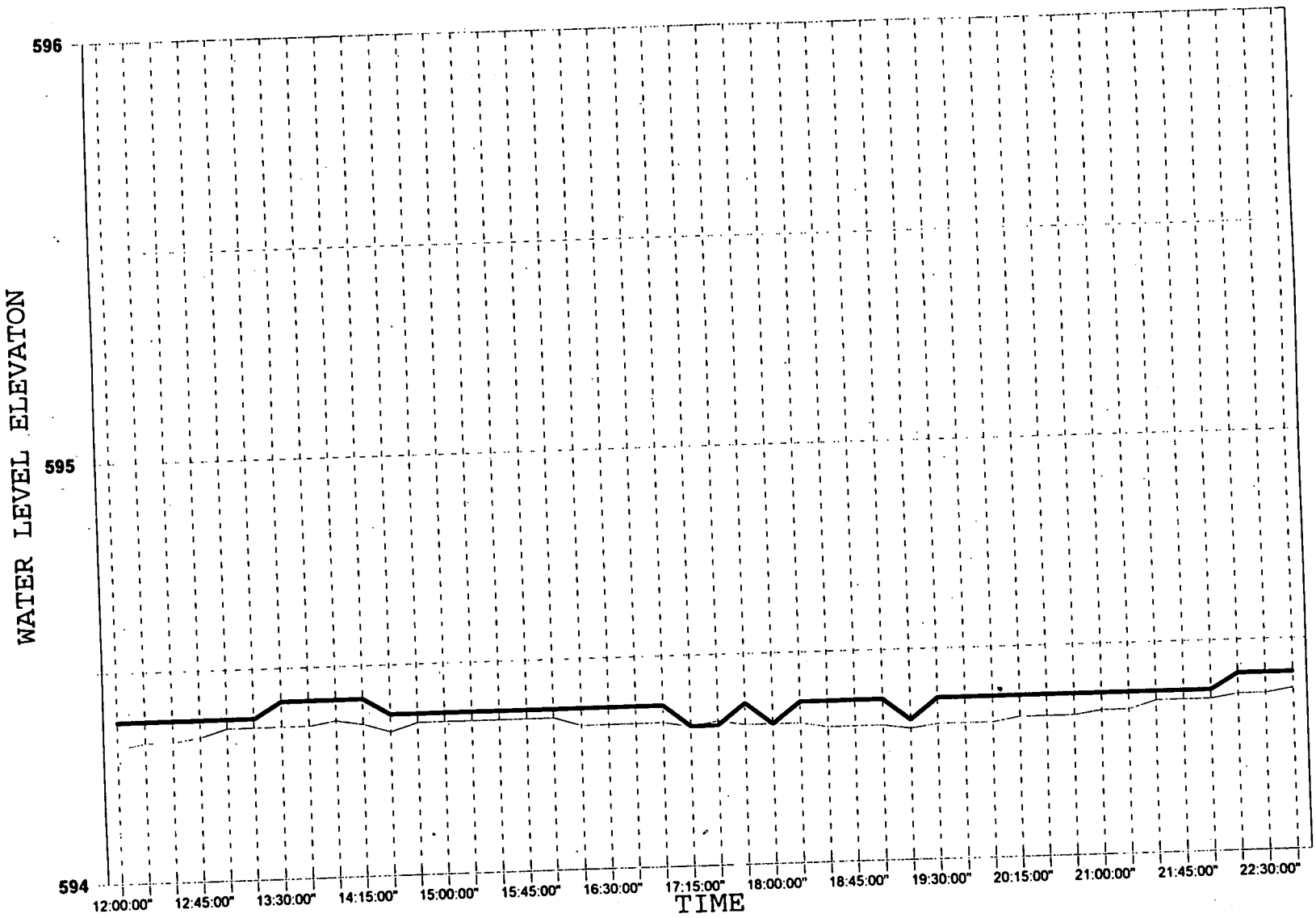

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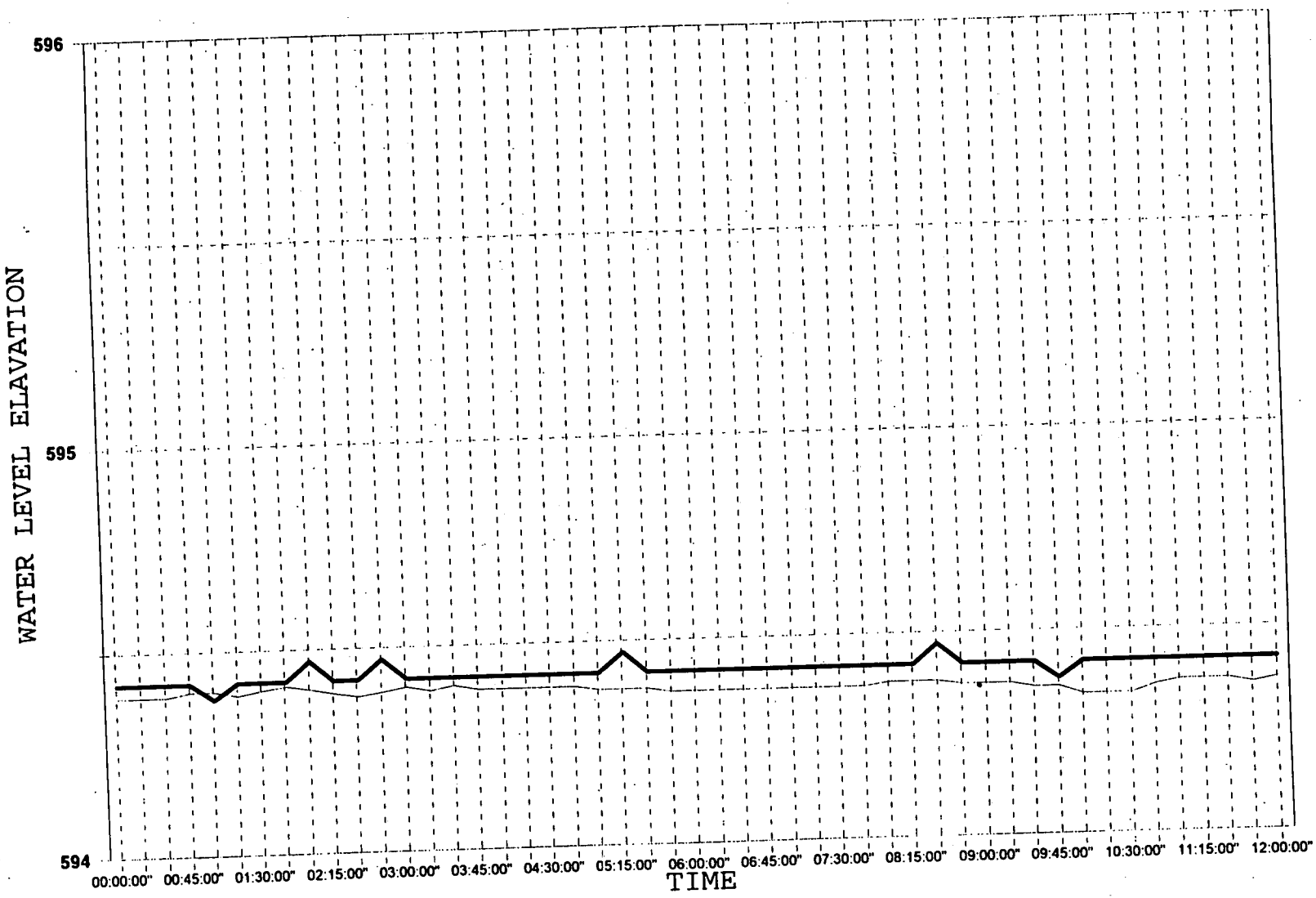




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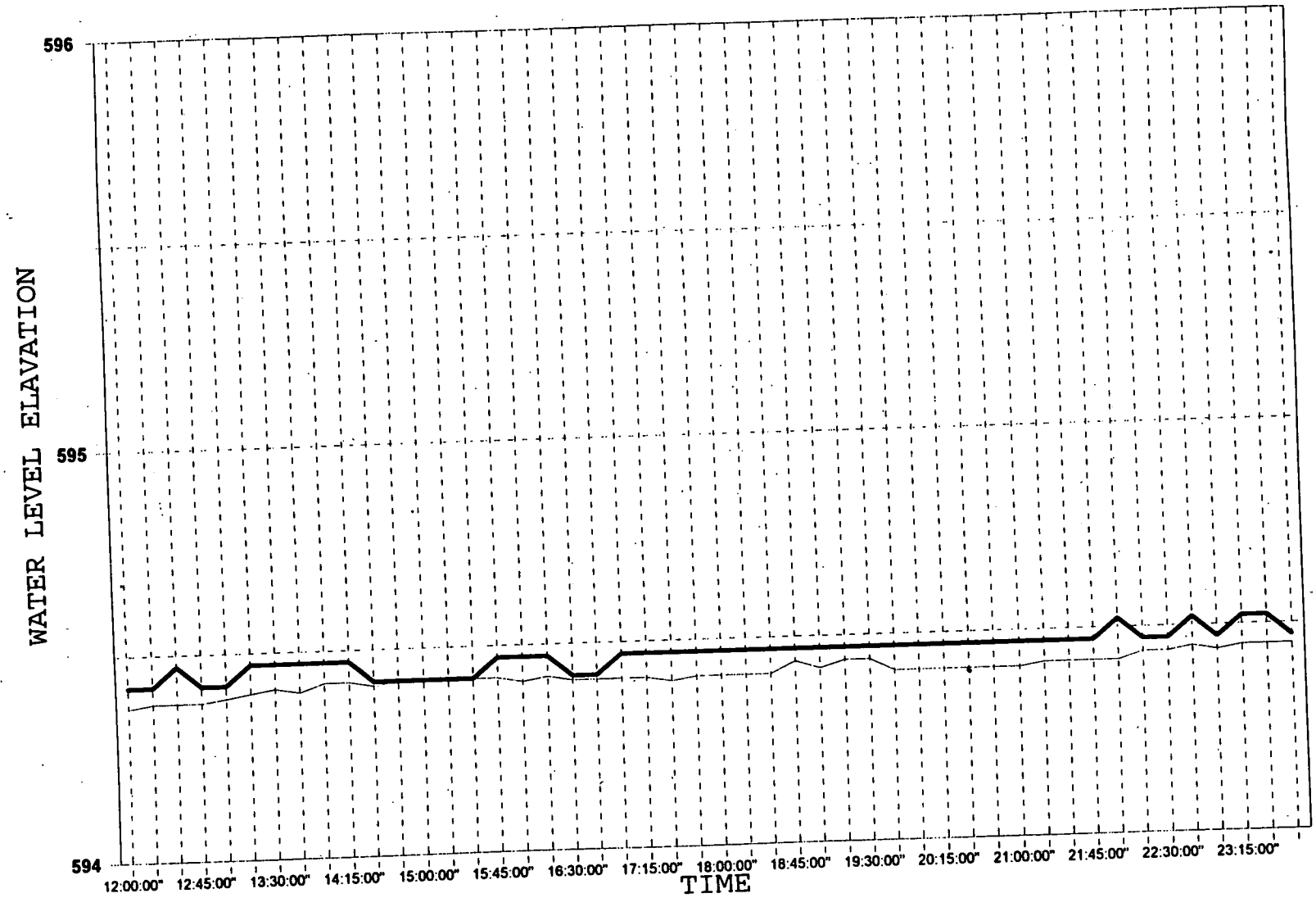

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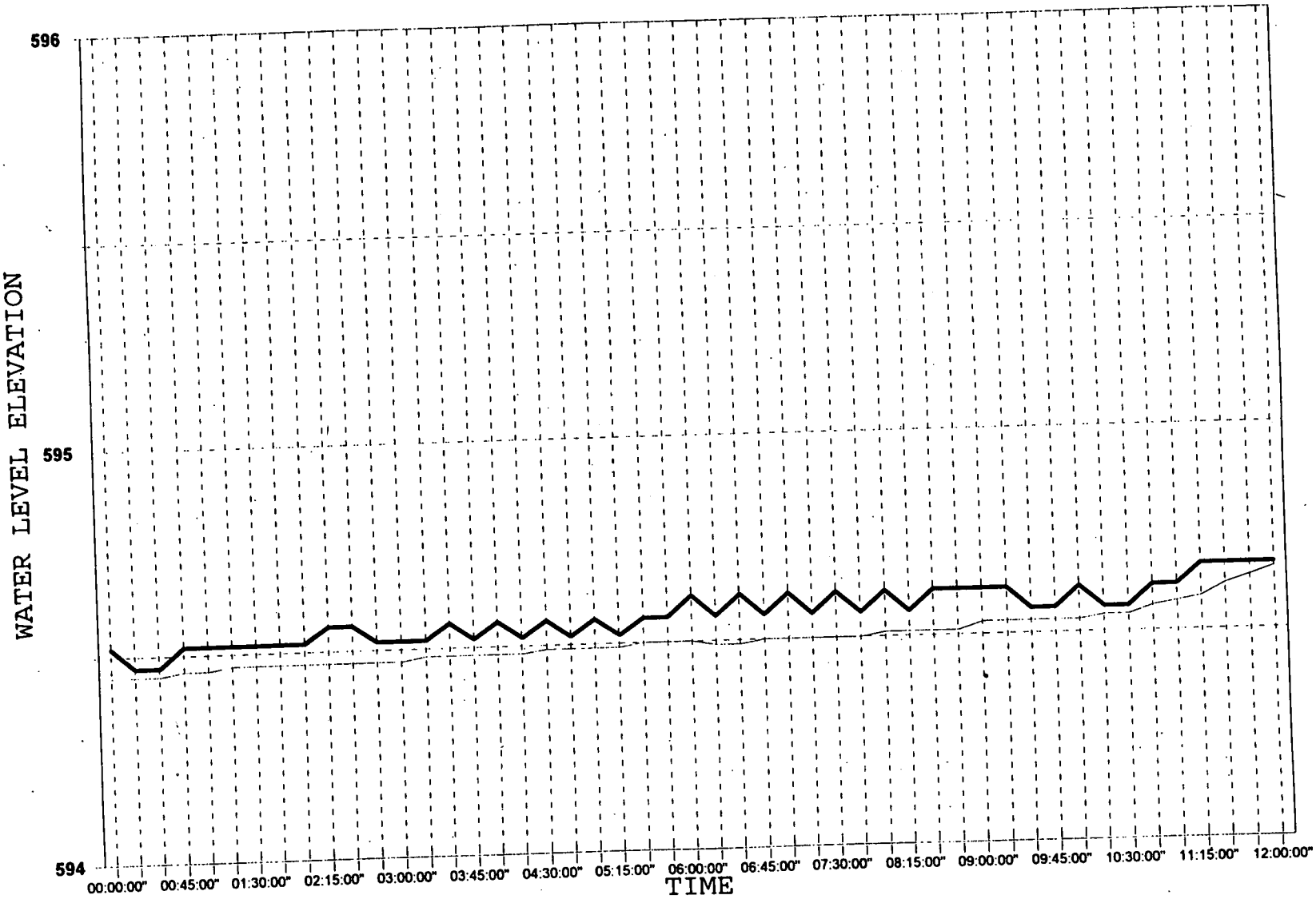

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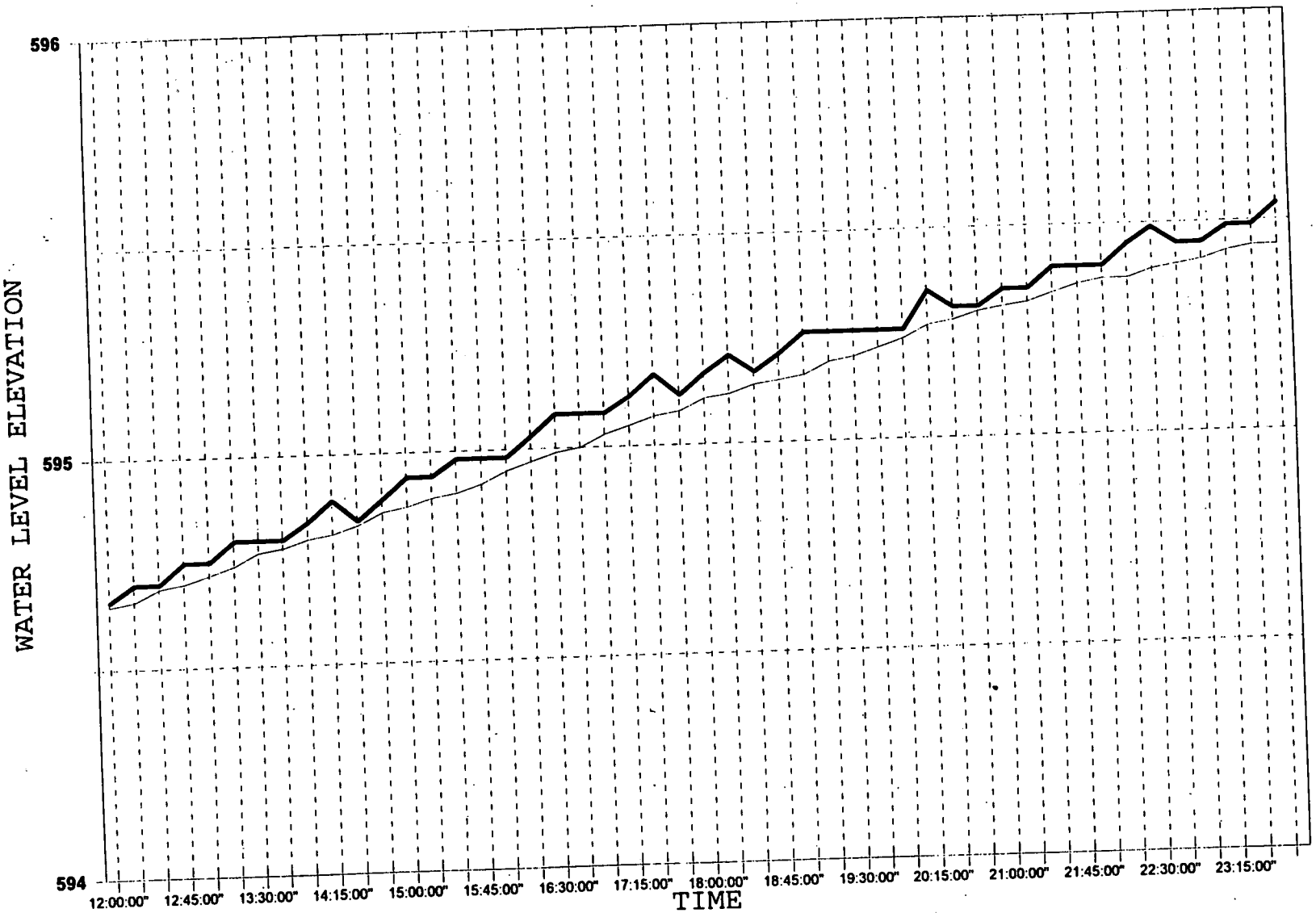

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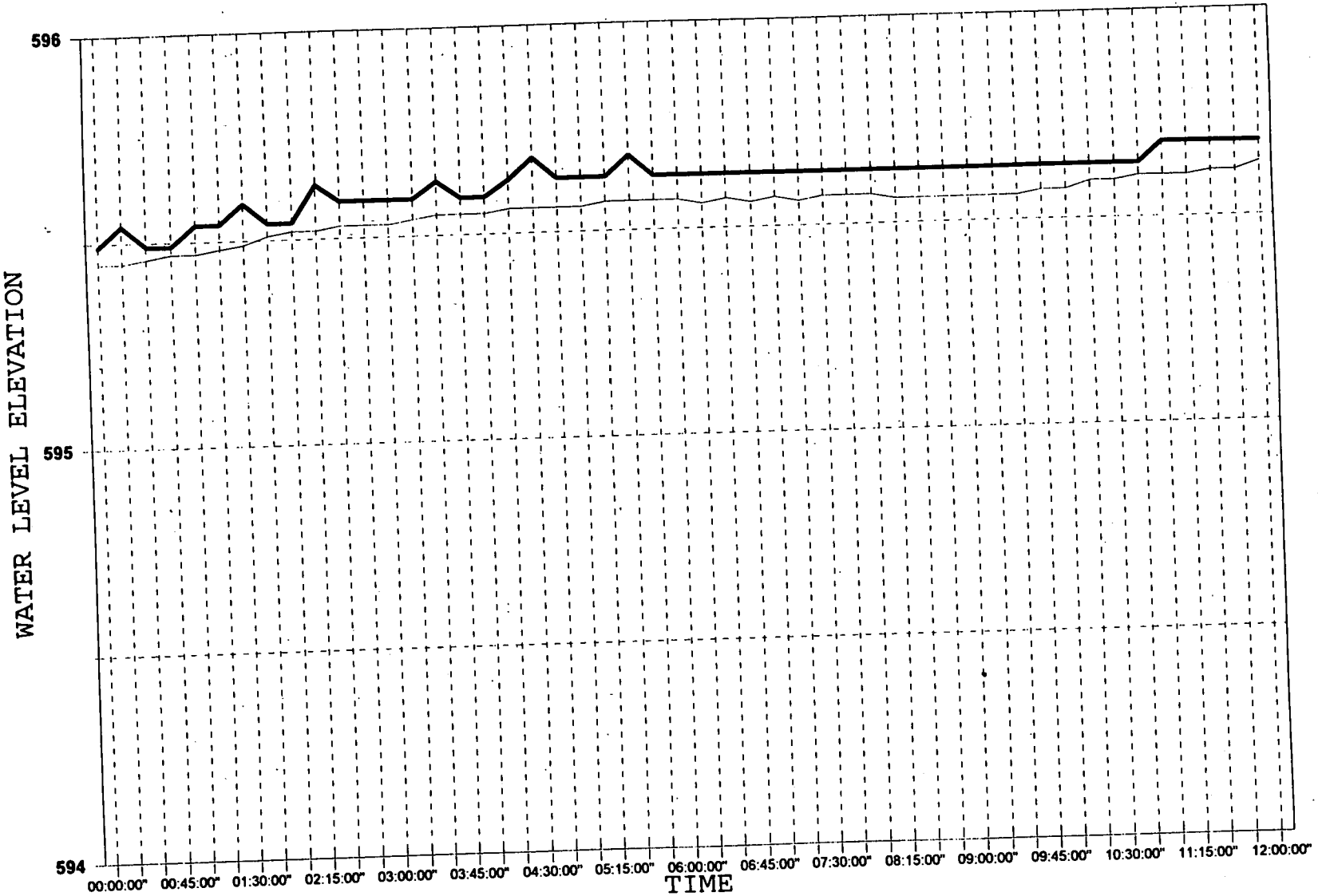




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ecology and environment

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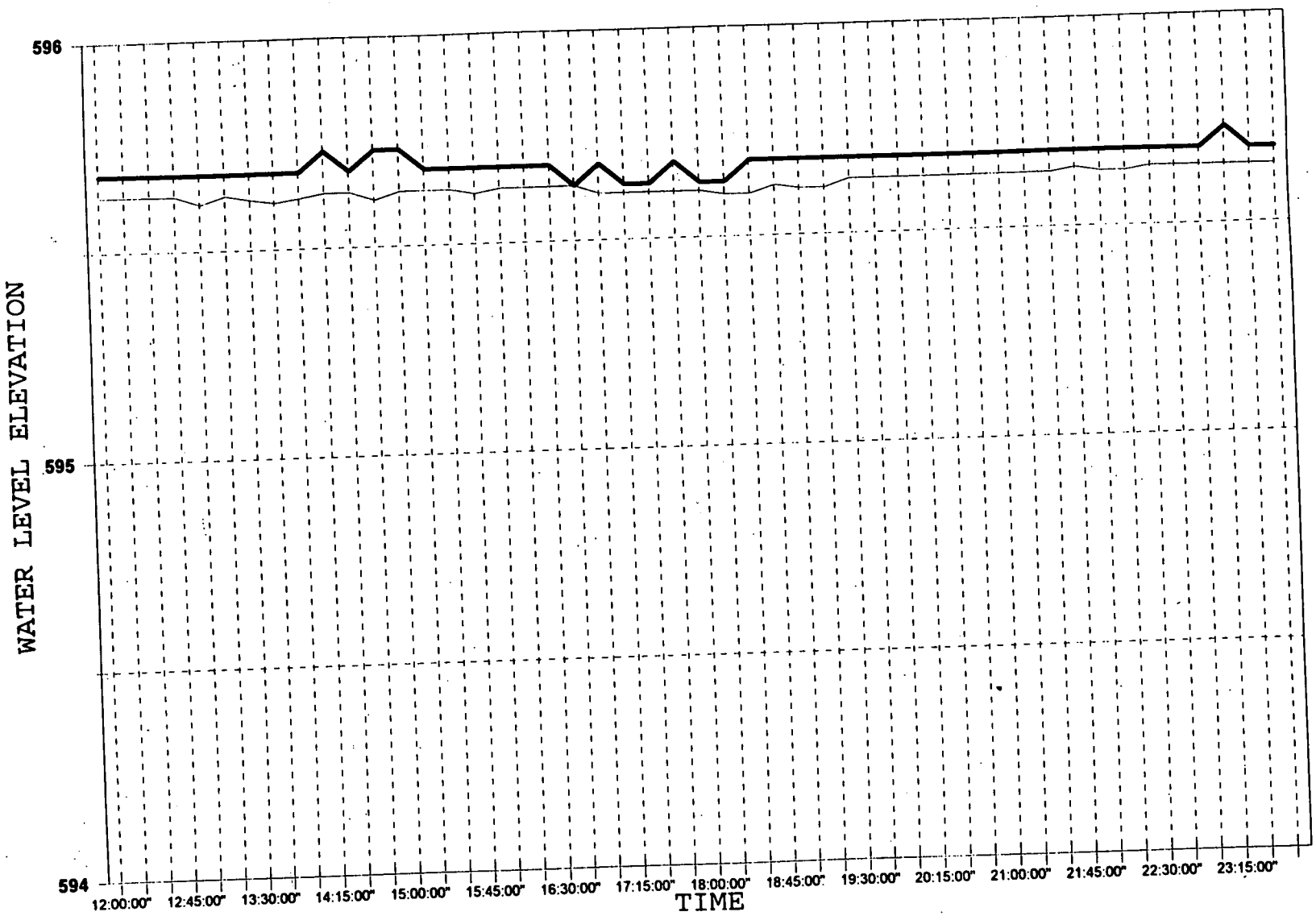

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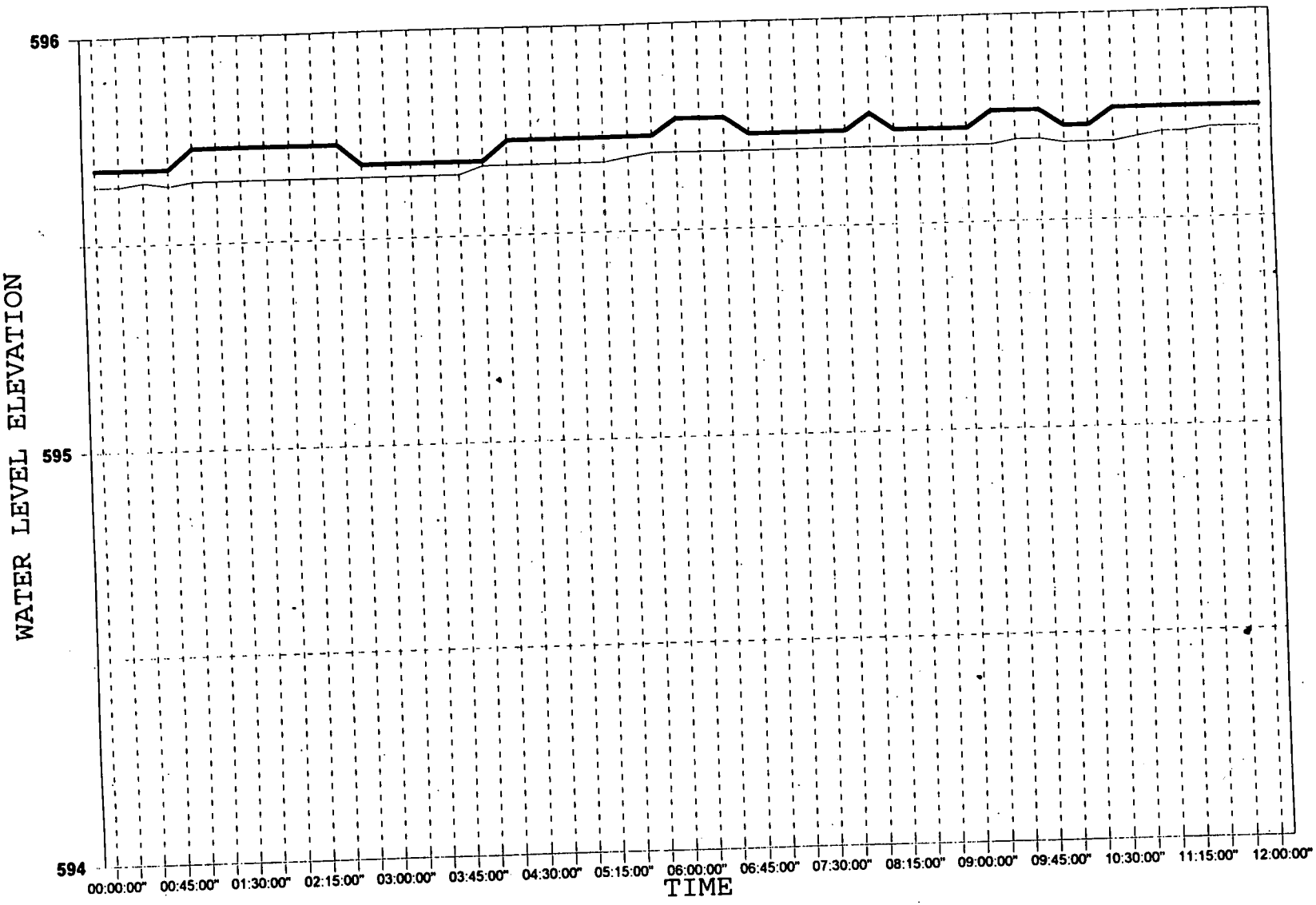




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ecology and environment

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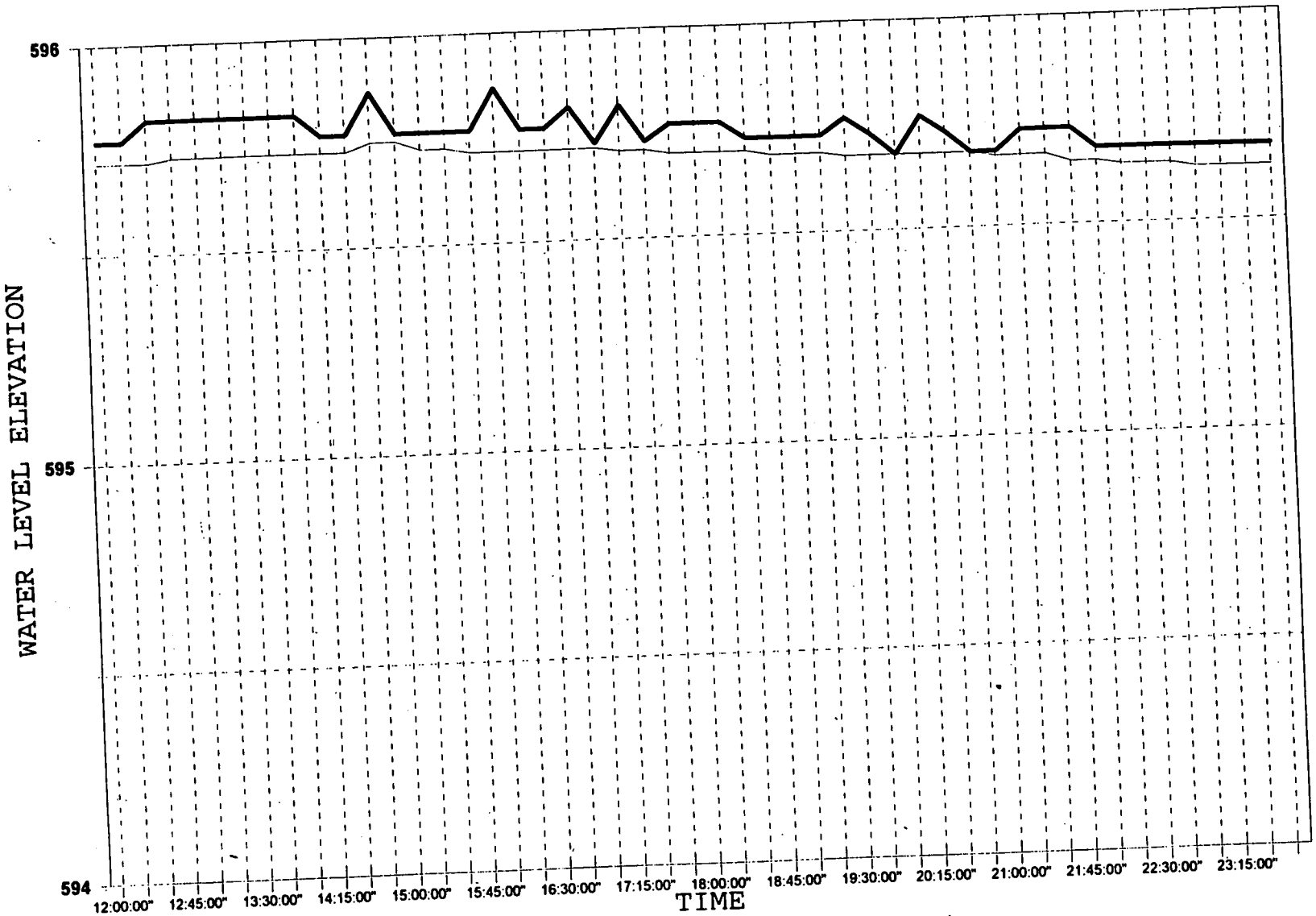

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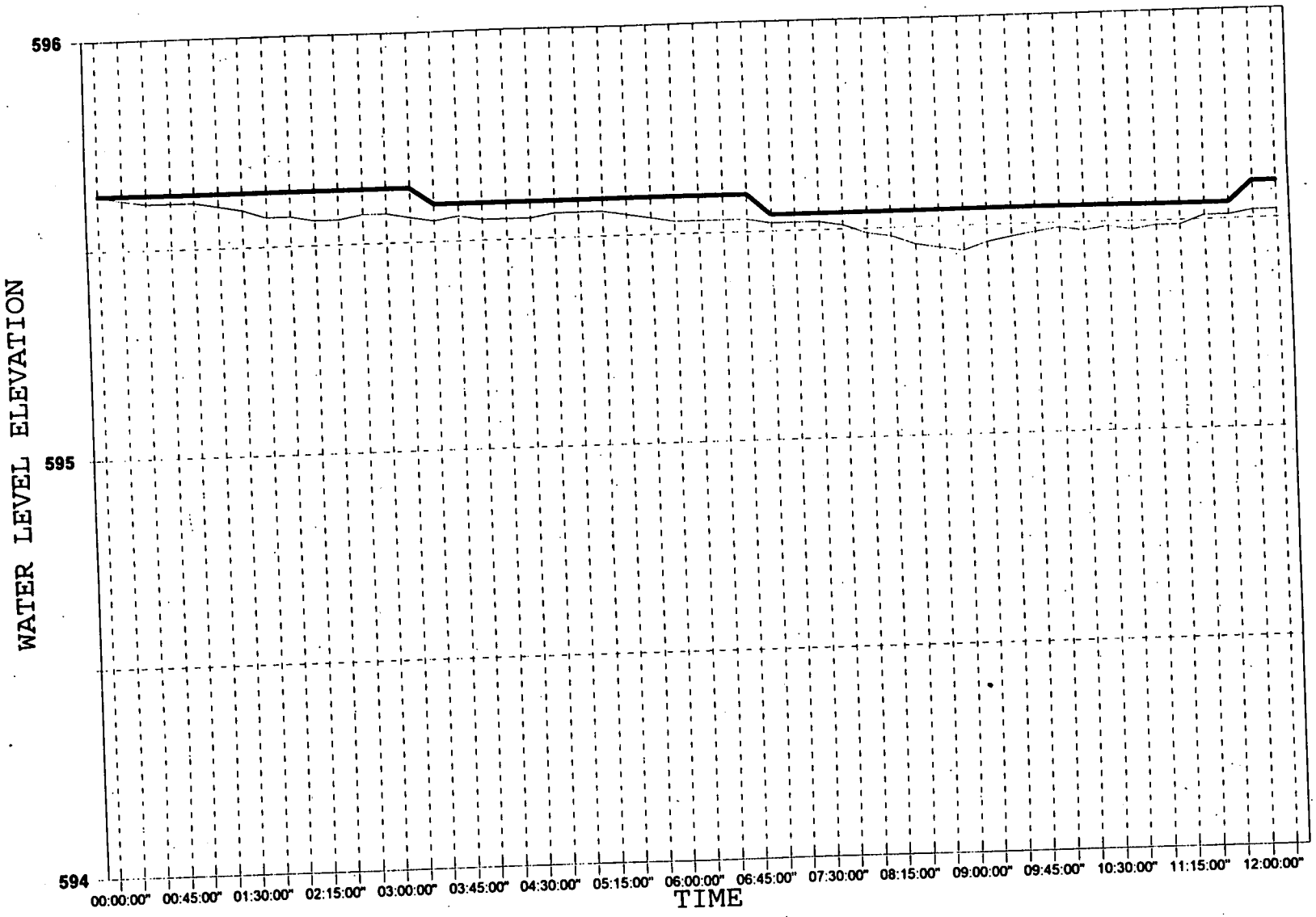




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ecology and environment

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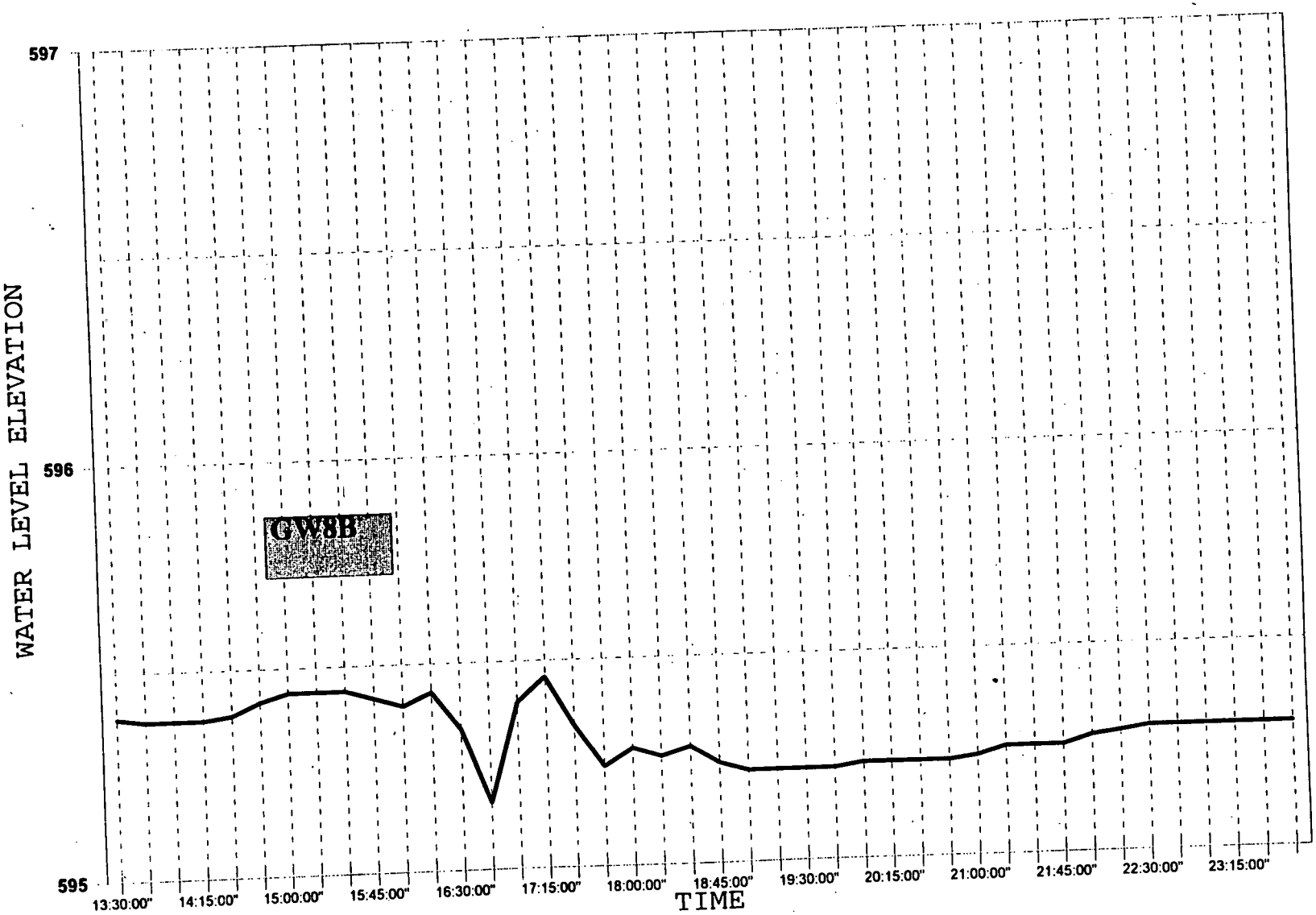

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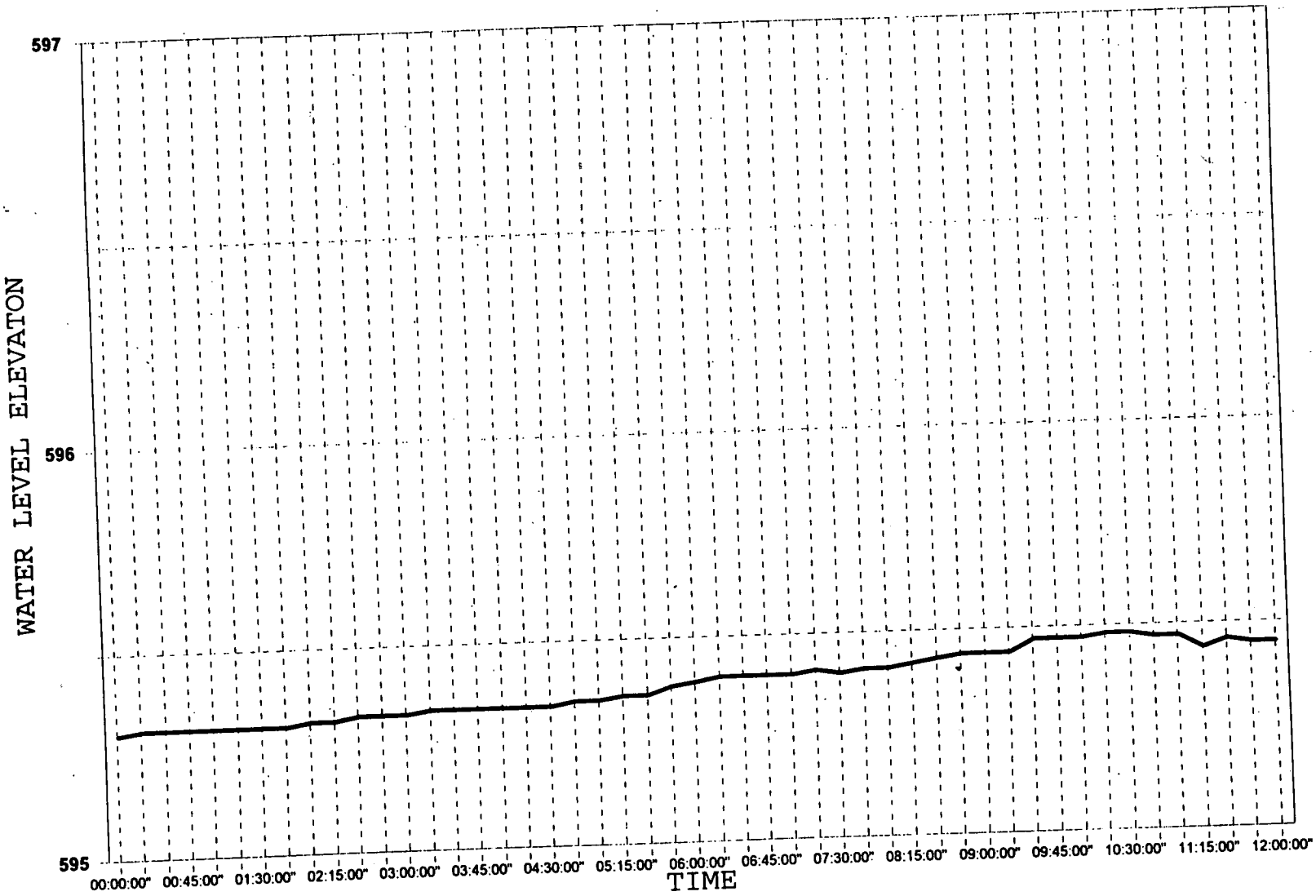




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ecology and environment

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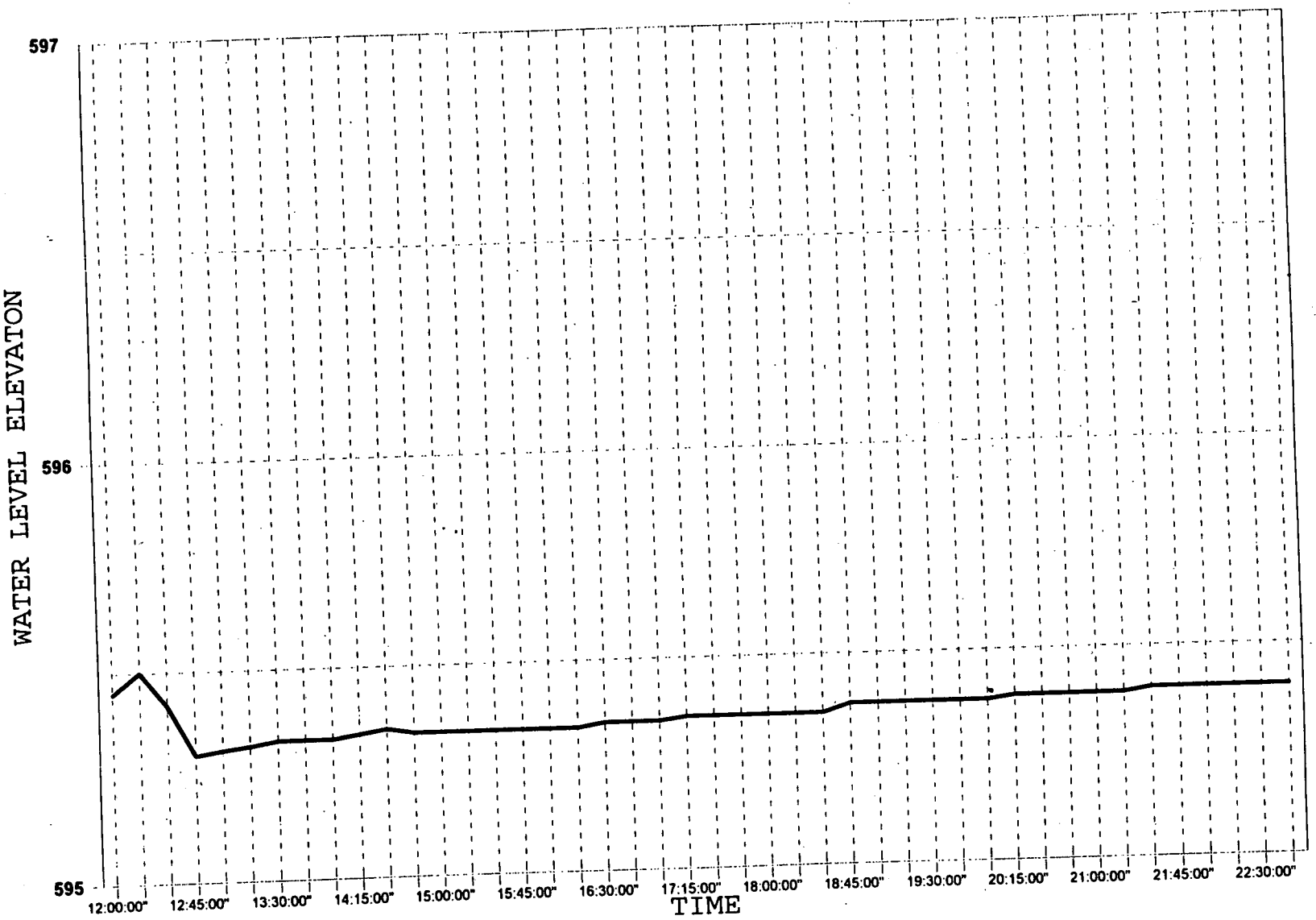

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# WATER LEVELS 12/03/93

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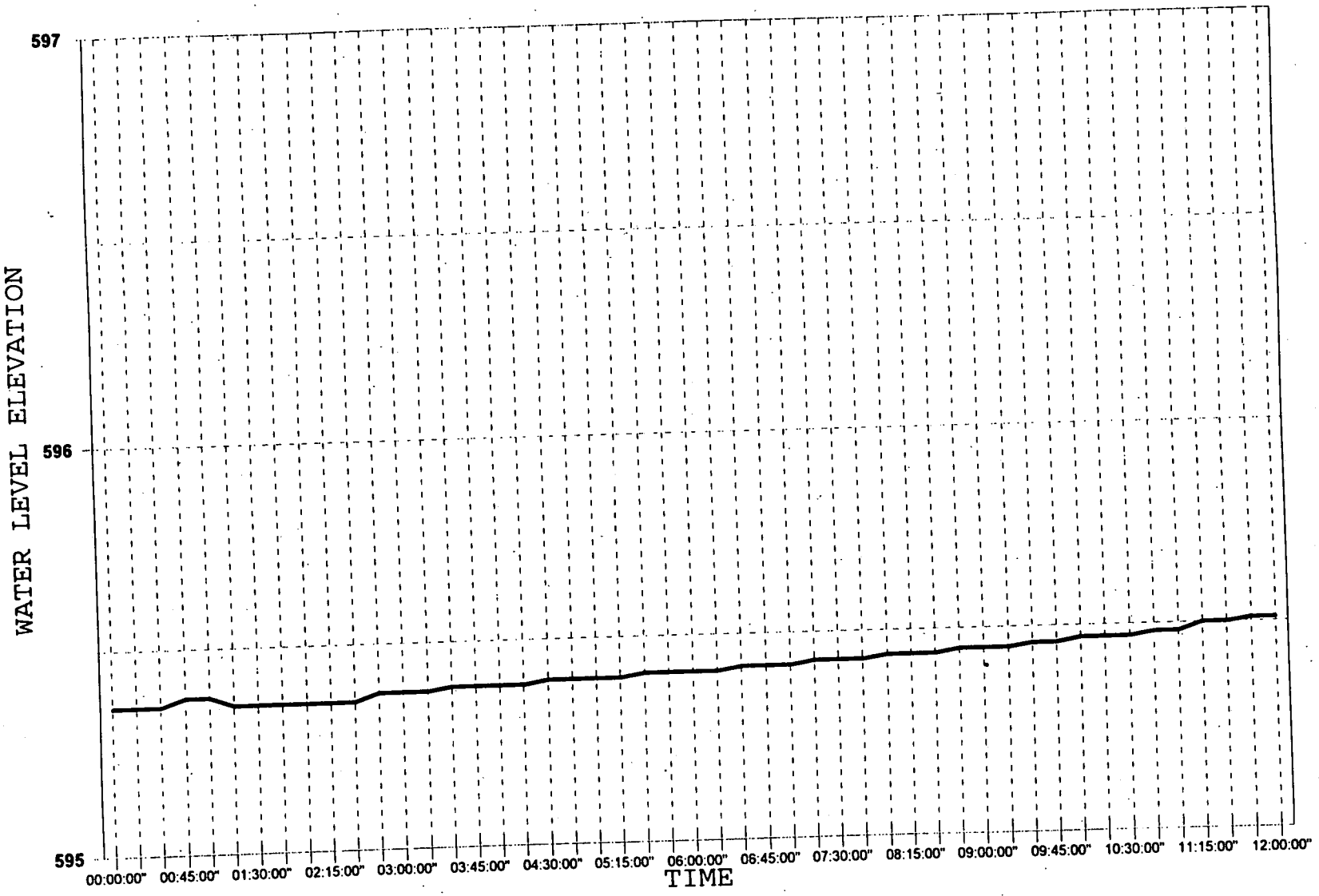




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ecology and environment

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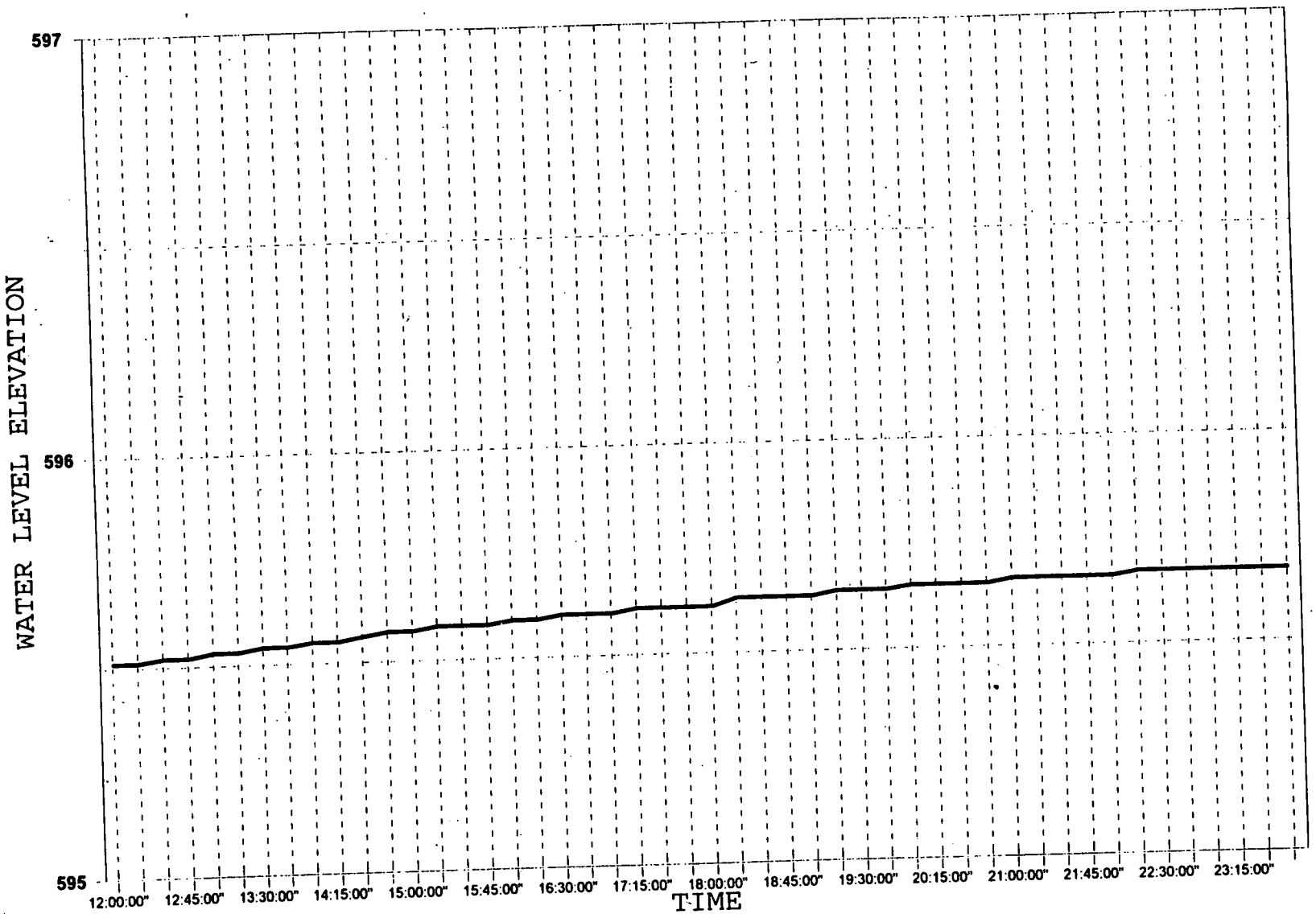

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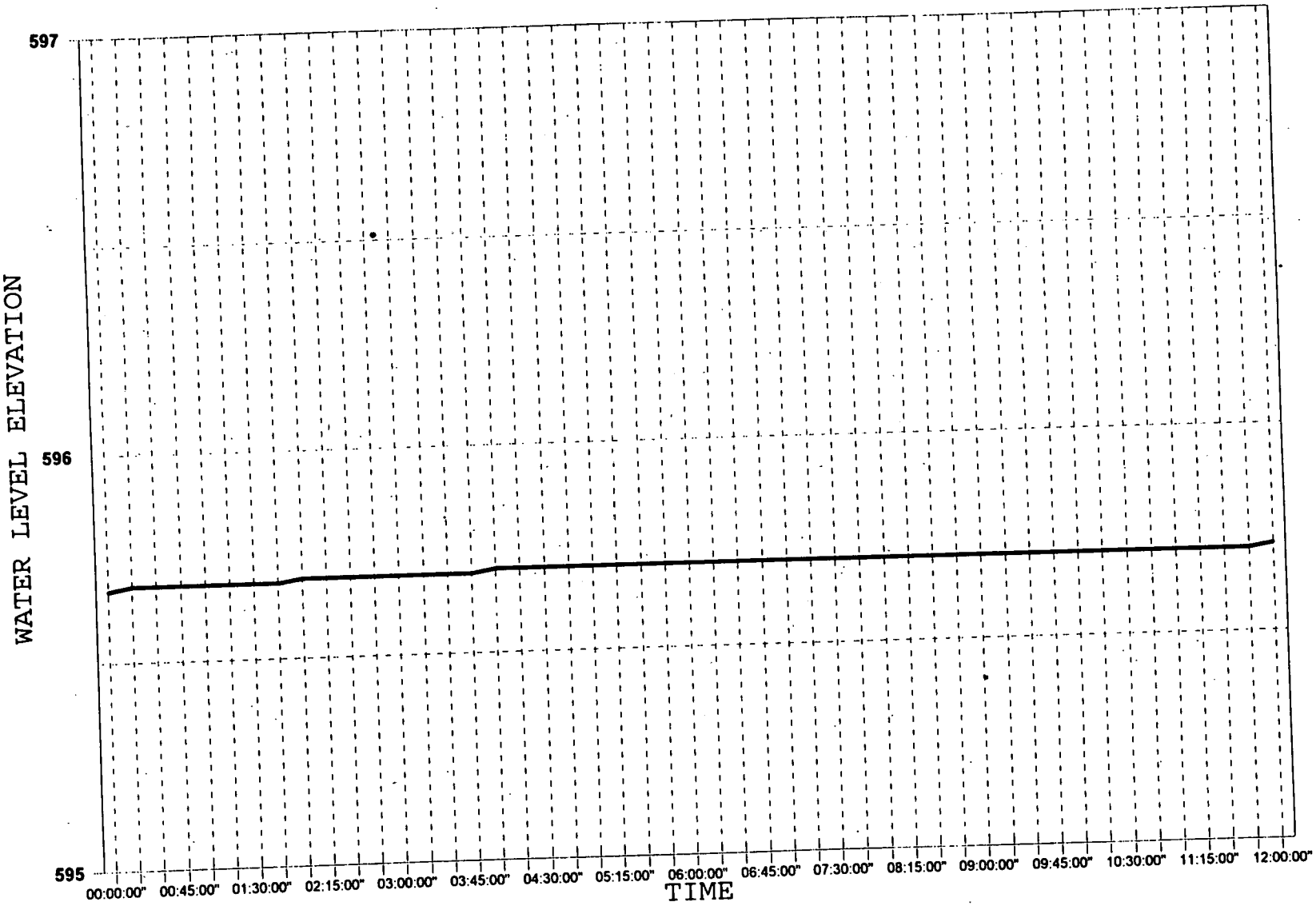




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ecology and environment

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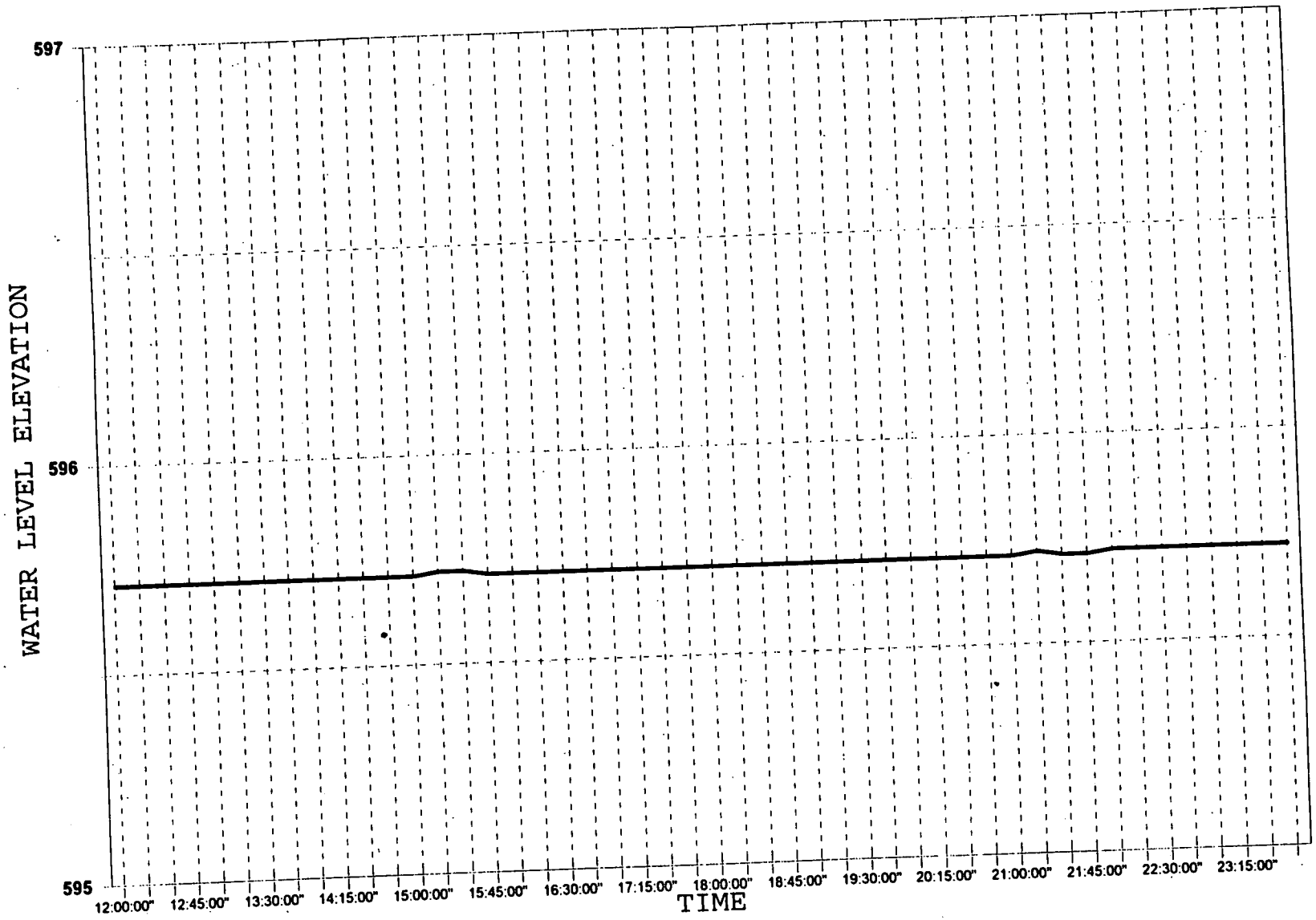

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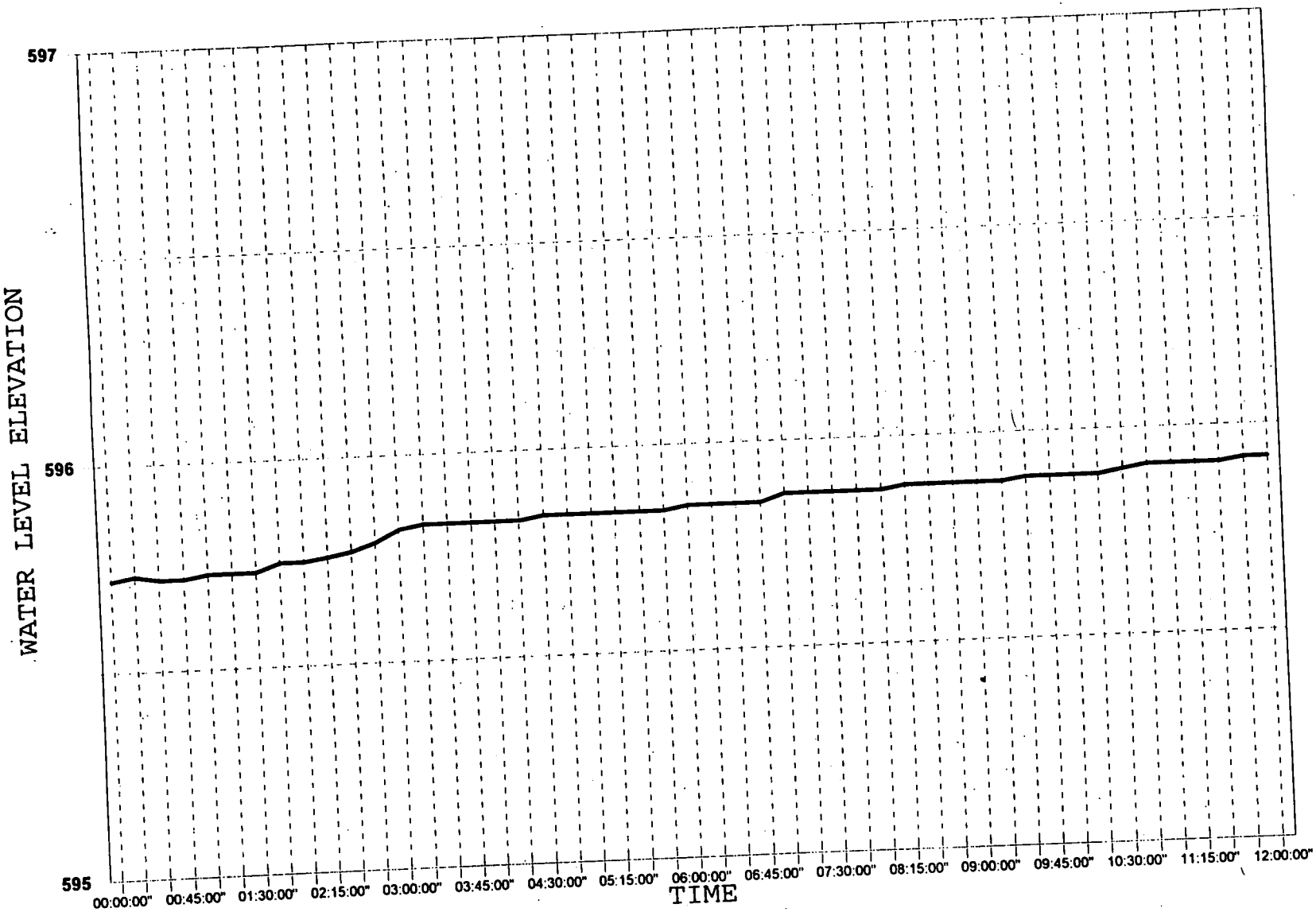




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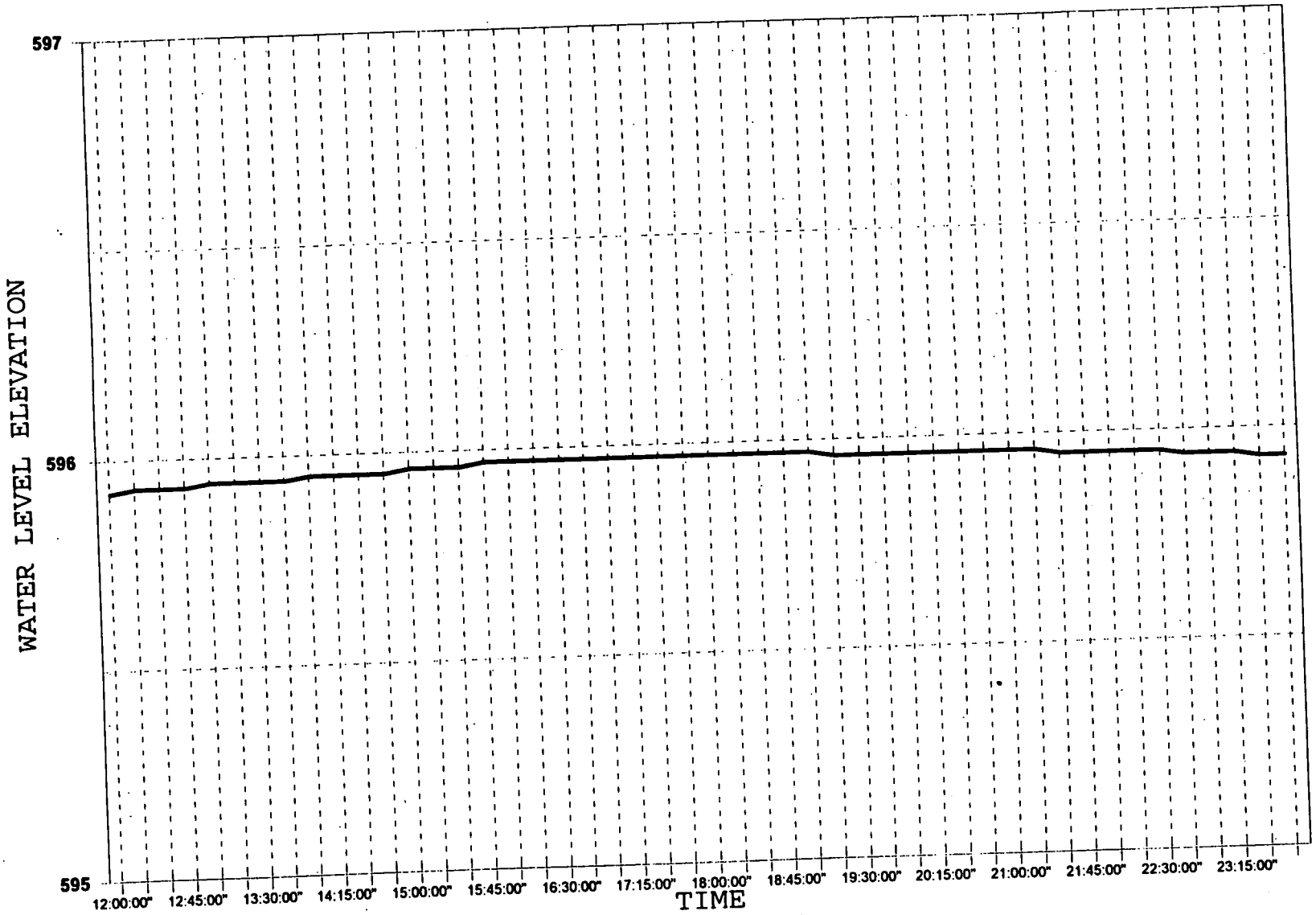

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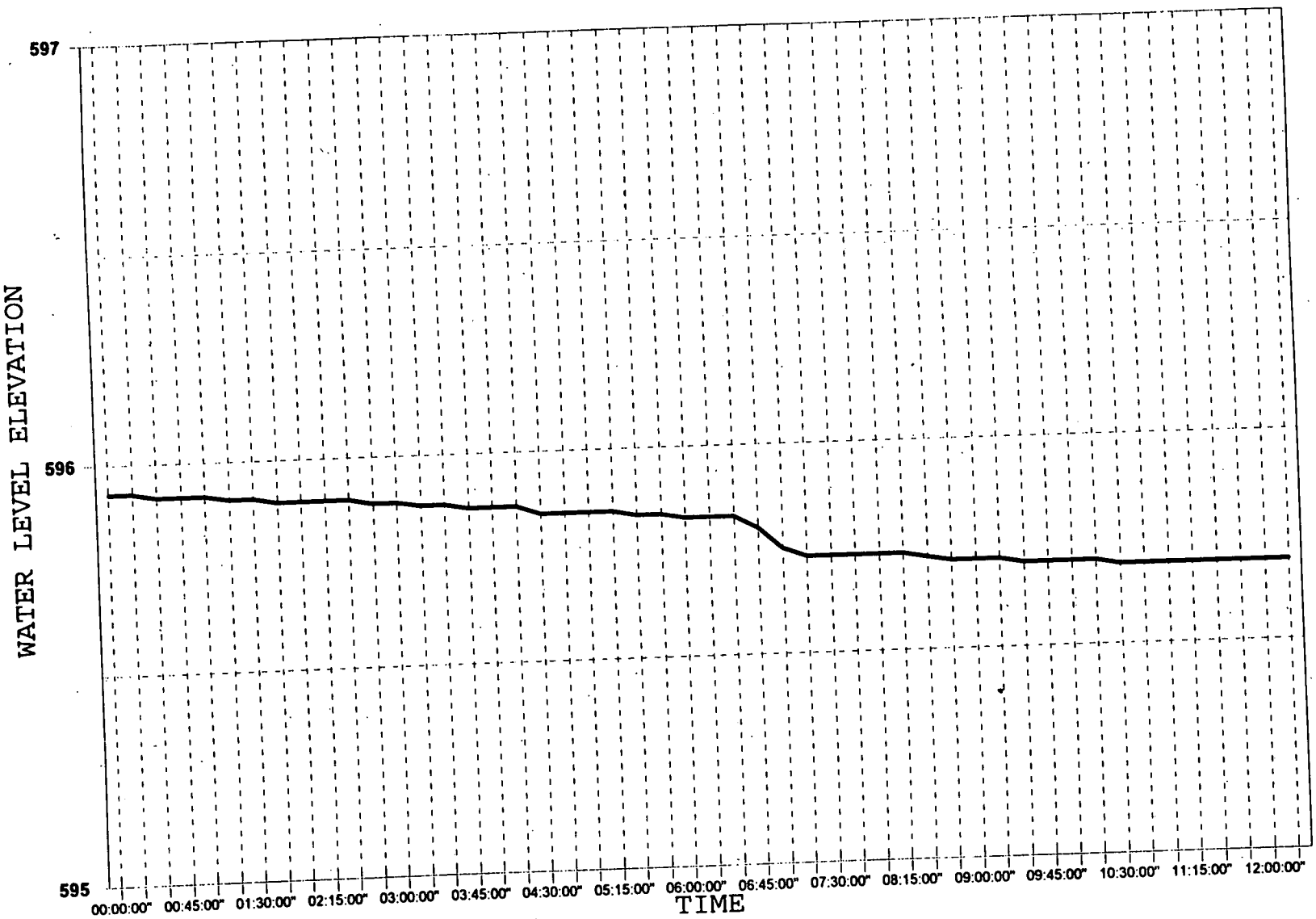




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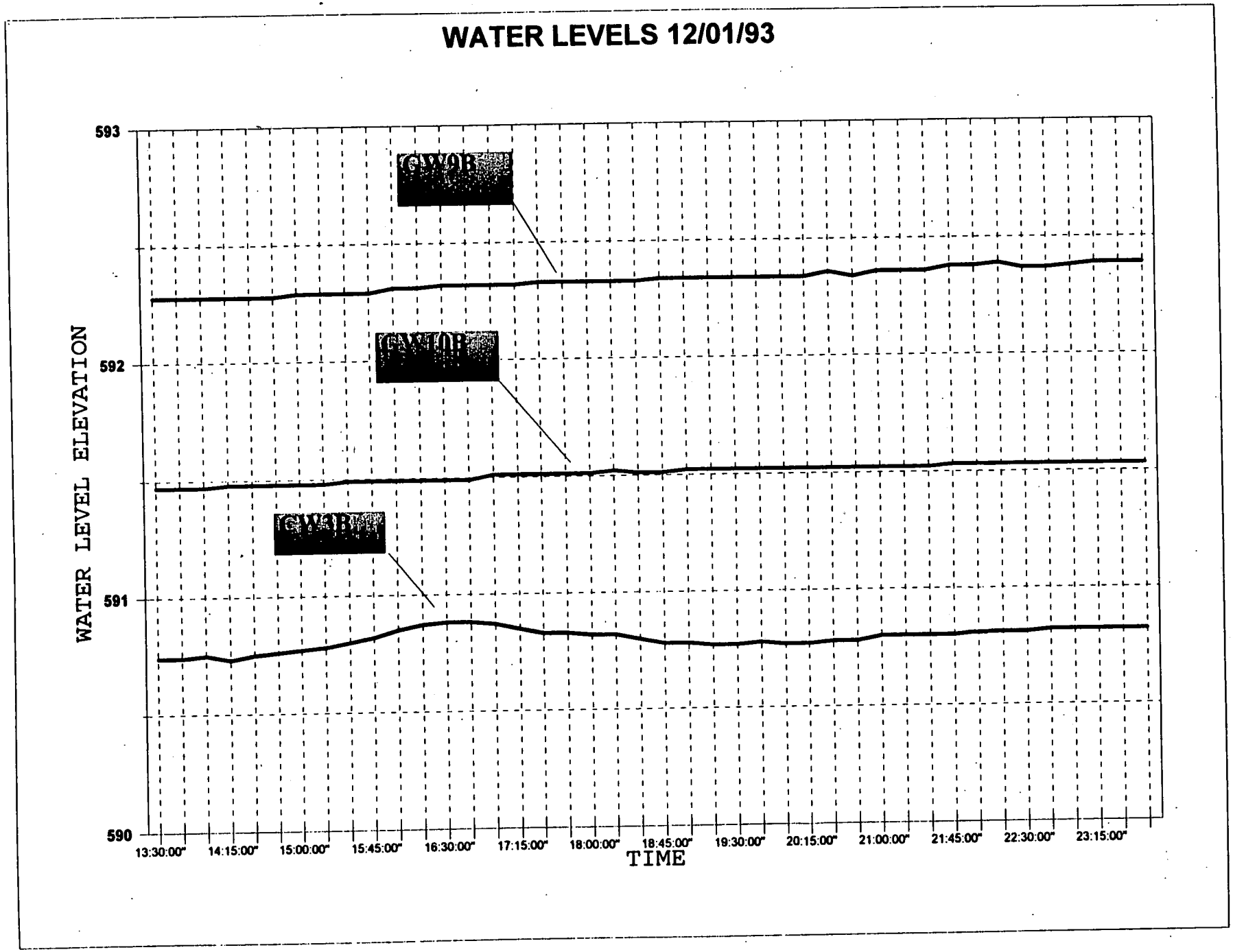
ecology and environment


WATER LEVELS 12/01/93
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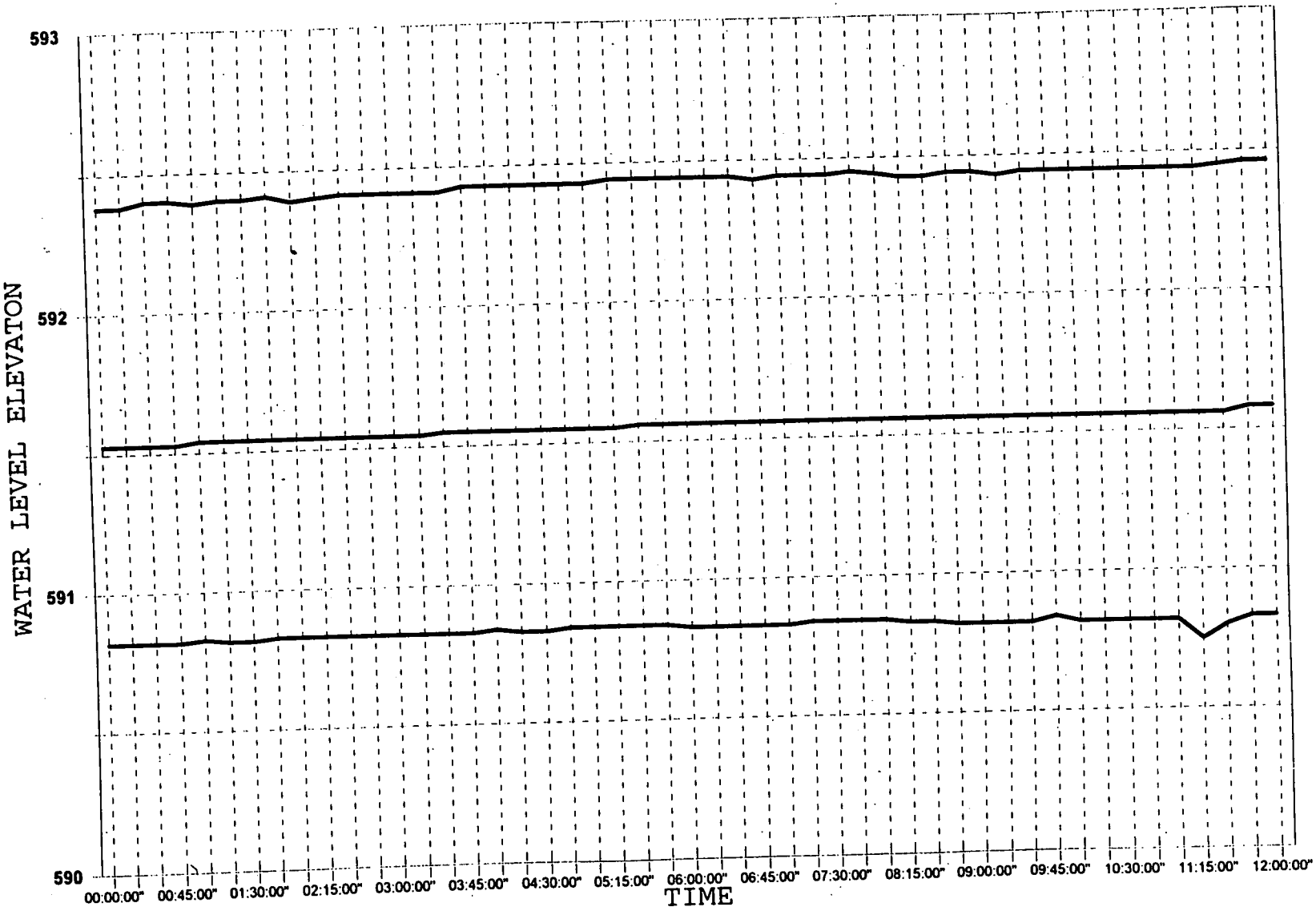




recycled paper
ecology and environment

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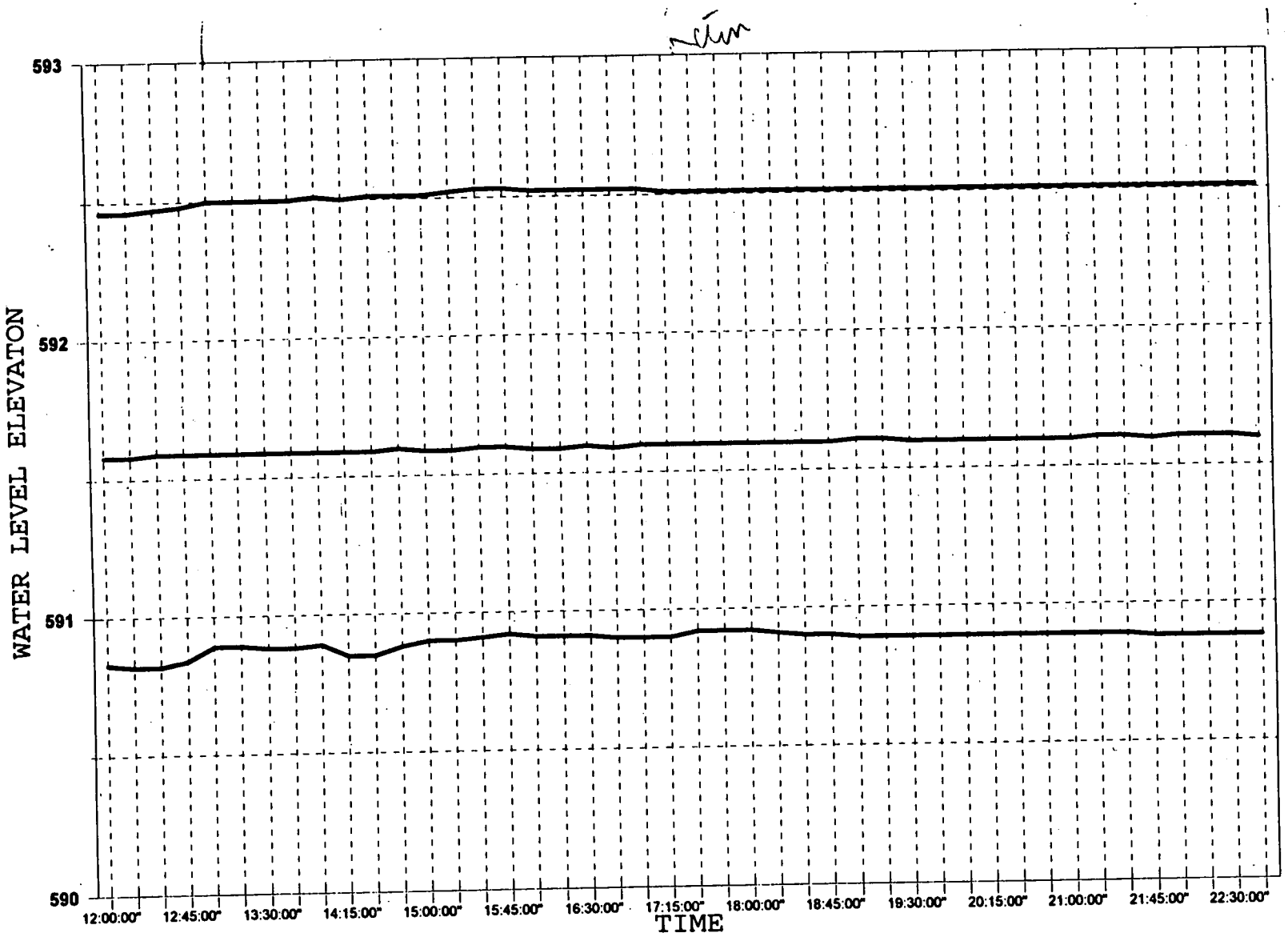
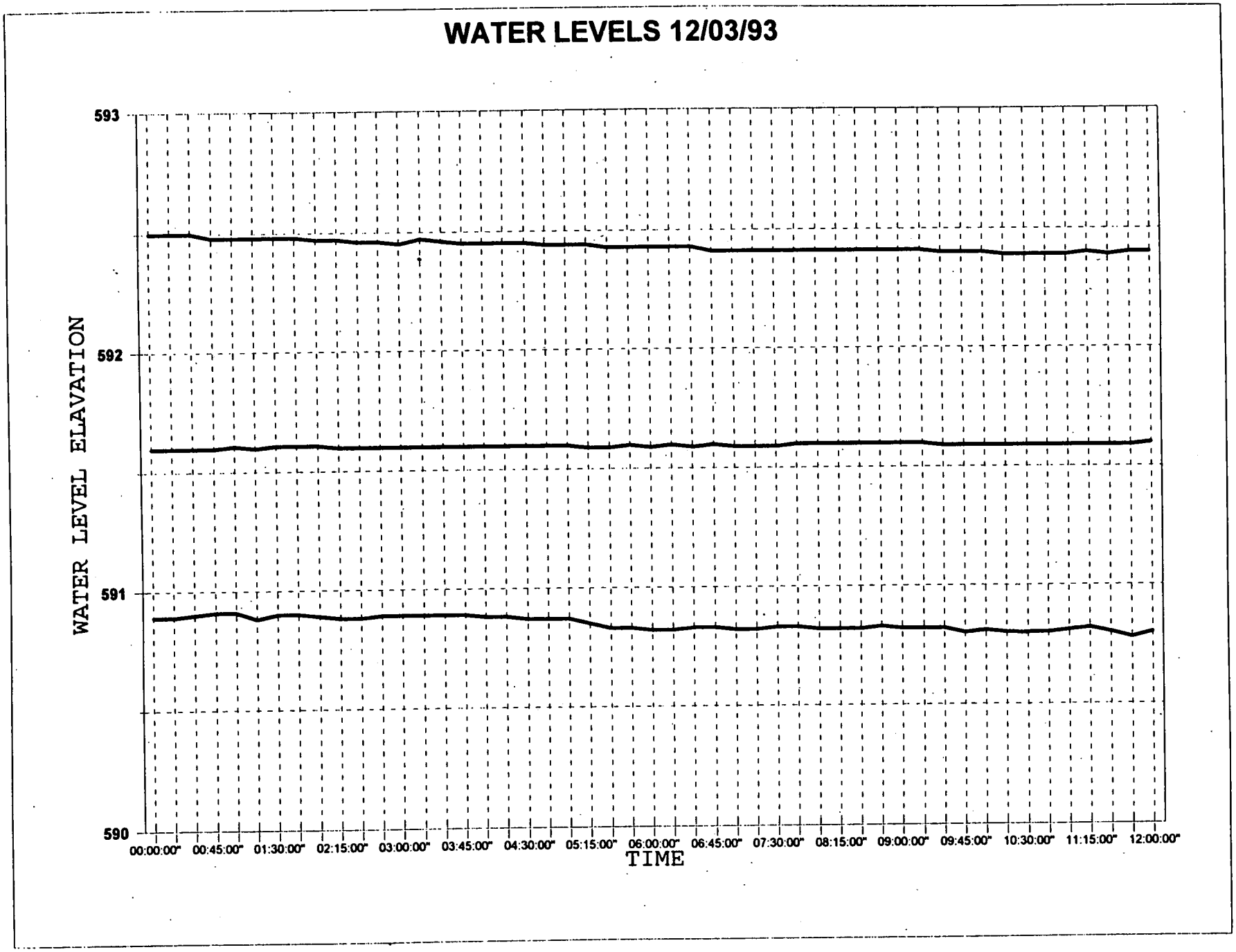
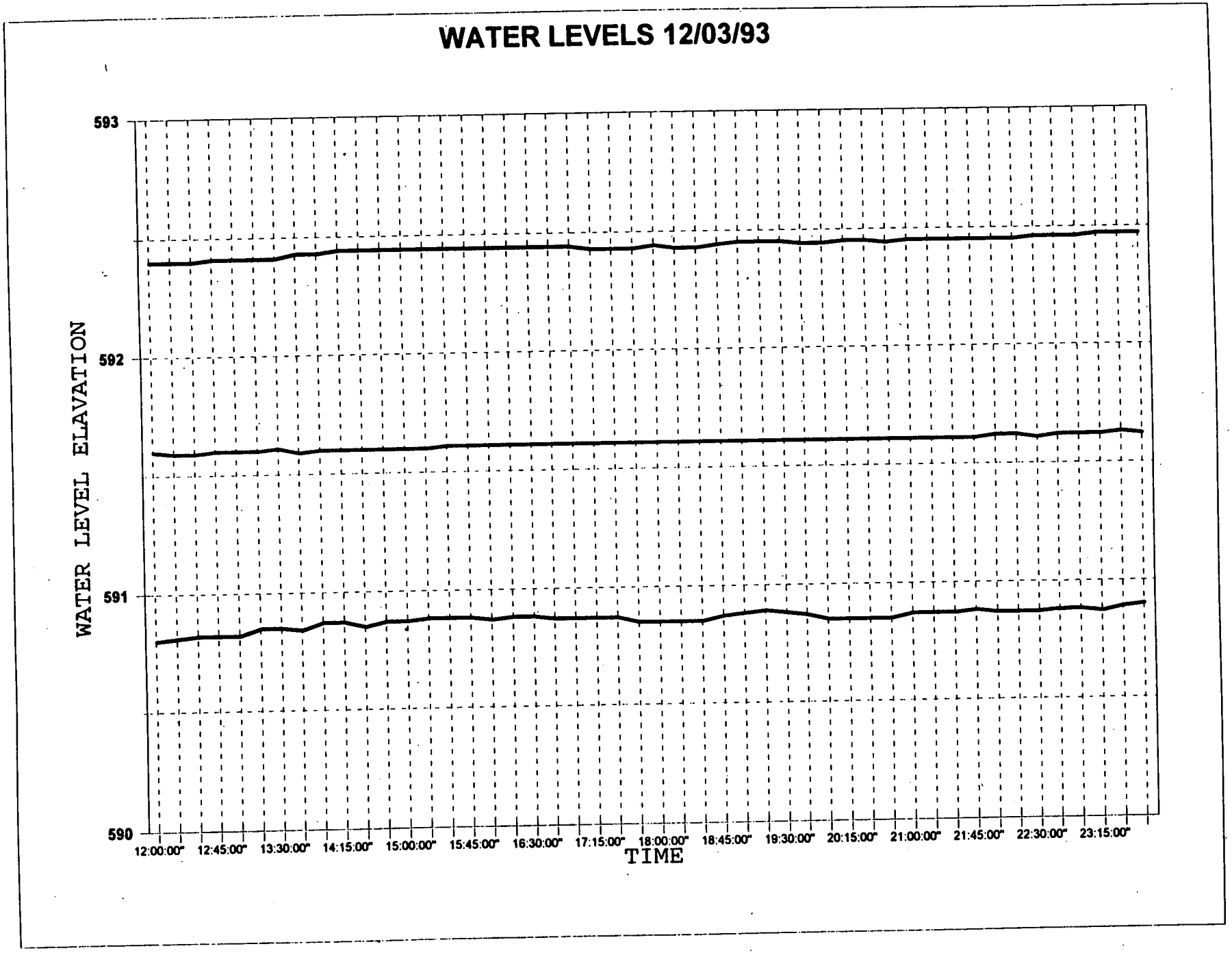







recycled paper
ecology and environment


WATER LEVELS 12/03/93
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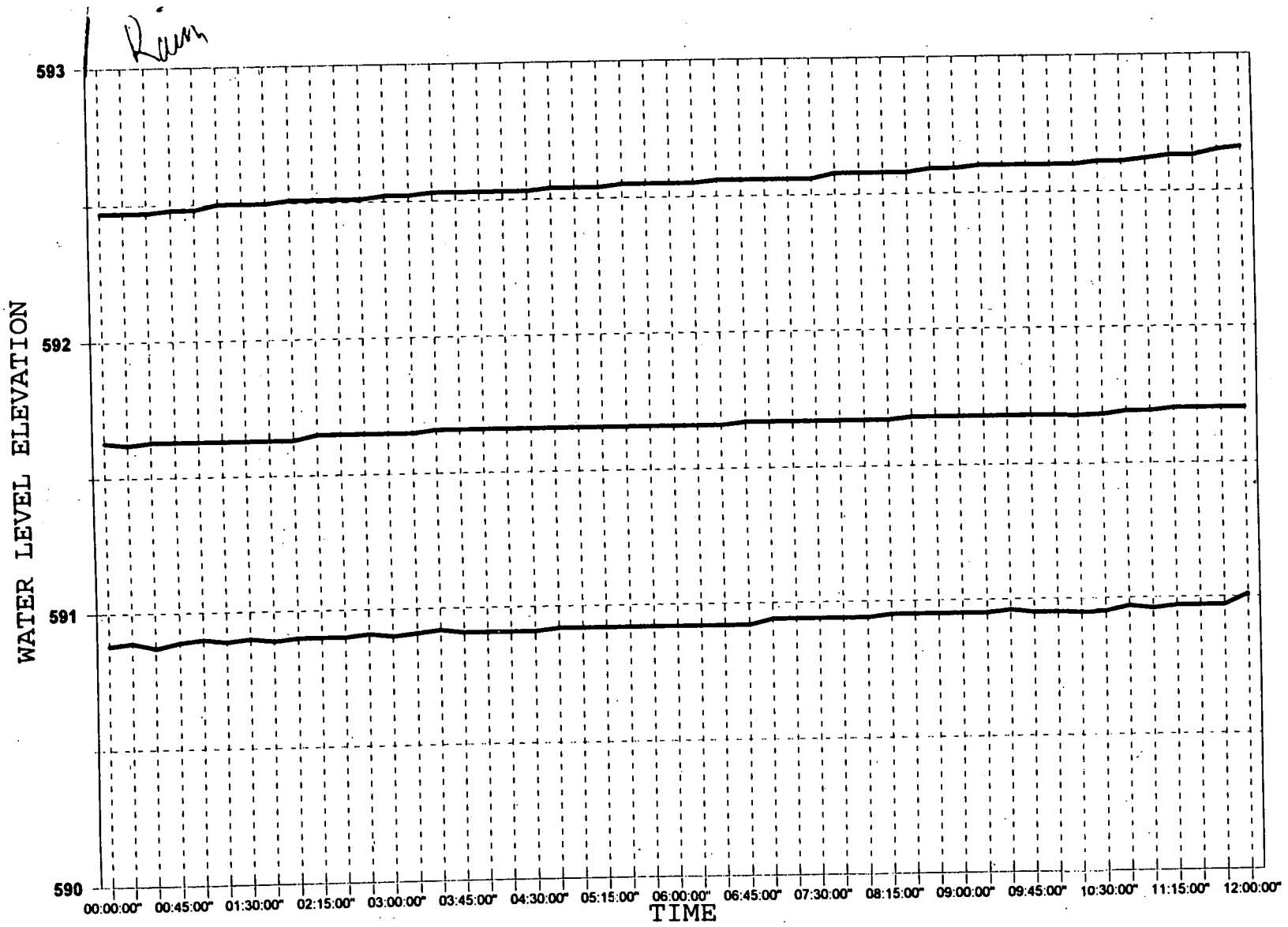




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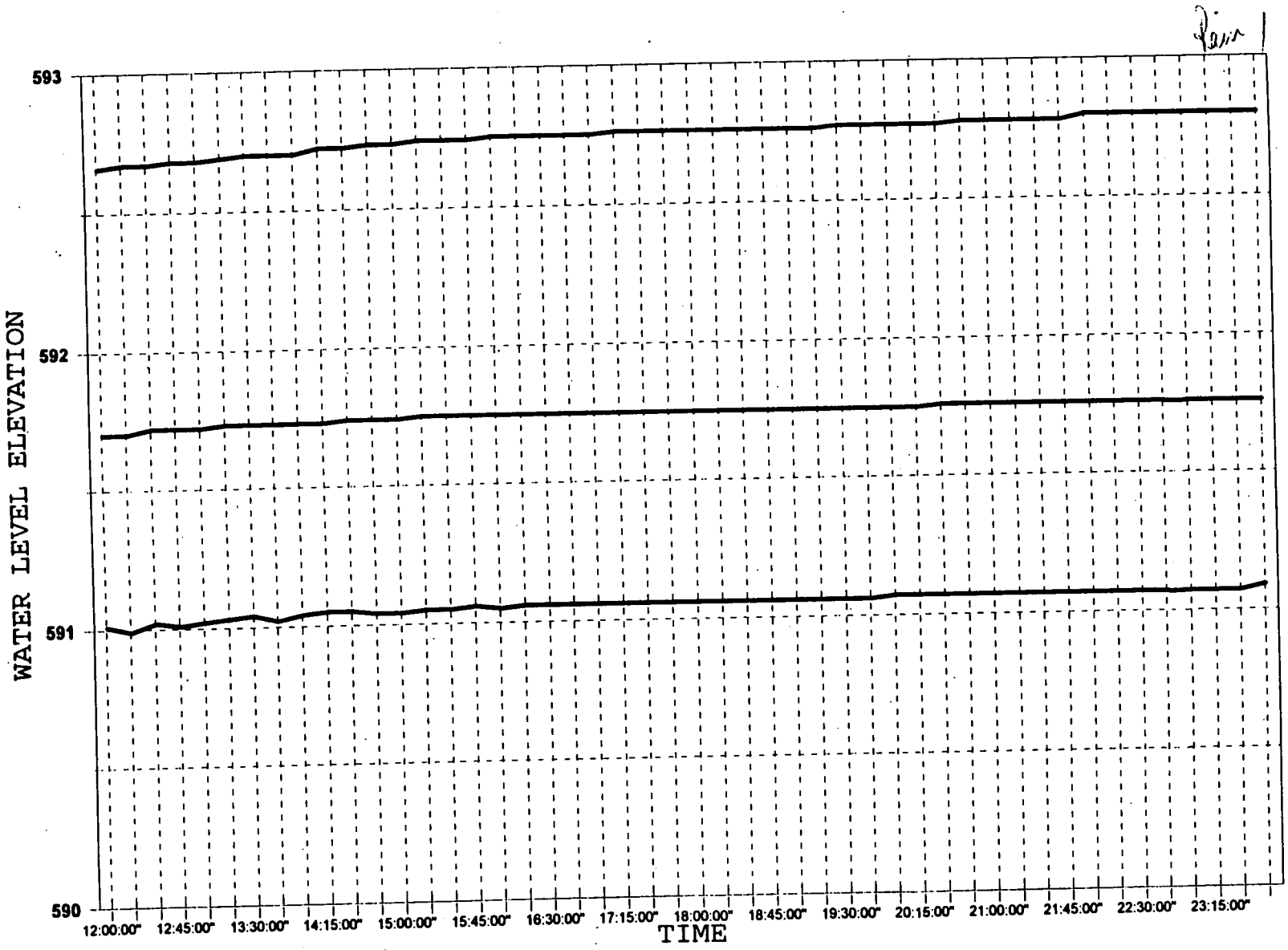

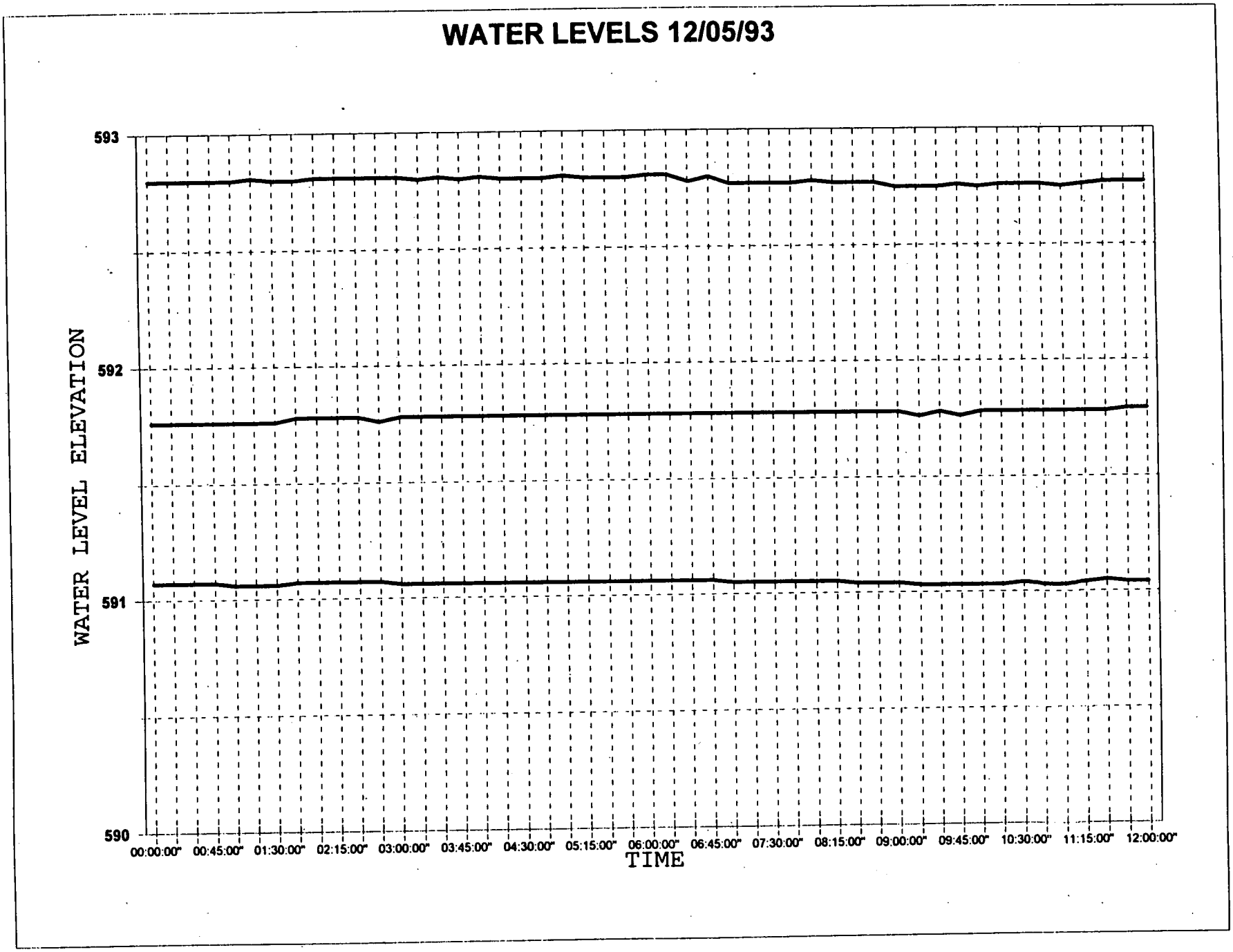




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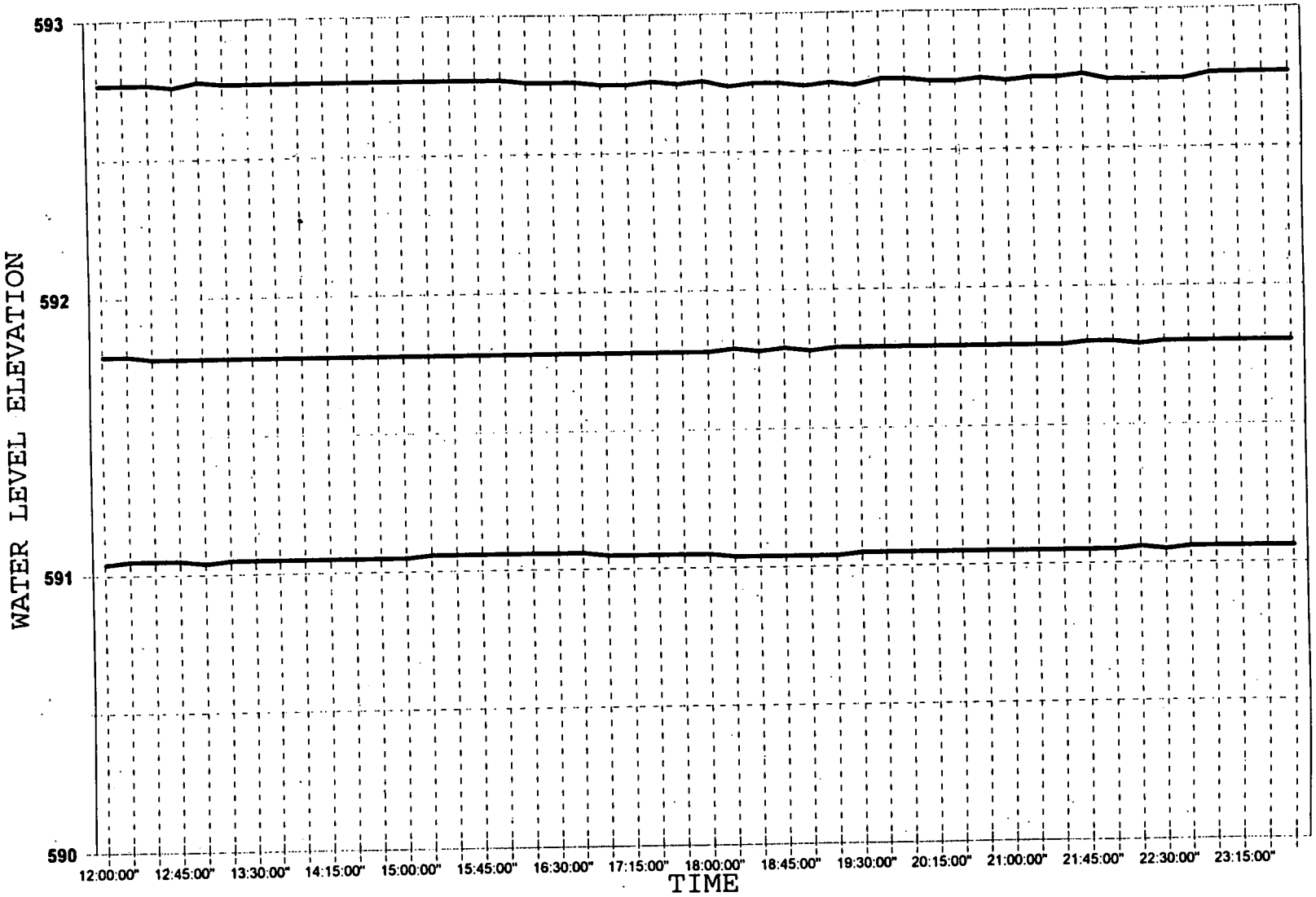

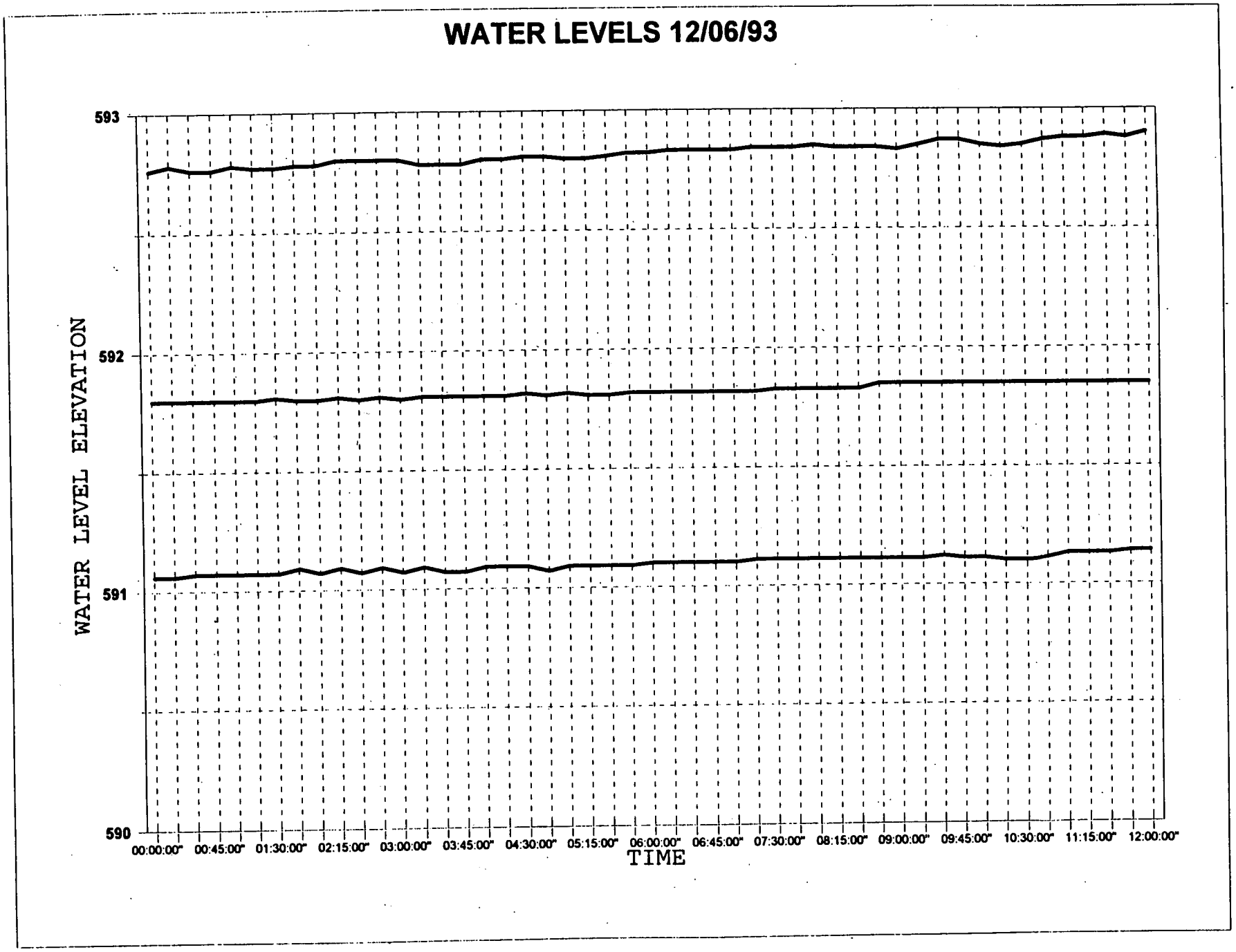




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ecology and environment

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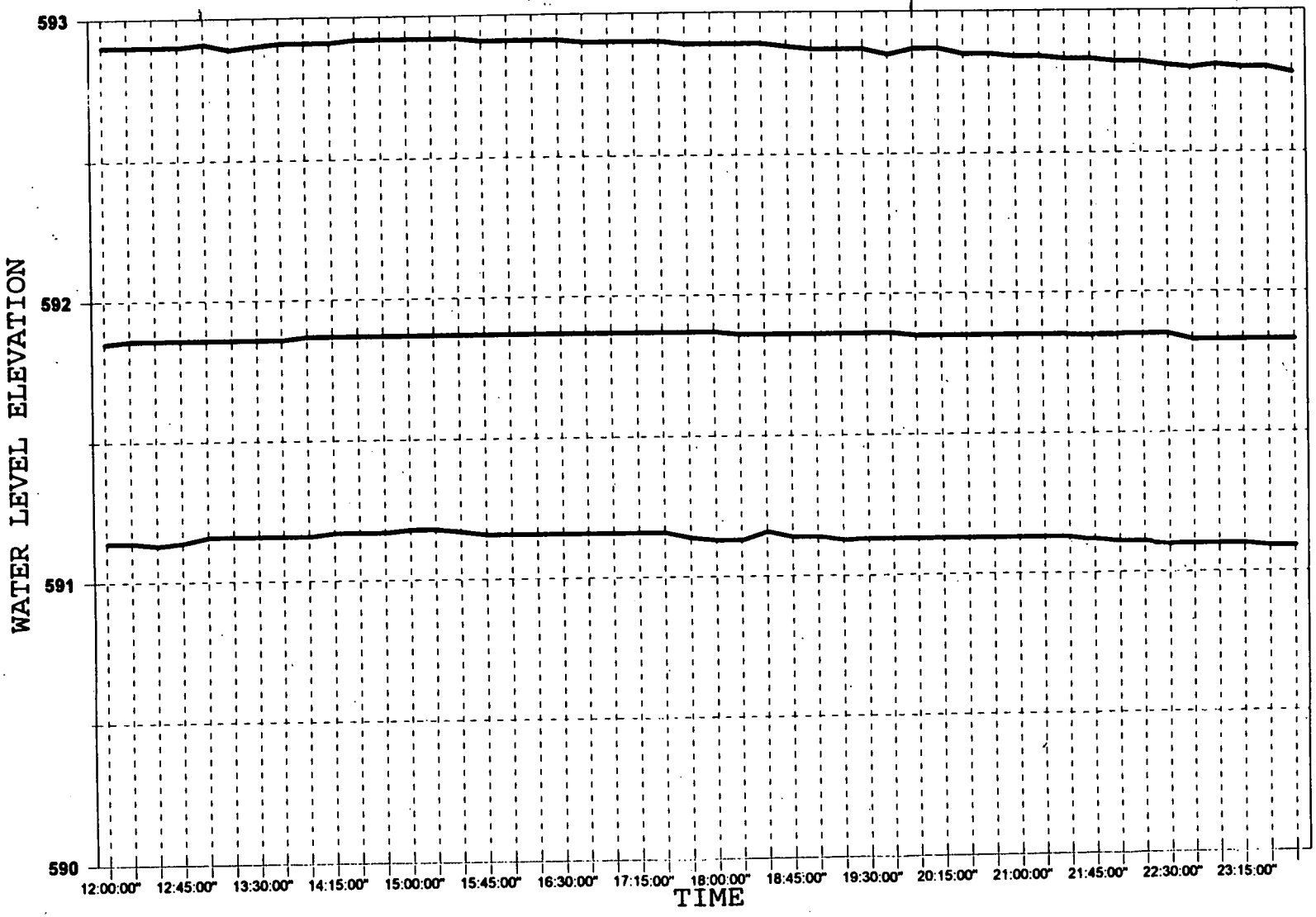

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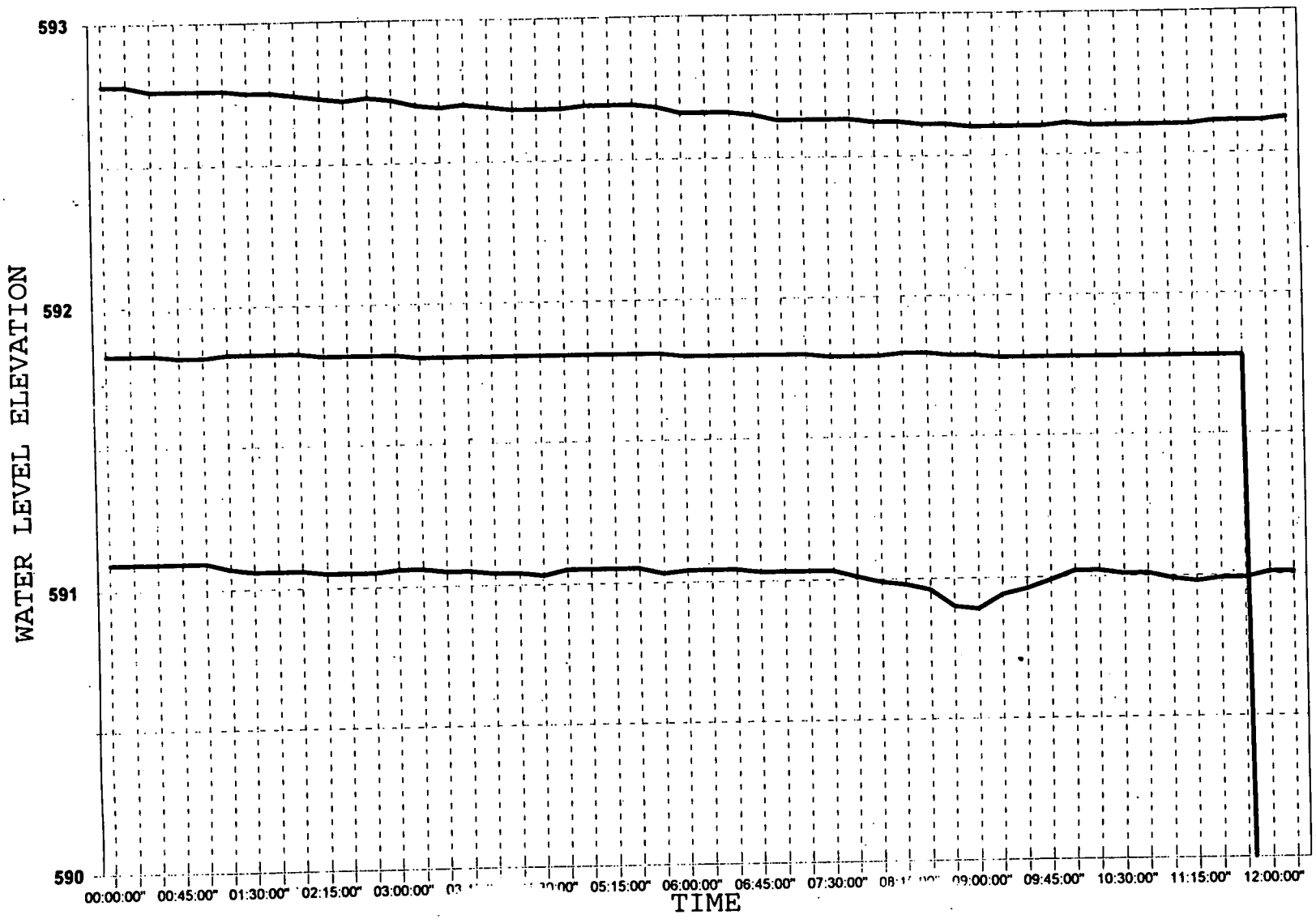




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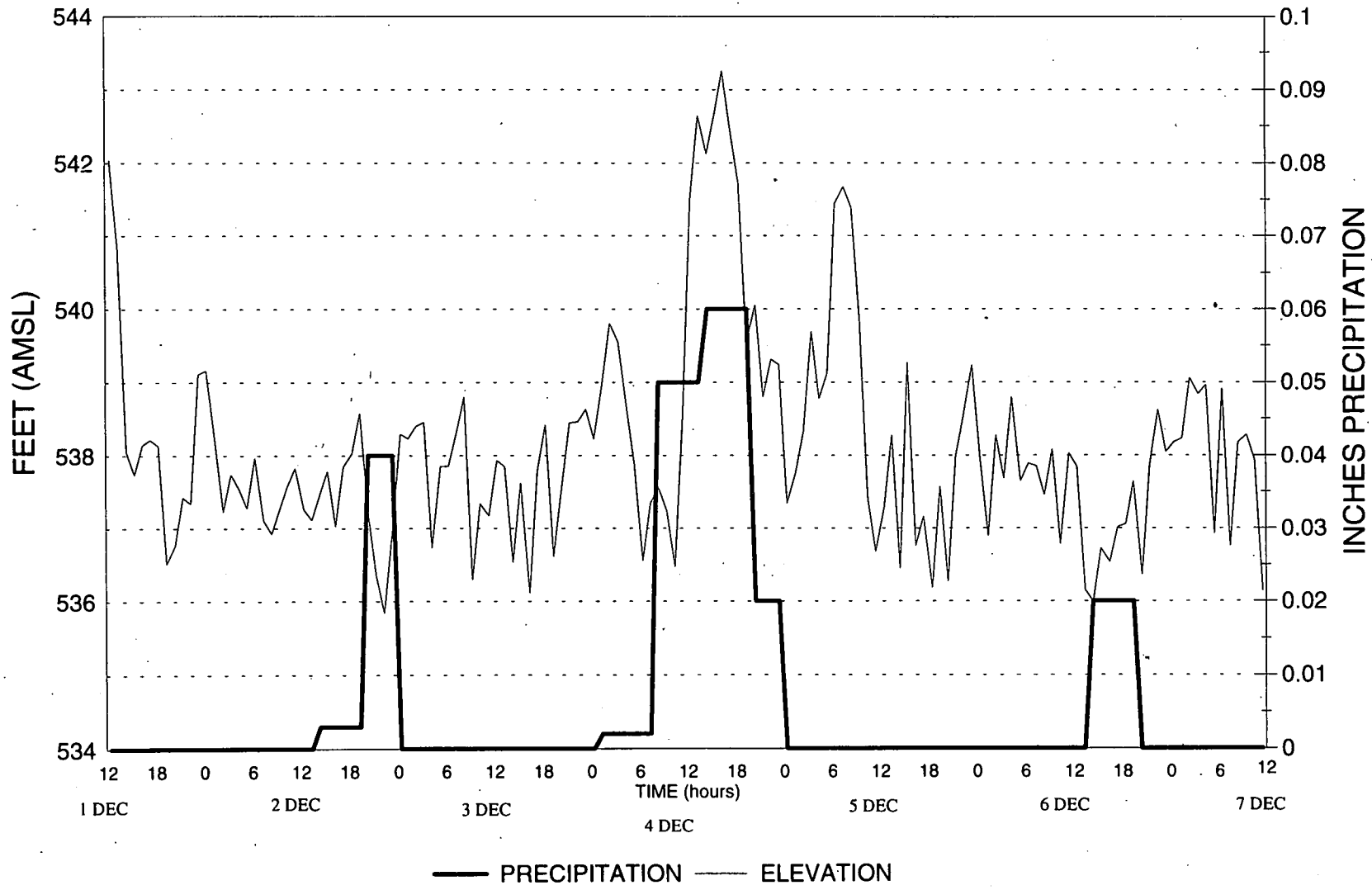
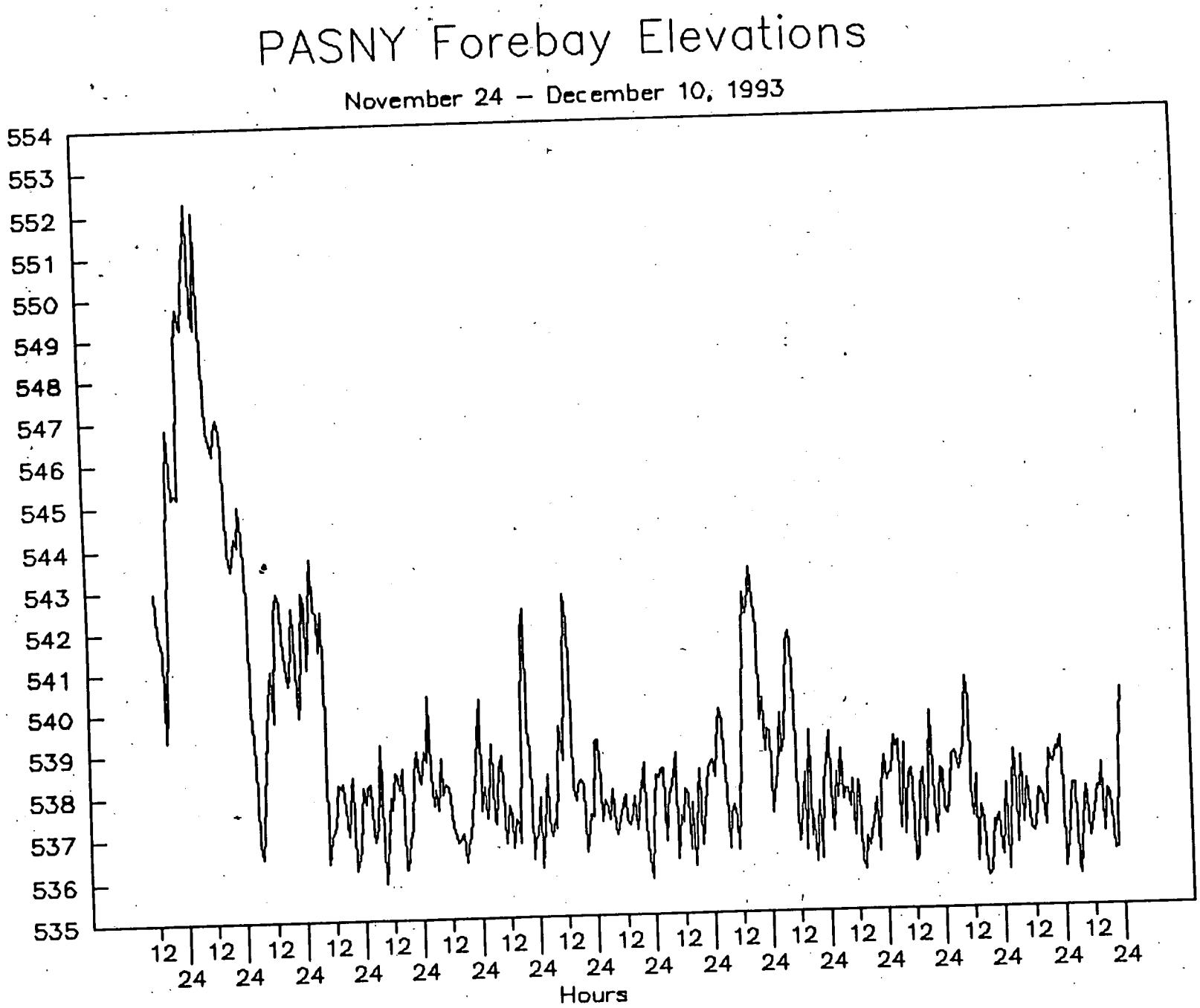
# NEW YORK POWER AUTHORITY

# FOREBAY ELEVATIONS AND CONDUIT FLOW RATES

# NYPA FORBAY ELEVATIONS AND PRECIPITATION DATA





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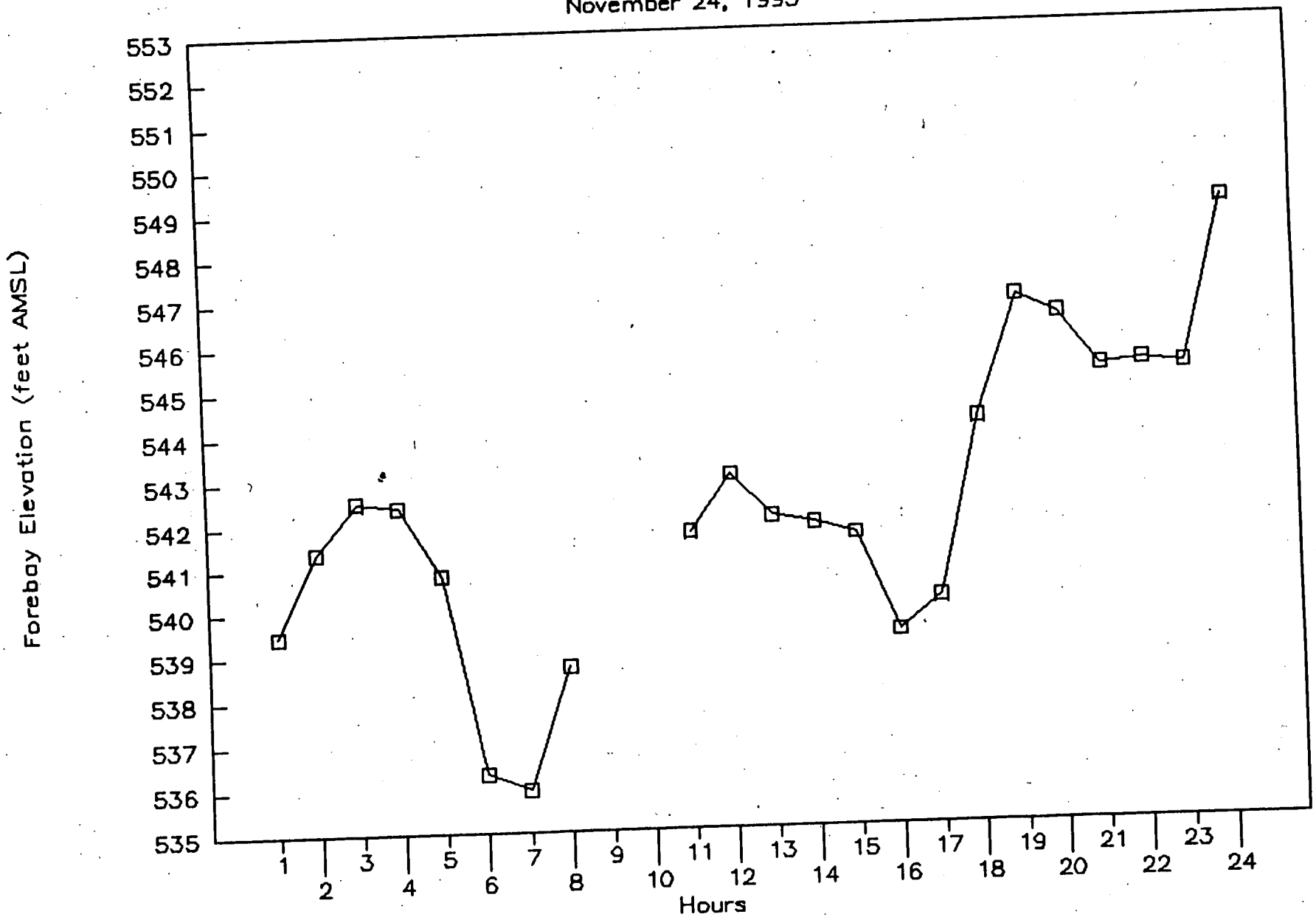
# PASNY Forebay Elevations

November 24, 1993



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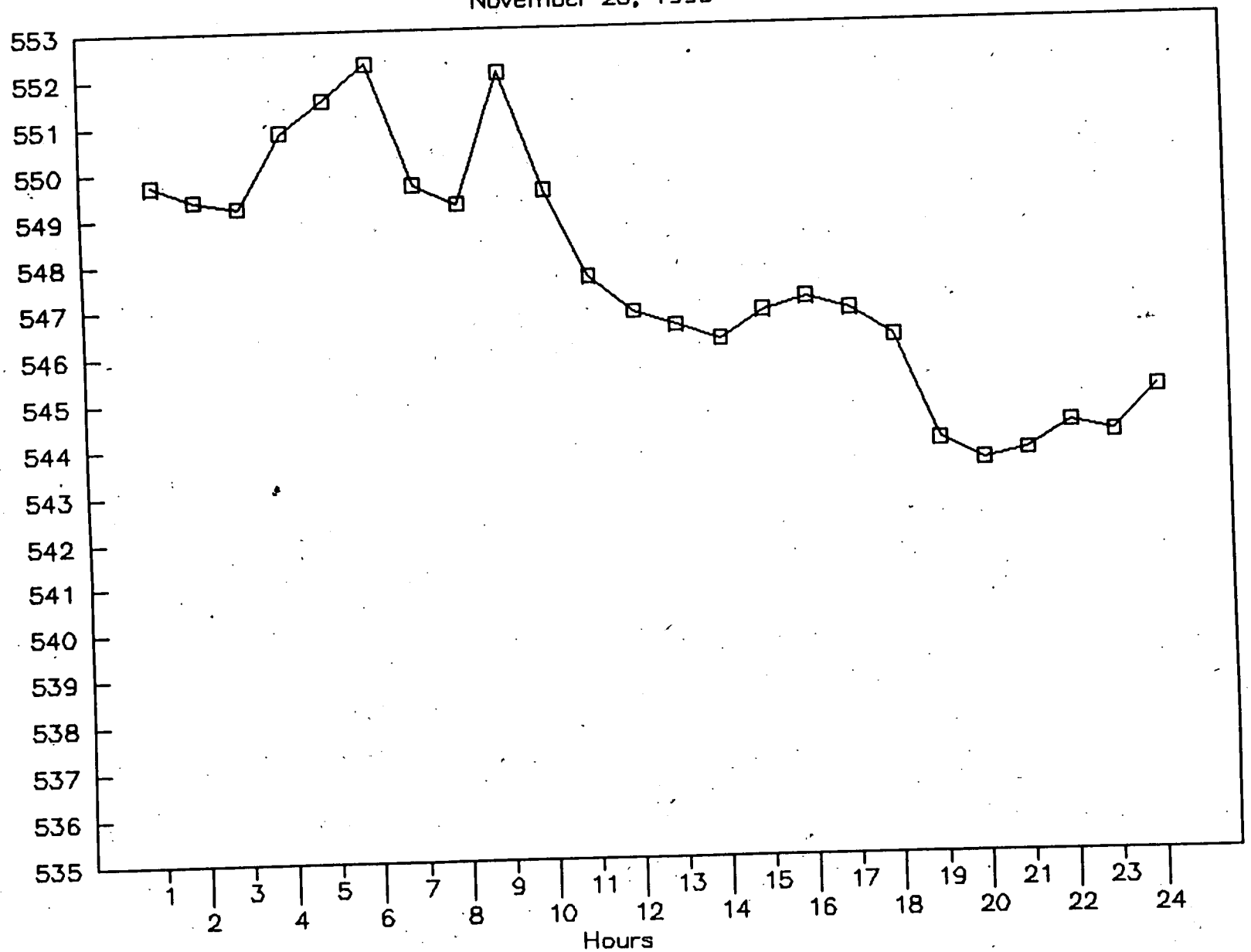
November 25, 1993



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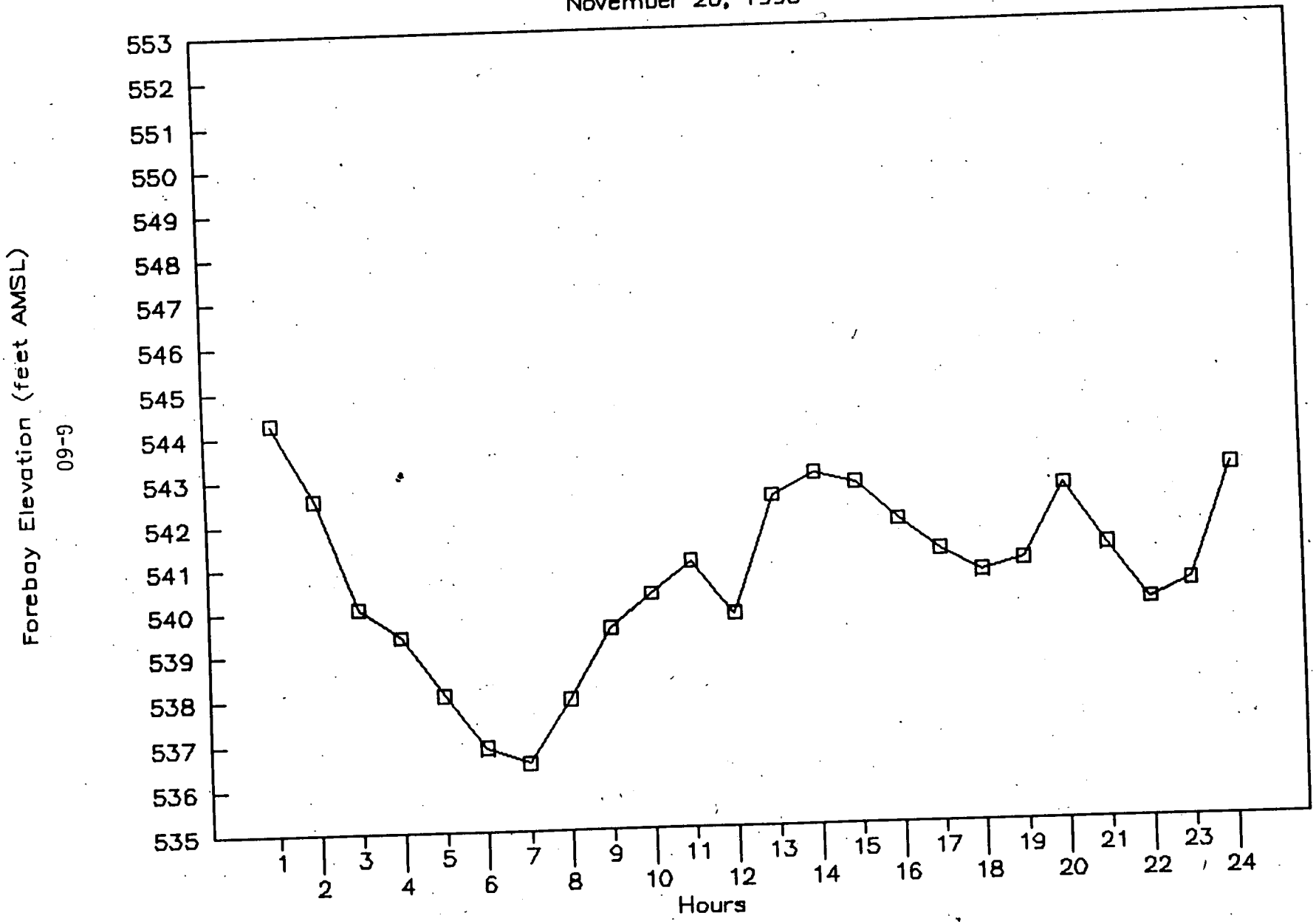

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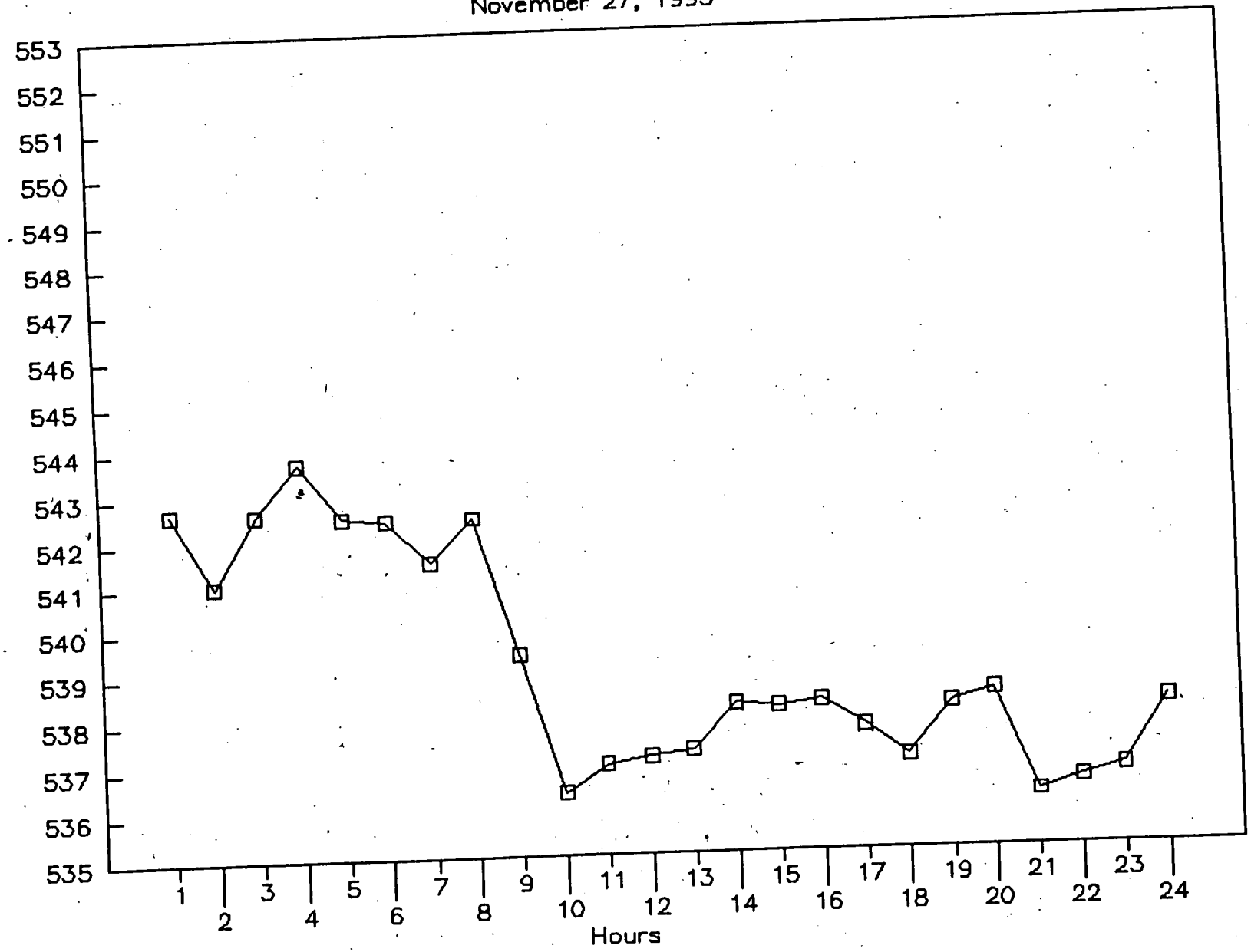
November 27, 1993



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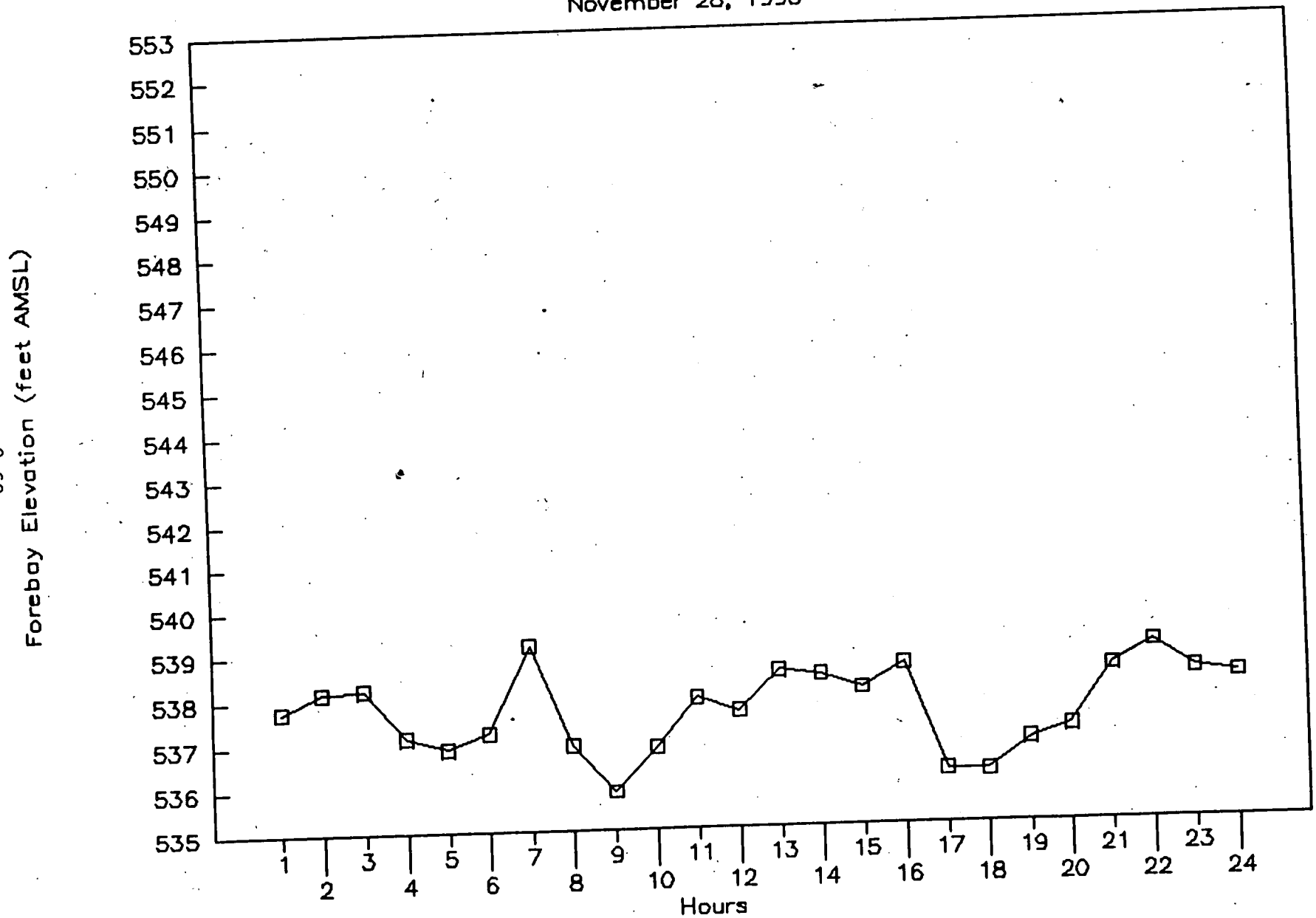
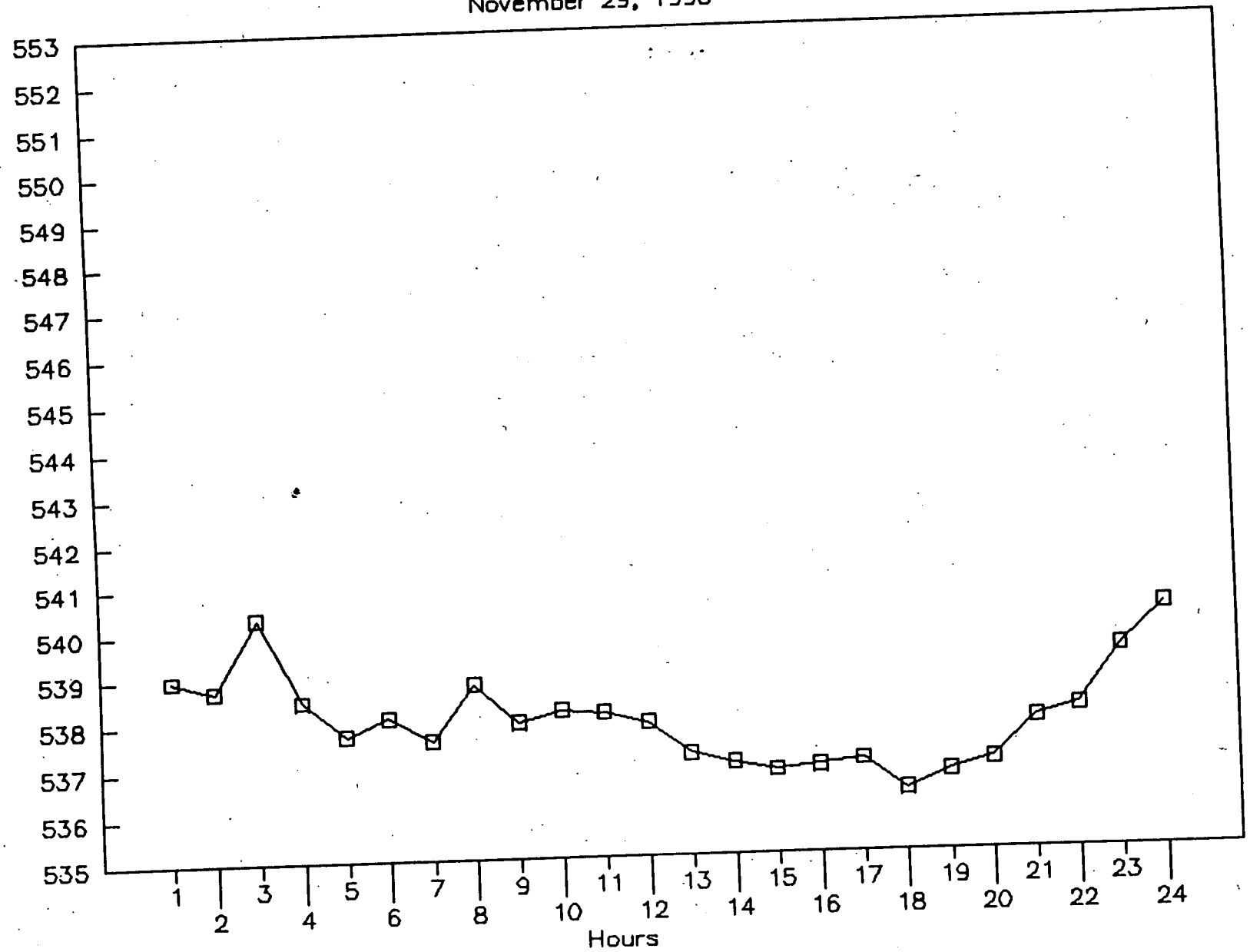
# PASNY Forebay Elevations

November 28, 1993



# PASNY Forebay Elevations

November 29, 1993



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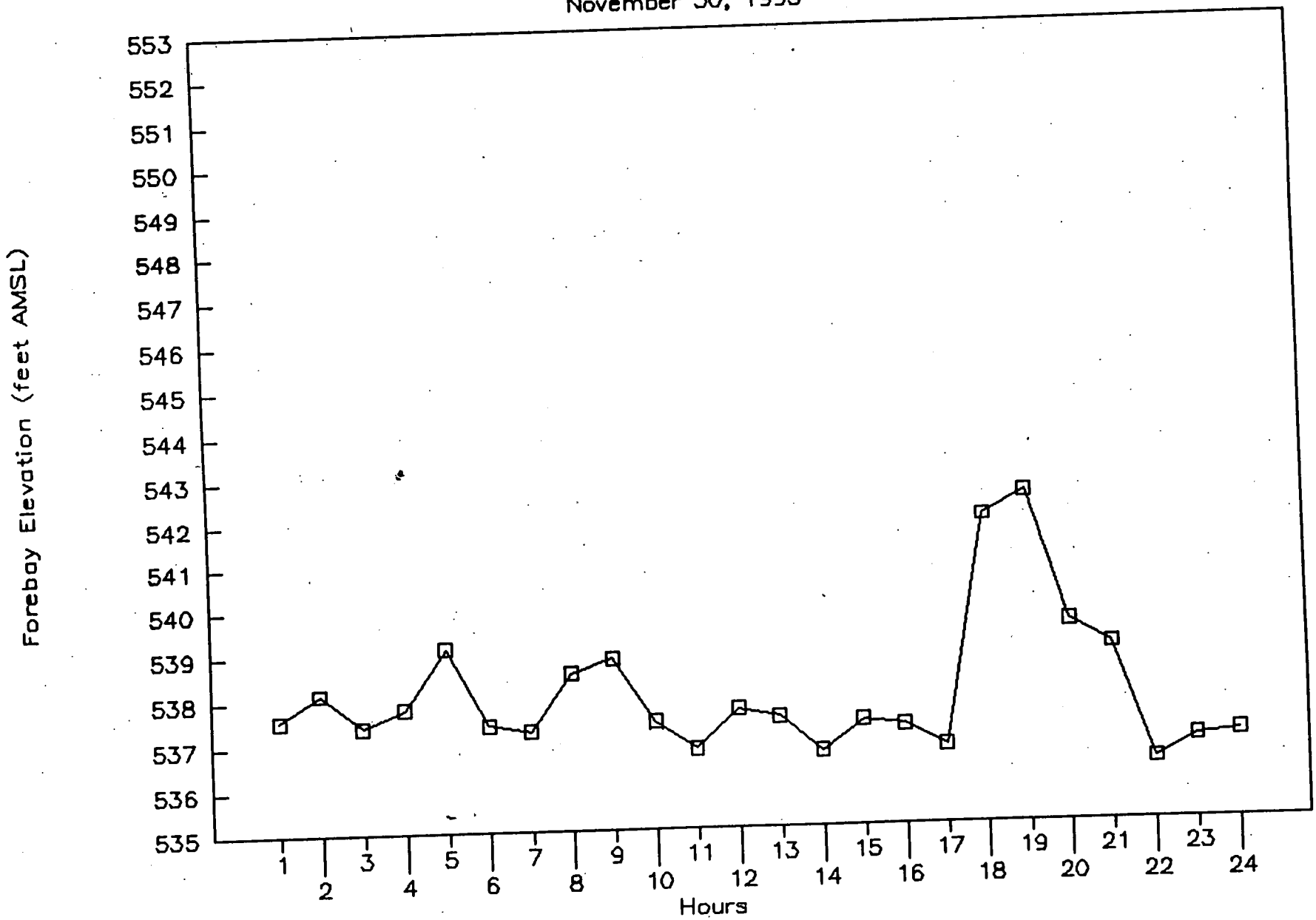
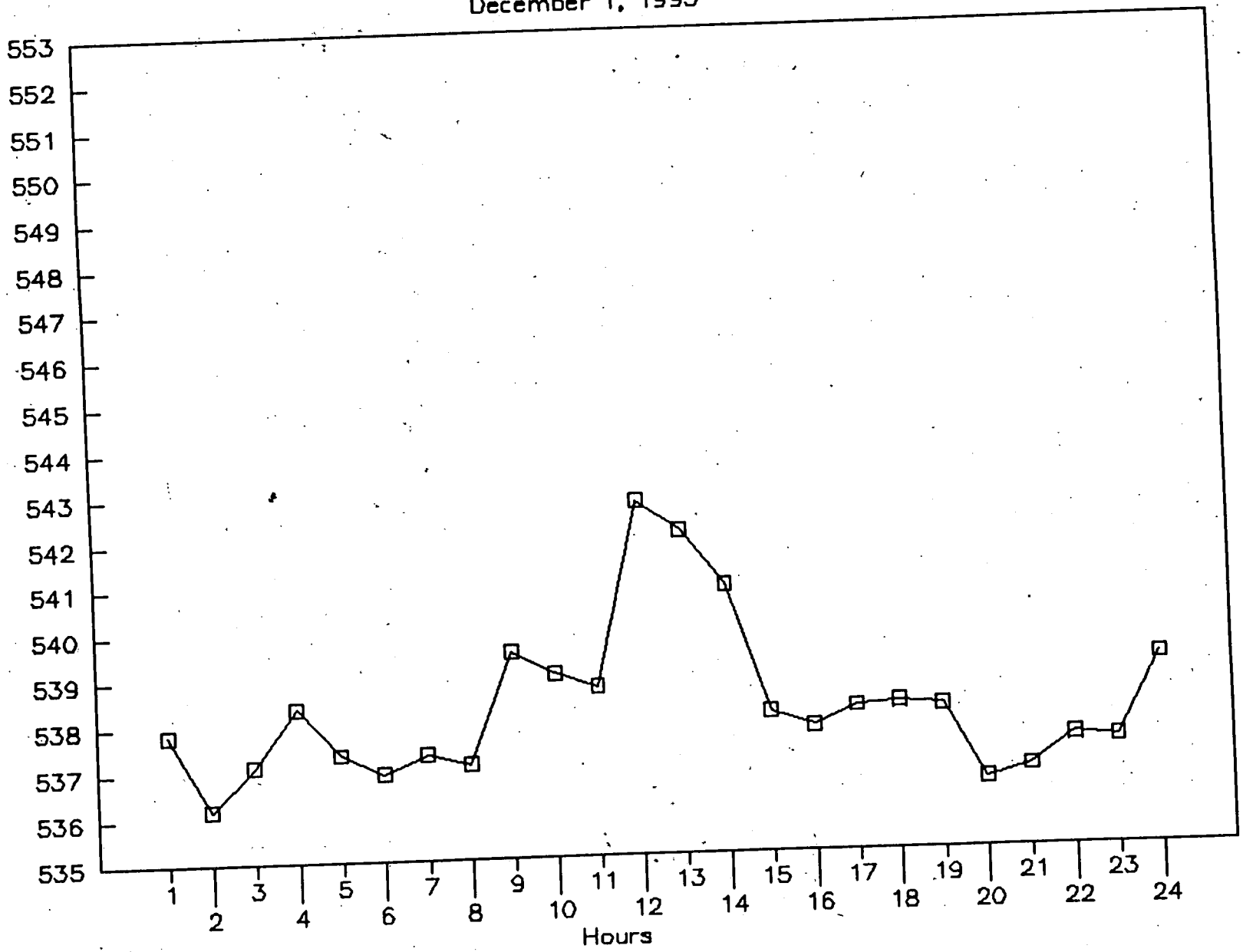
# PASNY Forebay Elevations

November 30, 1993



# PASNY Forebay Elevations

December 1, 1993



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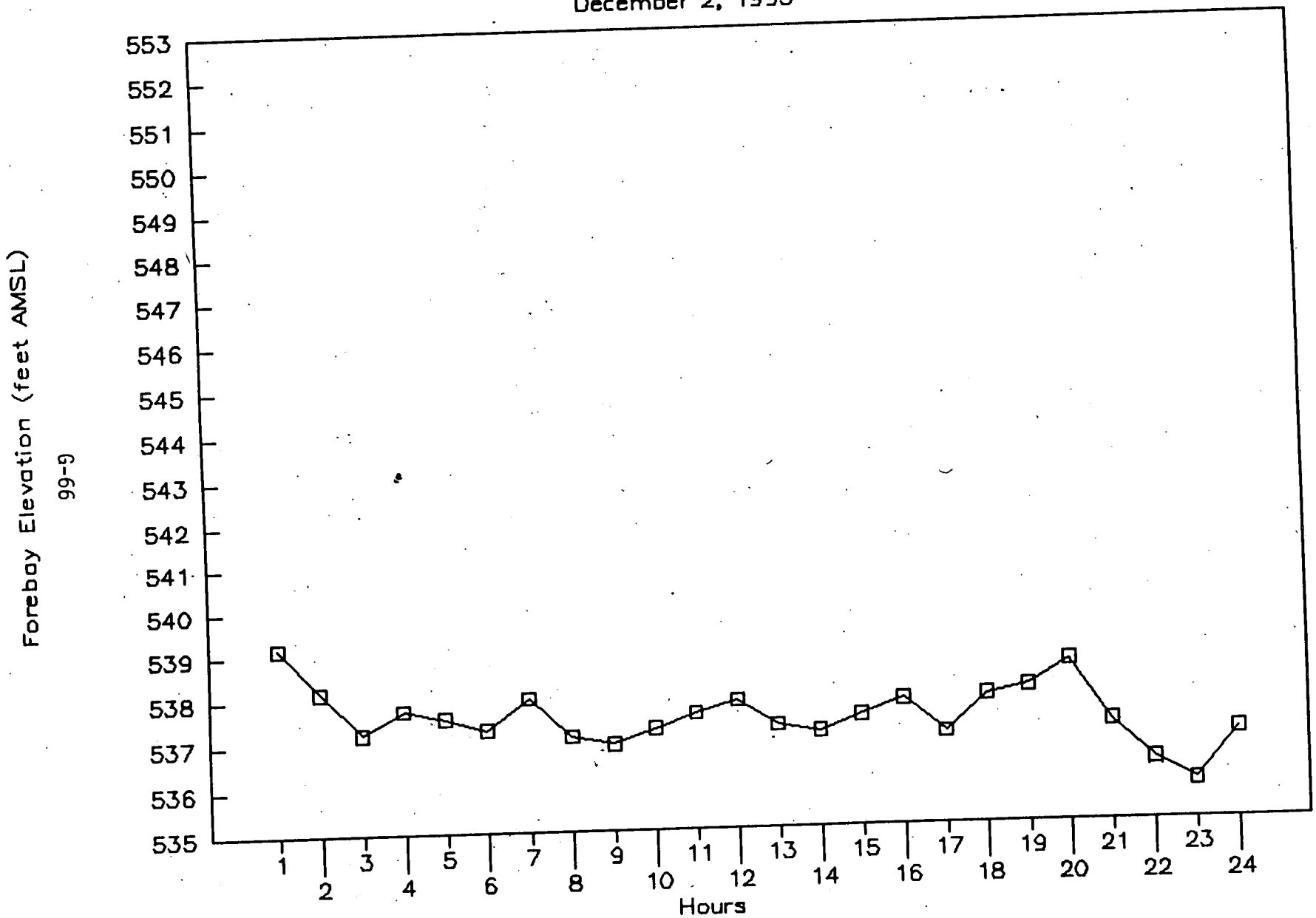
ecology and environment

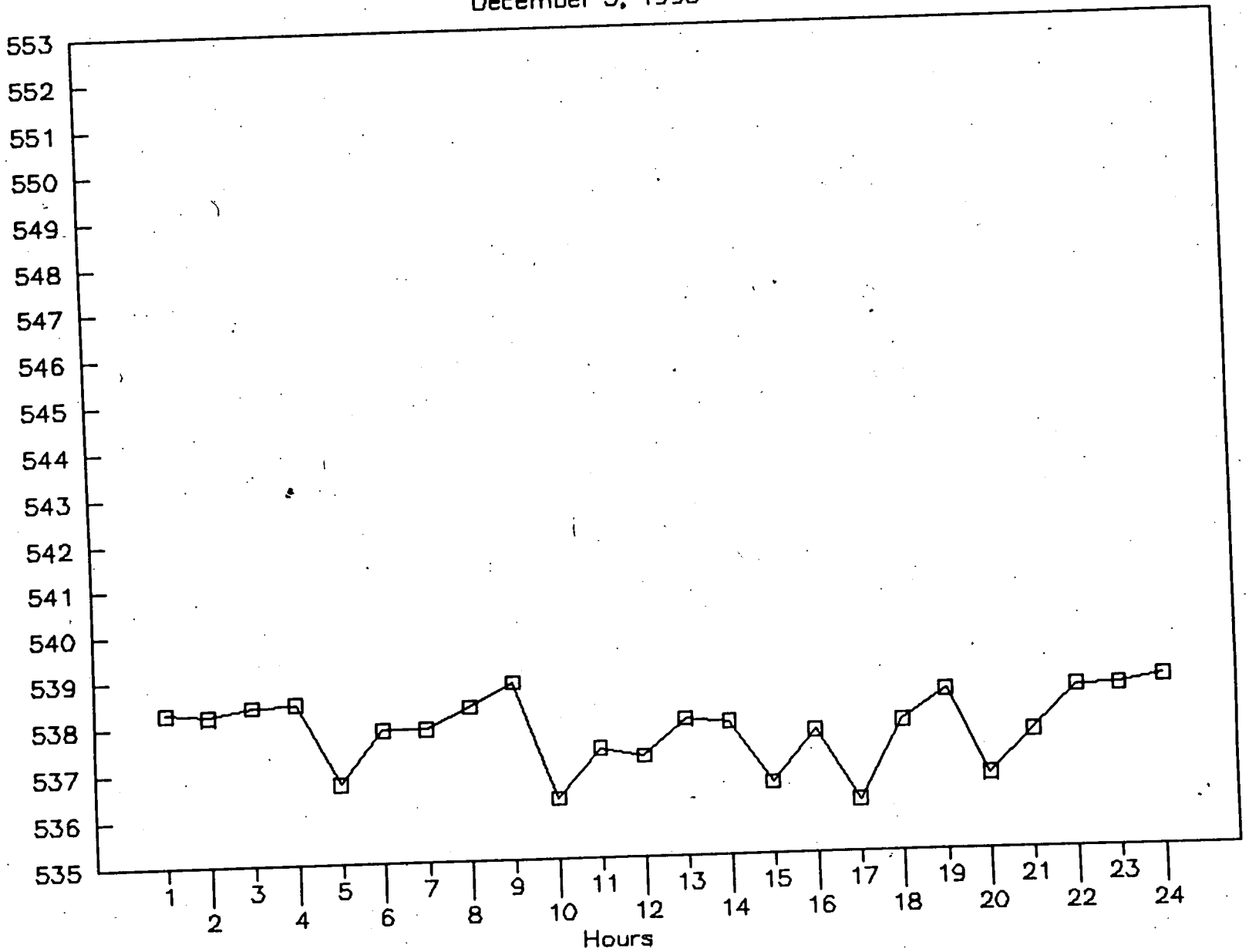
# PASNY Forebay Elevations

December 2, 1993



# PASNY Forebay Elevations

December 3, 1993



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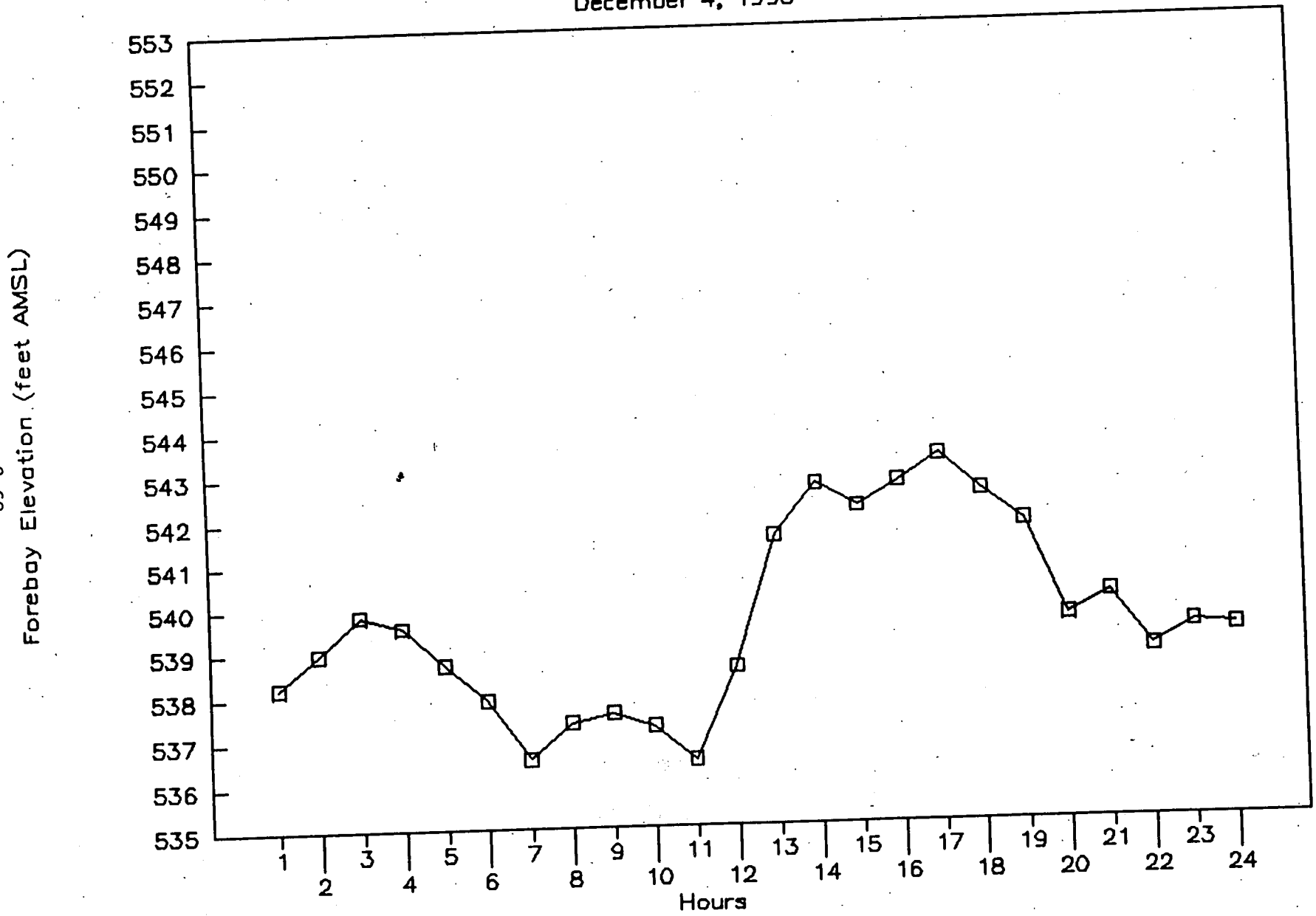
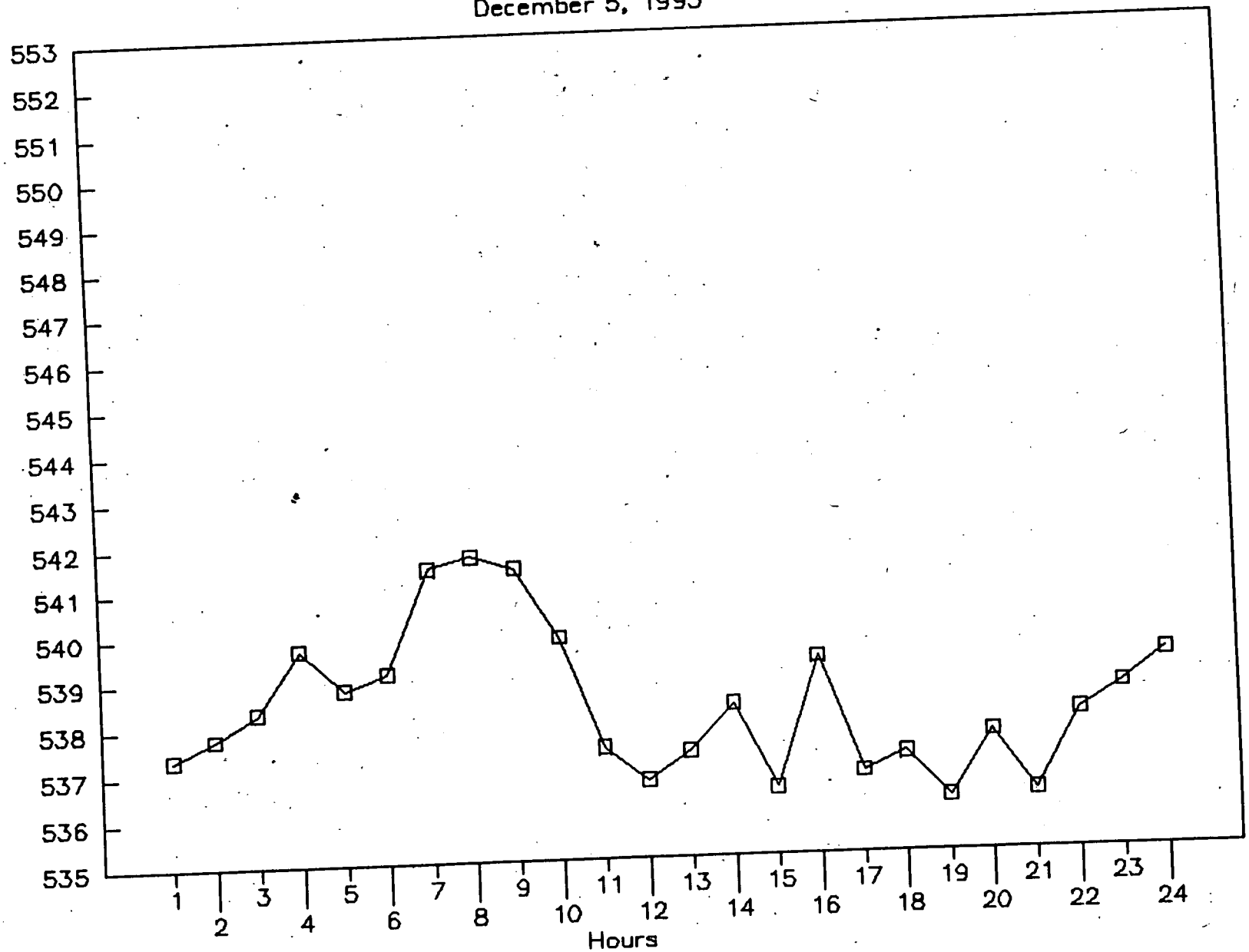
# PASNY Forebay Elevations

December 4, 1993



# PASNY Forebay Elevations

December 5, 1993



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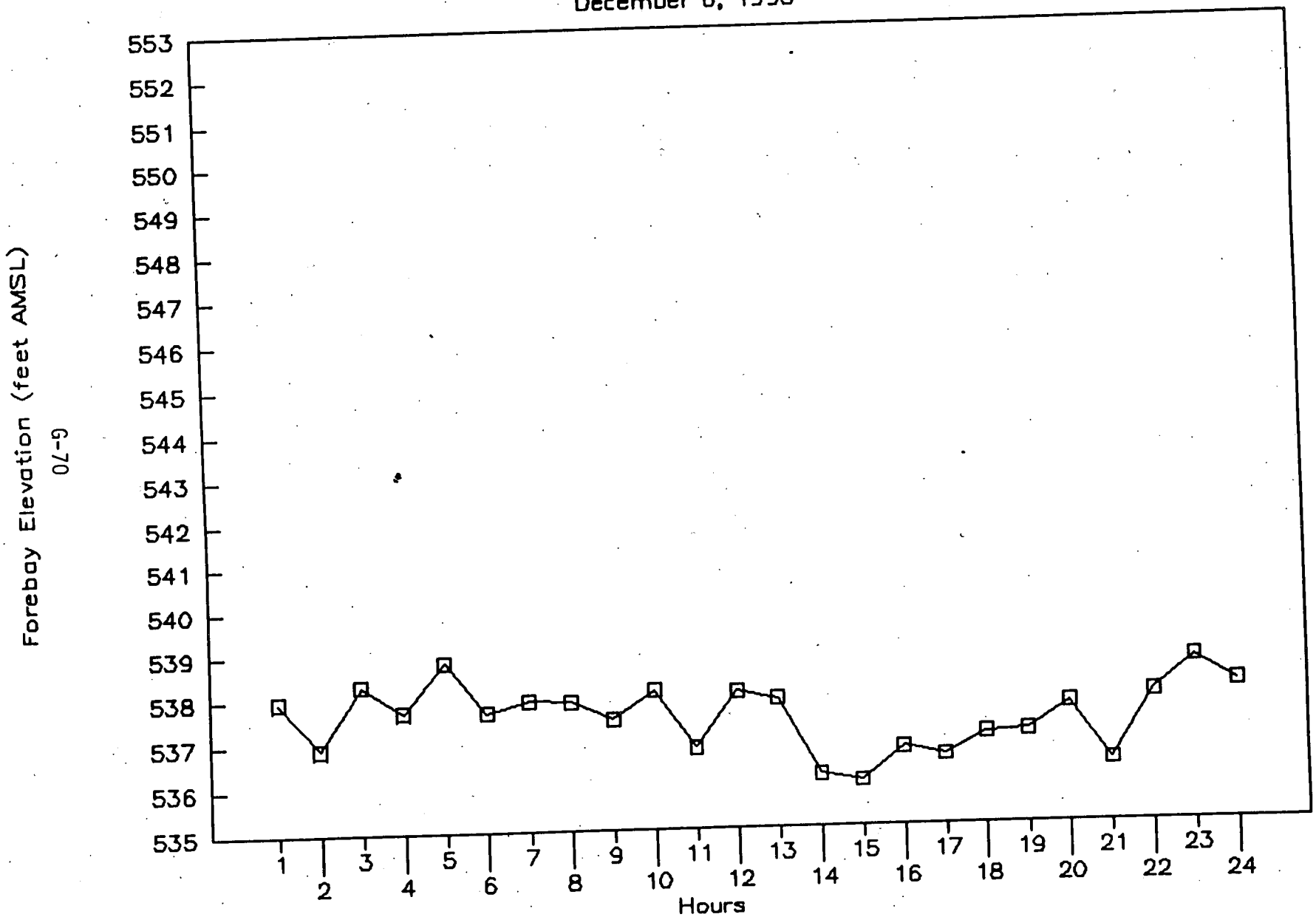
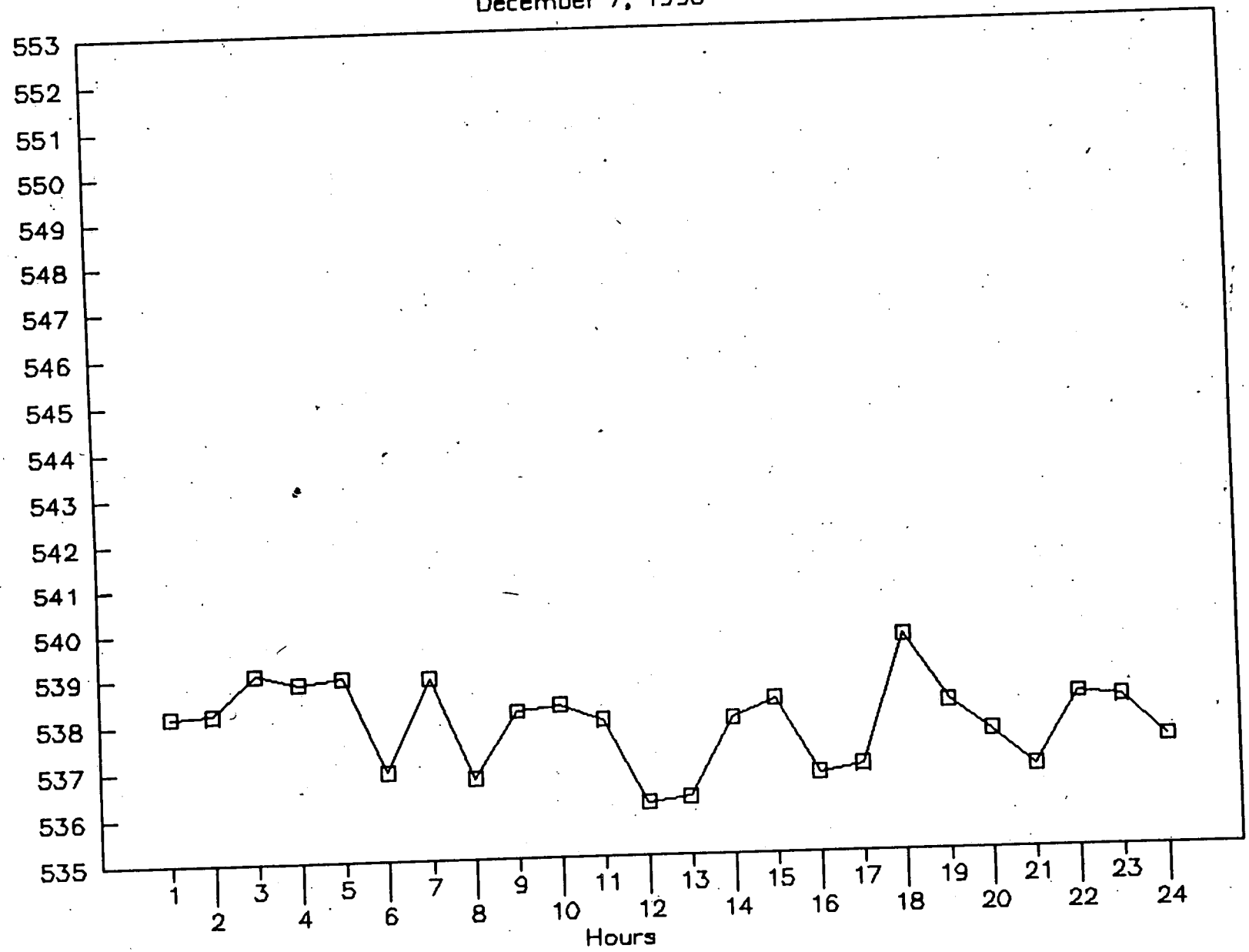
# PASNY Forebay Elevations

December 6, 1993



# PASNY Forebay Elevations

December 7, 1993

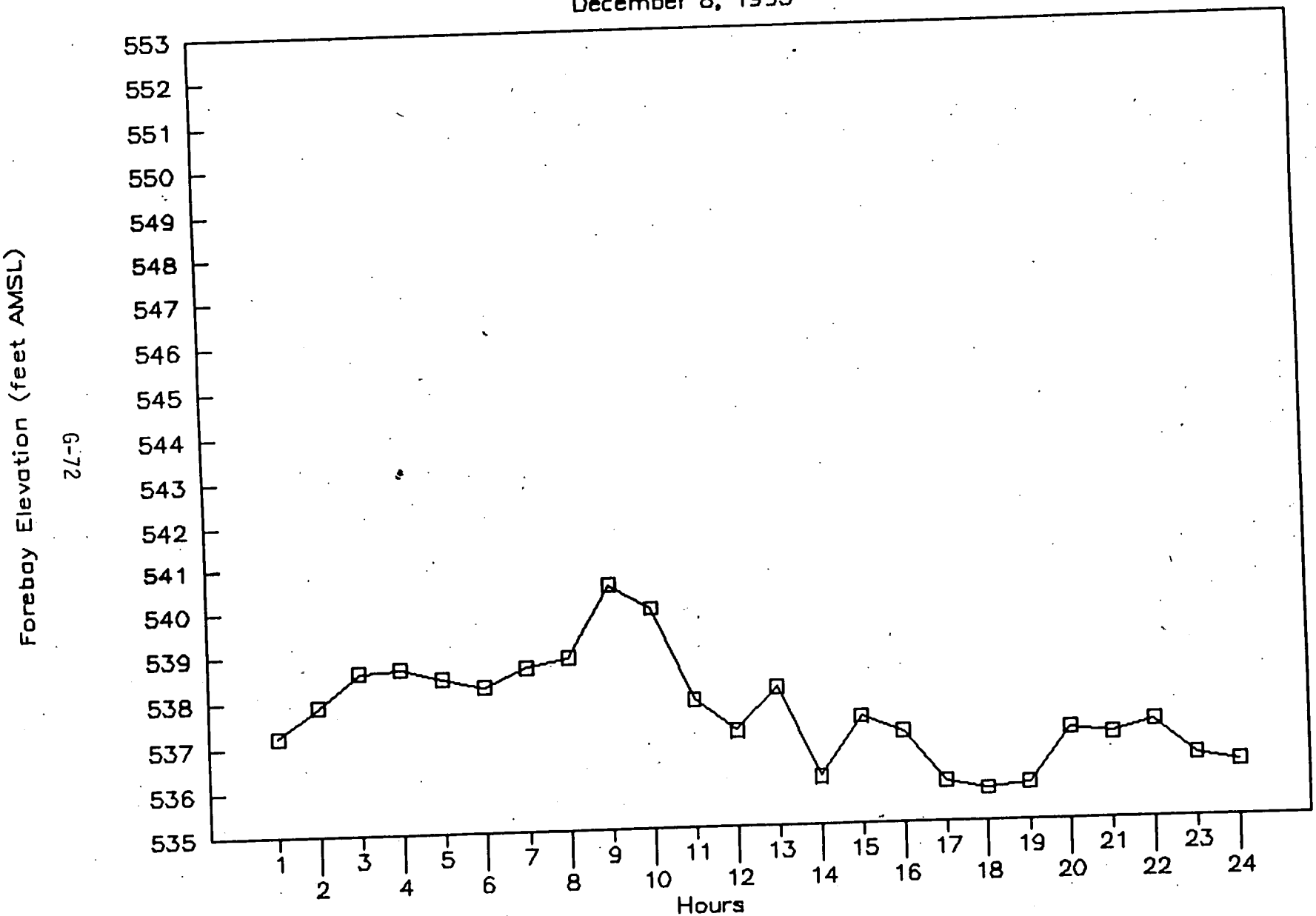





recycled paper
ecology and environment

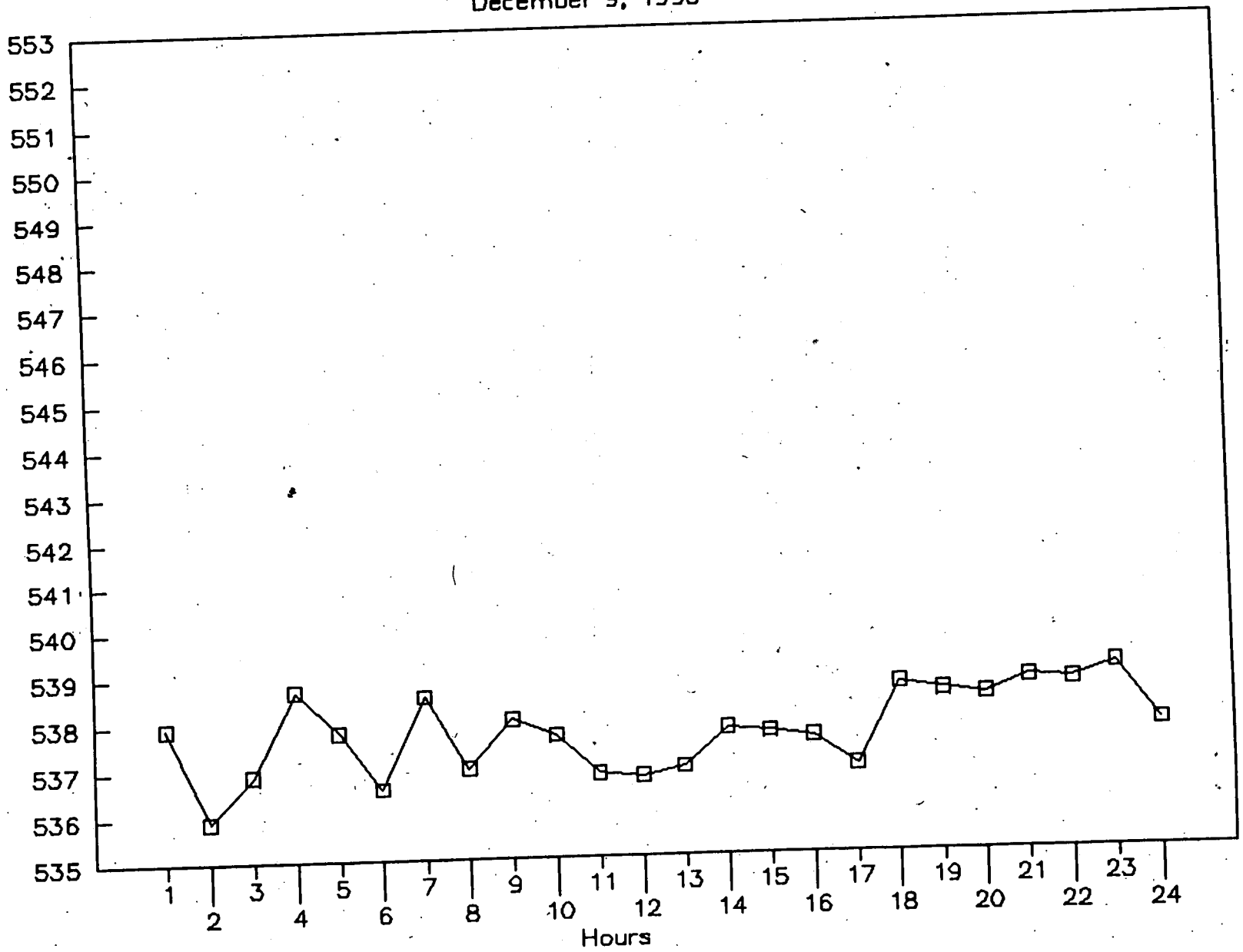
# PASNY Forebay Elevations

December 8, 1993



# PASNY Forebay Elevations

December 9, 1993



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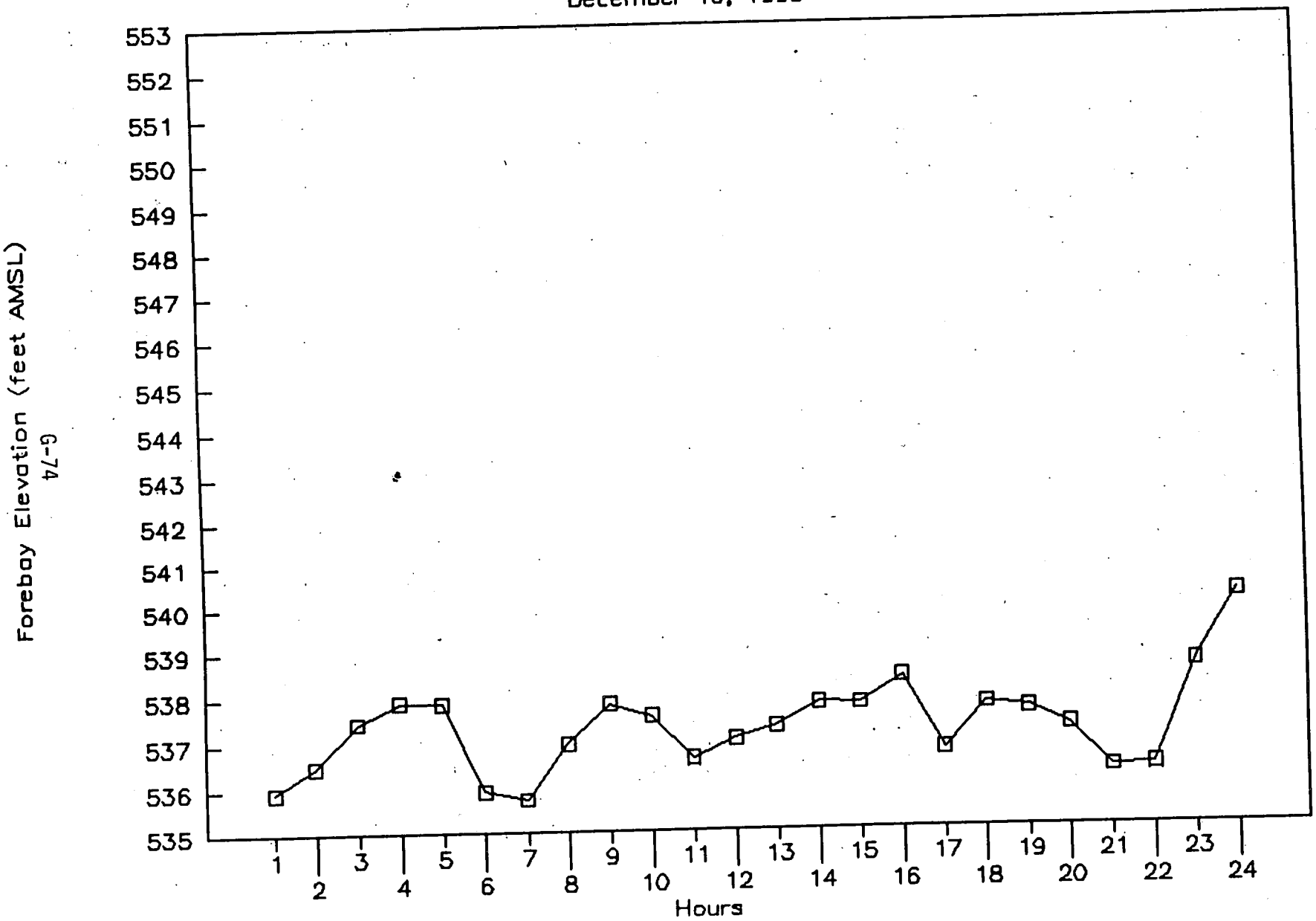
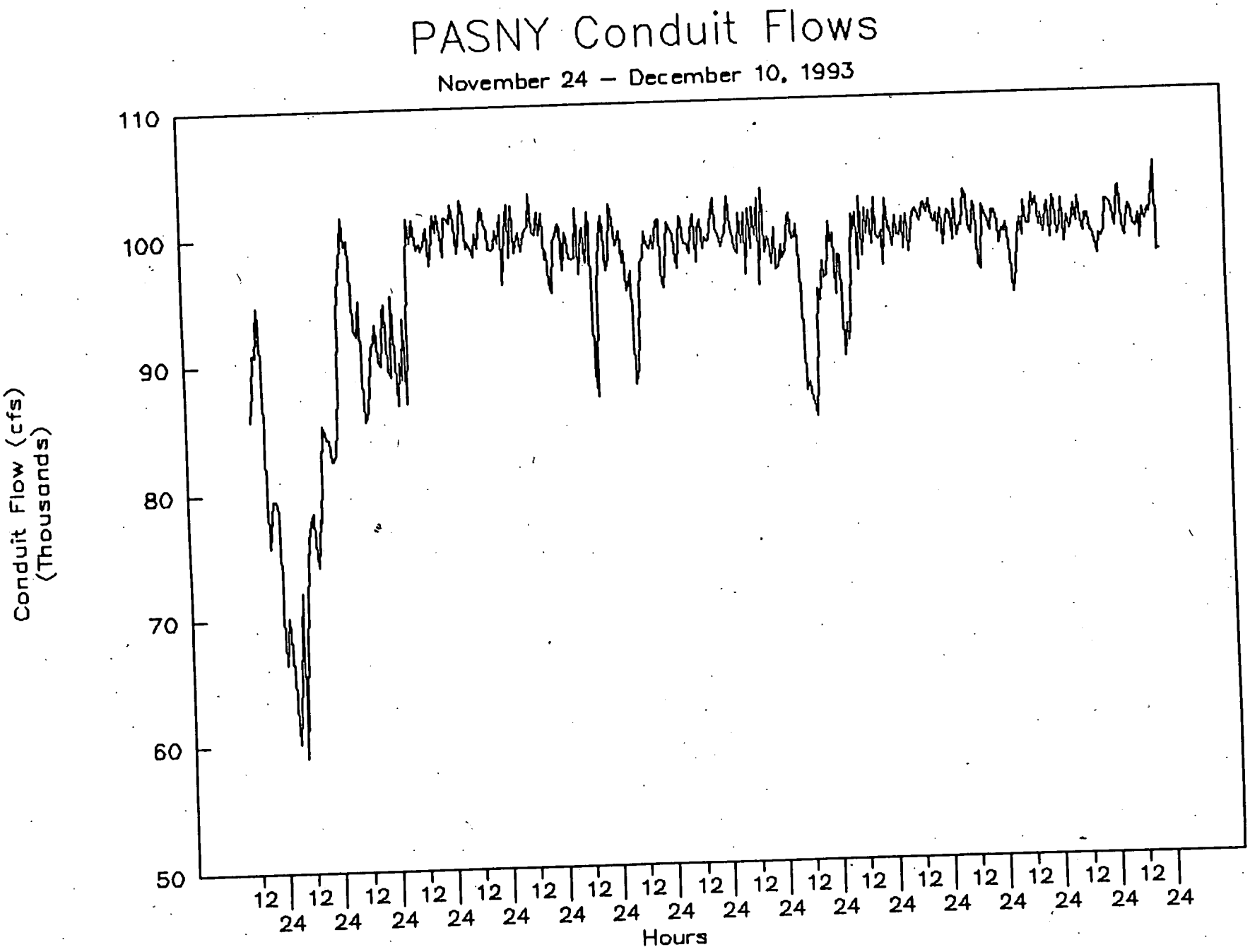
ecology and environment

# PASNY Forebay Elevations

December 10, 1993



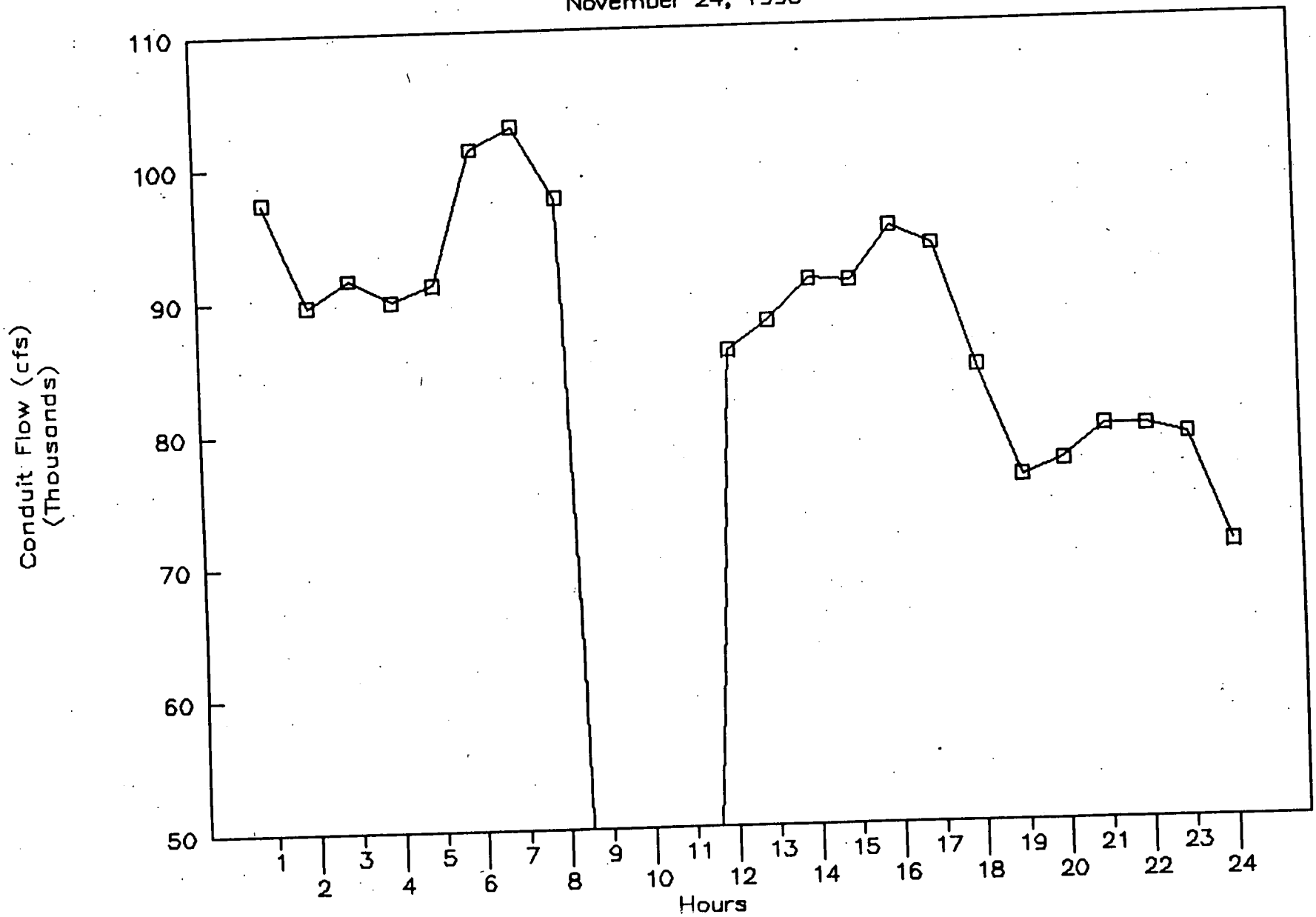





recycled paper
ecology and environment

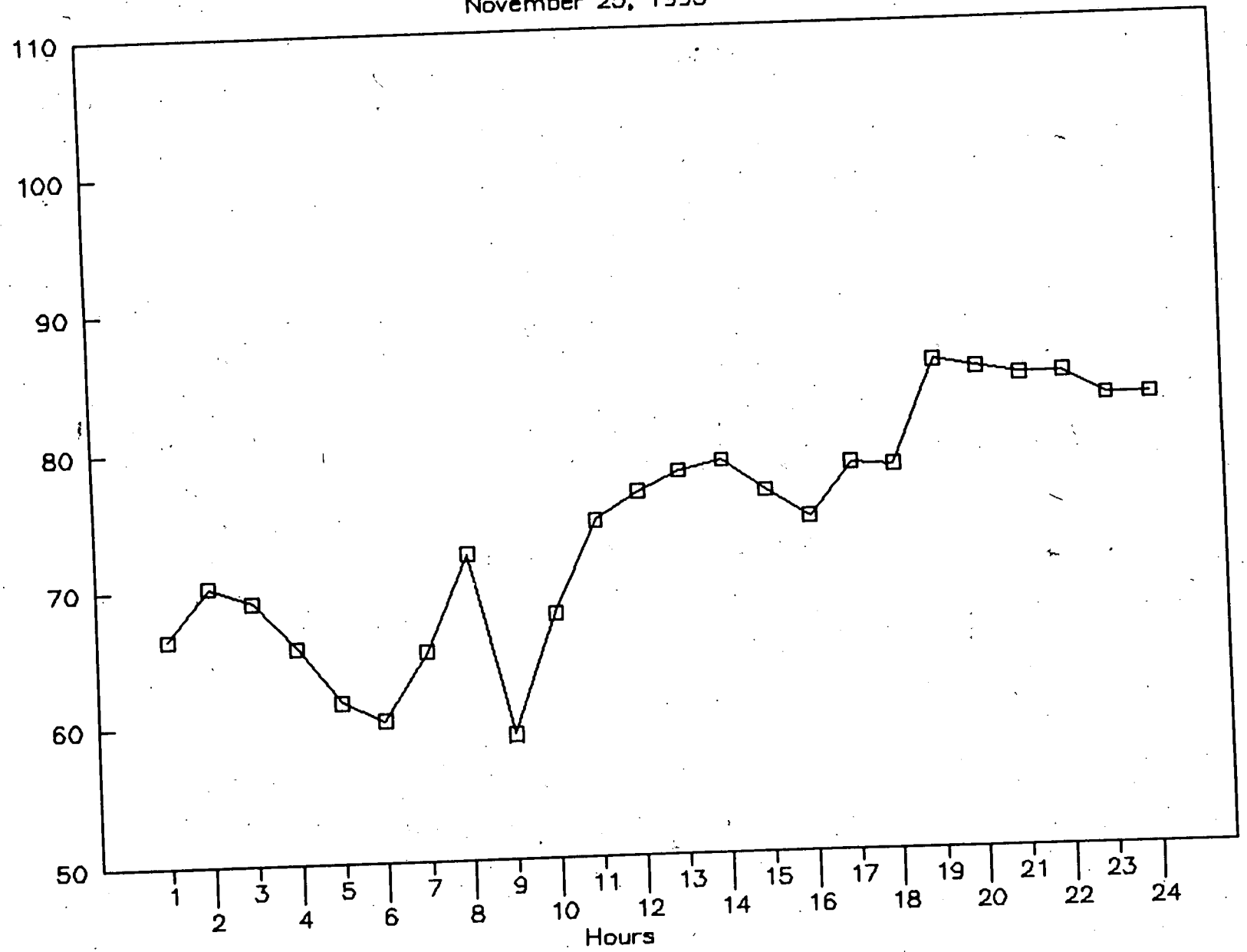
# PASNY Conduit Flows

November 24, 1993



# PASNY Conduit Flows

November 25, 1993



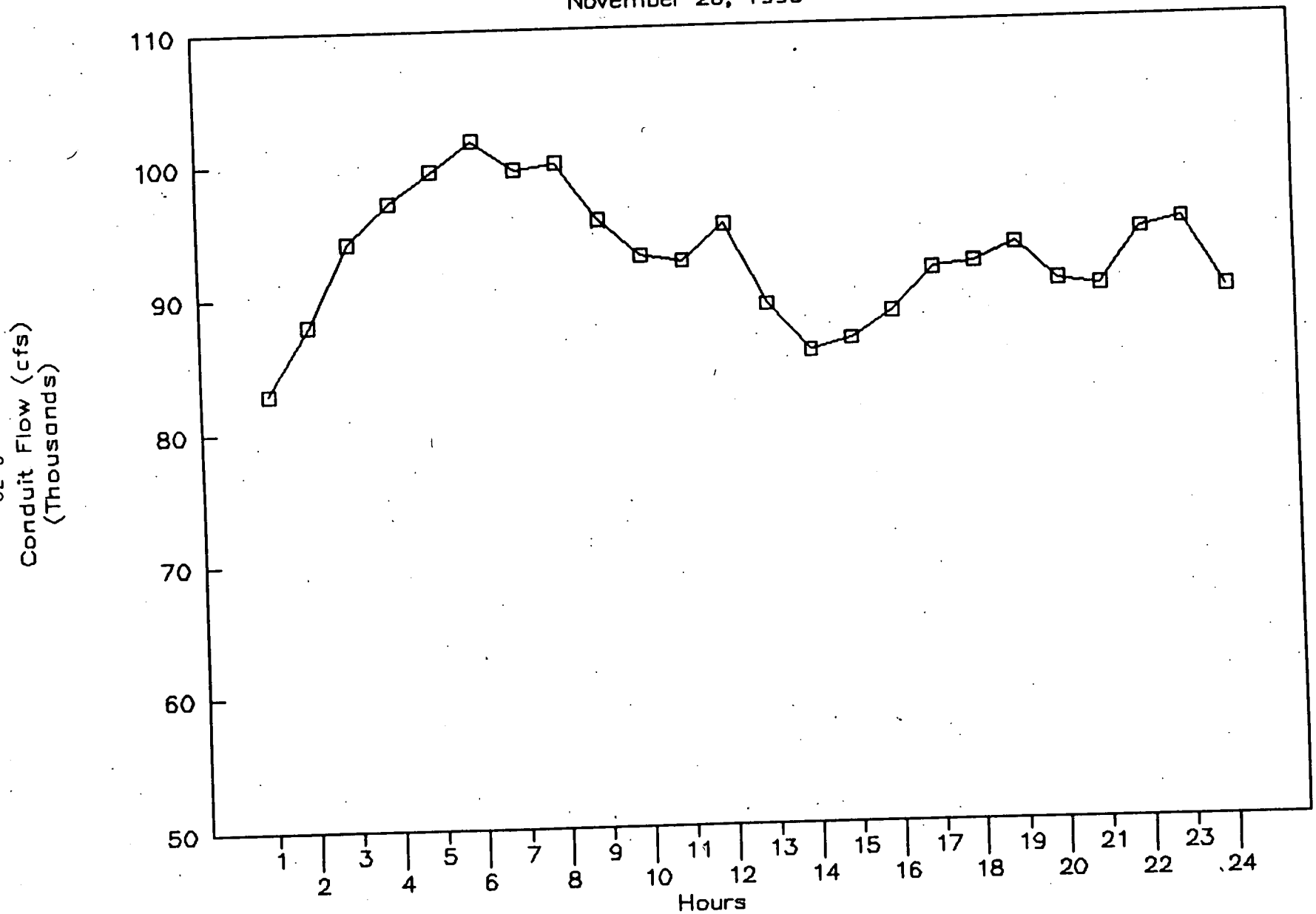

recycled paper

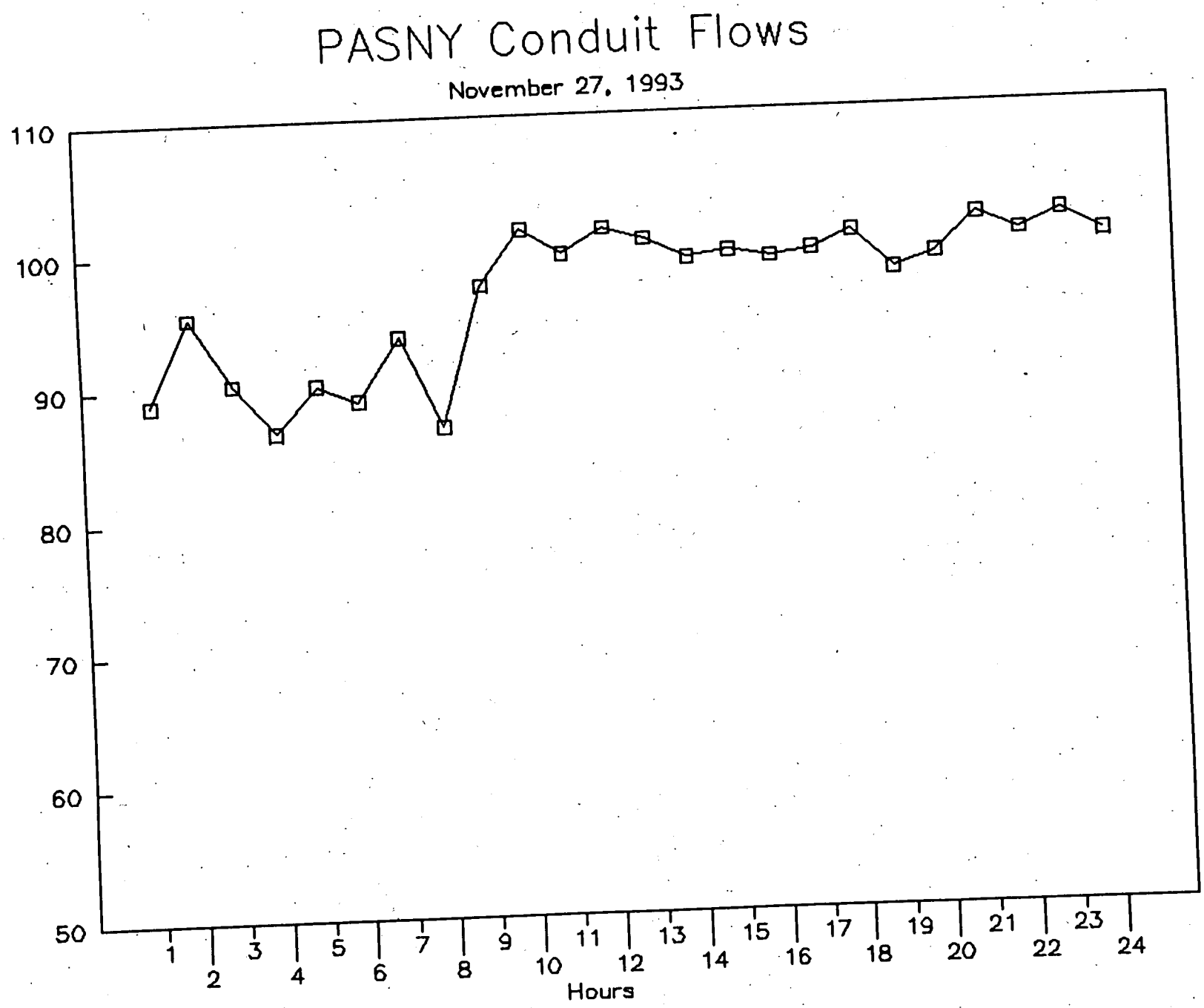


ecology and environment

# PASNY Conduit Flows

November 26, 1993





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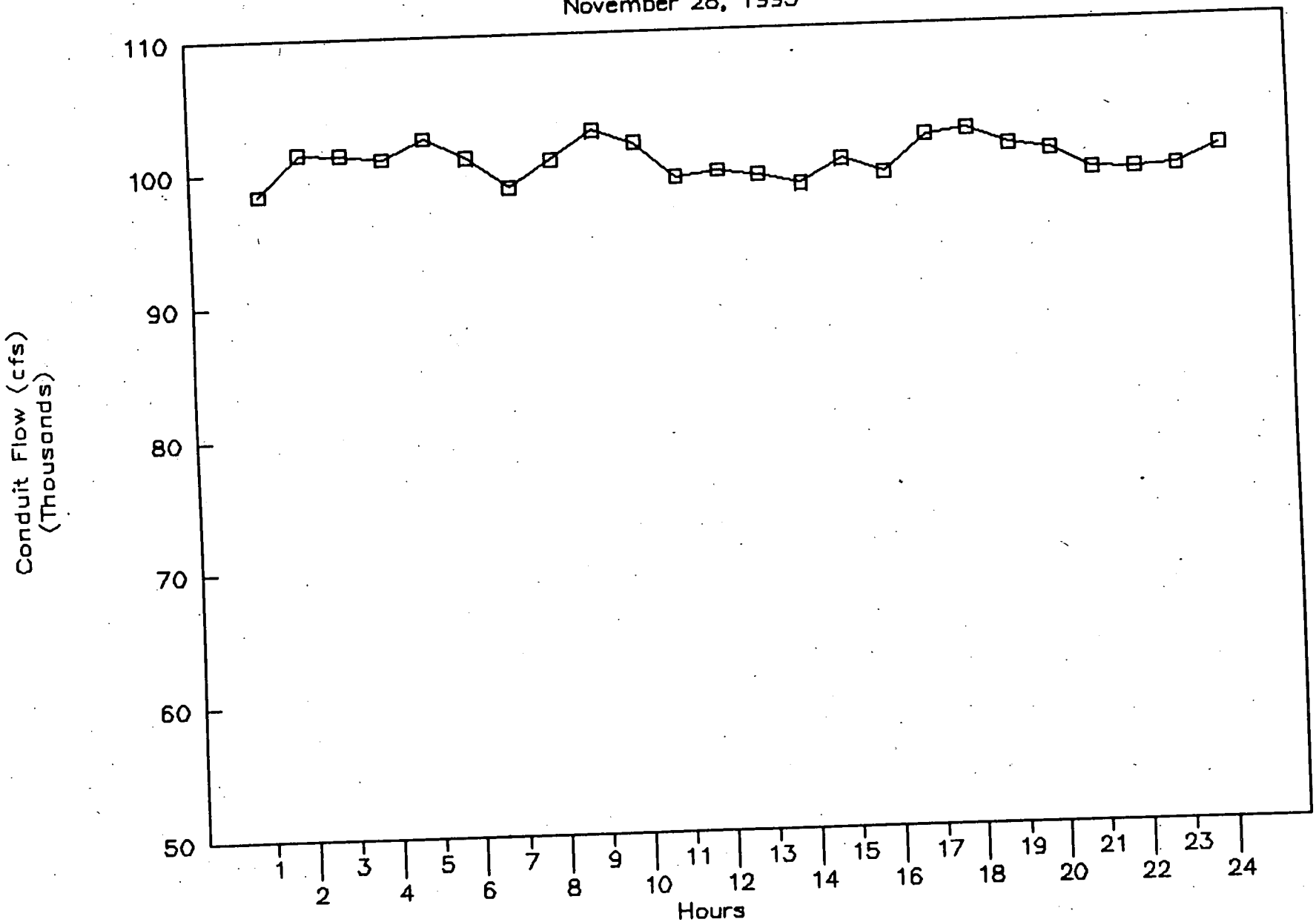
ecology and environment

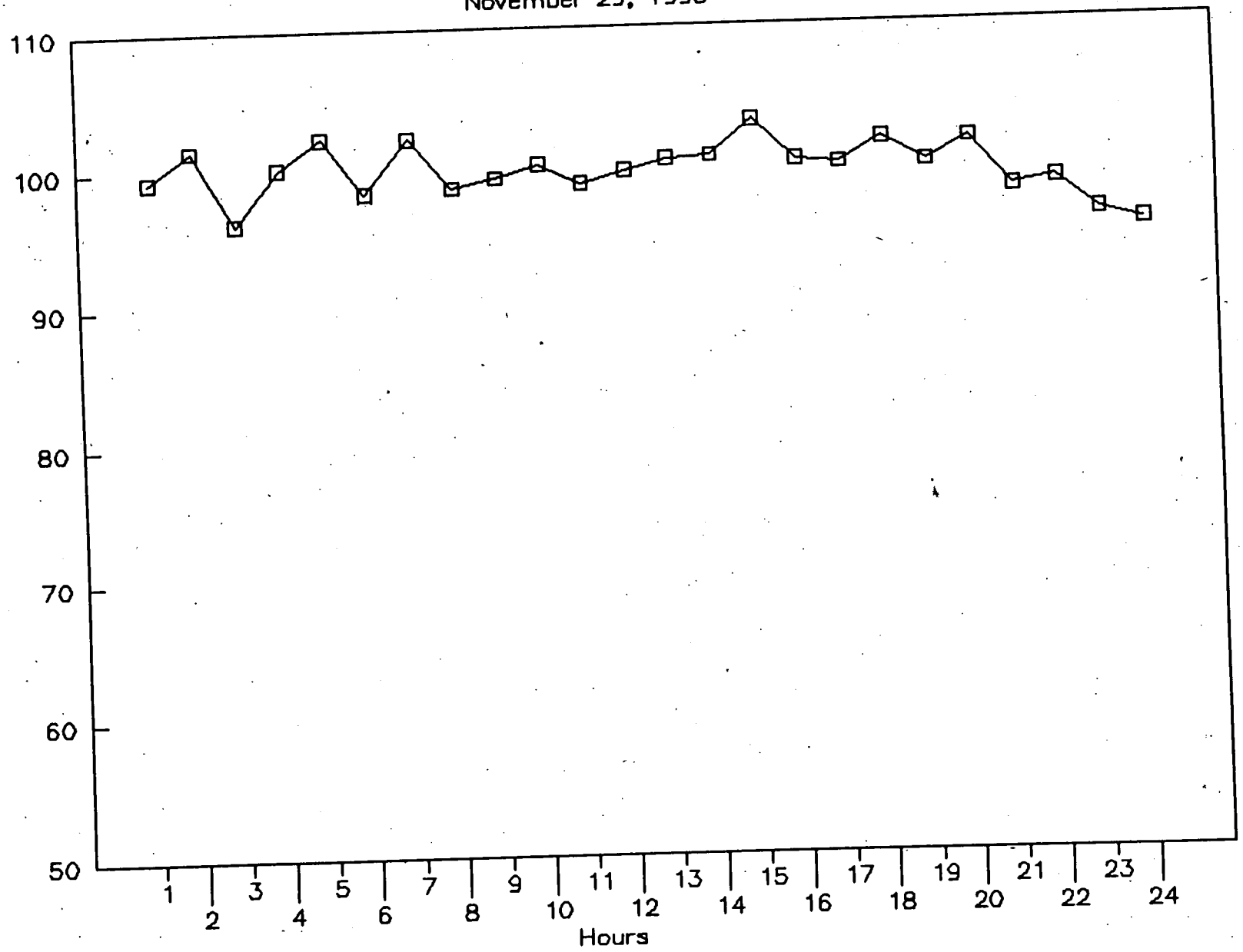
# PASNY Conduit Flows

November 28, 1993



# PASNY Conduit Flows

November 29, 1993

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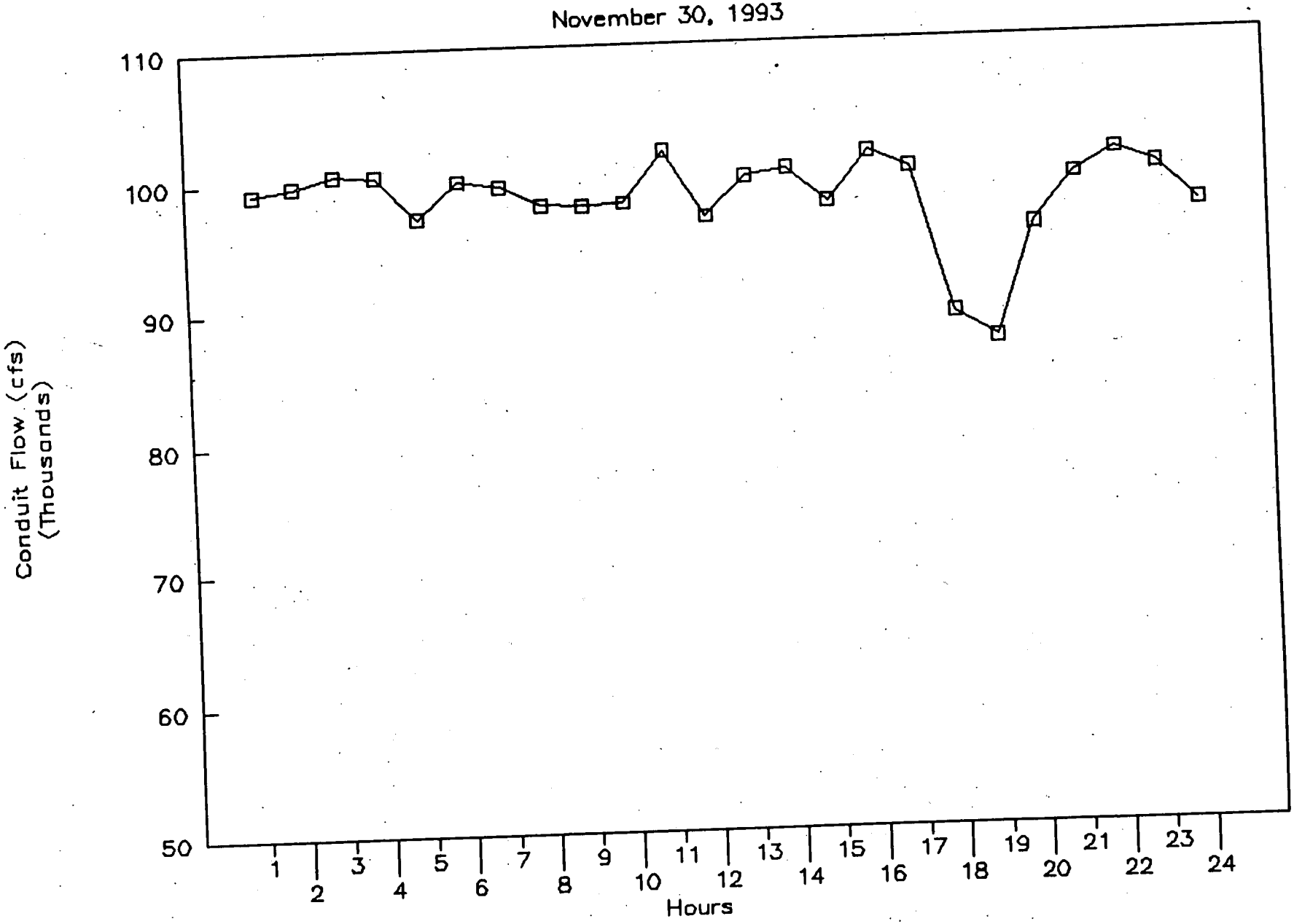
ecology and environment

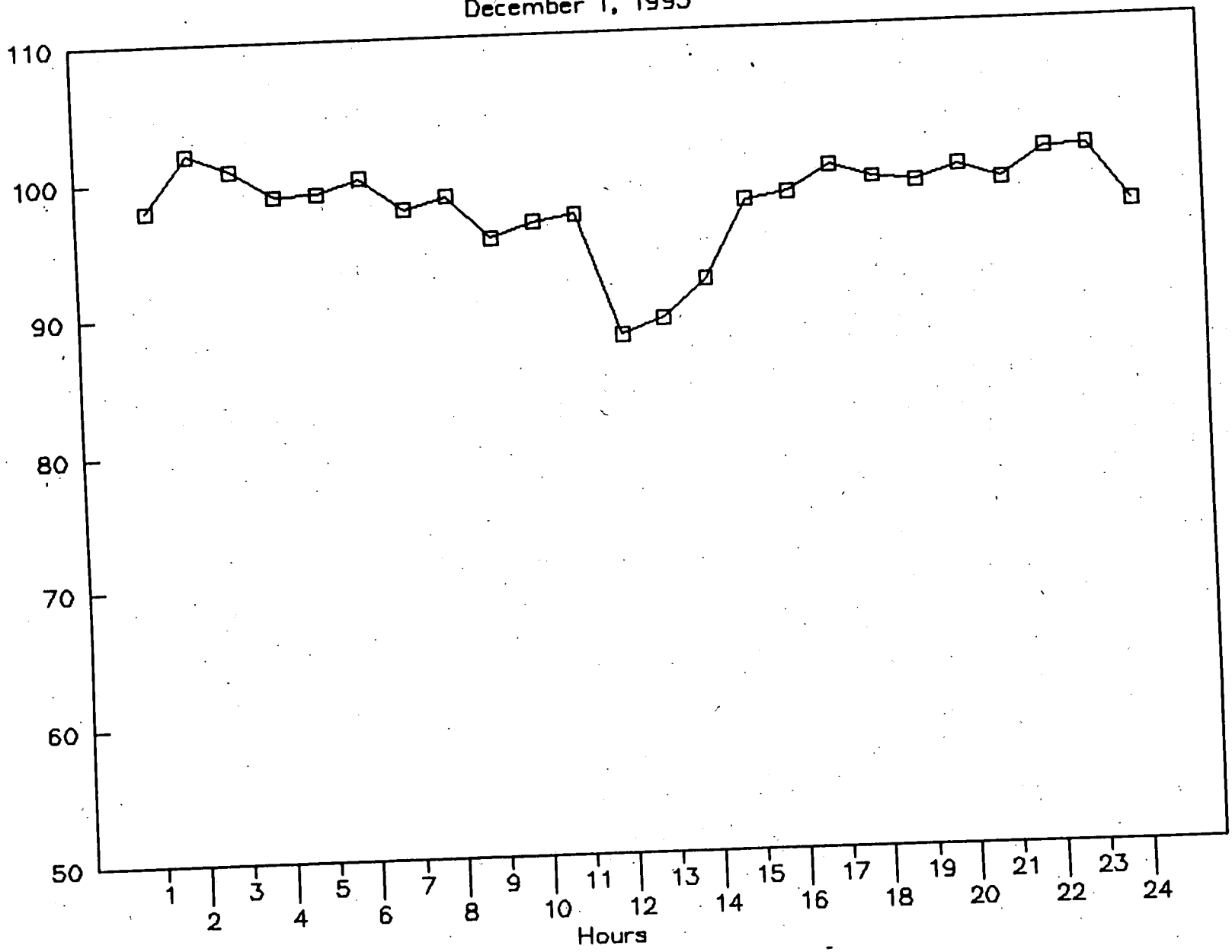
# PASNY Conduit Flows

November 30, 1993



# PASNY Conduit Flows

December 1, 1993

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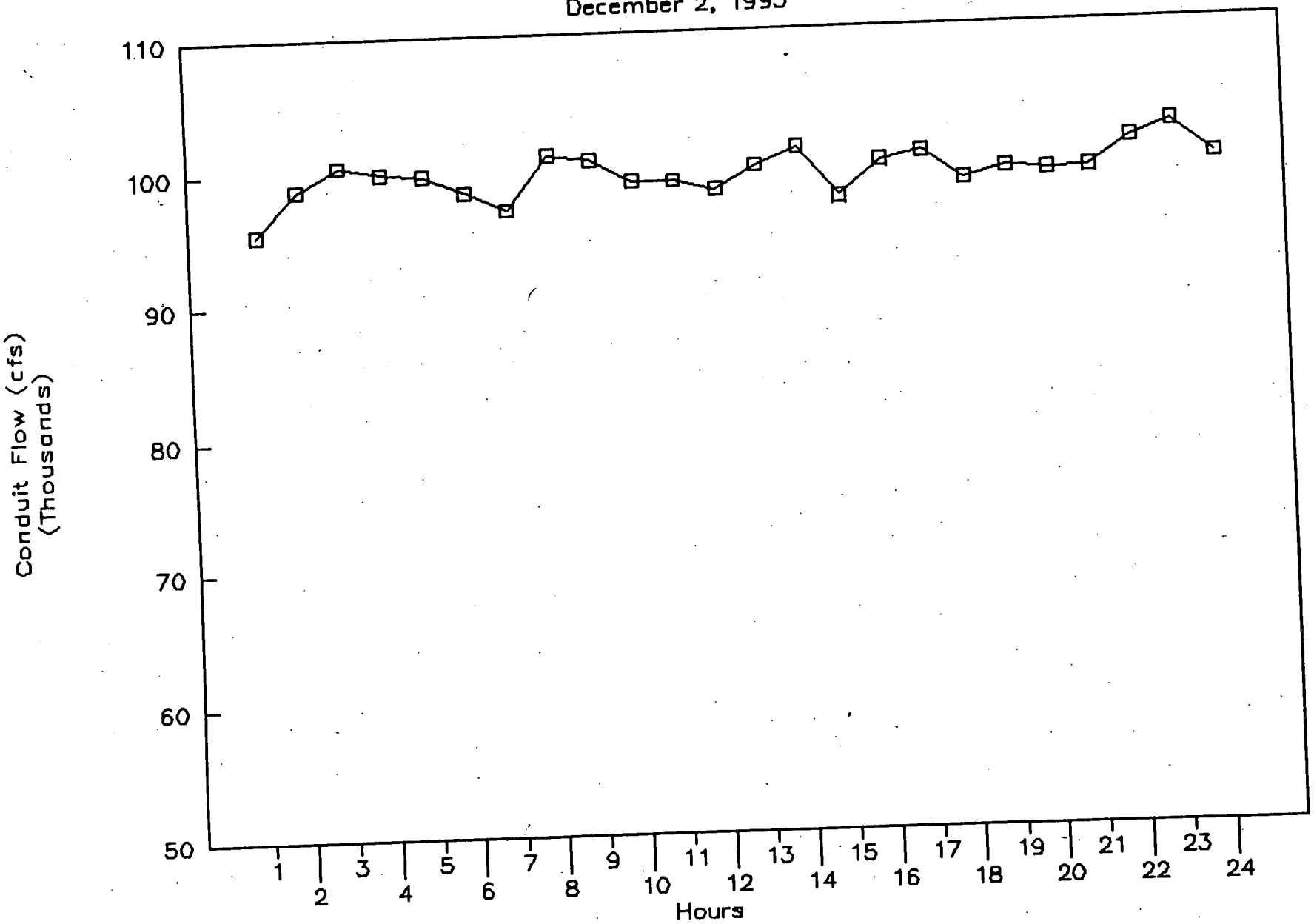
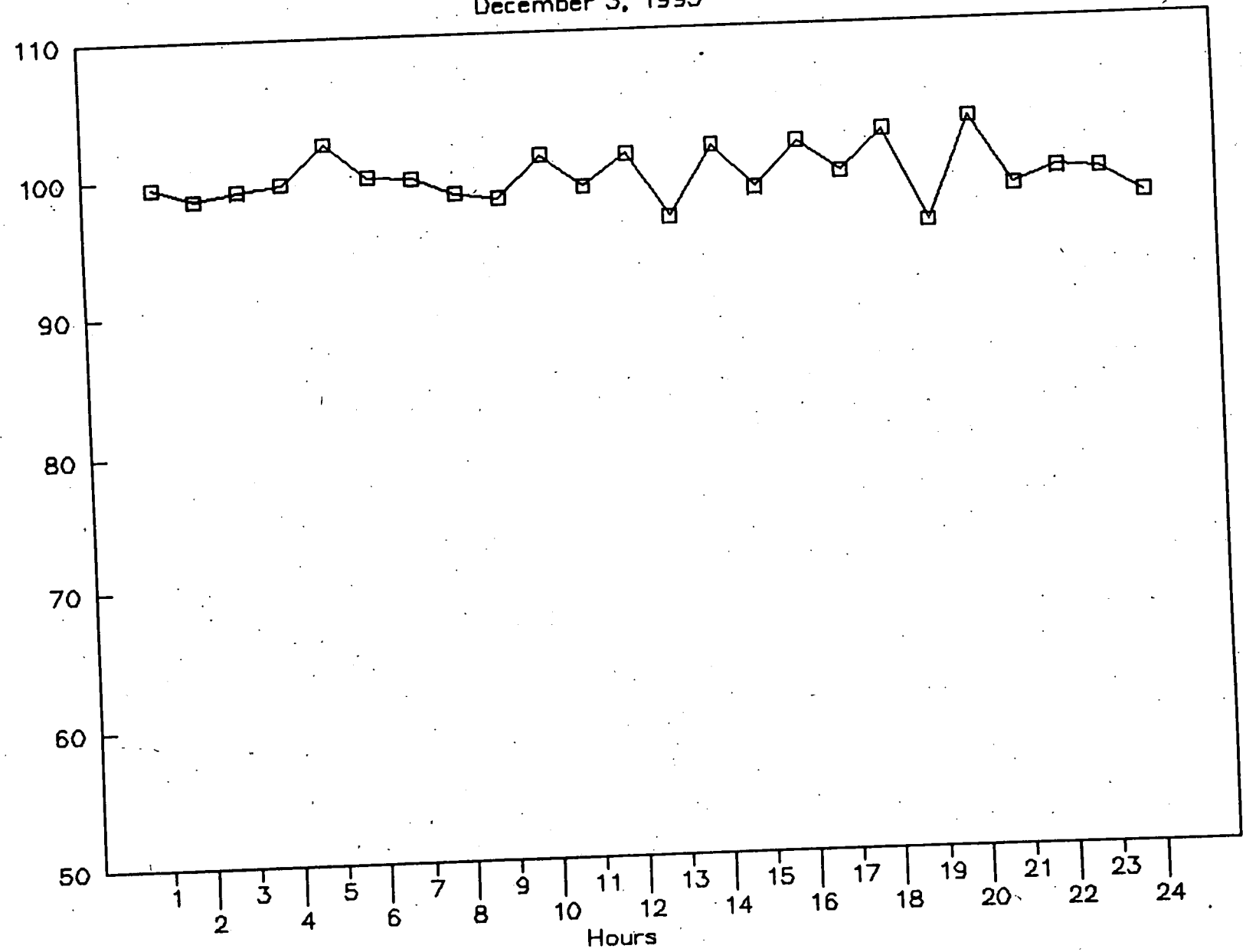
# PASNY Conduit Flows

December 2, 1993



# PASNY Conduit Flows

December 3, 1993



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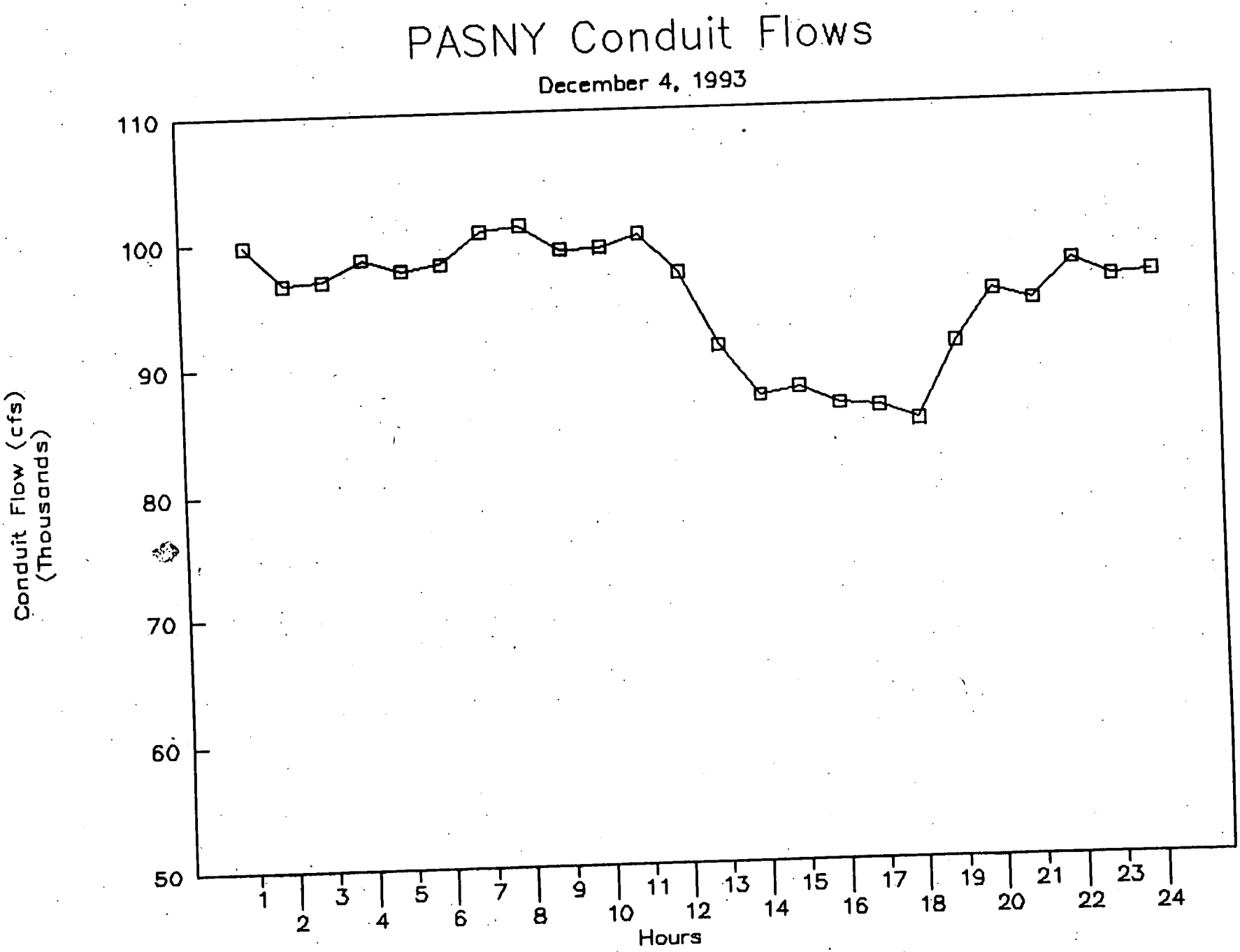
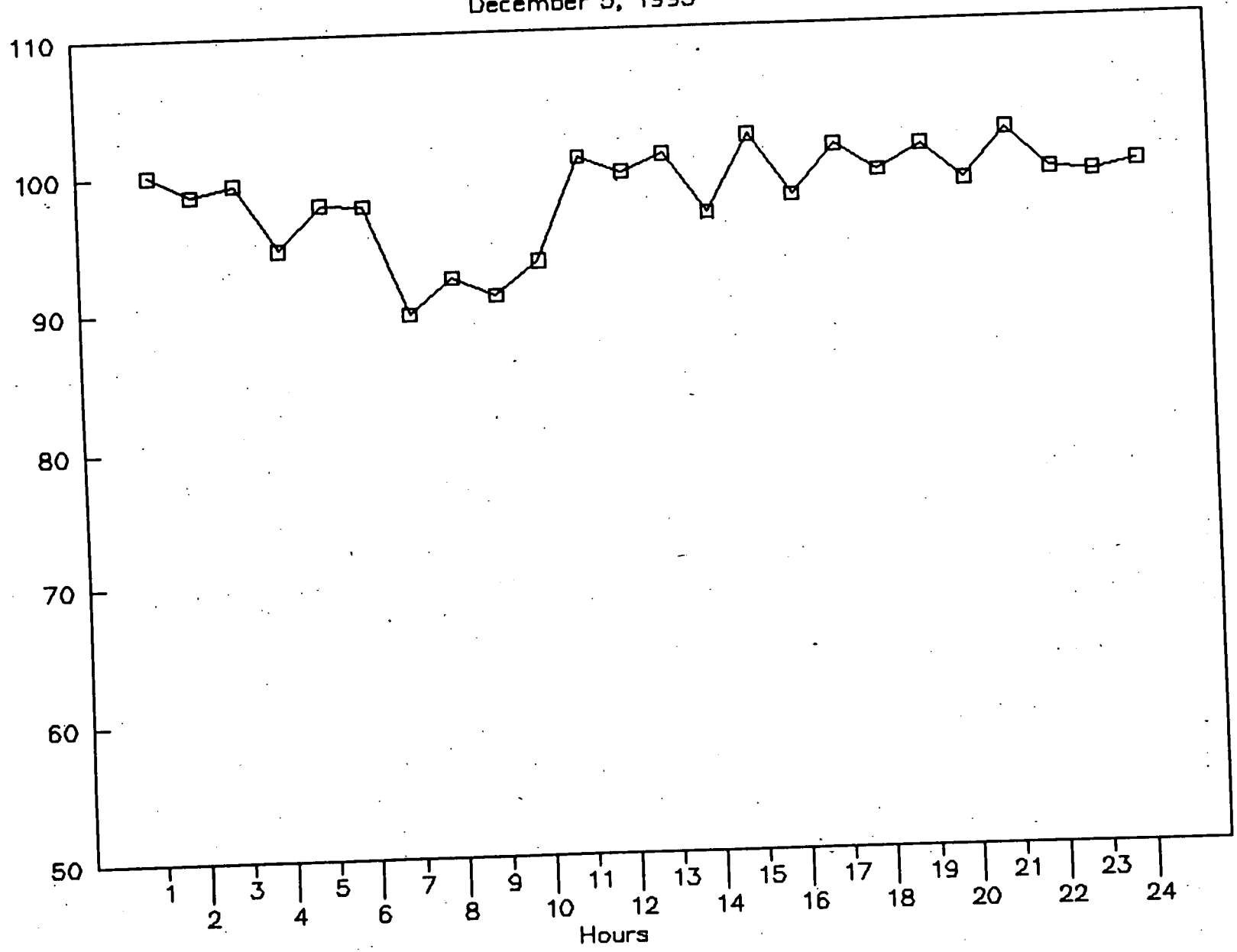
ecology and environment


PASNY Conduit Flows
December 4, 1993
Conduit Flow (cfs)
(Thousands)
110
100
90
80
70
60
50
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
Hours

# PASNY Conduit Flows

December 5, 1993



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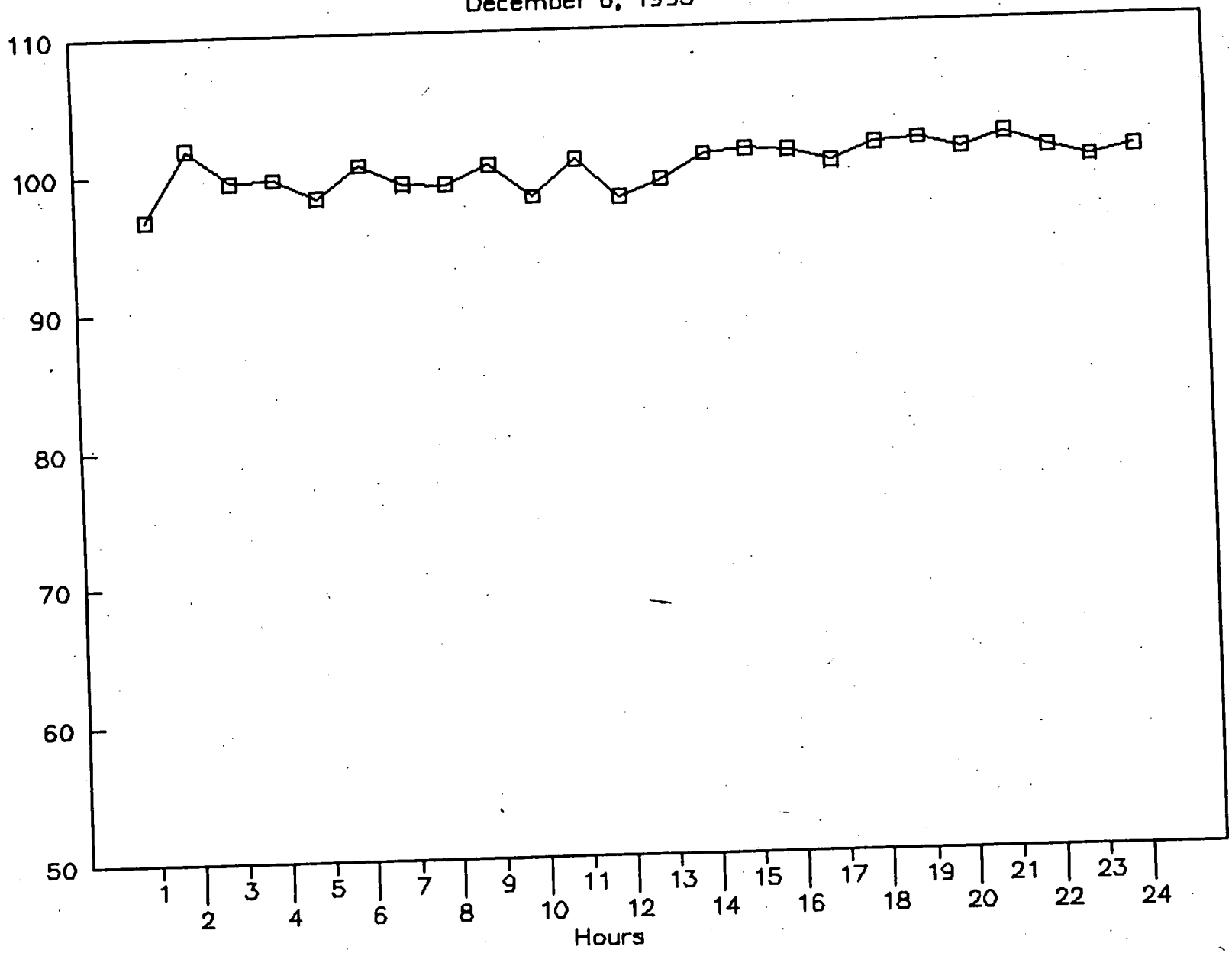
ecology and environment

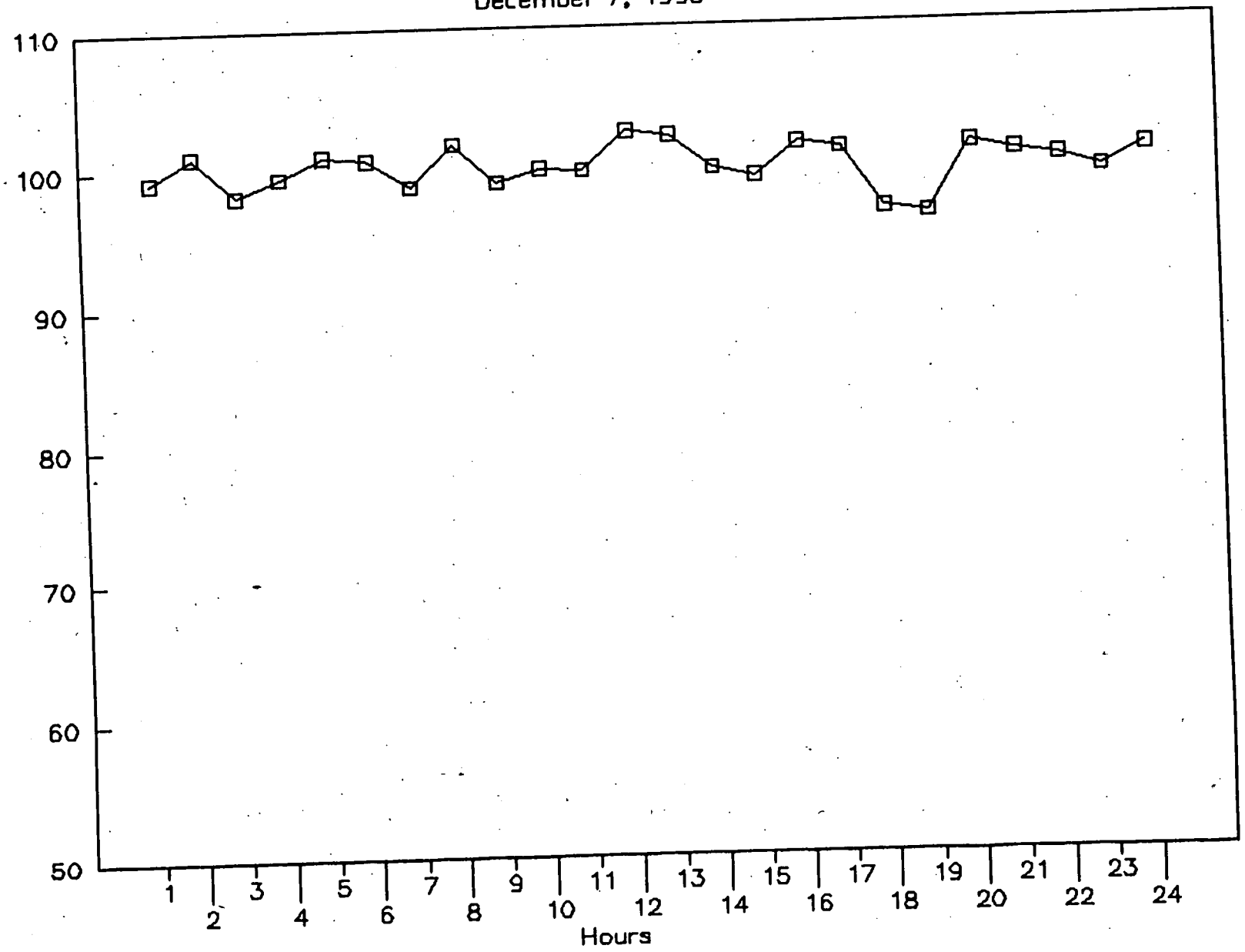
# PASNY Conduit Flows

December 6, 1993



# PASNY Conduit Flows

December 7, 1993



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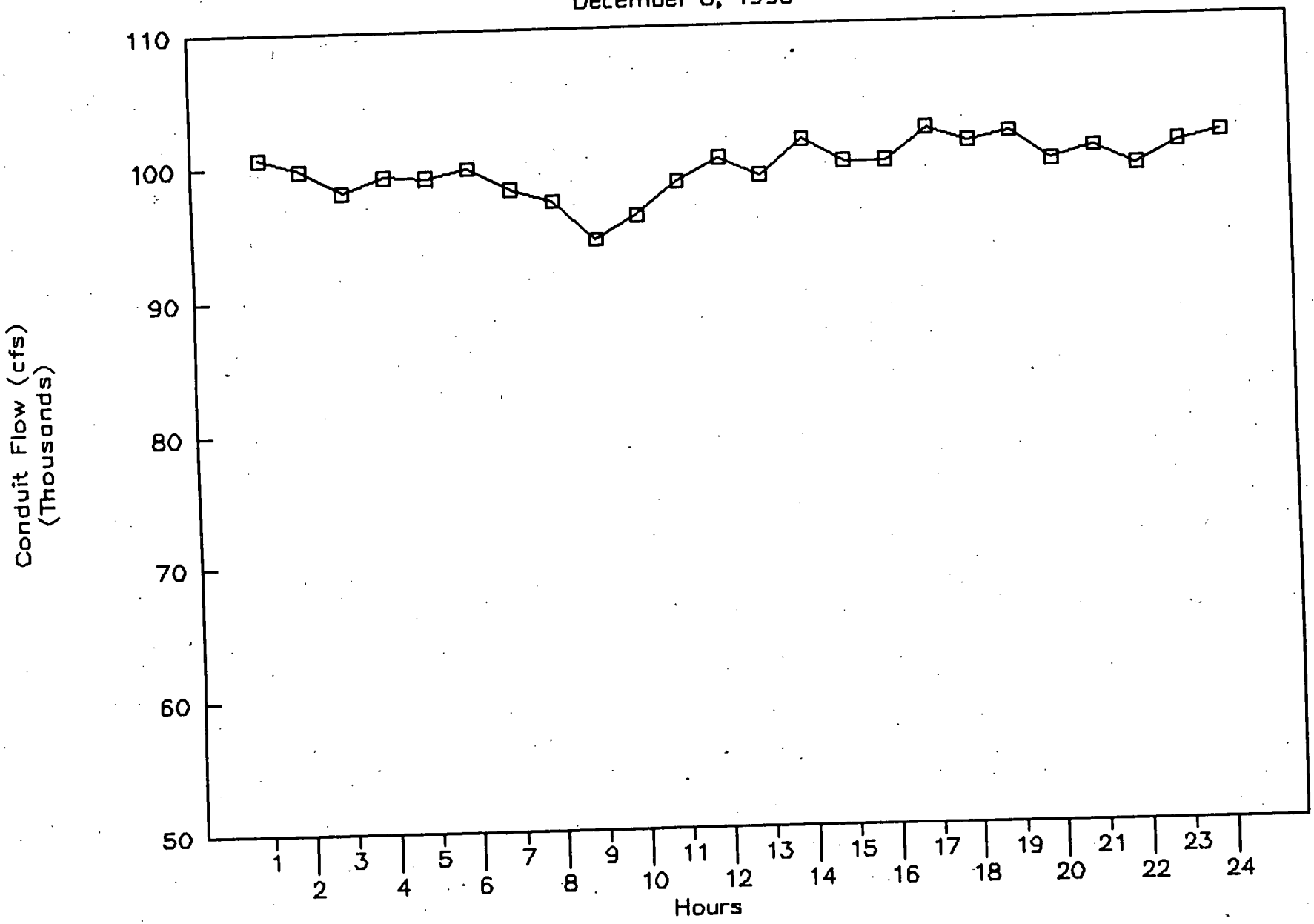
ecology and environment

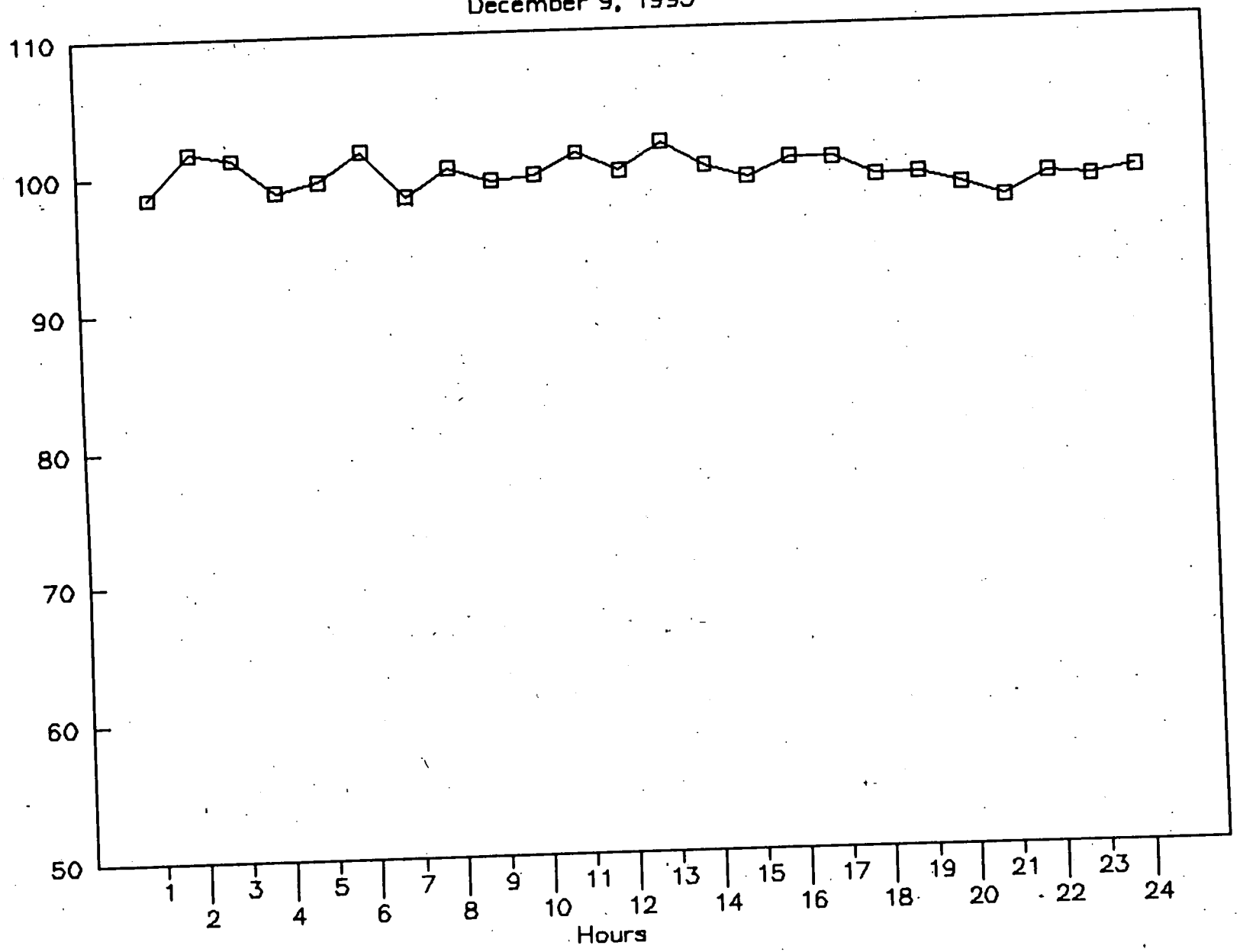
# PASNY Conduit Flows

December 8, 1993



# PASNY Conduit Flows

December 9, 1993



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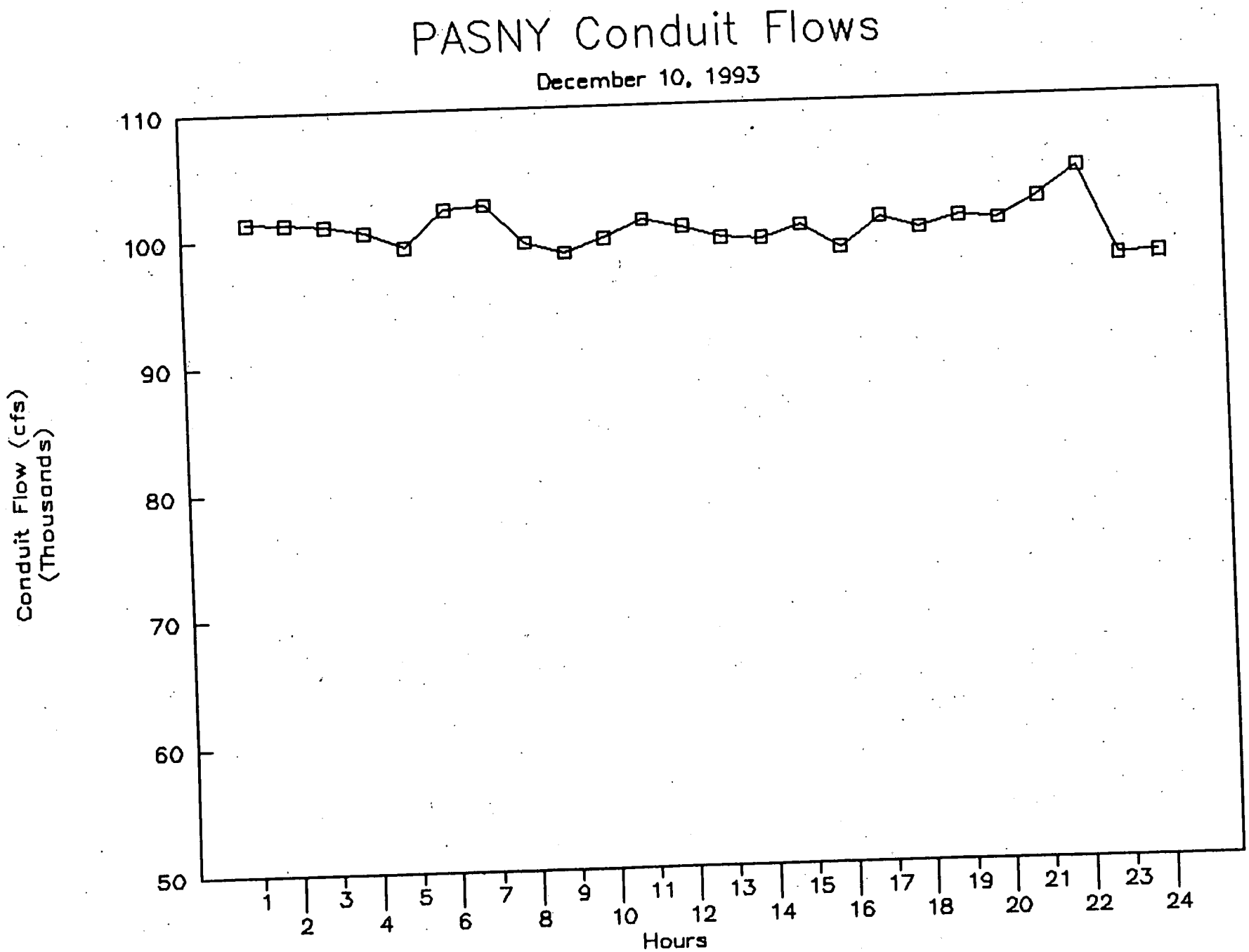
ecology and environment


PASNY Conduit Flows
December 10, 1993
Conduit Flow (cfs)
(Thousands)
110
100
90
80
70
60
50
1
2
3
4
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21
22
23
24
Hours

**PASNY DATA**
NOV 24 - DEC 10
1993

| Date | Hour | Fby_av | Riv div |
|---|---|---|---|
| 24-Nov-93 | 1 | 539.46 | 97370 |
| 24-Nov-93 | 2 | 541.37 | 89600 |
| 24-Nov-93 | 3 | 542.49 | 91560 |
| 24-Nov-93 | 4 | 542.37 | 89880 |
| 24-Nov-93 | 5 | 540.78 | 91090 |
| 24-Nov-93 | 6 | 536.31 | 101190 |
| 24-Nov-93 | 7 | 535.95 | 102750 |
| 24-Nov-93 | 8 | 538.7 | 97430 |
| 24-Nov-93 | 9 | | |
| 24-Nov-93 | 10 | | |
| 24-Nov-93 | 11 | 541.7 | |
| 24-Nov-93 | 12 | 542.95 | 85690 |
| 24-Nov-93 | 13 | 542.01 | 87850 |
| 24-Nov-93 | 14 | 541.84 | 90870 |
| 24-Nov-93 | 15 | 541.58 | 90730 |
| 24-Nov-93 | 16 | 539.34 | 94730 |
| 24-Nov-93 | 17 | 540.1 | 93360 |
| 24-Nov-93 | 18 | 544.1 | 84120 |
| 24-Nov-93 | 19 | 546.81 | 75780 |
| 24-Nov-93 | 20 | 546.41 | 76930 |
| 24-Nov-93 | 21 | 545.21 | 79460 |
| 24-Nov-93 | 22 | 545.3 | 79370 |
| 24-Nov-93 | 23 | 545.21 | 78650 |
| 24-Nov-93 | 24 | 548.91 | 70550 |
| 25-Nov-93 | 1 | 549.74 | 66320 |
| 25-Nov-93 | 2 | 549.39 | 70210 |
| 25-Nov-93 | 3 | 549.23 | 69020 |
| 25-Nov-93 | 4 | 550.82 | 65550 |
| 25-Nov-93 | 5 | 551.51 | 61550 |
| 25-Nov-93 | 6 | 552.27 | 60120 |
| 25-Nov-93 | 7 | 549.66 | 65050 |
| 25-Nov-93 | 8 | 549.23 | 72180 |
| 25-Nov-93 | 9 | 552.05 | 58990 |
| 25-Nov-93 | 10 | 549.5 | 67650 |
| 25-Nov-93 | 11 | 547.58 | 74370 |
| 25-Nov-93 | 12 | 546.8 | 76300 |
| 25-Nov-93 | 13 | 546.5 | 77740 |
| 25-Nov-93 | 14 | 546.18 | 78390 |
| 25-Nov-93 | 15 | 546.77 | 76180 |
| 25-Nov-93 | 16 | 547.05 | 74210 |
| 25-Nov-93 | 17 | 546.77 | 78000 |
| 25-Nov-93 | 18 | 546.19 | 77790 |
| 25-Nov-93 | 19 | 543.91 | 85180 |
| 25-Nov-93 | 20 | 543.46 | 84610 |
| 25-Nov-93 | 21 | 543.66 | 84040 |
| 25-Nov-93 | 22 | 544.24 | 84120 |

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|---|---|---|---|
| 25-Nov-93 | 23 | 544.01 | 82420 |
| 25-Nov-93 | 24 | 544.99 | 82410 |
| 26-Nov-93 | 1 | 544.27 | 82830 |
| 26-Nov-93 | 2 | 542.54 | 87920 |
| 26-Nov-93 | 3 | 540.05 | 94070 |
| 26-Nov-93 | 4 | 539.37 | 97120 |
| 26-Nov-93 | 5 | 538.06 | 99420 |
| 26-Nov-93 | 6 | 536.87 | 101630 |
| 26-Nov-93 | 7 | 536.52 | 99420 |
| 26-Nov-93 | 8 | 537.91 | 99860 |
| 26-Nov-93 | 9 | 539.48 | 95550 |
| 26-Nov-93 | 10 | 540.27 | 92770 |
| 26-Nov-93 | 11 | 540.99 | 92270 |
| 26-Nov-93 | 12 | 539.75 | 95000 |
| 26-Nov-93 | 13 | 542.42 | 88900 |
| 26-Nov-93 | 14 | 542.9 | 85440 |
| 26-Nov-93 | 15 | 542.67 | 86200 |
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| 26-Nov-93 | 24 | 542.87 | 89490 |
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| 27-Nov-93 | 4 | 543.69 | 86650 |
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| 27-Nov-93 | 6 | 542.39 | 88810 |
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| 27-Nov-93 | 10 | 536.37 | 101340 |
| 27-Nov-93 | 11 | 536.98 | 99470 |
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| 27-Nov-93 | 13 | 537.25 | 100390 |
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| 27-Nov-93 | 17 | 537.7 | 99330 |
| 27-Nov-93 | 18 | 537.02 | 100550 |
| 27-Nov-93 | 19 | 538.16 | 97670 |
| 27-Nov-93 | 20 | 538.41 | 98740 |
| 27-Nov-93 | 21 | 536.2 | 101560 |
| 27-Nov-93 | 22 | 536.48 | 100260 |
| 27-Nov-93 | 23 | 536.72 | 101660 |
| 27-Nov-93 | 24 | 538.16 | 100040 |
| 28-Nov-93 | 1 | 537.75 | 98370 |

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|---|---|---|---|
| 28-Nov-93 | 2 | 538.16 | 101420 |
| 28-Nov-93 | 3 | 538.21 | 101310 |
| 28-Nov-93 | 4 | 537.15 | 100960 |
| 28-Nov-93 | 5 | 536.88 | 102390 |
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| 28-Nov-93 | 9 | 535.86 | 102710 |
| 28-Nov-93 | 10 | 536.84 | 101620 |
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| 28-Nov-93 | 12 | 537.61 | 99390 |
| 28-Nov-93 | 13 | 538.49 | 98990 |
| 28-Nov-93 | 14 | 538.38 | 98240 |
| 28-Nov-93 | 15 | 538.07 | 100000 |
| 28-Nov-93 | 16 | 538.59 | 98930 |
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| 28-Nov-93 | 18 | 536.19 | 102030 |
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| 29-Nov-93 | 17 | 537 | 99830 |
| 29-Nov-93 | 18 | 536.34 | 101560 |
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| 29-Nov-93 | 21 | 537.82 | 97870 |
| 29-Nov-93 | 22 | 538.06 | 98460 |
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| 30-Nov-93 | 2 | 538.14 | 99730 |
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| 30-Nov-93 | 4 | 537.77 | 100440 |

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|---|---|---|---|
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| 30-Nov-93 | 6 | 537.39 | 99930 |
| 30-Nov-93 | 7 | 537.24 | 99460 |
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| 01-Dec-93 | 3 | 537.11 | 100770 |
| 01-Dec-93 | 4 | 538.35 | 98780 |
| 01-Dec-93 | 5 | 537.33 | 98880 |
| 01-Dec-93 | 6 | 536.9 | 99980 |
| 01-Dec-93 | 7 | 537.3 | 97520 |
| 01-Dec-93 | 8 | 537.07 | 98410 |
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| 01-Dec-93 | 19 | 538.13 | 98470 |
| 01-Dec-93 | 20 | 536.51 | 99540 |
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| 01-Dec-93 | 22 | 537.42 | 100650 |
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| 01-Dec-93 | 24 | 539.11 | 96550 |
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| 02-Dec-93 | 2 | 538.16 | 98710 |
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| | | | |
|---|---|---|---|
| 02-Dec-93 | 8 | 537.1 | 100980 |
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| 02-Dec-93 | 12 | 537.83 | 98070 |
| 02-Dec-93 | 13 | 537.26 | 99840 |
| 02-Dec-93 | 14 | 537.11 | 101090 |
| 02-Dec-93 | 15 | 537.45 | 97310 |
| 02-Dec-93 | 16 | 537.78 | 99970 |
| 02-Dec-93 | 17 | 537.03 | 100540 |
| 02-Dec-93 | 18 | 537.84 | 98410 |
| 02-Dec-93 | 19 | 538.03 | 99220 |
| 02-Dec-93 | 20 | 538.58 | 98960 |
| 02-Dec-93 | 21 | 537.21 | 99080 |
| 02-Dec-93 | 22 | 536.35 | 101210 |
| 02-Dec-93 | 23 | 535.84 | 102330 |
| 02-Dec-93 | 24 | 536.98 | 99830 |
| 03-Dec-93 | 1 | 538.29 | 99480 |
| 03-Dec-93 | 2 | 538.23 | 98460 |
| 03-Dec-93 | 3 | 538.4 | 99070 |
| 03-Dec-93 | 4 | 538.45 | 99500 |
| 03-Dec-93 | 5 | 536.73 | 102400 |
| 03-Dec-93 | 6 | 537.85 | 99870 |
| 03-Dec-93 | 7 | 537.85 | 99660 |
| 03-Dec-93 | 8 | 538.3 | 98440 |
| 03-Dec-93 | 9 | 538.8 | 97980 |
| 03-Dec-93 | 10 | 536.29 | 101070 |
| 03-Dec-93 | 11 | 537.34 | 98680 |
| 03-Dec-93 | 12 | 537.17 | 101010 |
| 03-Dec-93 | 13 | 537.93 | 96230 |
| 03-Dec-93 | 14 | 537.84 | 101400 |
| 03-Dec-93 | 15 | 536.53 | 98220 |
| 03-Dec-93 | 16 | 537.62 | 101530 |
| 03-Dec-93 | 17 | 536.11 | 99200 |
| 03-Dec-93 | 18 | 537.79 | 102180 |
| 03-Dec-93 | 19 | 538.42 | 95360 |
| 03-Dec-93 | 20 | 536.61 | 102950 |
| 03-Dec-93 | 21 | 537.52 | 97880 |
| 03-Dec-93 | 22 | 538.44 | 99120 |
| 03-Dec-93 | 23 | 538.46 | 98950 |
| 03-Dec-93 | 24 | 538.63 | 97100 |
| 04-Dec-93 | 1 | 538.22 | 99770 |
| 04-Dec-93 | 2 | 538.96 | 96570 |
| 04-Dec-93 | 3 | 539.81 | 96760 |
| 04-Dec-93 | 4 | 539.54 | 98530 |
| 04-Dec-93 | 5 | 538.68 | 97510 |
| 04-Dec-93 | 6 | 537.89 | 98020 |
| 04-Dec-93 | 7 | 536.55 | 100540 |
| 04-Dec-93 | 8 | 537.34 | 100990 |
| 04-Dec-93 | 9 | 537.55 | 98980 |
| 04-Dec-93 | 10 | 537.24 | 99090 |



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| | | | |
|---|---|---|---|
| 04-Dec-93 | 11 | 536.47 | 100110 |
| 04-Dec-93 | 12 | 538.54 | 96910 |
| 04-Dec-93 | 13 | 541.51 | 91010 |
| 04-Dec-93 | 14 | 542.64 | 87000 |
| 04-Dec-93 | 15 | 542.12 | 87580 |
| 04-Dec-93 | 16 | 542.66 | 86220 |
| 04-Dec-93 | 17 | 543.25 | 85950 |
| 04-Dec-93 | 18 | 542.44 | 84850 |
| 04-Dec-93 | 19 | 541.73 | 90860 |
| 04-Dec-93 | 20 | 539.55 | 94910 |
| 04-Dec-93 | 21 | 540.06 | 94010 |
| 04-Dec-93 | 22 | 538.79 | 97170 |
| 04-Dec-93 | 23 | 539.31 | 95790 |
| 04-Dec-93 | 24 | 539.24 | 96060 |
| 05-Dec-93 | 1 | 537.34 | 100120 |
| 05-Dec-93 | 2 | 537.76 | 98570 |
| 05-Dec-93 | 3 | 538.31 | 99320 |
| 05-Dec-93 | 4 | 539.69 | 94460 |
| 05-Dec-93 | 5 | 538.77 | 97620 |
| 05-Dec-93 | 6 | 539.12 | 97470 |
| 05-Dec-93 | 7 | 541.44 | 89560 |
| 05-Dec-93 | 8 | 541.67 | 92130 |
| 05-Dec-93 | 9 | 541.39 | 90770 |
| 05-Dec-93 | 10 | 539.84 | 93190 |
| 05-Dec-93 | 11 | 537.41 | 100720 |
| 05-Dec-93 | 12 | 536.68 | 99530 |
| 05-Dec-93 | 13 | 537.29 | 100810 |
| 05-Dec-93 | 14 | 538.27 | 96370 |
| 05-Dec-93 | 15 | 536.45 | 102040 |
| 05-Dec-93 | 16 | 539.27 | 97490 |
| 05-Dec-93 | 17 | 536.76 | 101140 |
| 05-Dec-93 | 18 | 537.16 | 99140 |
| 05-Dec-93 | 19 | 536.18 | 100980 |
| 05-Dec-93 | 20 | 537.57 | 98330 |
| 05-Dec-93 | 21 | 536.27 | 102000 |
| 05-Dec-93 | 22 | 537.98 | 99010 |
| 05-Dec-93 | 23 | 538.54 | 98750 |
| 05-Dec-93 | 24 | 539.23 | 99410 |
| 06-Dec-93 | 1 | 537.95 | 96740 |
| 06-Dec-93 | 2 | 536.89 | 101850 |
| 06-Dec-93 | 3 | 538.27 | 99460 |
| 06-Dec-93 | 4 | 537.68 | 99620 |
| 06-Dec-93 | 5 | 538.79 | 98170 |
| 06-Dec-93 | 6 | 537.64 | 100500 |
| 06-Dec-93 | 7 | 537.89 | 99080 |
| 06-Dec-93 | 8 | 537.85 | 98990 |
| 06-Dec-93 | 9 | 537.45 | 100350 |
| 06-Dec-93 | 10 | 538.08 | 97950 |
| 06-Dec-93 | 11 | 536.78 | 100550 |
| 06-Dec-93 | 12 | 538.03 | 97760 |
| 06-Dec-93 | 13 | 537.84 | 98960 |

| | | | |
|---|---|---|---|
| 06-Dec-93 | 14 | 536.15 | 100730 |
| 06-Dec-93 | 15 | 535.99 | 101010 |
| 06-Dec-93 | 16 | 536.72 | 100870 |
| 06-Dec-93 | 17 | 536.53 | 100030 |
| 06-Dec-93 | 18 | 537.01 | 101250 |
| 06-Dec-93 | 19 | 537.06 | 101510 |
| 06-Dec-93 | 20 | 537.64 | 100760 |
| 06-Dec-93 | 21 | 536.36 | 101760 |
| 06-Dec-93 | 22 | 537.85 | 100670 |
| 06-Dec-93 | 23 | 538.62 | 99930 |
| 06-Dec-93 | 24 | 538.04 | 100550 |
| 07-Dec-93 | 1 | 538.18 | 99180 |
| 07-Dec-93 | 2 | 538.23 | 100970 |
| 07-Dec-93 | 3 | 539.06 | 98130 |
| 07-Dec-93 | 4 | 538.84 | 99390 |
| 07-Dec-93 | 5 | 538.96 | 100850 |
| 07-Dec-93 | 6 | 536.92 | 100580 |
| 07-Dec-93 | 7 | 538.91 | 98580 |
| 07-Dec-93 | 8 | 536.75 | 101610 |
| 07-Dec-93 | 9 | 538.17 | 98820 |
| 07-Dec-93 | 10 | 538.28 | 99730 |
| 07-Dec-93 | 11 | 537.94 | 99600 |
| 07-Dec-93 | 12 | 536.14 | 102360 |
| 07-Dec-93 | 13 | 536.25 | 101990 |
| 07-Dec-93 | 14 | 537.92 | 99620 |
| 07-Dec-93 | 15 | 538.31 | 98970 |
| 07-Dec-93 | 16 | 536.71 | 101350 |
| 07-Dec-93 | 17 | 536.87 | 100940 |
| 07-Dec-93 | 18 | 539.64 | 96530 |
| 07-Dec-93 | 19 | 538.19 | 96150 |
| 07-Dec-93 | 20 | 537.55 | 101100 |
| 07-Dec-93 | 21 | 536.77 | 100510 |
| 07-Dec-93 | 22 | 538.3 | 100080 |
| 07-Dec-93 | 23 | 538.21 | 99150 |
| 07-Dec-93 | 24 | 537.33 | 100690 |
| 08-Dec-93 | 1 | 537.23 | 100690 |
| 08-Dec-93 | 2 | 537.87 | 99790 |
| 08-Dec-93 | 3 | 538.61 | 98150 |
| 08-Dec-93 | 4 | 538.68 | 99230 |
| 08-Dec-93 | 5 | 538.44 | 99080 |
| 08-Dec-93 | 6 | 538.25 | 99720 |
| 08-Dec-93 | 7 | 538.66 | 98060 |
| 08-Dec-93 | 8 | 538.84 | 97160 |
| 08-Dec-93 | 9 | 540.45 | 94250 |
| 08-Dec-93 | 10 | 539.91 | 96010 |
| 08-Dec-93 | 11 | 537.85 | 98450 |
| 08-Dec-93 | 12 | 537.16 | 100100 |
| 08-Dec-93 | 13 | 538.1 | 98770 |
| 08-Dec-93 | 14 | 536.09 | 101360 |
| 08-Dec-93 | 15 | 537.4 | 99630 |
| 08-Dec-93 | 16 | 537.04 | 99650 |



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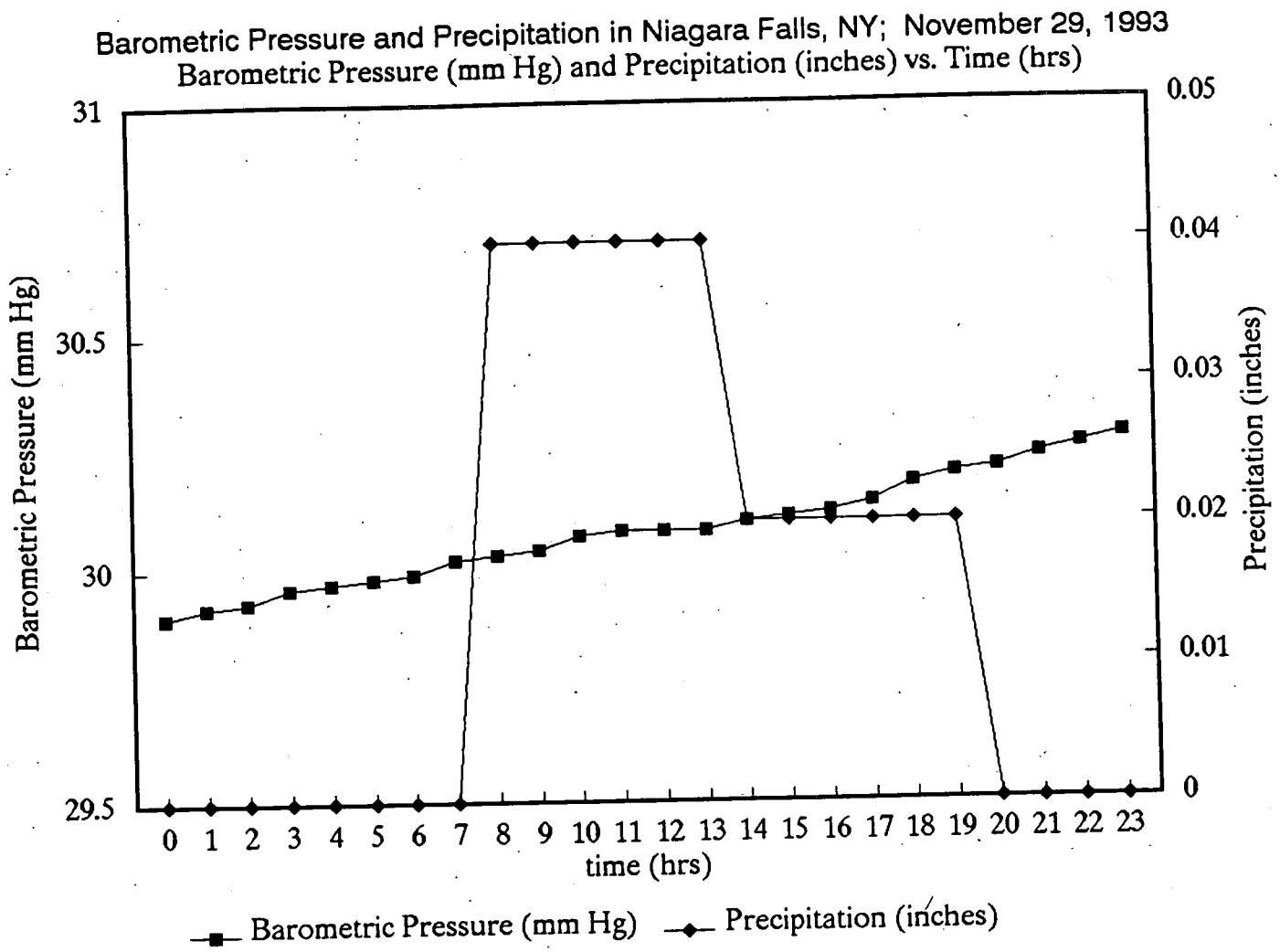
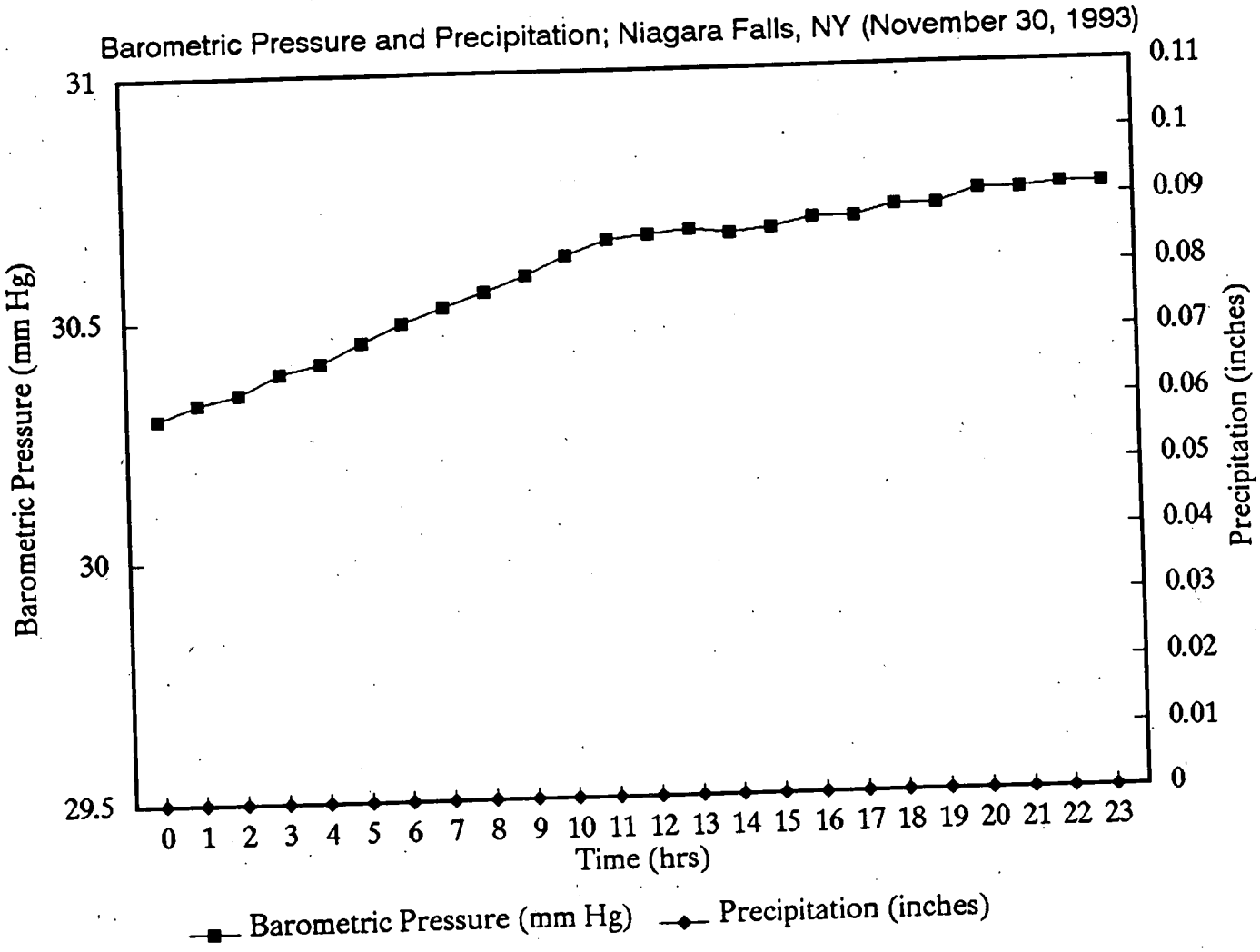
| | | | |
|---|---|---|---|
| 08-Dec-93 | 17 | 535.9 | 101970 |
| 08-Dec-93 | 18 | 535.73 | 100990 |
| 08-Dec-93 | 19 | 535.83 | 101600 |
| 08-Dec-93 | 20 | 537.04 | 99430 |
| 08-Dec-93 | 21 | 536.92 | 100400 |
| 08-Dec-93 | 22 | 537.18 | 98970 |
| 08-Dec-93 | 23 | 536.4 | 100660 |
| 08-Dec-93 | 24 | 536.24 | 101280 |
| 09-Dec-93 | 1 | 537.92 | 98490 |
| 09-Dec-93 | 2 | 535.88 | 101710 |
| 09-Dec-93 | 3 | 536.87 | 101180 |
| 09-Dec-93 | 4 | 538.69 | 98710 |
| 09-Dec-93 | 5 | 537.78 | 99450 |
| 09-Dec-93 | 6 | 536.56 | 101540 |
| 09-Dec-93 | 7 | 538.54 | 98160 |
| 09-Dec-93 | 8 | 536.97 | 100210 |
| 09-Dec-93 | 9 | 538.02 | 99170 |
| 09-Dec-93 | 10 | 537.67 | 99550 |
| 09-Dec-93 | 11 | 536.82 | 101050 |
| 09-Dec-93 | 12 | 536.75 | 99680 |
| 09-Dec-93 | 13 | 536.93 | 101620 |
| 09-Dec-93 | 14 | 537.75 | 99860 |
| 09-Dec-93 | 15 | 537.67 | 98980 |
| 09-Dec-93 | 16 | 537.54 | 100320 |
| 09-Dec-93 | 17 | 536.91 | 100220 |
| 09-Dec-93 | 18 | 538.65 | 98910 |
| 09-Dec-93 | 19 | 538.49 | 98960 |
| 09-Dec-93 | 20 | 538.38 | 98120 |
| 09-Dec-93 | 21 | 538.73 | 97140 |
| 09-Dec-93 | 22 | 538.67 | 98750 |
| 09-Dec-93 | 23 | 538.98 | 98450 |
| 09-Dec-93 | 24 | 537.74 | 99030 |
| 10-Dec-93 | 1 | 535.92 | 101340 |
| 10-Dec-93 | 2 | 536.49 | 101230 |
| 10-Dec-93 | 3 | 537.43 | 101010 |
| 10-Dec-93 | 4 | 537.88 | 100460 |
| 10-Dec-93 | 5 | 537.86 | 99230 |
| 10-Dec-93 | 6 | 535.91 | 102140 |
| 10-Dec-93 | 7 | 535.73 | 102390 |
| 10-Dec-93 | 8 | 536.95 | 99380 |
| 10-Dec-93 | 9 | 537.81 | 98500 |
| 10-Dec-93 | 10 | 537.54 | 99570 |
| 10-Dec-93 | 11 | 536.61 | 100940 |
| 10-Dec-93 | 12 | 537.02 | 100290 |
| 10-Dec-93 | 13 | 537.28 | 99360 |
| 10-Dec-93 | 14 | 537.78 | 99170 |
| 10-Dec-93 | 15 | 537.76 | 100170 |
| 10-Dec-93 | 16 | 538.34 | 98310 |
| 10-Dec-93 | 17 | 536.74 | 100660 |
| 10-Dec-93 | 18 | 537.74 | 99700 |
| 10-Dec-93 | 19 | 537.63 | 100550 |

# METEOROLOGICAL DATA




TOTAL PRECIPITATION = 0.36"




TOTAL PRECIPITATION = 0"



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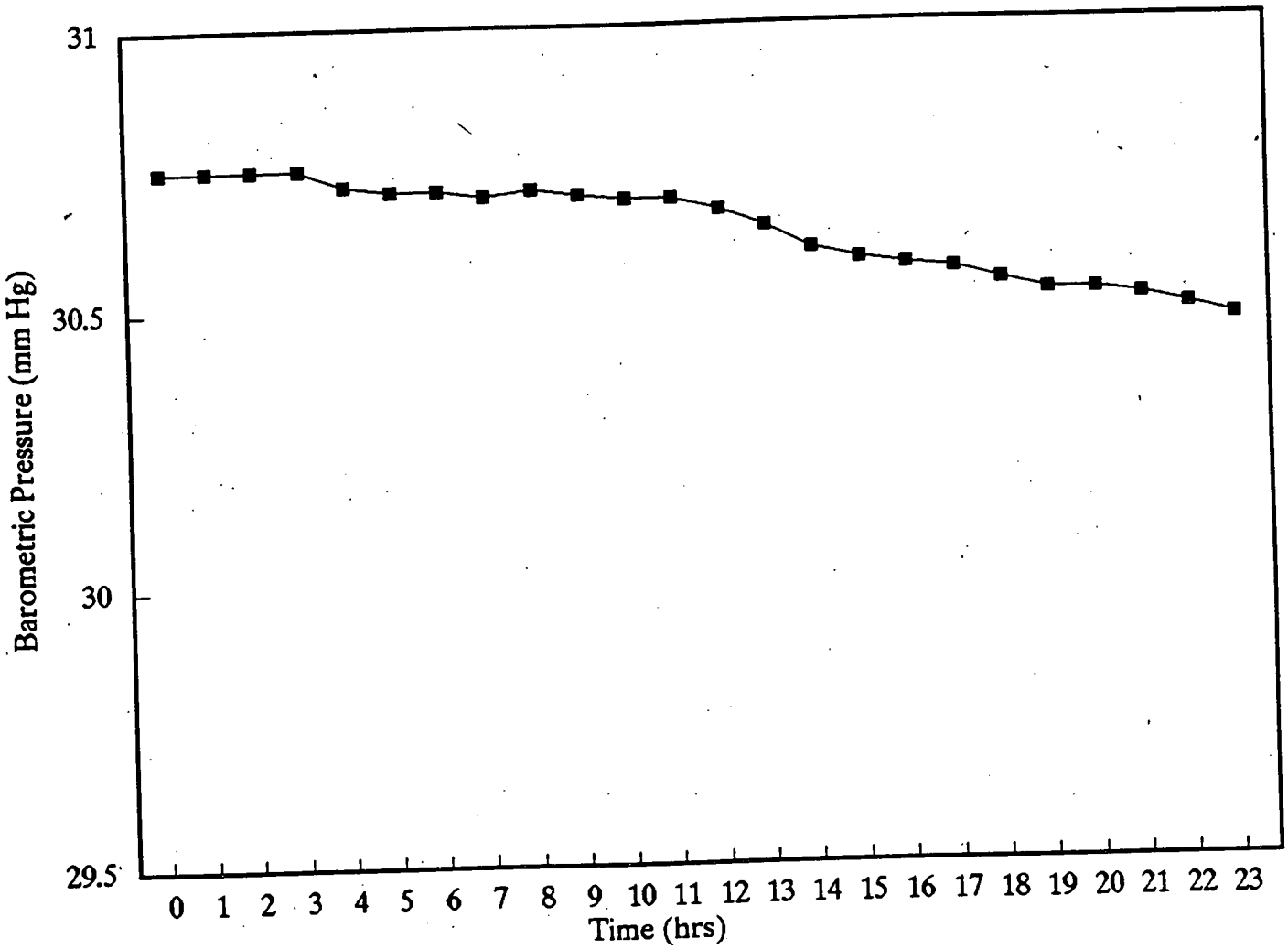
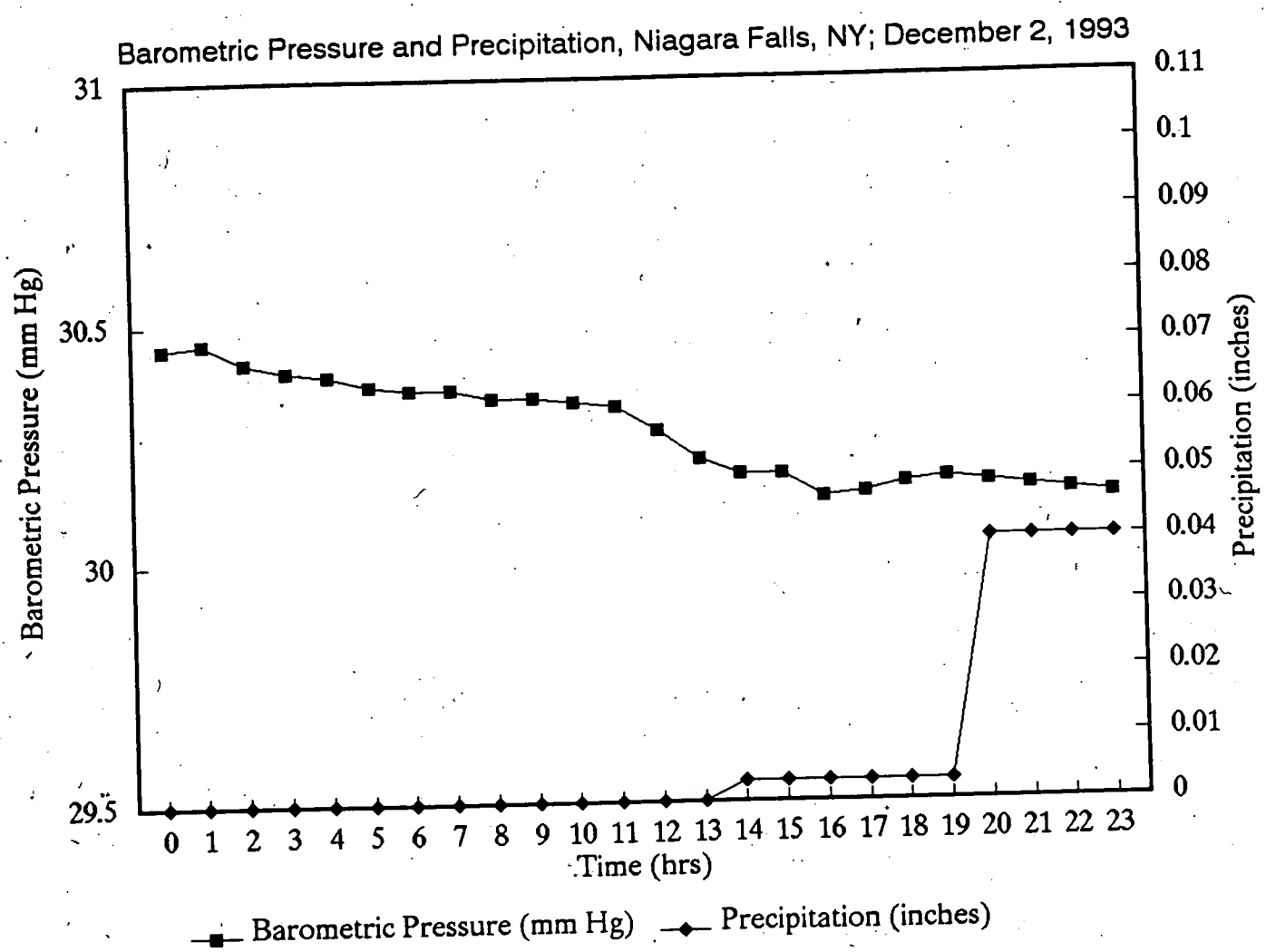
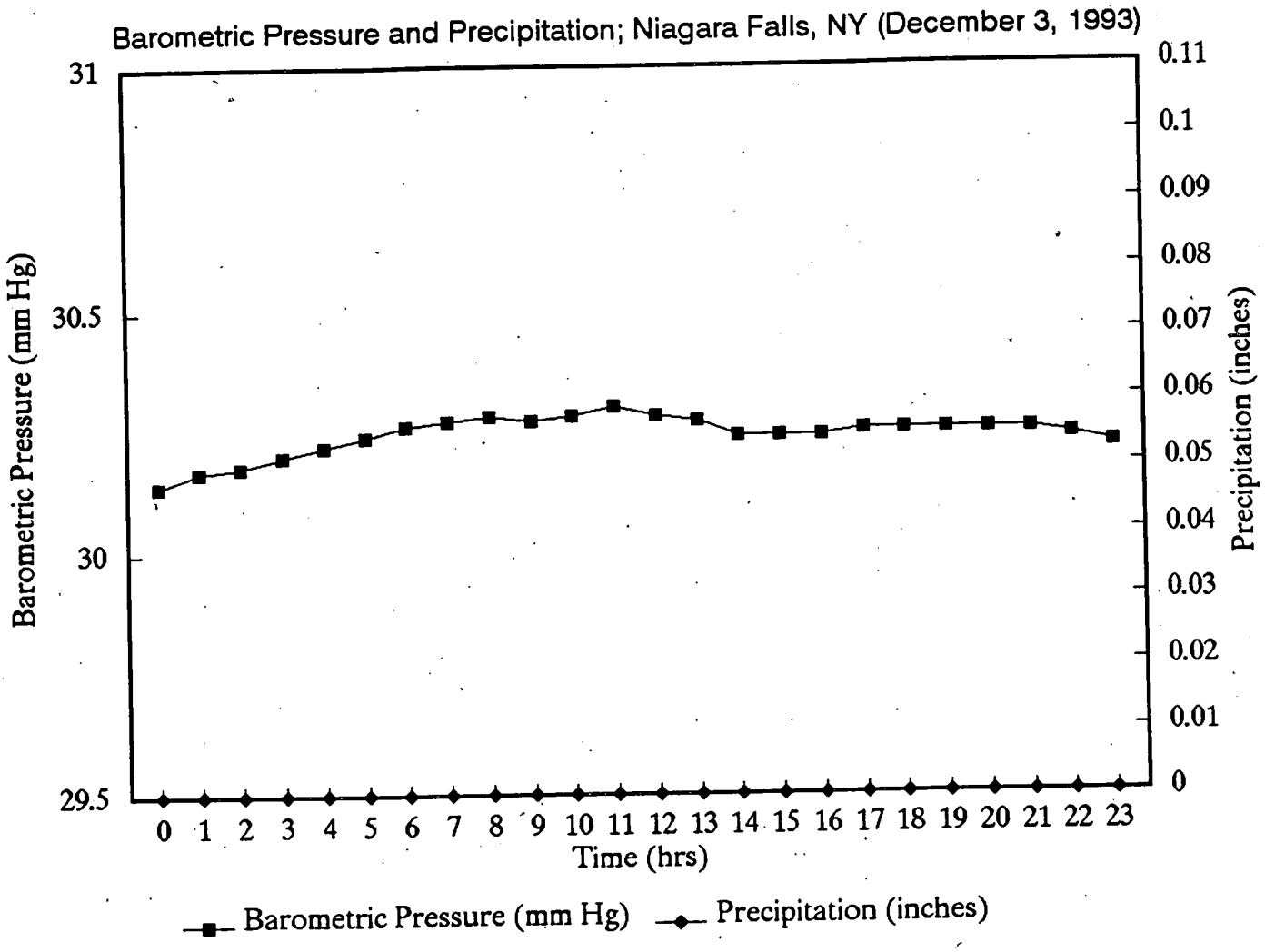
BAROMETRIC PRESSURE; NIAGARA FALLS, NY
(DECEMBER 1, 1993)




0" = PRECIPITATION

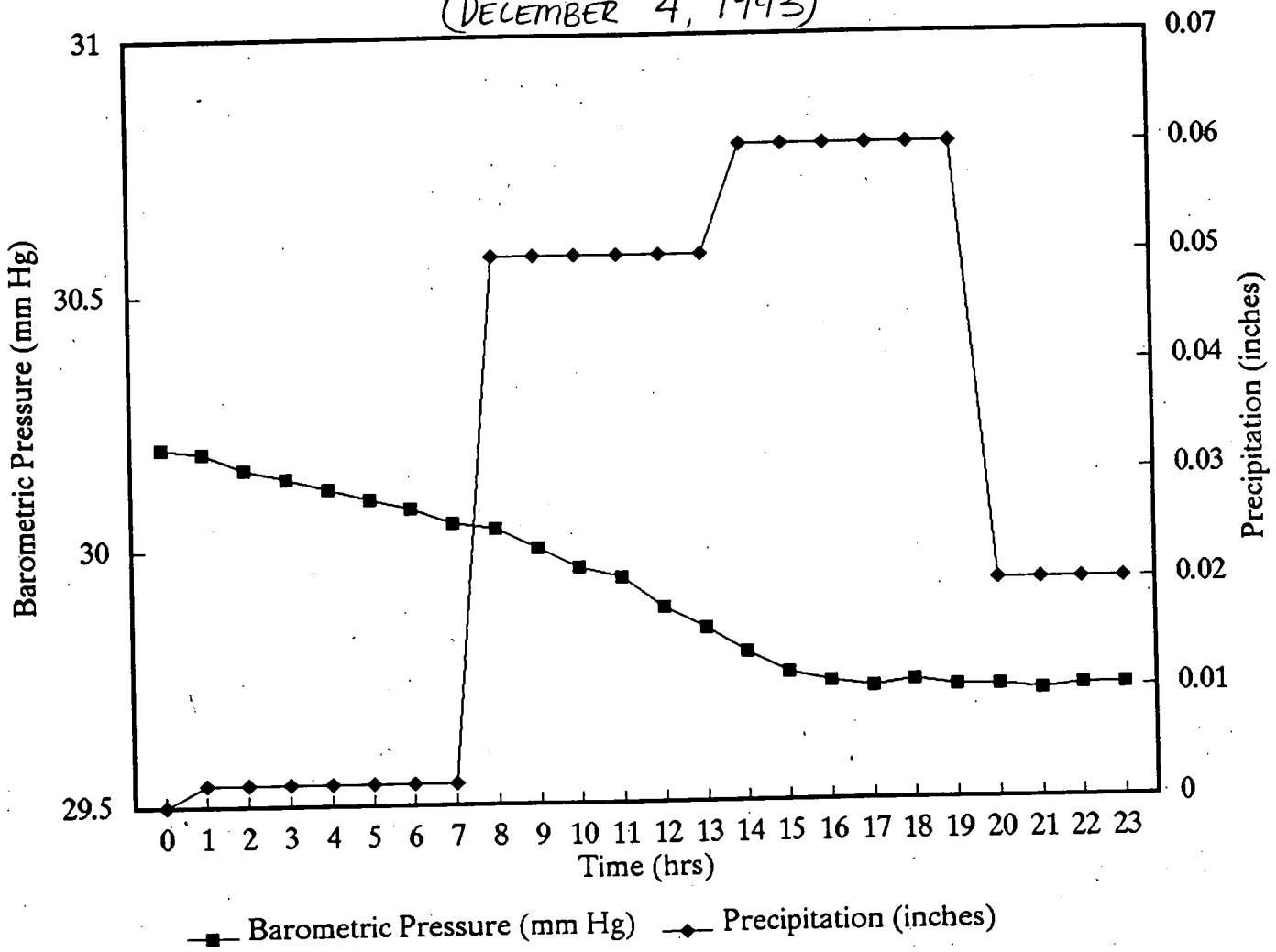



TOTAL PRECIPITATION = 0.21"




TOTAL PRECIPITATION = 0"

BAROMETRIC PRESSURE AND PRECIPITATION; NIAGARA FALLS, NY
(DECEMBER 4, 1993)




TOTAL PRECIPITATION = 0.72"



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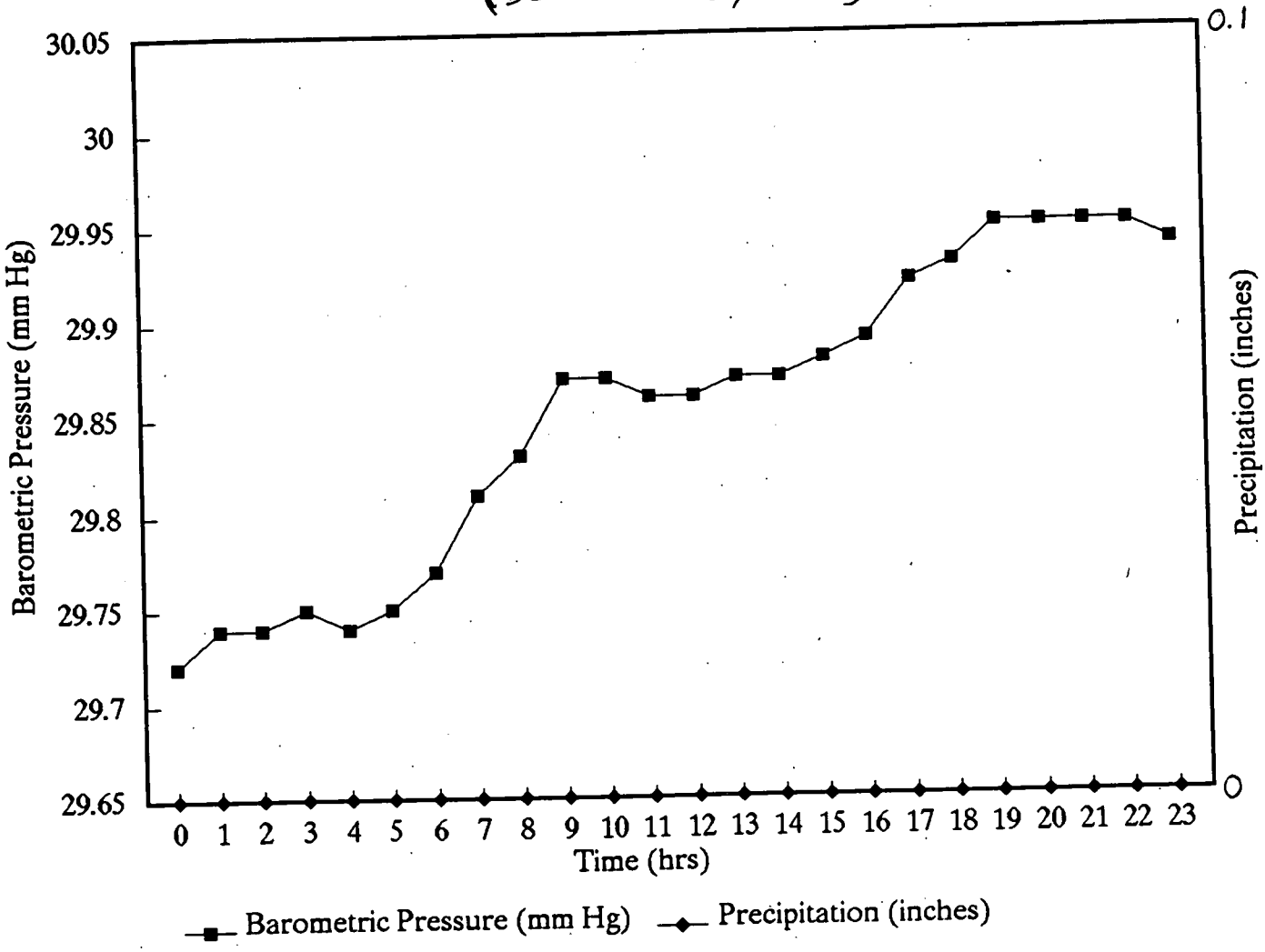
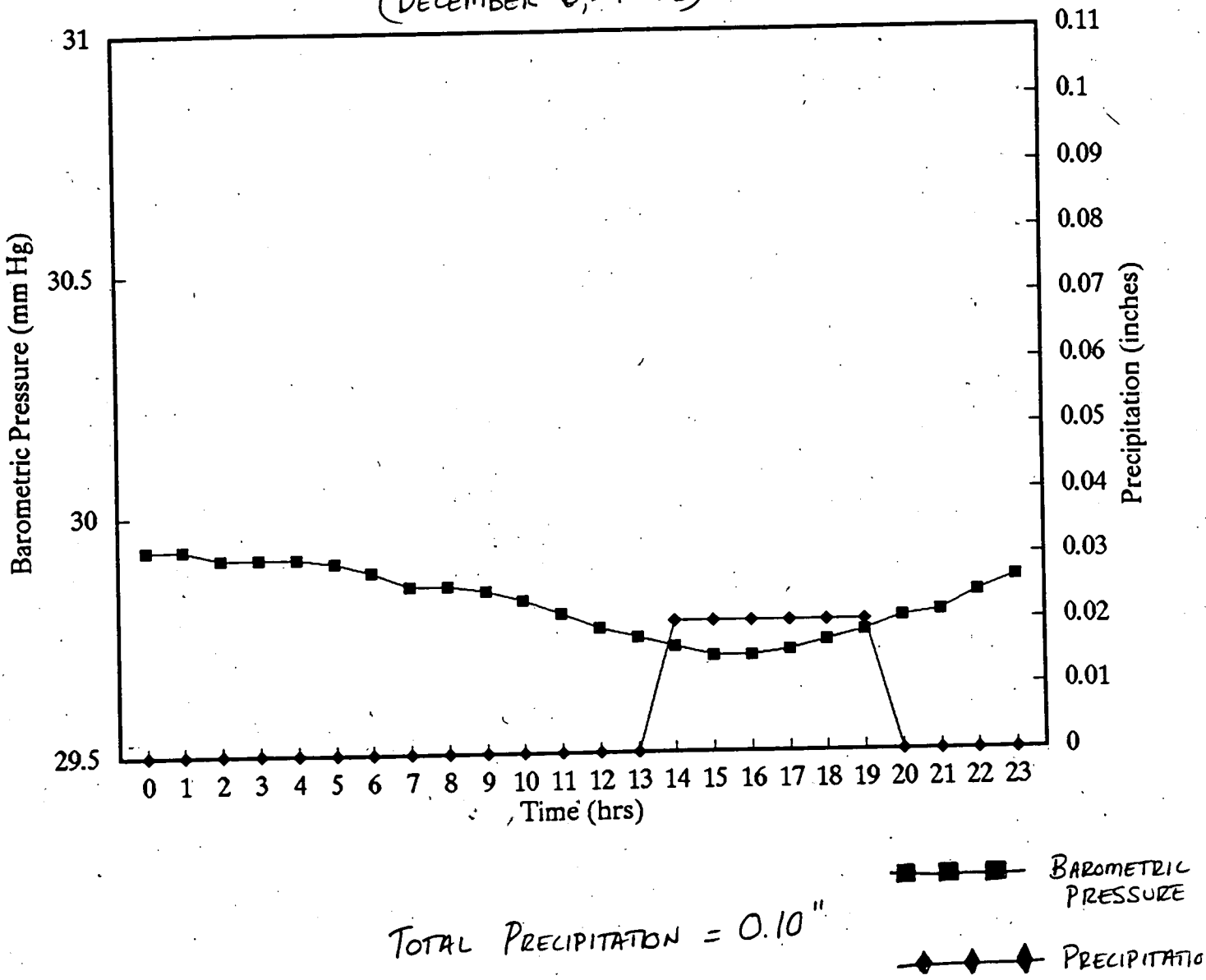
BAROMETRIC PRESSURE AND PRECIPITATION; NIAGARA FALLS, NY
(DECEMBER 5, 1993)




TOTAL PRECIPITATION = 0"

BAROMETRIC PRESSURE AND PRECIPITATION; NIAGARA FALLS, NY
(DECEMBER 6, 1993)




TOTAL PRECIPITATION = 0.10"



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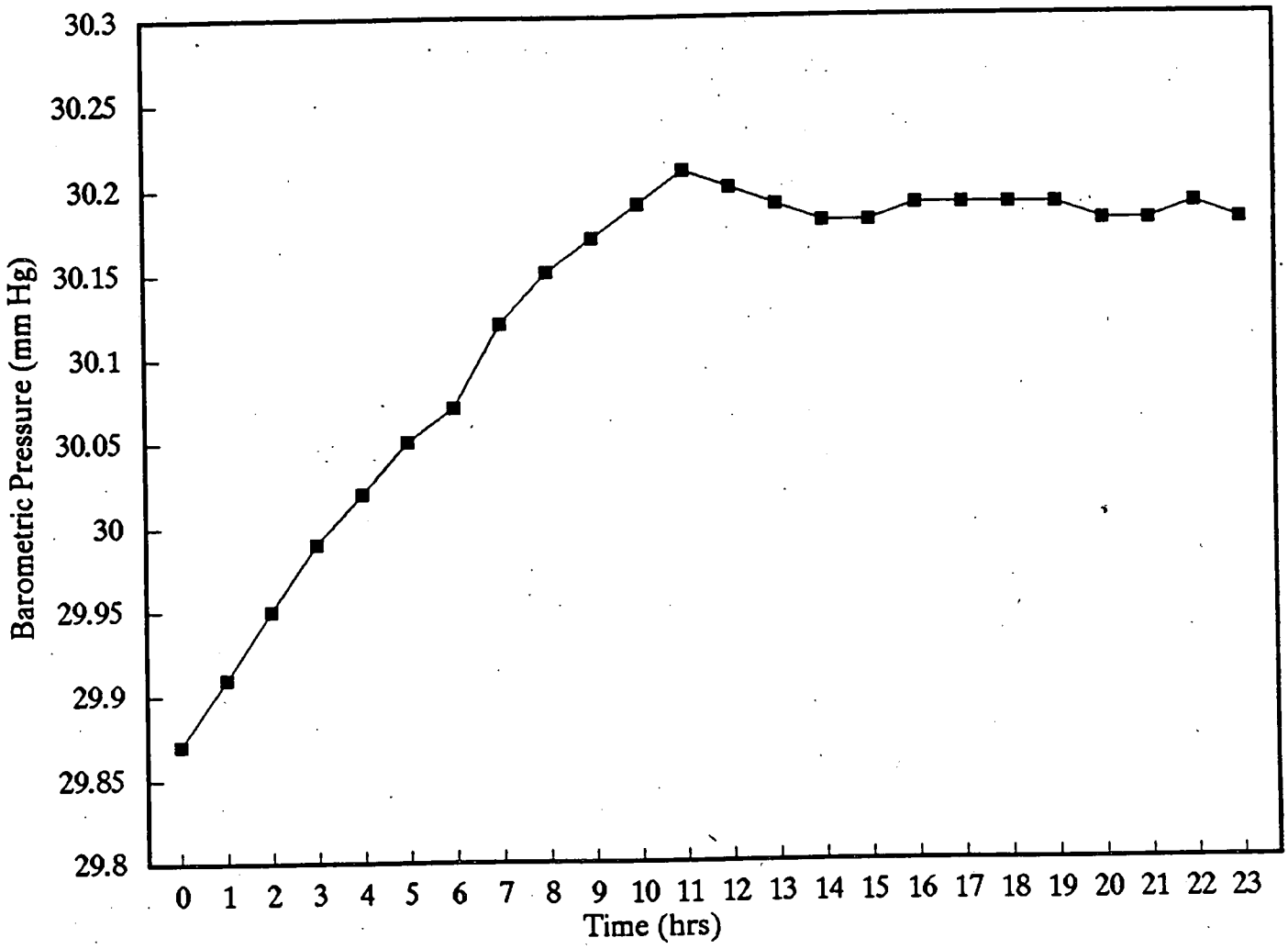
BAROMETRIC PRESSURE; NIAGARA FALLS, NY

(DECEMBER 7, 1993)




BAROMETRIC PRESSURE (mm Hg)

0" = PRECIPITATION

NIAGARA FALLS, NY
Nov 29, 1993

| | HOUR | BARO. PRESS. (mm Hg) | PRECIPITATION (inches) |
|---|---|---|---|
| nov29 | | | |
| | 0 | 29.9 | 0 |
| | 1 | 29.92 | 0 |
| | 2 | 29.93 | 0 |
| | 3 | 29.96 | 0 |
| | 4 | 29.97 | 0 |
| | 5 | 29.98 | 0 |
| | 6 | 29.99 | 0 |
| | 7 | 30.02 | 0 |
| | 8 | 30.03 | 0.04 |
| | 9 | 30.04 | 0.04 |
| | 10 | 30.07 | 0.04 |
| | 11 | 30.08 | 0.04 |
| | 12 | 30.08 | 0.04 |
| | 13 | 30.08 | 0.04 |
| | 14 | 30.1 | 0.02 |
| | 15 | 30.11 | 0.02 |
| | 16 | 30.12 | 0.02 |
| | 17 | 30.14 | 0.02 |
| | 18 | 30.18 | 0.02 |
| | 19 | 30.2 | 0.02 |
| | 20 | 30.21 | 0 |
| | 21 | 30.24 | 0 |
| | 22 | 30.26 | 0 |
| | 23 | 30.28 | 0 |



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ecology and environment

NOVEMBER 30, 1993
NIAGARA FALLS NY

| nov30 hour | baro. p. (mm Hg) | precip (inches) |
|---|---|---|
| 0 | 30.3 | 0 |
| 1 | 30.33 | 0 |
| 2 | 30.35 | 0 |
| 3 | 30.39 | 0 |
| 4 | 30.41 | 0 |
| 5 | 30.45 | 0 |
| 6 | 30.49 | 0 |
| 7 | 30.52 | 0 |
| 8 | 30.55 | 0 |
| 9 | 30.58 | 0 |
| 10 | 30.62 | 0 |
| 11 | 30.65 | 0 |
| 12 | 30.66 | 0 |
| 13 | 30.67 | 0 |
| 14 | 30.66 | 0 |
| 15 | 30.67 | 0 |
| 16 | 30.69 | 0 |
| 17 | 30.69 | 0 |
| 18 | 30.71 | 0 |
| 19 | 30.71 | 0 |
| 20 | 30.74 | 0 |
| 21 | 30.74 | 0 |
| 22 | 30.75 | 0 |
| 23 | 30.75 | 0 |

DEC. 1, 1993
NIAGARA FALLS, NY

dec1

| HOUR | BAROM. PRESS. (mm Hg) | PRECIP. (inches) |
|---|---|---|
| 0 | 30.75 | 0 |
| 1 | 30.75 | 0 |
| 2 | 30.75 | 0 |
| 3 | 30.75 | 0 |
| 4 | 30.72 | 0 |
| 5 | 30.71 | 0 |
| 6 | 30.71 | 0 |
| 7 | 30.7 | 0 |
| 8 | 30.71 | 0 |
| 9 | 30.7 | 0 |
| 10 | 30.69 | 0 |
| 11 | 30.69 | 0 |
| 12 | 30.67 | 0 |
| 13 | 30.64 | 0 |
| 14 | 30.6 | 0 |
| 15 | 30.58 | 0 |
| 16 | 30.57 | 0 |
| 17 | 30.56 | 0 |
| 18 | 30.54 | 0 |
| 19 | 30.52 | 0 |
| 20 | 30.52 | 0 |
| 21 | 30.51 | 0 |
| 22 | 30.49 | 0 |
| 23 | 30.47 | 0 |



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DECEMBER 2, 1993
NIAGARA FALLS, NY

dec2

| HOUR | BAROMETRIC PRESSURE (mm Hg) | PRECIPITATION (inches) |
|---|---|---|
| 0 | 30.45 | 0 |
| 1 | 30.46 | 0 |
| 2 | 30.42 | 0 |
| 3 | 30.4 | 0 |
| 4 | 30.39 | 0 |
| 5 | 30.37 | 0 |
| 6 | 30.36 | 0 |
| 7 | 30.36 | 0 |
| 8 | 30.34 | 0 |
| 9 | 30.34 | 0 |
| 10 | 30.33 | 0 |
| 11 | 30.32 | 0 |
| 12 | 30.27 | 0 |
| 13 | 30.21 | 0 |
| 14 | 30.18 | 0.003 |
| 15 | 30.18 | 0.003 |
| 16 | 30.13 | 0.003 |
| 17 | 30.14 | 0.003 |
| 18 | 30.16 | 0.003 |
| 19 | 30.17 | 0.003 |
| 20 | 30.16 | 0.04 |
| 21 | 30.15 | 0.04 |
| 22 | 30.14 | 0.04 |
| 23 | 30.13 | 0.04 |

DECEMBER 3, 1993
NIAGARA FALLS, NY

dec3

| HOUR | BAROMETRIC PRESSURE (mm Hg) | PRECIPITATION (inches) |
|---|---|---|
| 0 | 30.14 | 0 |
| 1 | 30.17 | 0 |
| 2 | 30.18 | 0 |
| 3 | 30.2 | 0 |
| 4 | 30.22 | 0 |
| 5 | 30.24 | 0 |
| 6 | 30.26 | 0 |
| 7 | 30.27 | 0 |
| 8 | 30.28 | 0 |
| 9 | 30.27 | 0 |
| 10 | 30.28 | 0 |
| 11 | 30.3 | 0 |
| 12 | 30.28 | 0 |
| 13 | 30.27 | 0 |
| 14 | 30.24 | 0 |
| 15 | 30.24 | 0 |
| 16 | 30.24 | 0 |
| 17 | 30.25 | 0 |
| 18 | 30.25 | 0 |
| 19 | 30.25 | 0 |
| 20 | 30.25 | 0 |
| 21 | 30.25 | 0 |
| 22 | 30.24 | 0 |
| 23 | 30.22 | 0 |

DECEMBER 4, 1993
NIAGARA FALLS, NY

dec4

| HOUR | BAROMETRIC PRESSURE (mm Hg) | PRECIPITATION (inches) |
|---|---|---|
| 0 | 30.2 | 0 |
| 1 | 30.19 | 0.002 |
| 2 | 30.16 | 0.002 |
| 3 | 30.14 | 0.002 |
| 4 | 30.12 | 0.002 |
| 5 | 30.1 | 0.002 |
| 6 | 30.08 | 0.002 |
| 7 | 30.05 | 0.002 |
| 8 | 30.04 | 0.05 |
| 9 | 30 | 0.05 |
| 10 | 29.96 | 0.05 |
| 11 | 29.94 | 0.05 |
| 12 | 29.88 | 0.05 |
| 13 | 29.84 | 0.05 |
| 14 | 29.79 | 0.06 |
| 15 | 29.75 | 0.06 |
| 16 | 29.73 | 0.06 |
| 17 | 29.72 | 0.06 |
| 18 | 29.73 | 0.06 |
| 19 | 29.72 | 0.06 |
| 20 | 29.72 | 0.02 |
| 21 | 29.71 | 0.02 |
| 22 | 29.72 | 0.02 |
| 23 | 29.72 | 0.02 |

DECEMBER 5, 1993
NIAGARA FALLS, NY

dec5

| Hour | Barometric Pressure (mm Hg) | Precipitation (inches) |
|---|---|---|
| 0 | 29.72 | 0 |
| 1 | 29.74 | 0 |
| 2 | 29.74 | 0 |
| 3 | 29.75 | 0 |
| 4 | 29.74 | 0 |
| 5 | 29.75 | 0 |
| 6 | 29.77 | 0 |
| 7 | 29.81 | 0 |
| 8 | 29.83 | 0 |
| 9 | 29.87 | 0 |
| 10 | 29.87 | 0 |
| 11 | 29.86 | 0 |
| 12 | 29.86 | 0 |
| 13 | 29.87 | 0 |
| 14 | 29.87 | 0 |
| 15 | 29.88 | 0 |
| 16 | 29.89 | 0 |
| 17 | 29.92 | 0 |
| 18 | 29.93 | 0 |
| 19 | 29.95 | 0 |
| 20 | 29.95 | 0 |
| 21 | 29.95 | 0 |
| 22 | 29.95 | 0 |
| 23 | 29.94 | 0 |



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DECEMBER 6, 1993
NIAGARA FALLS, NY

dec6

| HOUR | BAROMETRIC PRESSURE (mm Hg) | PRECIPITATION (inches) |
|---|---|---|
| 0 | 29.93 | 0 |
| 1 | 29.93 | 0 |
| 2 | 29.91 | 0 |
| 3 | 29.91 | 0 |
| 4 | 29.91 | 0 |
| 5 | 29.9 | 0 |
| 6 | 29.88 | 0 |
| 7 | 29.85 | 0 |
| 8 | 29.85 | 0 |
| 9 | 29.84 | 0 |
| 10 | 29.82 | 0 |
| 11 | 29.79 | 0 |
| 12 | 29.76 | 0 |
| 13 | 29.74 | 0 |
| 14 | 29.72 | 0.02 |
| 15 | 29.7 | 0.02 |
| 16 | 29.7 | 0.02 |
| 17 | 29.71 | 0.02 |
| 18 | 29.73 | 0.02 |
| 19 | 29.75 | 0.02 |
| 20 | 29.78 | 0 |
| 21 | 29.79 | 0 |
| 22 | 29.83 | 0 |
| 23 | 29.86 | 0 |

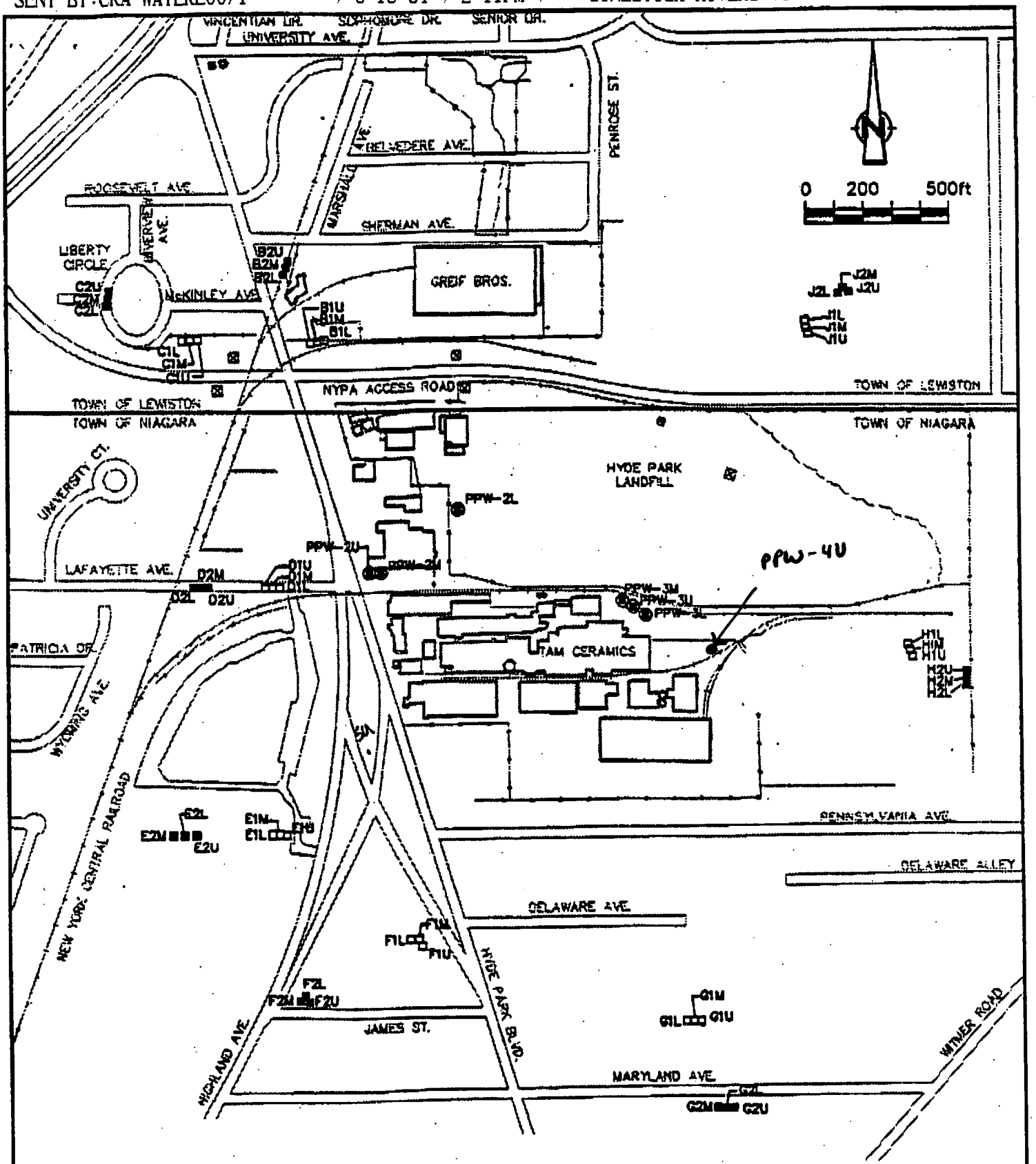
DECEMBER 7, 1993
NIAGARA FALLS, NY

dec7

| Hour | Barometric Pressure (mm Hg) | Precipitation (inches) |
|---|---|---|
| 0 | 29.87 | 0 |
| 1 | 29.91 | 0 |
| 2 | 29.95 | 0 |
| 3 | 29.99 | 0 |
| 4 | 30.02 | 0 |
| 5 | 30.05 | 0 |
| 6 | 30.07 | 0 |
| 7 | 30.12 | 0 |
| 8 | 30.15 | 0 |
| 9 | 30.17 | 0 |
| 10 | 30.19 | 0 |
| 11 | 30.21 | 0 |
| 12 | 30.2 | 0 |
| 13 | 30.19 | 0 |
| 14 | 30.18 | 0 |
| 15 | 30.18 | 0 |
| 16 | 30.19 | 0 |
| 17 | 30.19 | 0 |
| 18 | 30.19 | 0 |
| 19 | 30.19 | 0 |
| 20 | 30.18 | 0 |
| 21 | 30.18 | 0 |
| 22 | 30.19 | 0 |
| 23 | 30.18 | 0 |

# HYDE PARK SITE PUMP TEST DATA

(from CRA)




## LEGEND

- POWER TOWER
- RAILWAY
- E2U OUTER RING WELL
- F1L INNER RING WELL
- 2L BEDROCK PURGE WELL

NOTES:

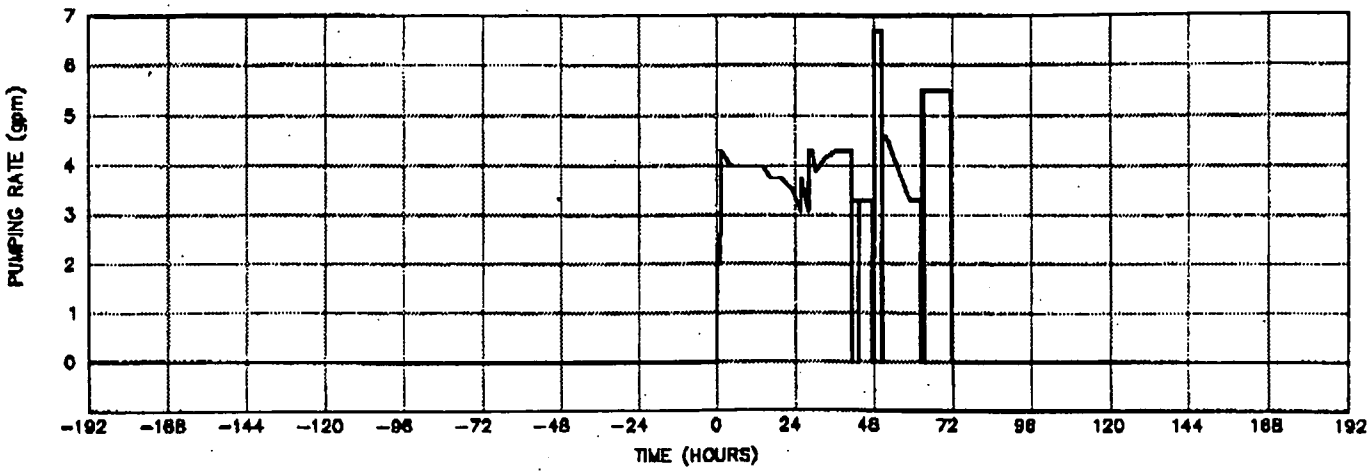
1.) SITE BENCHMARK IS A P.K. NAIL SET IN THE EAST FACE OF A POWER POLE LOCATED AT THE WEST END OF THE EXISTING HYDE PARK LANDFILL. ELEVATION = 612.77. DATUM NOT VERIFIED.

**figure 2.1**

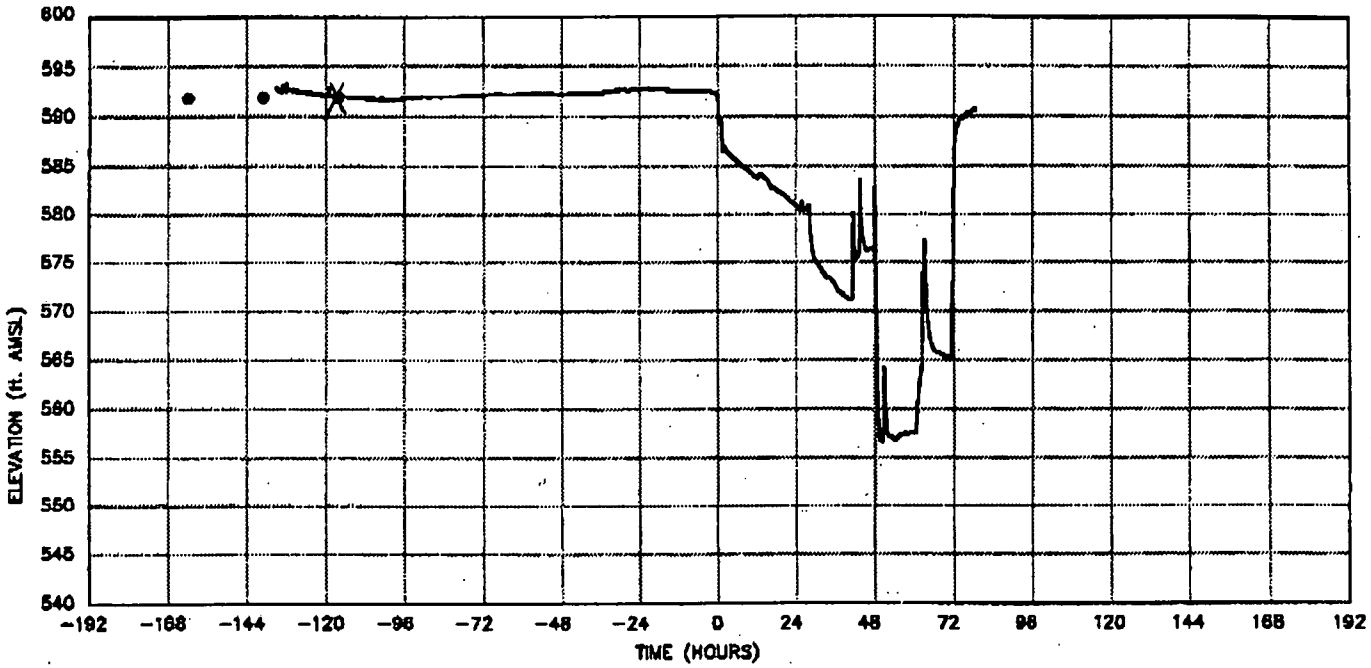
**BEDROCK MONITORING WELL LOCATIONS**
**HYDE PARK RRT PROGRAM**
***Occidental Chemical Corporation***

**CRA**

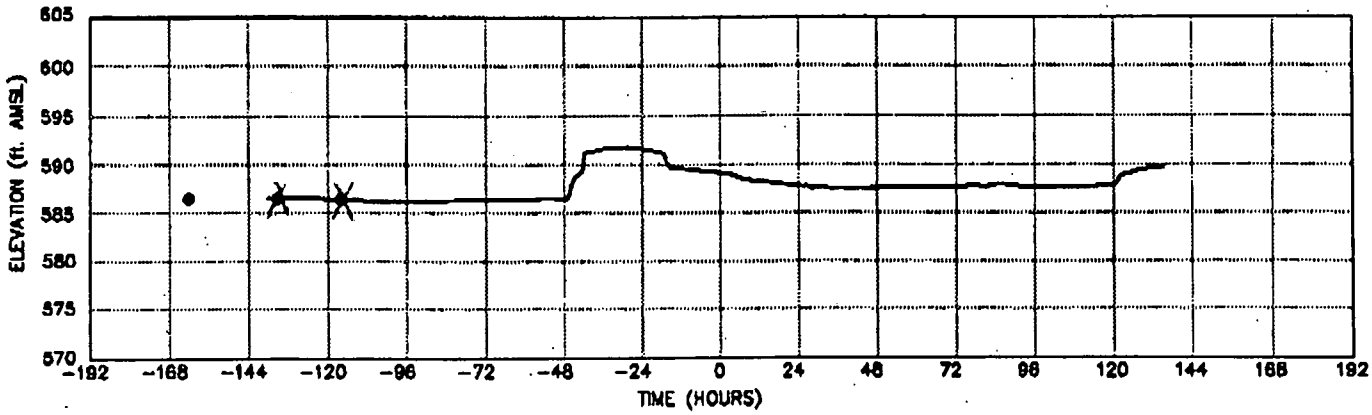
1089 (181) DEC 23/93(W) REV.0 (P241)




PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: PPW-2U

SCALE: H: 1"=60hrs
V: 1"=20ft

figure A-14.1

PPW-4U/PPW-2U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

START TIME (0) = NOVEMBER 29, 1993 (10:35)

**CRA** recycled paper

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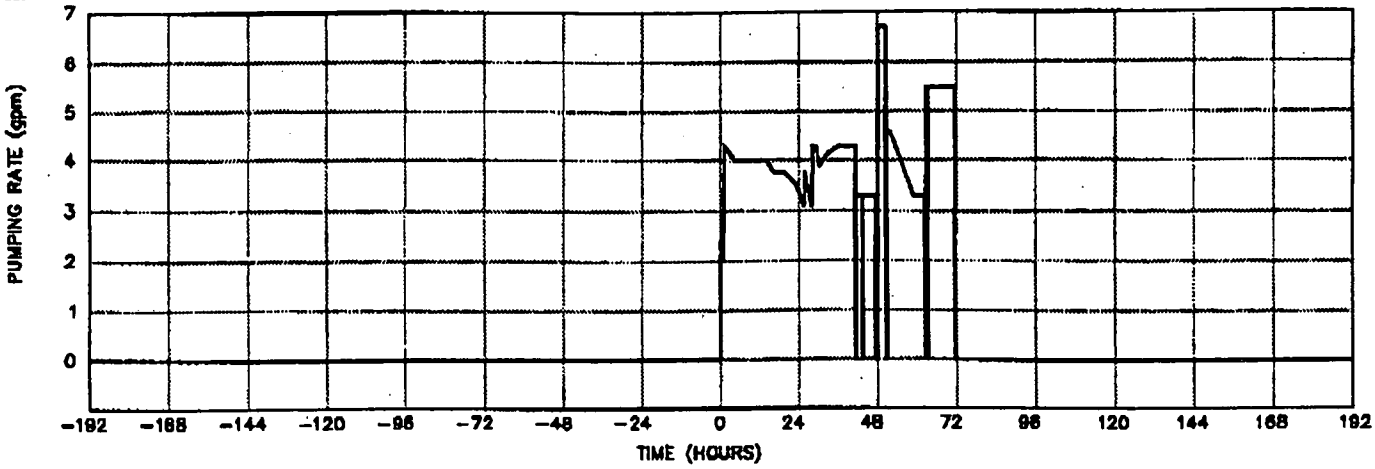
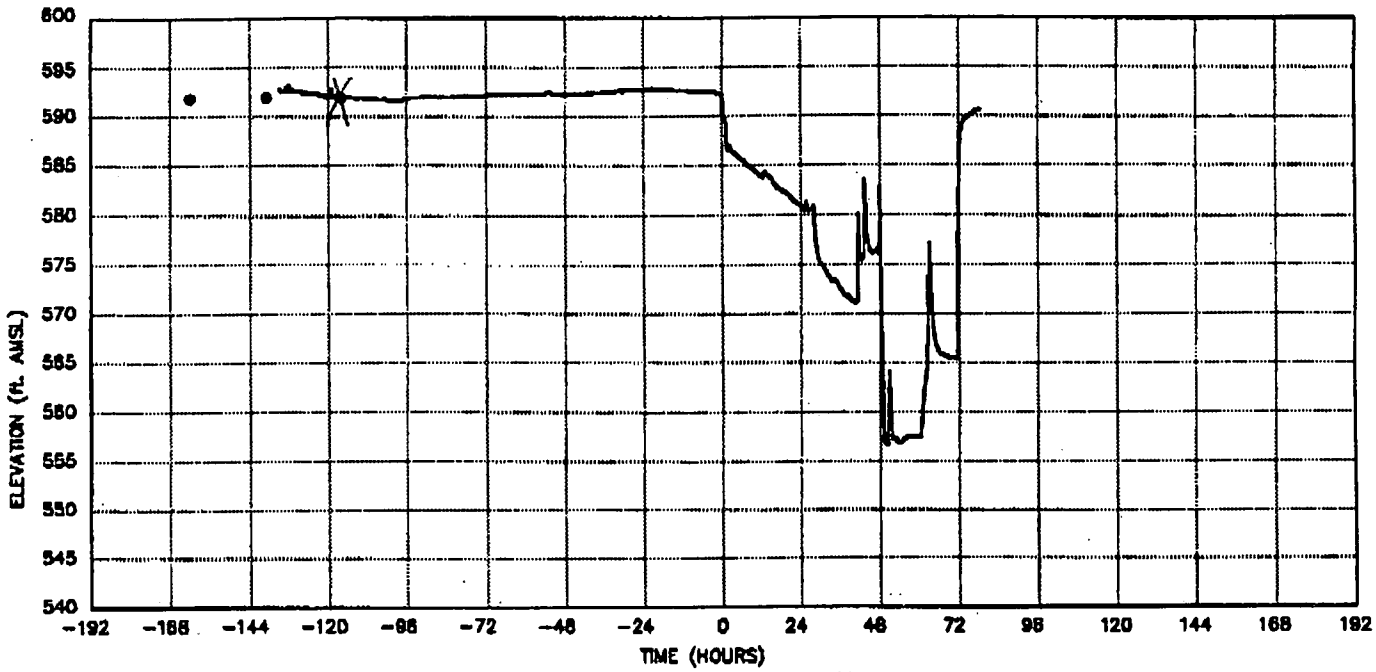
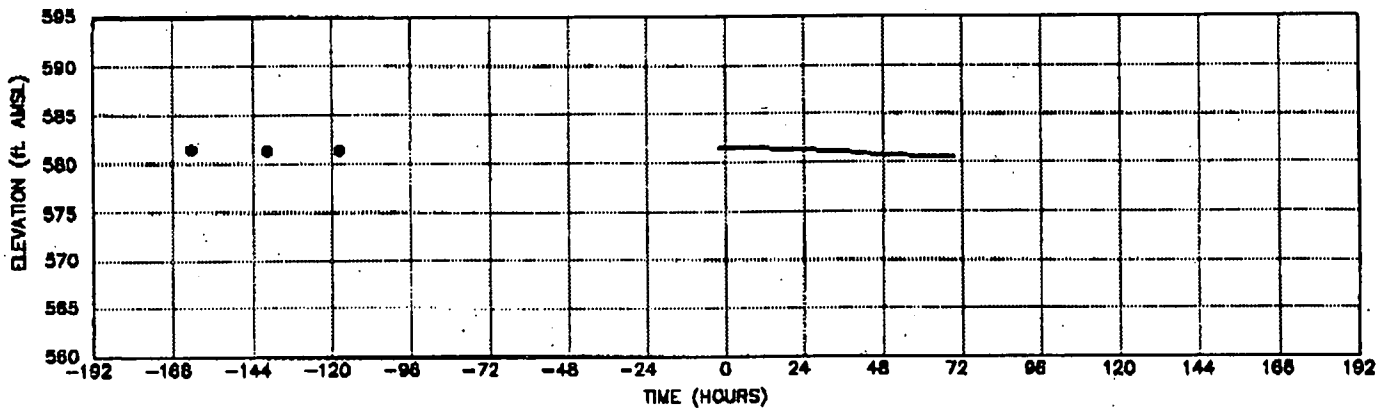



PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: PPW-3U

SCALE: H: 1"=60hrs
V: 1"=20ft

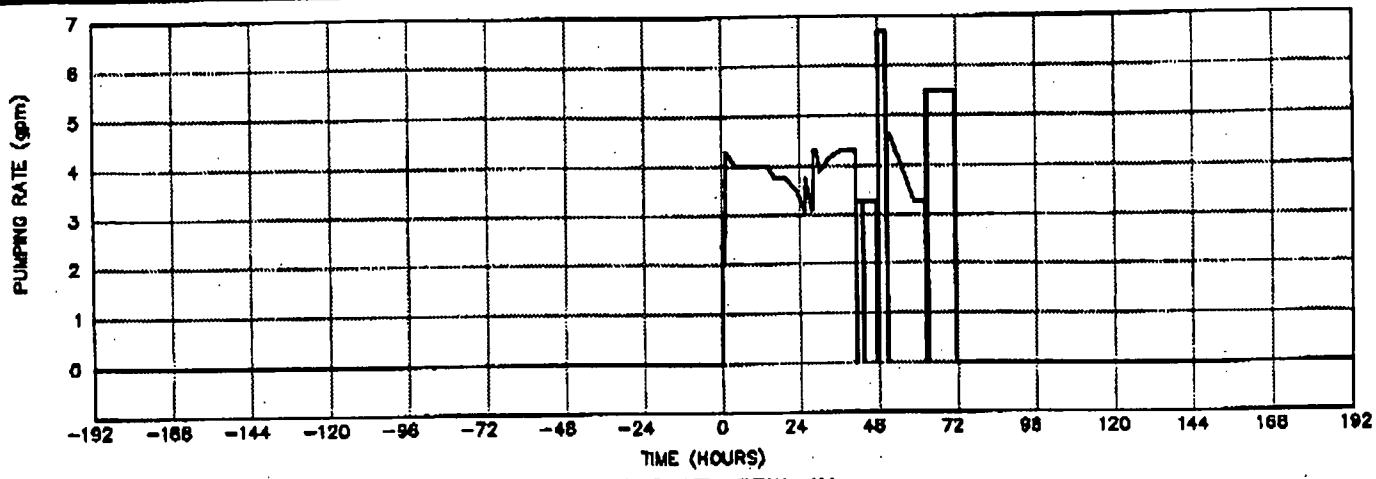
figure A-14.2

PPW-4U/PPW-3U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

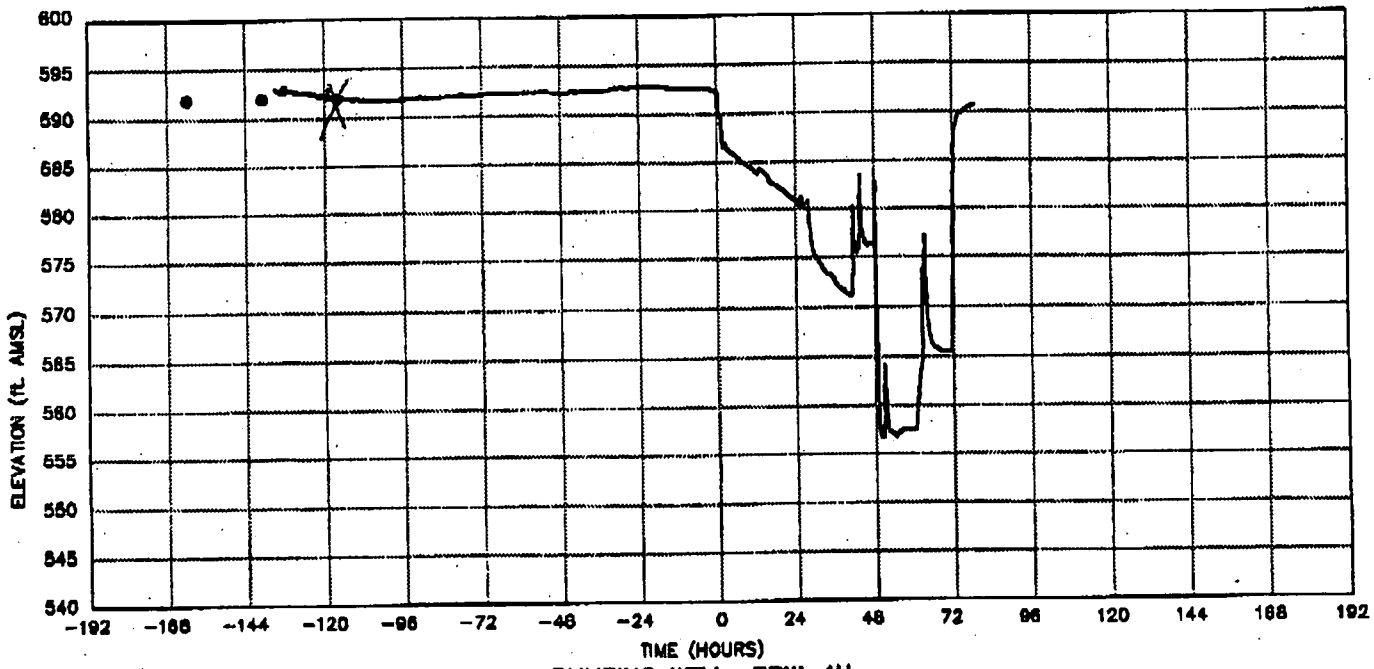
START TIME (0) = NOVEMBER 29, 1993 (10:35)

**CRA**

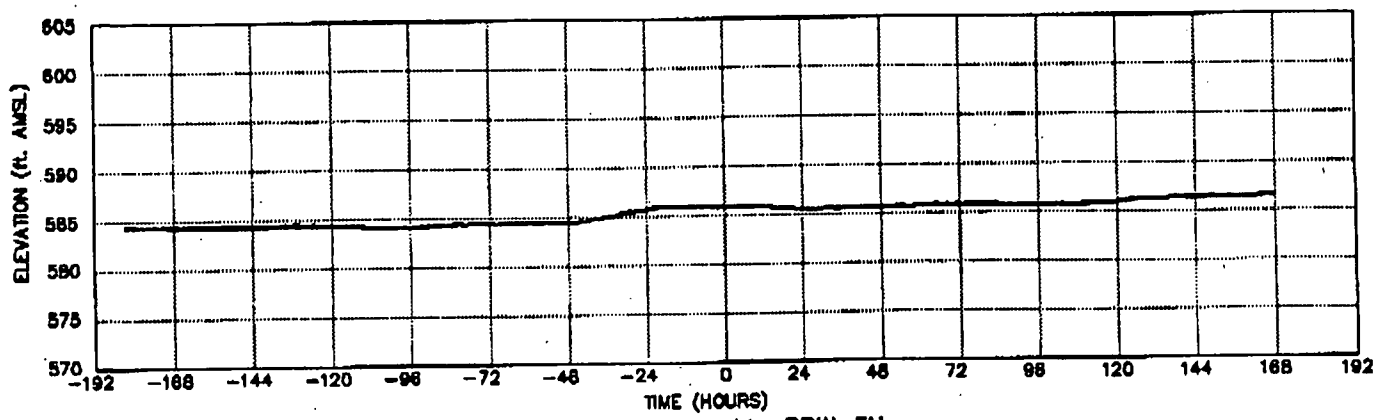
1069 (185) APR 04/94(W) REV.0 (G369)




PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: PPW-5U

SCALE: H: 1"=60hrs
V: 1"=20ft

figure A-14.3

PPW-4U/PPW-5U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

START TIME (0) = NOVERMBER 29, 1993 (10:35)

**CRA** recycled paper

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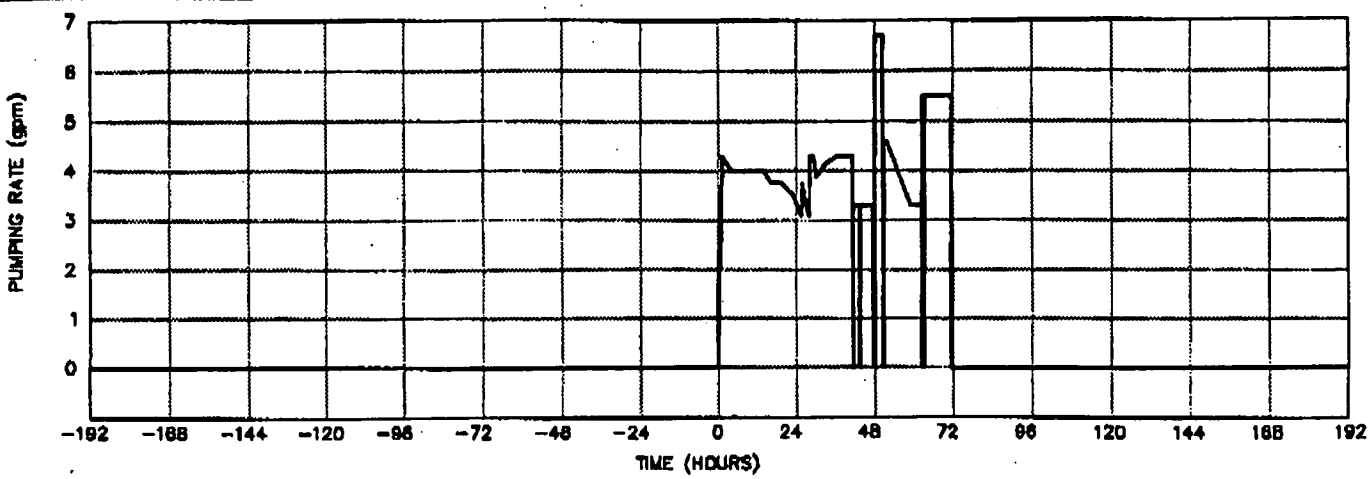
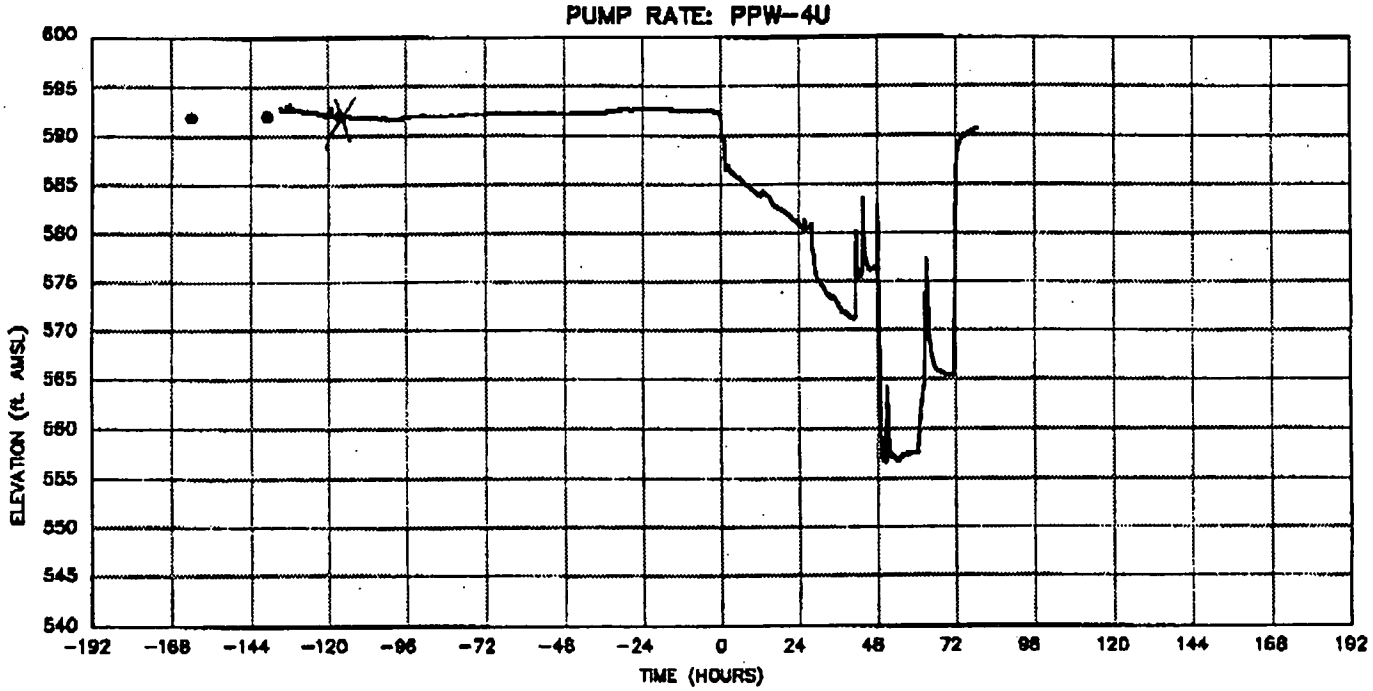
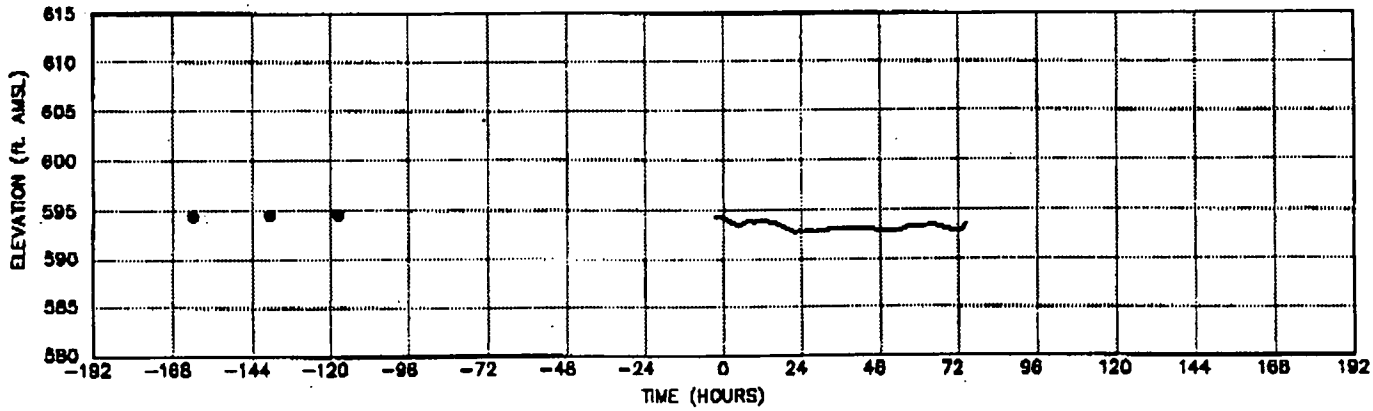
1069 (185) APR 04/94(W) REV.0 (G370)




PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: PMW-3U

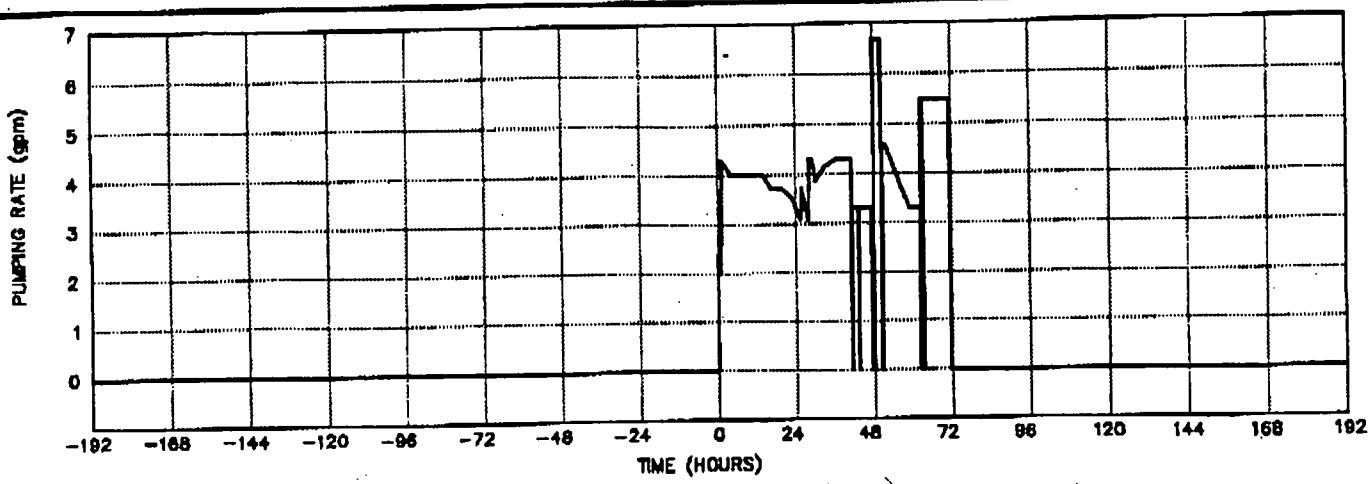
SCALE: H: 1"=60hrs
V: 1"=20ft

figure A-14.4

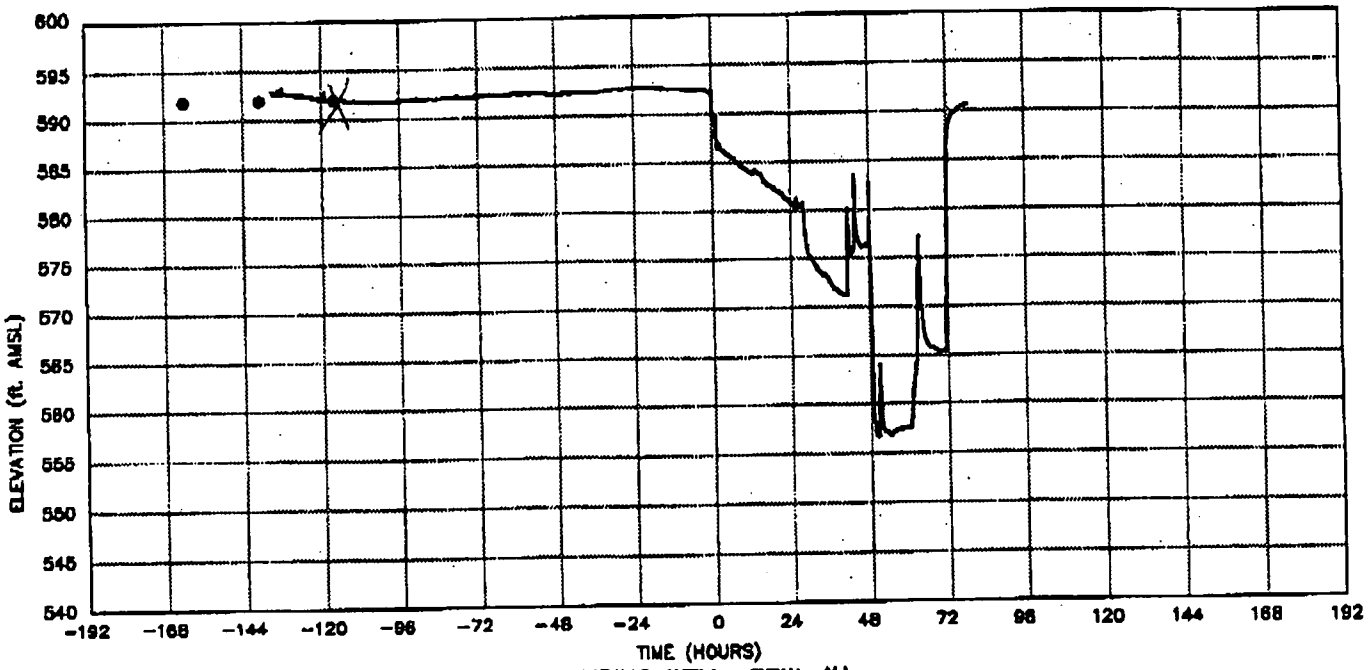
PPW-4U/PMW-3U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

START TIME (0) = NOVEMBER 29, 1993 (10:35)

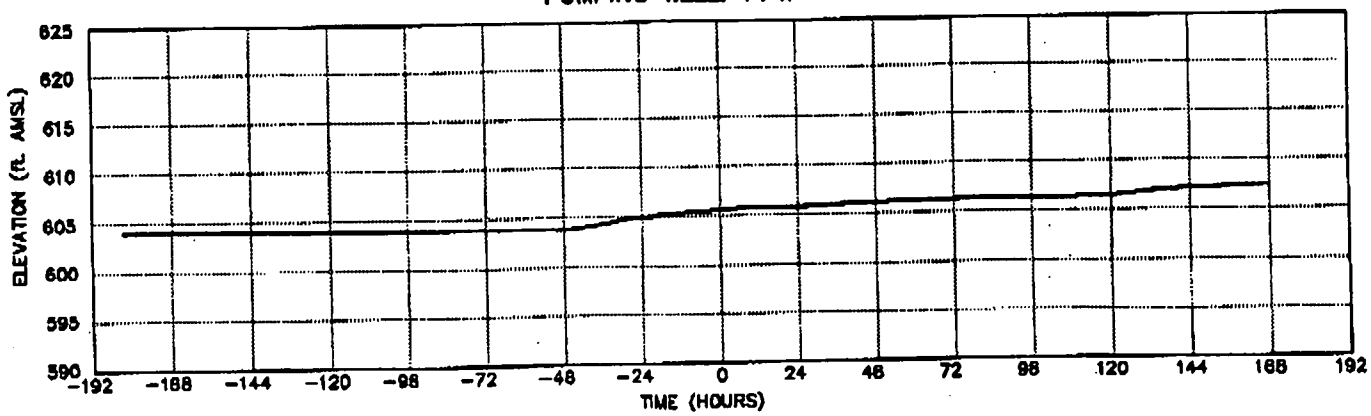
**CRA**




PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: G1U

SCALE: H: 1"=60hrs
V: 1"=20ft

figure A-14.5

PPW-4U/G1U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

START TIME (0) = NOVEMBER 29, 1993 (10:35)

**CRA** recycled paper

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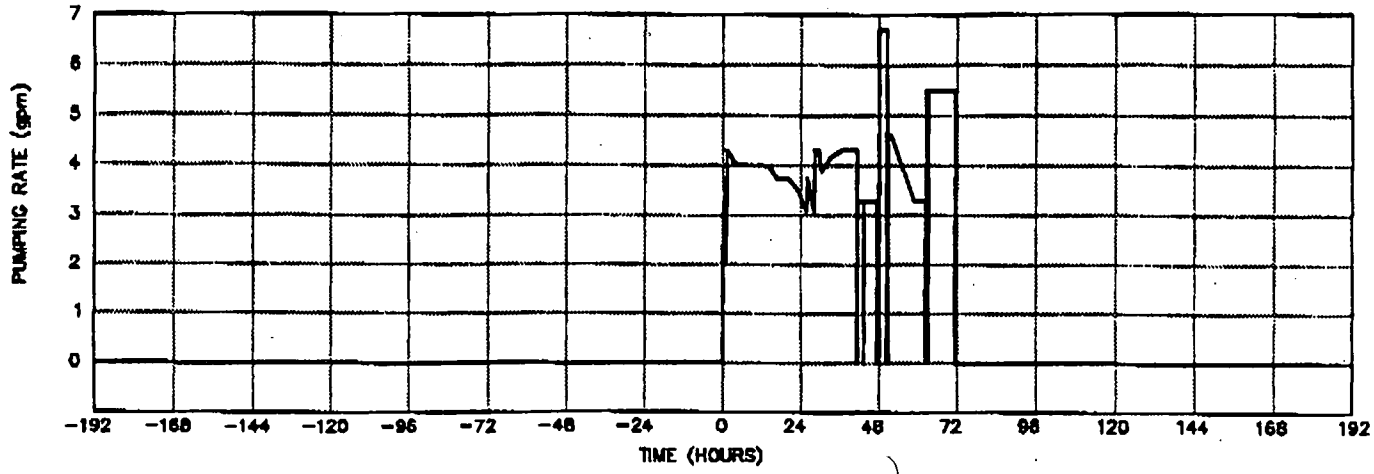
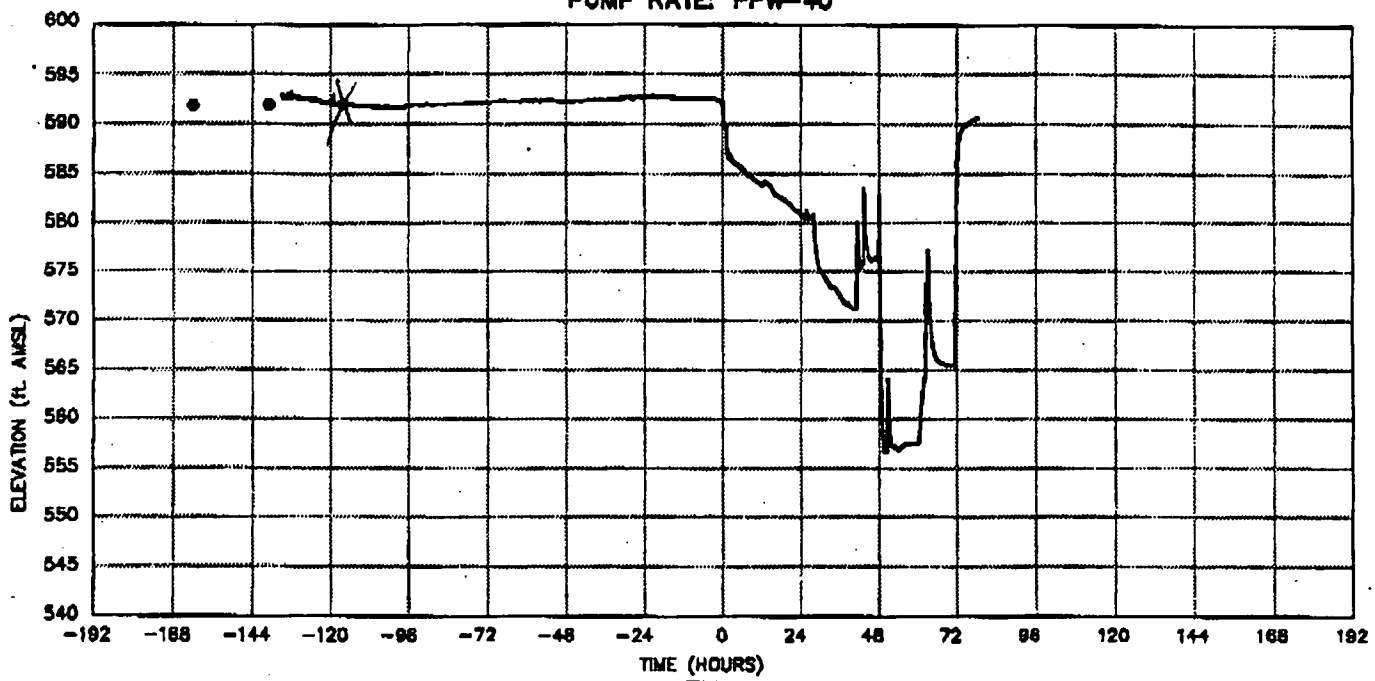
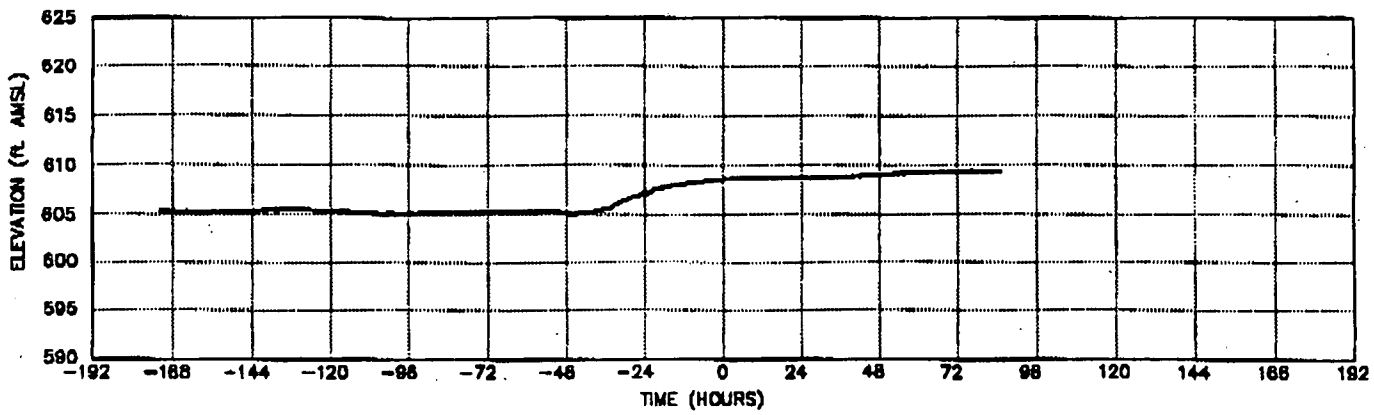



PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: H1U

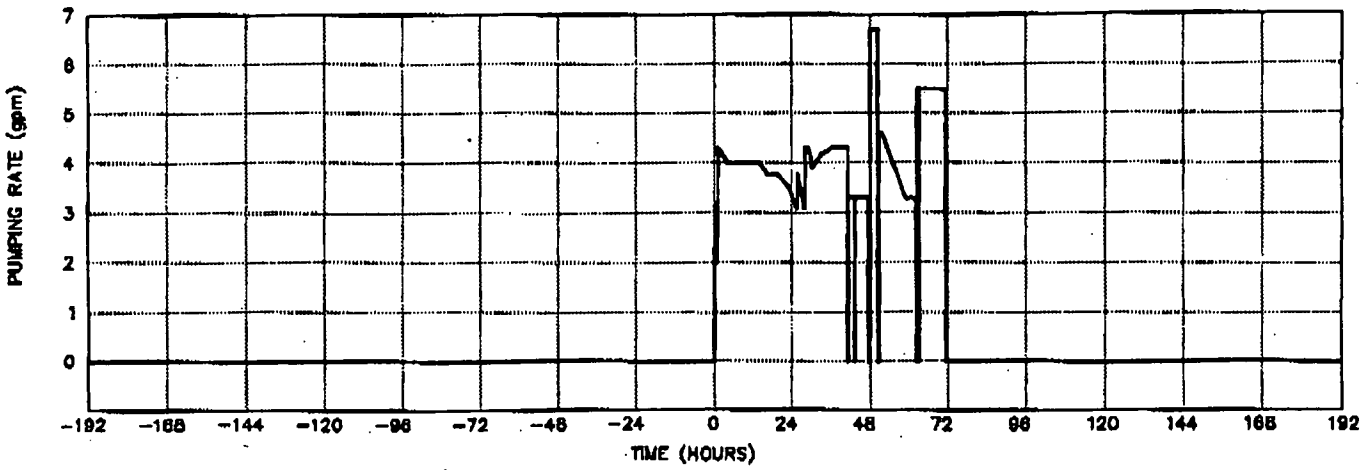
SCALE: H: 1"=60hrs
V: 1"=20ft

figure A-14.6

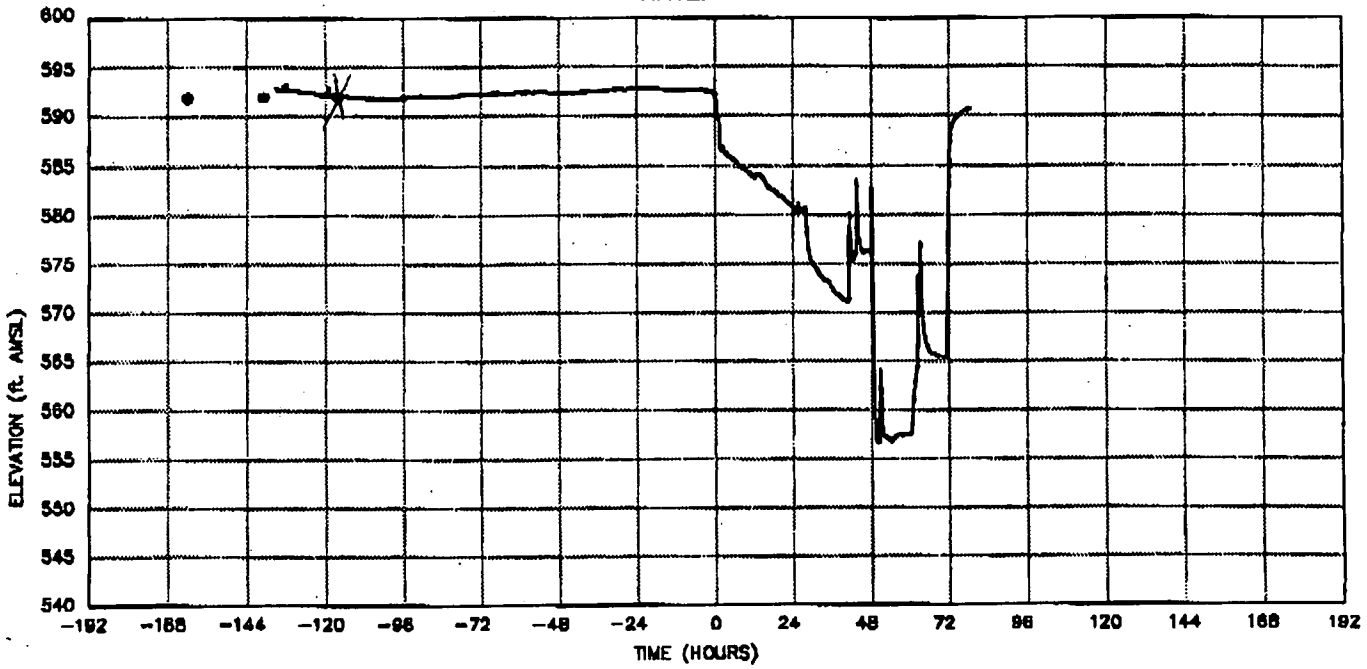
PPW-4U/H1U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

START TIME (0) = NOVEMBER 29, 1993 (10:35)

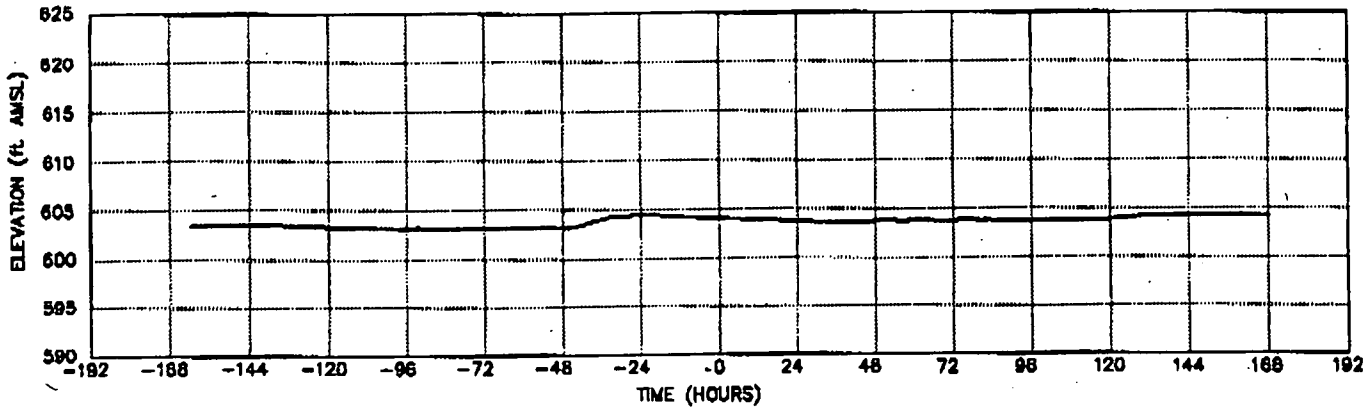
**CRA**




PUMP RATE: PPW-4U




PUMPING WELL: PPW-4U




OBSERVATION WELL: J1U

SCALE: H: 1"=60hrs
V: 1"=20ft

figure A-14.7

PPW-4U/J1U HYDROGRAPH
PUMPING TEST#14: PPW-4U
HYDE PARK REMEDIAL PROGRAM
*Occidental Chemical Corporation*

START TIME (0) = NOVEMBER 29, 1993 (10:35)

**CRA** recycled paper

" Saved Recorder Status
"Type: 2109e-5
" Time at Recorder: 12/07/93 13:11:05 Sync'd @ 12/01/93 12:02:22
" Signal process: Not Applicable Accum: Not Scaled
" Values being saved: averages
" Alarm status: Low alarm @ 2.380 is OFF Upper alarm @ 12.138 is OFF
" Nbr of Events: Alarm recording is not enabled
" Averaging period: 00:15:00 Amount of data recorded: 6 days 00:45:00
" Sample Rate: 00:05:00 Excitation time (msec): 015
" Storage Capacity: 8004 value records: 83 days 09:00:00
"Output compressed by a factor of 1

BW1
MONITORING WELL BW1
INITIAL DEPTH TO WATER FROM TOP OF CASING = 16.31 FEET (OUTER CASING)
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 4.74 (CALCULATED BASED ON RECALIBRATION

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 4.703 | 21.05 | 612.31 | 595.963 |
| 12/01/93" | 13:45:00" | 4.706 | 21.05 | 612.31 | 595.966 |
| 12/01/93" | 14:00:00" | 4.715 | 21.05 | 612.31 | 595.975 |
| 12/01/93" | 14:15:00" | 4.718 | 21.05 | 612.31 | 595.978 |
| 12/01/93" | 14:30:00" | 4.727 | 21.05 | 612.31 | 595.987 |
| 12/01/93" | 14:45:00" | 4.73 | 21.05 | 612.31 | 595.99 |
| 12/01/93" | 15:00:00" | 4.733 | 21.05 | 612.31 | 595.993 |
| 12/01/93" | 15:15:00" | 4.736 | 21.05 | 612.31 | 595.996 |
| 12/01/93" | 15:30:00" | 4.739 | 21.05 | 612.31 | 595.999 |
| 12/01/93" | 15:45:00" | 4.742 | 21.05 | 612.31 | 596.002 |
| 12/01/93" | 16:00:00" | 4.745 | 21.05 | 612.31 | 596.005 |
| 12/01/93" | 16:15:00" | 4.754 | 21.05 | 612.31 | 596.014 |
| 12/01/93" | 16:30:00" | 4.754 | 21.05 | 612.31 | 596.014 |
| 12/01/93" | 16:45:00" | 4.76 | 21.05 | 612.31 | 596.02 |
| 12/01/93" | 17:00:00" | 4.76 | 21.05 | 612.31 | 596.02 |
| 12/01/93" | 17:15:00" | 4.763 | 21.05 | 612.31 | 596.023 |
| 12/01/93" | 17:30:00" | 4.766 | 21.05 | 612.31 | 596.026 |
| 12/01/93" | 17:45:00" | 4.769 | 21.05 | 612.31 | 596.029 |
| 12/01/93" | 18:00:00" | 4.775 | 21.05 | 612.31 | 596.035 |
| 12/01/93" | 18:15:00" | 4.778 | 21.05 | 612.31 | 596.038 |
| 12/01/93" | 18:30:00" | 4.784 | 21.05 | 612.31 | 596.044 |
| 12/01/93" | 18:45:00" | 4.79 | 21.05 | 612.31 | 596.05 |
| 12/01/93" | 19:00:00" | 4.79 | 21.05 | 612.31 | 596.05 |
| 12/01/93" | 19:15:00" | 4.793 | 21.05 | 612.31 | 596.053 |
| 12/01/93" | 19:30:00" | 4.793 | 21.05 | 612.31 | 596.053 |
| 12/01/93" | 19:45:00" | 4.793 | 21.05 | 612.31 | 596.053 |
| 12/01/93" | 20:00:00" | 4.798 | 21.05 | 612.31 | 596.058 |
| 12/01/93" | 20:15:00" | 4.804 | 21.05 | 612.31 | 596.064 |
| 12/01/93" | 20:30:00" | 4.804 | 21.05 | 612.31 | 596.064 |
| 12/01/93" | 20:45:00" | 4.81 | 21.05 | 612.31 | 596.07 |
| 12/01/93" | 21:00:00" | 4.813 | 21.05 | 612.31 | 596.073 |
| 12/01/93" | 21:15:00" | 4.816 | 21.05 | 612.31 | 596.076 |
| 12/01/93" | 21:30:00" | 4.819 | 21.05 | 612.31 | 596.079 |
| 12/01/93" | 21:45:00" | 4.822 | 21.05 | 612.31 | 596.082 |
| 12/01/93" | 22:00:00" | 4.825 | 21.05 | 612.31 | 596.085 |
| 12/01/93" | 22:15:00" | 4.831 | 21.05 | 612.31 | 596.091 |



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| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 4.834 | 21.05 | 612.31 | 596.094 |
| 12/01/93" | 22:45:00" | 4.84 | 21.05 | 612.31 | 596.1 |
| 12/01/93" | 23:00:00" | 4.84 | 21.05 | 612.31 | 596.1 |
| 12/01/93" | 23:15:00" | 4.84 | 21.05 | 612.31 | 596.1 |
| 12/01/93" | 23:30:00" | 4.843 | 21.05 | 612.31 | 596.103 |
| 12/01/93" | 23:45:00" | 4.846 | 21.05 | 612.31 | 596.106 |
| 12/02/93" | 00:00:00" | 4.849 | 21.05 | 612.31 | 596.109 |
| 12/02/93" | 00:15:00" | 4.855 | 21.05 | 612.31 | 596.115 |
| 12/02/93" | 00:30:00" | 4.858 | 21.05 | 612.31 | 596.118 |
| 12/02/93" | 00:45:00" | 4.858 | 21.05 | 612.31 | 596.118 |
| 12/02/93" | 01:00:00" | 4.864 | 21.05 | 612.31 | 596.124 |
| 12/02/93" | 01:15:00" | 4.861 | 21.05 | 612.31 | 596.121 |
| 12/02/93" | 01:30:00" | 4.867 | 21.05 | 612.31 | 596.127 |
| 12/02/93" | 01:45:00" | 4.867 | 21.05 | 612.31 | 596.127 |
| 12/02/93" | 02:00:00" | 4.87 | 21.05 | 612.31 | 596.13 |
| 12/02/93" | 02:15:00" | 4.876 | 21.05 | 612.31 | 596.136 |
| 12/02/93" | 02:30:00" | 4.879 | 21.05 | 612.31 | 596.139 |
| 12/02/93" | 02:45:00" | 4.885 | 21.05 | 612.31 | 596.145 |
| 12/02/93" | 03:00:00" | 4.885 | 21.05 | 612.31 | 596.145 |
| 12/02/93" | 03:15:00" | 4.885 | 21.05 | 612.31 | 596.145 |
| 12/02/93" | 03:30:00" | 4.891 | 21.05 | 612.31 | 596.151 |
| 12/02/93" | 03:45:00" | 4.891 | 21.05 | 612.31 | 596.151 |
| 12/02/93" | 04:00:00" | 4.894 | 21.05 | 612.31 | 596.154 |
| 12/02/93" | 04:15:00" | 4.897 | 21.05 | 612.31 | 596.157 |
| 12/02/93" | 04:30:00" | 4.9 | 21.05 | 612.31 | 596.16 |
| 12/02/93" | 04:45:00" | 4.903 | 21.05 | 612.31 | 596.163 |
| 12/02/93" | 05:00:00" | 4.906 | 21.05 | 612.31 | 596.166 |
| 12/02/93" | 05:15:00" | 4.906 | 21.05 | 612.31 | 596.166 |
| 12/02/93" | 05:30:00" | 4.912 | 21.05 | 612.31 | 596.172 |
| 12/02/93" | 05:45:00" | 4.912 | 21.05 | 612.31 | 596.172 |
| 12/02/93" | 06:00:00" | 4.912 | 21.05 | 612.31 | 596.172 |
| 12/02/93" | 06:15:00" | 4.915 | 21.05 | 612.31 | 596.175 |
| 12/02/93" | 06:30:00" | 4.915 | 21.05 | 612.31 | 596.175 |
| 12/02/93" | 06:45:00" | 4.917 | 21.05 | 612.31 | 596.177 |
| 12/02/93" | 07:00:00" | 4.917 | 21.05 | 612.31 | 596.177 |
| 12/02/93" | 07:15:00" | 4.92 | 21.05 | 612.31 | 596.18 |
| 12/02/93" | 07:30:00" | 4.923 | 21.05 | 612.31 | 596.183 |
| 12/02/93" | 07:45:00" | 4.926 | 21.05 | 612.31 | 596.186 |
| 12/02/93" | 08:00:00" | 4.926 | 21.05 | 612.31 | 596.186 |
| 12/02/93" | 08:15:00" | 4.926 | 21.05 | 612.31 | 596.186 |
| 12/02/93" | 08:30:00" | 4.926 | 21.05 | 612.31 | 596.186 |
| 12/02/93" | 08:45:00" | 4.926 | 21.05 | 612.31 | 596.186 |
| 12/02/93" | 09:00:00" | 4.929 | 21.05 | 612.31 | 596.189 |
| 12/02/93" | 09:15:00" | 4.926 | 21.05 | 612.31 | 596.186 |
| 12/02/93" | 09:30:00" | 4.929 | 21.05 | 612.31 | 596.189 |
| 12/02/93" | 09:45:00" | 4.929 | 21.05 | 612.31 | 596.189 |
| 12/02/93" | 10:00:00" | 4.932 | 21.05 | 612.31 | 596.192 |
| 12/02/93" | 10:15:00" | 4.932 | 21.05 | 612.31 | 596.192 |
| 12/02/93" | 10:30:00" | 4.935 | 21.05 | 612.31 | 596.195 |
| 12/02/93" | 10:45:00" | 4.935 | 21.05 | 612.31 | 596.195 |
| 12/02/93" | 11:00:00" | 4.953 | 21.05 | 612.31 | 596.213 |
| 12/02/93" | 11:15:00" | 4.956 | 21.05 | 612.31 | 596.216 |
| 12/02/93" | 11:30:00" | 4.962 | 21.05 | 612.31 | 596.222 |
| 12/02/93" | 11:45:00" | 4.971 | 21.05 | 612.31 | 596.231 |
| 12/02/93" | 12:00:00" | 4.977 | 21.05 | 612.31 | 596.237 |
| 12/02/93" | 12:15:00" | 4.986 | 21.05 | 612.31 | 596.246 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 4.989 | 21.05 | 612.31 | 596.249 |
| 12/02/93" | 12:45:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/02/93" | 13:00:00" | 4.998 | 21.05 | 612.31 | 596.258 |
| 12/02/93" | 13:15:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/02/93" | 13:30:00" | 5.007 | 21.05 | 612.31 | 596.267 |
| 12/02/93" | 13:45:00" | 5.013 | 21.05 | 612.31 | 596.273 |
| 12/02/93" | 14:00:00" | 5.016 | 21.05 | 612.31 | 596.276 |
| 12/02/93" | 14:15:00" | 5.022 | 21.05 | 612.31 | 596.282 |
| 12/02/93" | 14:30:00" | 5.028 | 21.05 | 612.31 | 596.288 |
| 12/02/93" | 14:45:00" | 5.025 | 21.05 | 612.31 | 596.285 |
| 12/02/93" | 15:00:00" | 5.028 | 21.05 | 612.31 | 596.288 |
| 12/02/93" | 15:15:00" | 5.028 | 21.05 | 612.31 | 596.288 |
| 12/02/93" | 15:30:00" | 5.031 | 21.05 | 612.31 | 596.291 |
| 12/02/93" | 15:45:00" | 5.031 | 21.05 | 612.31 | 596.291 |
| 12/02/93" | 16:00:00" | 5.034 | 21.05 | 612.31 | 596.294 |
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| 12/02/93" | 19:00:00" | 5.028 | 21.05 | 612.31 | 596.288 |
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| 12/02/93" | 20:00:00" | 5.028 | 21.05 | 612.31 | 596.288 |
| 12/02/93" | 20:15:00" | 5.031 | 21.05 | 612.31 | 596.291 |
| 12/02/93" | 20:30:00" | 5.034 | 21.05 | 612.31 | 596.294 |
| 12/02/93" | 20:45:00" | 5.034 | 21.05 | 612.31 | 596.294 |
| 12/02/93" | 21:00:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/02/93" | 21:15:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/02/93" | 21:30:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/02/93" | 21:45:00" | 5.039 | 21.05 | 612.31 | 596.299 |
| 12/02/93" | 22:00:00" | 5.039 | 21.05 | 612.31 | 596.299 |
| 12/02/93" | 22:15:00" | 5.039 | 21.05 | 612.31 | 596.299 |
| 12/02/93" | 22:30:00" | 5.039 | 21.05 | 612.31 | 596.299 |
| 12/02/93" | 22:45:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/02/93" | 23:00:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/02/93" | 23:15:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/02/93" | 23:30:00" | 5.034 | 21.05 | 612.31 | 596.294 |
| 12/02/93" | 23:45:00" | 5.031 | 21.05 | 612.31 | 596.291 |
| 12/03/93" | 00:00:00" | 5.028 | 21.05 | 612.31 | 596.288 |
| 12/03/93" | 00:15:00" | 5.028 | 21.05 | 612.31 | 596.288 |
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| 12/03/93" | 00:45:00" | 5.025 | 21.05 | 612.31 | 596.285 |
| 12/03/93" | 01:00:00" | 5.022 | 21.05 | 612.31 | 596.282 |
| 12/03/93" | 01:15:00" | 5.022 | 21.05 | 612.31 | 596.282 |
| 12/03/93" | 01:30:00" | 5.022 | 21.05 | 612.31 | 596.282 |
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| 12/03/93" | 02:00:00" | 5.016 | 21.05 | 612.31 | 596.276 |
| 12/03/93" | 02:15:00" | 5.01 | 21.05 | 612.31 | 596.27 |

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| 12/03/93" | 02:30:00" | 5.01 | 21.05 | 612.31 | 596.27 |
| 12/03/93" | 02:45:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 03:00:00" | 5.001 | 21.05 | 612.31 | 596.261 |
| 12/03/93" | 03:15:00" | 5.001 | 21.05 | 612.31 | 596.261 |
| 12/03/93" | 03:30:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 03:45:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 04:00:00" | 4.992 | 21.05 | 612.31 | 596.252 |
| 12/03/93" | 04:15:00" | 4.989 | 21.05 | 612.31 | 596.249 |
| 12/03/93" | 04:30:00" | 4.986 | 21.05 | 612.31 | 596.246 |
| 12/03/93" | 04:45:00" | 4.983 | 21.05 | 612.31 | 596.243 |
| 12/03/93" | 05:00:00" | 4.983 | 21.05 | 612.31 | 596.243 |
| 12/03/93" | 05:15:00" | 4.98 | 21.05 | 612.31 | 596.24 |
| 12/03/93" | 05:30:00" | 4.98 | 21.05 | 612.31 | 596.24 |
| 12/03/93" | 05:45:00" | 4.974 | 21.05 | 612.31 | 596.234 |
| 12/03/93" | 06:00:00" | 4.974 | 21.05 | 612.31 | 596.234 |
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| 12/03/93" | 06:30:00" | 4.968 | 21.05 | 612.31 | 596.228 |
| 12/03/93" | 06:45:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 07:00:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 07:15:00" | 4.962 | 21.05 | 612.31 | 596.222 |
| 12/03/93" | 07:30:00" | 4.962 | 21.05 | 612.31 | 596.222 |
| 12/03/93" | 07:45:00" | 4.968 | 21.05 | 612.31 | 596.228 |
| 12/03/93" | 08:00:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 08:15:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 08:30:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 08:45:00" | 4.971 | 21.05 | 612.31 | 596.231 |
| 12/03/93" | 09:00:00" | 4.968 | 21.05 | 612.31 | 596.228 |
| 12/03/93" | 09:15:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 09:30:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 09:45:00" | 4.962 | 21.05 | 612.31 | 596.222 |
| 12/03/93" | 10:00:00" | 4.959 | 21.05 | 612.31 | 596.219 |
| 12/03/93" | 10:15:00" | 4.956 | 21.05 | 612.31 | 596.216 |
| 12/03/93" | 10:30:00" | 4.956 | 21.05 | 612.31 | 596.216 |
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| 12/03/93" | 11:00:00" | 4.956 | 21.05 | 612.31 | 596.216 |
| 12/03/93" | 11:15:00" | 4.962 | 21.05 | 612.31 | 596.222 |
| 12/03/93" | 11:30:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 11:45:00" | 4.965 | 21.05 | 612.31 | 596.225 |
| 12/03/93" | 12:00:00" | 4.968 | 21.05 | 612.31 | 596.228 |
| 12/03/93" | 12:15:00" | 4.968 | 21.05 | 612.31 | 596.228 |
| 12/03/93" | 12:30:00" | 4.971 | 21.05 | 612.31 | 596.231 |
| 12/03/93" | 12:45:00" | 4.974 | 21.05 | 612.31 | 596.234 |
| 12/03/93" | 13:00:00" | 4.98 | 21.05 | 612.31 | 596.24 |
| 12/03/93" | 13:15:00" | 4.983 | 21.05 | 612.31 | 596.243 |
| 12/03/93" | 13:30:00" | 4.983 | 21.05 | 612.31 | 596.243 |
| 12/03/93" | 13:45:00" | 4.986 | 21.05 | 612.31 | 596.246 |
| 12/03/93" | 14:00:00" | 4.989 | 21.05 | 612.31 | 596.249 |
| 12/03/93" | 14:15:00" | 4.992 | 21.05 | 612.31 | 596.252 |
| 12/03/93" | 14:30:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 14:45:00" | 4.995 | 21.05 | 612.31 | 596.255 |
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| 12/03/93" | 15:15:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 15:30:00" | 4.998 | 21.05 | 612.31 | 596.258 |
| 12/03/93" | 15:45:00" | 4.998 | 21.05 | 612.31 | 596.258 |
| 12/03/93" | 16:00:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 16:15:00" | 4.995 | 21.05 | 612.31 | 596.255 |

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|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 16:45:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 17:00:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 17:15:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 17:30:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 17:45:00" | 4.995 | 21.05 | 612.31 | 596.255 |
| 12/03/93" | 18:00:00" | 4.998 | 21.05 | 612.31 | 596.258 |
| 12/03/93" | 18:15:00" | 4.998 | 21.05 | 612.31 | 596.258 |
| 12/03/93" | 18:30:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 18:45:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 19:00:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 19:15:00" | 5.007 | 21.05 | 612.31 | 596.267 |
| 12/03/93" | 19:30:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 19:45:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 20:00:00" | 5.004 | 21.05 | 612.31 | 596.264 |
| 12/03/93" | 20:15:00" | 5.01 | 21.05 | 612.31 | 596.27 |
| 12/03/93" | 20:30:00" | 5.007 | 21.05 | 612.31 | 596.267 |
| 12/03/93" | 20:45:00" | 5.013 | 21.05 | 612.31 | 596.273 |
| 12/03/93" | 21:00:00" | 5.013 | 21.05 | 612.31 | 596.273 |
| 12/03/93" | 21:15:00" | 5.013 | 21.05 | 612.31 | 596.273 |
| 12/03/93" | 21:30:00" | 5.016 | 21.05 | 612.31 | 596.276 |
| 12/03/93" | 21:45:00" | 5.016 | 21.05 | 612.31 | 596.276 |
| 12/03/93" | 22:00:00" | 5.022 | 21.05 | 612.31 | 596.282 |
| 12/03/93" | 22:15:00" | 5.025 | 21.05 | 612.31 | 596.285 |
| 12/03/93" | 22:30:00" | 5.028 | 21.05 | 612.31 | 596.288 |
| 12/03/93" | 22:45:00" | 5.031 | 21.05 | 612.31 | 596.291 |
| 12/03/93" | 23:00:00" | 5.031 | 21.05 | 612.31 | 596.291 |
| 12/03/93" | 23:15:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/03/93" | 23:30:00" | 5.036 | 21.05 | 612.31 | 596.296 |
| 12/03/93" | 23:45:00" | 5.039 | 21.05 | 612.31 | 596.299 |
| 12/04/93" | 00:00:00" | 5.039 | 21.05 | 612.31 | 596.299 |
| 12/04/93" | 00:15:00" | 5.042 | 21.05 | 612.31 | 596.302 |
| 12/04/93" | 00:30:00" | 5.045 | 21.05 | 612.31 | 596.305 |
| 12/04/93" | 00:45:00" | 5.048 | 21.05 | 612.31 | 596.308 |
| 12/04/93" | 01:00:00" | 5.054 | 21.05 | 612.31 | 596.314 |
| 12/04/93" | 01:15:00" | 5.057 | 21.05 | 612.31 | 596.317 |
| 12/04/93" | 01:30:00" | 5.06 | 21.05 | 612.31 | 596.32 |
| 12/04/93" | 01:45:00" | 5.063 | 21.05 | 612.31 | 596.323 |
| 12/04/93" | 02:00:00" | 5.066 | 21.05 | 612.31 | 596.326 |
| 12/04/93" | 02:15:00" | 5.072 | 21.05 | 612.31 | 596.332 |
| 12/04/93" | 02:30:00" | 5.075 | 21.05 | 612.31 | 596.335 |
| 12/04/93" | 02:45:00" | 5.078 | 21.05 | 612.31 | 596.338 |
| 12/04/93" | 03:00:00" | 5.081 | 21.05 | 612.31 | 596.341 |
| 12/04/93" | 03:15:00" | 5.087 | 21.05 | 612.31 | 596.347 |
| 12/04/93" | 03:30:00" | 5.087 | 21.05 | 612.31 | 596.347 |
| 12/04/93" | 03:45:00" | 5.09 | 21.05 | 612.31 | 596.35 |
| 12/04/93" | 04:00:00" | 5.093 | 21.05 | 612.31 | 596.353 |
| 12/04/93" | 04:15:00" | 5.099 | 21.05 | 612.31 | 596.359 |
| 12/04/93" | 04:30:00" | 5.105 | 21.05 | 612.31 | 596.365 |
| 12/04/93" | 04:45:00" | 5.108 | 21.05 | 612.31 | 596.368 |
| 12/04/93" | 05:00:00" | 5.111 | 21.05 | 612.31 | 596.371 |
| 12/04/93" | 05:15:00" | 5.117 | 21.05 | 612.31 | 596.377 |
| 12/04/93" | 05:30:00" | 5.117 | 21.05 | 612.31 | 596.377 |
| 12/04/93" | 05:45:00" | 5.12 | 21.05 | 612.31 | 596.38 |
| 12/04/93" | 06:00:00" | 5.126 | 21.05 | 612.31 | 596.386 |
| 12/04/93" | 06:15:00" | 5.126 | 21.05 | 612.31 | 596.386 |

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| 12/04/93" | 06:30:00" | 5.129 | 21.05 | 612.31 | 596.389 |
| 12/04/93" | 06:45:00" | 5.135 | 21.05 | 612.31 | 596.395 |
| 12/04/93" | 07:00:00" | 5.135 | 21.05 | 612.31 | 596.395 |
| 12/04/93" | 07:15:00" | 5.138 | 21.05 | 612.31 | 596.398 |
| 12/04/93" | 07:30:00" | 5.141 | 21.05 | 612.31 | 596.401 |
| 12/04/93" | 07:45:00" | 5.147 | 21.05 | 612.31 | 596.407 |
| 12/04/93" | 08:00:00" | 5.153 | 21.05 | 612.31 | 596.413 |
| 12/04/93" | 08:15:00" | 5.155 | 21.05 | 612.31 | 596.415 |
| 12/04/93" | 08:30:00" | 5.164 | 21.05 | 612.31 | 596.424 |
| 12/04/93" | 08:45:00" | 5.167 | 21.05 | 612.31 | 596.427 |
| 12/04/93" | 09:00:00" | 5.173 | 21.05 | 612.31 | 596.433 |
| 12/04/93" | 09:15:00" | 5.179 | 21.05 | 612.31 | 596.439 |
| 12/04/93" | 09:30:00" | 5.182 | 21.05 | 612.31 | 596.442 |
| 12/04/93" | 09:45:00" | 5.185 | 21.05 | 612.31 | 596.445 |
| 12/04/93" | 10:00:00" | 5.185 | 21.05 | 612.31 | 596.445 |
| 12/04/93" | 10:15:00" | 5.191 | 21.05 | 612.31 | 596.451 |
| 12/04/93" | 10:30:00" | 5.197 | 21.05 | 612.31 | 596.457 |
| 12/04/93" | 10:45:00" | 5.203 | 21.05 | 612.31 | 596.463 |
| 12/04/93" | 11:00:00" | 5.215 | 21.05 | 612.31 | 596.475 |
| 12/04/93" | 11:15:00" | 5.221 | 21.05 | 612.31 | 596.481 |
| 12/04/93" | 11:30:00" | 5.23 | 21.05 | 612.31 | 596.49 |
| 12/04/93" | 11:45:00" | 5.239 | 21.05 | 612.31 | 596.499 |
| 12/04/93" | 12:00:00" | 5.245 | 21.05 | 612.31 | 596.505 |
| 12/04/93" | 12:15:00" | 5.254 | 21.05 | 612.31 | 596.514 |
| 12/04/93" | 12:30:00" | 5.26 | 21.05 | 612.31 | 596.52 |
| 12/04/93" | 12:45:00" | 5.266 | 21.05 | 612.31 | 596.526 |
| 12/04/93" | 13:00:00" | 5.272 | 21.05 | 612.31 | 596.532 |
| 12/04/93" | 13:15:00" | 5.277 | 21.05 | 612.31 | 596.537 |
| 12/04/93" | 13:30:00" | 5.286 | 21.05 | 612.31 | 596.546 |
| 12/04/93" | 13:45:00" | 5.295 | 21.05 | 612.31 | 596.555 |
| 12/04/93" | 14:00:00" | 5.304 | 21.05 | 612.31 | 596.564 |
| 12/04/93" | 14:15:00" | 5.31 | 21.05 | 612.31 | 596.57 |
| 12/04/93" | 14:30:00" | 5.316 | 21.05 | 612.31 | 596.576 |
| 12/04/93" | 14:45:00" | 5.316 | 21.05 | 612.31 | 596.576 |
| 12/04/93" | 15:00:00" | 5.322 | 21.05 | 612.31 | 596.582 |
| 12/04/93" | 15:15:00" | 5.328 | 21.05 | 612.31 | 596.588 |
| 12/04/93" | 15:30:00" | 5.334 | 21.05 | 612.31 | 596.594 |
| 12/04/93" | 15:45:00" | 5.34 | 21.05 | 612.31 | 596.6 |
| 12/04/93" | 16:00:00" | 5.346 | 21.05 | 612.31 | 596.606 |
| 12/04/93" | 16:15:00" | 5.352 | 21.05 | 612.31 | 596.612 |
| 12/04/93" | 16:30:00" | 5.355 | 21.05 | 612.31 | 596.615 |
| 12/04/93" | 16:45:00" | 5.358 | 21.05 | 612.31 | 596.618 |
| 12/04/93" | 17:00:00" | 5.361 | 21.05 | 612.31 | 596.621 |
| 12/04/93" | 17:15:00" | 5.367 | 21.05 | 612.31 | 596.627 |
| 12/04/93" | 17:30:00" | 5.37 | 21.05 | 612.31 | 596.63 |
| 12/04/93" | 17:45:00" | 5.376 | 21.05 | 612.31 | 596.636 |
| 12/04/93" | 18:00:00" | 5.382 | 21.05 | 612.31 | 596.642 |
| 12/04/93" | 18:15:00" | 5.385 | 21.05 | 612.31 | 596.645 |
| 12/04/93" | 18:30:00" | 5.388 | 21.05 | 612.31 | 596.648 |
| 12/04/93" | 18:45:00" | 5.391 | 21.05 | 612.31 | 596.651 |
| 12/04/93" | 19:00:00" | 5.396 | 21.05 | 612.31 | 596.656 |
| 12/04/93" | 19:15:00" | 5.399 | 21.05 | 612.31 | 596.659 |
| 12/04/93" | 19:30:00" | 5.402 | 21.05 | 612.31 | 596.662 |
| 12/04/93" | 19:45:00" | 5.405 | 21.05 | 612.31 | 596.665 |
| 12/04/93" | 20:00:00" | 5.411 | 21.05 | 612.31 | 596.671 |
| 12/04/93" | 20:15:00" | 5.414 | 21.05 | 612.31 | 596.674 |

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| 12/04/93" | 20:30:00" | 5.423 | 21.05 | 612.31 | 596.683 |
| 12/04/93" | 20:45:00" | 5.426 | 21.05 | 612.31 | 596.686 |
| 12/04/93" | 21:00:00" | 5.432 | 21.05 | 612.31 | 596.692 |
| 12/04/93" | 21:15:00" | 5.432 | 21.05 | 612.31 | 596.692 |
| 12/04/93" | 21:30:00" | 5.438 | 21.05 | 612.31 | 596.698 |
| 12/04/93" | 21:45:00" | 5.444 | 21.05 | 612.31 | 596.704 |
| 12/04/93" | 22:00:00" | 5.45 | 21.05 | 612.31 | 596.71 |
| 12/04/93" | 22:15:00" | 5.45 | 21.05 | 612.31 | 596.71 |
| 12/04/93" | 22:30:00" | 5.453 | 21.05 | 612.31 | 596.713 |
| 12/04/93" | 22:45:00" | 5.459 | 21.05 | 612.31 | 596.719 |
| 12/04/93" | 23:00:00" | 5.462 | 21.05 | 612.31 | 596.722 |
| 12/04/93" | 23:15:00" | 5.468 | 21.05 | 612.31 | 596.728 |
| 12/04/93" | 23:30:00" | 5.471 | 21.05 | 612.31 | 596.731 |
| 12/04/93" | 23:45:00" | 5.471 | 21.05 | 612.31 | 596.731 |
| 12/05/93" | 00:00:00" | 5.474 | 21.05 | 612.31 | 596.734 |
| 12/05/93" | 00:15:00" | 5.474 | 21.05 | 612.31 | 596.734 |
| 12/05/93" | 00:30:00" | 5.48 | 21.05 | 612.31 | 596.74 |
| 12/05/93" | 00:45:00" | 5.48 | 21.05 | 612.31 | 596.74 |
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| 12/05/93" | 01:15:00" | 5.486 | 21.05 | 612.31 | 596.746 |
| 12/05/93" | 01:30:00" | 5.492 | 21.05 | 612.31 | 596.752 |
| 12/05/93" | 01:45:00" | 5.495 | 21.05 | 612.31 | 596.755 |
| 12/05/93" | 02:00:00" | 5.498 | 21.05 | 612.31 | 596.758 |
| 12/05/93" | 02:15:00" | 5.501 | 21.05 | 612.31 | 596.761 |
| 12/05/93" | 02:30:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/05/93" | 02:45:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/05/93" | 03:00:00" | 5.501 | 21.05 | 612.31 | 596.761 |
| 12/05/93" | 03:15:00" | 5.507 | 21.05 | 612.31 | 596.767 |
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| 12/05/93" | 03:45:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 04:00:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 04:15:00" | 5.512 | 21.05 | 612.31 | 596.772 |
| 12/05/93" | 04:30:00" | 5.512 | 21.05 | 612.31 | 596.772 |
| 12/05/93" | 04:45:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/05/93" | 05:00:00" | 5.518 | 21.05 | 612.31 | 596.778 |
| 12/05/93" | 05:15:00" | 5.518 | 21.05 | 612.31 | 596.778 |
| 12/05/93" | 05:30:00" | 5.518 | 21.05 | 612.31 | 596.778 |
| 12/05/93" | 05:45:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/05/93" | 06:00:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/05/93" | 06:15:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/05/93" | 06:30:00" | 5.512 | 21.05 | 612.31 | 596.772 |
| 12/05/93" | 06:45:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 07:00:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 07:15:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 07:30:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 07:45:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/05/93" | 08:00:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/05/93" | 08:15:00" | 5.501 | 21.05 | 612.31 | 596.761 |
| 12/05/93" | 08:30:00" | 5.504 | 21.05 | 612.31 | 596.764 |
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| 12/05/93" | 09:00:00" | 5.498 | 21.05 | 612.31 | 596.758 |
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| 12/05/93" | 09:45:00" | 5.501 | 21.05 | 612.31 | 596.761 |
| 12/05/93" | 10:00:00" | 5.501 | 21.05 | 612.31 | 596.761 |
| 12/05/93" | 10:15:00" | 5.504 | 21.05 | 612.31 | 596.764 |

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| 12/05/93" | 10:30:00" | 5.501 | 21.05 | 612.31 | 596.761 |
| 12/05/93" | 10:45:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/05/93" | 11:00:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 11:15:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 11:30:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 11:45:00" | 5.512 | 21.05 | 612.31 | 596.772 |
| 12/05/93" | 12:00:00" | 5.518 | 21.05 | 612.31 | 596.778 |
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| 12/05/93" | 12:45:00" | 5.518 | 21.05 | 612.31 | 596.778 |
| 12/05/93" | 13:00:00" | 5.521 | 21.05 | 612.31 | 596.781 |
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| 12/05/93" | 13:30:00" | 5.518 | 21.05 | 612.31 | 596.778 |
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| 12/05/93" | 14:00:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/05/93" | 14:15:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/05/93" | 14:30:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/05/93" | 14:45:00" | 5.524 | 21.05 | 612.31 | 596.784 |
| 12/05/93" | 15:00:00" | 5.524 | 21.05 | 612.31 | 596.784 |
| 12/05/93" | 15:15:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/05/93" | 15:30:00" | 5.518 | 21.05 | 612.31 | 596.778 |
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| 12/05/93" | 16:15:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/05/93" | 16:30:00" | 5.512 | 21.05 | 612.31 | 596.772 |
| 12/05/93" | 16:45:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 17:00:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 17:15:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 17:30:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 17:45:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 18:00:00" | 5.501 | 21.05 | 612.31 | 596.761 |
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| 12/05/93" | 18:45:00" | 5.507 | 21.05 | 612.31 | 596.767 |
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| 12/05/93" | 19:30:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 19:45:00" | 5.507 | 21.05 | 612.31 | 596.767 |
| 12/05/93" | 20:00:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 20:15:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/05/93" | 20:30:00" | 5.512 | 21.05 | 612.31 | 596.772 |
| 12/05/93" | 20:45:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/05/93" | 21:00:00" | 5.518 | 21.05 | 612.31 | 596.778 |
| 12/05/93" | 21:15:00" | 5.518 | 21.05 | 612.31 | 596.778 |
| 12/05/93" | 21:30:00" | 5.521 | 21.05 | 612.31 | 596.781 |
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| 12/05/93" | 22:00:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/05/93" | 22:15:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/05/93" | 22:30:00" | 5.524 | 21.05 | 612.31 | 596.784 |
| 12/05/93" | 22:45:00" | 5.524 | 21.05 | 612.31 | 596.784 |
| 12/05/93" | 23:00:00" | 5.527 | 21.05 | 612.31 | 596.787 |
| 12/05/93" | 23:15:00" | 5.53 | 21.05 | 612.31 | 596.79 |
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| 12/05/93" | 23:45:00" | 5.53 | 21.05 | 612.31 | 596.79 |
| 12/06/93" | 00:00:00" | 5.533 | 21.05 | 612.31 | 596.793 |
| 12/06/93" | 00:15:00" | 5.536 | 21.05 | 612.31 | 596.796 |

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|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 5.536 | 21.05 | 612.31 | 596.796 |
| 12/06/93" | 00:45:00" | 5.536 | 21.05 | 612.31 | 596.796 |
| 12/06/93" | 01:00:00" | 5.542 | 21.05 | 612.31 | 596.802 |
| 12/06/93" | 01:15:00" | 5.548 | 21.05 | 612.31 | 596.808 |
| 12/06/93" | 01:30:00" | 5.548 | 21.05 | 612.31 | 596.808 |
| 12/06/93" | 01:45:00" | 5.551 | 21.05 | 612.31 | 596.811 |
| 12/06/93" | 02:00:00" | 5.551 | 21.05 | 612.31 | 596.811 |
| 12/06/93" | 02:15:00" | 5.551 | 21.05 | 612.31 | 596.811 |
| 12/06/93" | 02:30:00" | 5.548 | 21.05 | 612.31 | 596.808 |
| 12/06/93" | 02:45:00" | 5.554 | 21.05 | 612.31 | 596.814 |
| 12/06/93" | 03:00:00" | 5.551 | 21.05 | 612.31 | 596.811 |
| 12/06/93" | 03:15:00" | 5.551 | 21.05 | 612.31 | 596.811 |
| 12/06/93" | 03:30:00" | 5.554 | 21.05 | 612.31 | 596.814 |
| 12/06/93" | 03:45:00" | 5.557 | 21.05 | 612.31 | 596.817 |
| 12/06/93" | 04:00:00" | 5.56 | 21.05 | 612.31 | 596.82 |
| 12/06/93" | 04:15:00" | 5.563 | 21.05 | 612.31 | 596.823 |
| 12/06/93" | 04:30:00" | 5.566 | 21.05 | 612.31 | 596.826 |
| 12/06/93" | 04:45:00" | 5.569 | 21.05 | 612.31 | 596.829 |
| 12/06/93" | 05:00:00" | 5.569 | 21.05 | 612.31 | 596.829 |
| 12/06/93" | 05:15:00" | 5.578 | 21.05 | 612.31 | 596.838 |
| 12/06/93" | 05:30:00" | 5.581 | 21.05 | 612.31 | 596.841 |
| 12/06/93" | 05:45:00" | 5.587 | 21.05 | 612.31 | 596.847 |
| 12/06/93" | 06:00:00" | 5.593 | 21.05 | 612.31 | 596.853 |
| 12/06/93" | 06:15:00" | 5.596 | 21.05 | 612.31 | 596.856 |
| 12/06/93" | 06:30:00" | 5.599 | 21.05 | 612.31 | 596.859 |
| 12/06/93" | 06:45:00" | 5.599 | 21.05 | 612.31 | 596.859 |
| 12/06/93" | 07:00:00" | 5.602 | 21.05 | 612.31 | 596.862 |
| 12/06/93" | 07:15:00" | 5.605 | 21.05 | 612.31 | 596.865 |
| 12/06/93" | 07:30:00" | 5.608 | 21.05 | 612.31 | 596.868 |
| 12/06/93" | 07:45:00" | 5.611 | 21.05 | 612.31 | 596.871 |
| 12/06/93" | 08:00:00" | 5.611 | 21.05 | 612.31 | 596.871 |
| 12/06/93" | 08:15:00" | 5.614 | 21.05 | 612.31 | 596.874 |
| 12/06/93" | 08:30:00" | 5.617 | 21.05 | 612.31 | 596.877 |
| 12/06/93" | 08:45:00" | 5.617 | 21.05 | 612.31 | 596.877 |
| 12/06/93" | 09:00:00" | 5.623 | 21.05 | 612.31 | 596.883 |
| 12/06/93" | 09:15:00" | 5.626 | 21.05 | 612.31 | 596.886 |
| 12/06/93" | 09:30:00" | 5.628 | 21.05 | 612.31 | 596.888 |
| 12/06/93" | 09:45:00" | 5.631 | 21.05 | 612.31 | 596.891 |
| 12/06/93" | 10:00:00" | 5.631 | 21.05 | 612.31 | 596.891 |
| 12/06/93" | 10:15:00" | 5.64 | 21.05 | 612.31 | 596.9 |
| 12/06/93" | 10:30:00" | 5.646 | 21.05 | 612.31 | 596.906 |
| 12/06/93" | 10:45:00" | 5.646 | 21.05 | 612.31 | 596.906 |
| 12/06/93" | 11:00:00" | 5.652 | 21.05 | 612.31 | 596.912 |
| 12/06/93" | 11:15:00" | 5.655 | 21.05 | 612.31 | 596.915 |
| 12/06/93" | 11:30:00" | 5.664 | 21.05 | 612.31 | 596.924 |
| 12/06/93" | 11:45:00" | 5.664 | 21.05 | 612.31 | 596.924 |
| 12/06/93" | 12:00:00" | 5.67 | 21.05 | 612.31 | 596.93 |
| 12/06/93" | 12:15:00" | 5.673 | 21.05 | 612.31 | 596.933 |
| 12/06/93" | 12:30:00" | 5.679 | 21.05 | 612.31 | 596.939 |
| 12/06/93" | 12:45:00" | 5.685 | 21.05 | 612.31 | 596.945 |
| 12/06/93" | 13:00:00" | 5.685 | 21.05 | 612.31 | 596.945 |
| 12/06/93" | 13:15:00" | 5.691 | 21.05 | 612.31 | 596.951 |
| 12/06/93" | 13:30:00" | 5.694 | 21.05 | 612.31 | 596.954 |
| 12/06/93" | 13:45:00" | 5.697 | 21.05 | 612.31 | 596.957 |
| 12/06/93" | 14:00:00" | 5.697 | 21.05 | 612.31 | 596.957 |
| 12/06/93" | 14:15:00" | 5.7 | 21.05 | 612.31 | 596.96 |

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| 12/06/93" | 14:30:00" | 5.703 | 21.05 | 612.31 | 596.963 |
| 12/06/93" | 14:45:00" | 5.706 | 21.05 | 612.31 | 596.966 |
| 12/06/93" | 15:00:00" | 5.709 | 21.05 | 612.31 | 596.969 |
| 12/06/93" | 15:15:00" | 5.712 | 21.05 | 612.31 | 596.972 |
| 12/06/93" | 15:30:00" | 5.712 | 21.05 | 612.31 | 596.972 |
| 12/06/93" | 15:45:00" | 5.712 | 21.05 | 612.31 | 596.972 |
| 12/06/93" | 16:00:00" | 5.709 | 21.05 | 612.31 | 596.969 |
| 12/06/93" | 16:15:00" | 5.709 | 21.05 | 612.31 | 596.969 |
| 12/06/93" | 16:30:00" | 5.709 | 21.05 | 612.31 | 596.969 |
| 12/06/93" | 16:45:00" | 5.706 | 21.05 | 612.31 | 596.966 |
| 12/06/93" | 17:00:00" | 5.706 | 21.05 | 612.31 | 596.966 |
| 12/06/93" | 17:15:00" | 5.703 | 21.05 | 612.31 | 596.963 |
| 12/06/93" | 17:30:00" | 5.7 | 21.05 | 612.31 | 596.96 |
| 12/06/93" | 17:45:00" | 5.697 | 21.05 | 612.31 | 596.957 |
| 12/06/93" | 18:00:00" | 5.697 | 21.05 | 612.31 | 596.957 |
| 12/06/93" | 18:15:00" | 5.694 | 21.05 | 612.31 | 596.954 |
| 12/06/93" | 18:30:00" | 5.694 | 21.05 | 612.31 | 596.954 |
| 12/06/93" | 18:45:00" | 5.691 | 21.05 | 612.31 | 596.951 |
| 12/06/93" | 19:00:00" | 5.688 | 21.05 | 612.31 | 596.948 |
| 12/06/93" | 19:15:00" | 5.685 | 21.05 | 612.31 | 596.945 |
| 12/06/93" | 19:30:00" | 5.682 | 21.05 | 612.31 | 596.942 |
| 12/06/93" | 19:45:00" | 5.679 | 21.05 | 612.31 | 596.939 |
| 12/06/93" | 20:00:00" | 5.676 | 21.05 | 612.31 | 596.936 |
| 12/06/93" | 20:15:00" | 5.676 | 21.05 | 612.31 | 596.936 |
| 12/06/93" | 20:30:00" | 5.673 | 21.05 | 612.31 | 596.933 |
| 12/06/93" | 20:45:00" | 5.667 | 21.05 | 612.31 | 596.927 |
| 12/06/93" | 21:00:00" | 5.664 | 21.05 | 612.31 | 596.924 |
| 12/06/93" | 21:15:00" | 5.658 | 21.05 | 612.31 | 596.918 |
| 12/06/93" | 21:30:00" | 5.652 | 21.05 | 612.31 | 596.912 |
| 12/06/93" | 21:45:00" | 5.649 | 21.05 | 612.31 | 596.909 |
| 12/06/93" | 22:00:00" | 5.646 | 21.05 | 612.31 | 596.906 |
| 12/06/93" | 22:15:00" | 5.64 | 21.05 | 612.31 | 596.9 |
| 12/06/93" | 22:30:00" | 5.637 | 21.05 | 612.31 | 596.897 |
| 12/06/93" | 22:45:00" | 5.628 | 21.05 | 612.31 | 596.888 |
| 12/06/93" | 23:00:00" | 5.626 | 21.05 | 612.31 | 596.886 |
| 12/06/93" | 23:15:00" | 5.623 | 21.05 | 612.31 | 596.883 |
| 12/06/93" | 23:30:00" | 5.62 | 21.05 | 612.31 | 596.88 |
| 12/06/93" | 23:45:00" | 5.614 | 21.05 | 612.31 | 596.874 |
| 12/07/93" | 00:00:00" | 5.608 | 21.05 | 612.31 | 596.868 |
| 12/07/93" | 00:15:00" | 5.605 | 21.05 | 612.31 | 596.865 |
| 12/07/93" | 00:30:00" | 5.602 | 21.05 | 612.31 | 596.862 |
| 12/07/93" | 00:45:00" | 5.599 | 21.05 | 612.31 | 596.859 |
| 12/07/93" | 01:00:00" | 5.599 | 21.05 | 612.31 | 596.859 |
| 12/07/93" | 01:15:00" | 5.596 | 21.05 | 612.31 | 596.856 |
| 12/07/93" | 01:30:00" | 5.587 | 21.05 | 612.31 | 596.847 |
| 12/07/93" | 01:45:00" | 5.581 | 21.05 | 612.31 | 596.841 |
| 12/07/93" | 02:00:00" | 5.575 | 21.05 | 612.31 | 596.835 |
| 12/07/93" | 02:15:00" | 5.566 | 21.05 | 612.31 | 596.826 |
| 12/07/93" | 02:30:00" | 5.563 | 21.05 | 612.31 | 596.823 |
| 12/07/93" | 02:45:00" | 5.56 | 21.05 | 612.31 | 596.82 |
| 12/07/93" | 03:00:00" | 5.551 | 21.05 | 612.31 | 596.811 |
| 12/07/93" | 03:15:00" | 5.548 | 21.05 | 612.31 | 596.808 |
| 12/07/93" | 03:30:00" | 5.545 | 21.05 | 612.31 | 596.805 |
| 12/07/93" | 03:45:00" | 5.542 | 21.05 | 612.31 | 596.802 |
| 12/07/93" | 04:00:00" | 5.536 | 21.05 | 612.31 | 596.796 |
| 12/07/93" | 04:15:00" | 5.53 | 21.05 | 612.31 | 596.79 |

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| 12/07/93" | 04:30:00" | 5.527 | 21.05 | 612.31 | 596.787 |
| 12/07/93" | 04:45:00" | 5.524 | 21.05 | 612.31 | 596.784 |
| 12/07/93" | 05:00:00" | 5.521 | 21.05 | 612.31 | 596.781 |
| 12/07/93" | 05:15:00" | 5.515 | 21.05 | 612.31 | 596.775 |
| 12/07/93" | 05:30:00" | 5.509 | 21.05 | 612.31 | 596.769 |
| 12/07/93" | 05:45:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/07/93" | 06:00:00" | 5.504 | 21.05 | 612.31 | 596.764 |
| 12/07/93" | 06:15:00" | 5.495 | 21.05 | 612.31 | 596.755 |
| 12/07/93" | 06:30:00" | 5.492 | 21.05 | 612.31 | 596.752 |
| 12/07/93" | 06:45:00" | 5.486 | 21.05 | 612.31 | 596.746 |
| 12/07/93" | 07:00:00" | 5.48 | 21.05 | 612.31 | 596.74 |
| 12/07/93" | 07:15:00" | 5.474 | 21.05 | 612.31 | 596.734 |
| 12/07/93" | 07:30:00" | 5.471 | 21.05 | 612.31 | 596.731 |
| 12/07/93" | 07:45:00" | 5.468 | 21.05 | 612.31 | 596.728 |
| 12/07/93" | 08:00:00" | 5.462 | 21.05 | 612.31 | 596.722 |
| 12/07/93" | 08:15:00" | 5.459 | 21.05 | 612.31 | 596.719 |
| 12/07/93" | 08:30:00" | 5.456 | 21.05 | 612.31 | 596.716 |
| 12/07/93" | 08:45:00" | 5.453 | 21.05 | 612.31 | 596.713 |
| 12/07/93" | 09:00:00" | 5.45 | 21.05 | 612.31 | 596.71 |
| 12/07/93" | 09:15:00" | 5.447 | 21.05 | 612.31 | 596.707 |
| 12/07/93" | 09:30:00" | 5.444 | 21.05 | 612.31 | 596.704 |
| 12/07/93" | 09:45:00" | 5.441 | 21.05 | 612.31 | 596.701 |
| 12/07/93" | 10:00:00" | 5.435 | 21.05 | 612.31 | 596.695 |
| 12/07/93" | 10:15:00" | 5.435 | 21.05 | 612.31 | 596.695 |
| 12/07/93" | 10:30:00" | 5.432 | 21.05 | 612.31 | 596.692 |
| 12/07/93" | 10:45:00" | 5.432 | 21.05 | 612.31 | 596.692 |
| 12/07/93" | 11:00:00" | 5.438 | 21.05 | 612.31 | 596.698 |
| 12/07/93" | 11:15:00" | 5.438 | 21.05 | 612.31 | 596.698 |
| 12/07/93" | 11:30:00" | 5.441 | 21.05 | 612.31 | 596.701 |
| 12/07/93" | 11:45:00" | 5.444 | 21.05 | 612.31 | 596.704 |
| 12/07/93" | 12:00:00" | 5.447 | 21.05 | 612.31 | 596.707 |
| 12/07/93" | 12:15:00" | 5.447 | 21.05 | 612.31 | 596.707 |
| 12/07/93" | 12:30:00" | 5.45 | 21.05 | 612.31 | 596.71 |
| 12/07/93" | 12:45:00" | 5.45 | 21.05 | 612.31 | 596.71 |

" Saved Recorder Status
"Type: 2109-5
" Time at Recorder: 12/07/93 12:55:11 Sync'd @ 12/01/93 12:30:34
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ 0.05 is OFF Upper alarm @ 11.84 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 6 days 00:00:00
"
" Storage Capacity: 3238 value records: 33 days 17:30:00
"Output compressed by a factor of 1

BW2
MONITORING WELL BW2
INITIAL DEPTH TO WATER FROM TOP OF CASING = 14.16 FEET (OUTER CASING)
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 5.84 (CALCULATED BASED ON RECALIBRATION

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 5.8 | 20 | 609.35 | 595.15 |
| 12/01/93" | 13:45:00" | 5.8 | 20 | 609.35 | 595.15 |
| 12/01/93" | 14:00:00" | 5.81 | 20 | 609.35 | 595.16 |
| 12/01/93" | 14:15:00" | 5.81 | 20 | 609.35 | 595.16 |
| 12/01/93" | 14:30:00" | 5.82 | 20 | 609.35 | 595.17 |
| 12/01/93" | 14:45:00" | 5.82 | 20 | 609.35 | 595.17 |
| 12/01/93" | 15:00:00" | 5.82 | 20 | 609.35 | 595.17 |
| 12/01/93" | 15:15:00" | 5.82 | 20 | 609.35 | 595.17 |
| 12/01/93" | 15:30:00" | 5.82 | 20 | 609.35 | 595.17 |
| 12/01/93" | 15:45:00" | 5.82 | 20 | 609.35 | 595.17 |
| 12/01/93" | 16:00:00" | 5.84 | 20 | 609.35 | 595.19 |
| 12/01/93" | 16:15:00" | 5.84 | 20 | 609.35 | 595.19 |
| 12/01/93" | 16:30:00" | 5.85 | 20 | 609.35 | 595.2 |
| 12/01/93" | 16:45:00" | 5.85 | 20 | 609.35 | 595.2 |
| 12/01/93" | 17:00:00" | 5.86 | 20 | 609.35 | 595.21 |
| 12/01/93" | 17:15:00" | 5.86 | 20 | 609.35 | 595.21 |
| 12/01/93" | 17:30:00" | 5.87 | 20 | 609.35 | 595.22 |
| 12/01/93" | 17:45:00" | 5.88 | 20 | 609.35 | 595.23 |
| 12/01/93" | 18:00:00" | 5.87 | 20 | 609.35 | 595.22 |
| 12/01/93" | 18:15:00" | 5.88 | 20 | 609.35 | 595.23 |
| 12/01/93" | 18:30:00" | 5.89 | 20 | 609.35 | 595.24 |
| 12/01/93" | 18:45:00" | 5.89 | 20 | 609.35 | 595.24 |
| 12/01/93" | 19:00:00" | 5.89 | 20 | 609.35 | 595.24 |
| 12/01/93" | 19:15:00" | 5.89 | 20 | 609.35 | 595.24 |
| 12/01/93" | 19:30:00" | 5.89 | 20 | 609.35 | 595.24 |
| 12/01/93" | 19:45:00" | 5.91 | 20 | 609.35 | 595.26 |
| 12/01/93" | 20:00:00" | 5.91 | 20 | 609.35 | 595.26 |
| 12/01/93" | 20:15:00" | 5.92 | 20 | 609.35 | 595.27 |
| 12/01/93" | 20:30:00" | 5.92 | 20 | 609.35 | 595.27 |
| 12/01/93" | 20:45:00" | 5.92 | 20 | 609.35 | 595.27 |
| 12/01/93" | 21:00:00" | 5.93 | 20 | 609.35 | 595.28 |
| 12/01/93" | 21:15:00" | 5.93 | 20 | 609.35 | 595.28 |
| 12/01/93" | 21:30:00" | 5.93 | 20 | 609.35 | 595.28 |
| 12/01/93" | 21:45:00" | 5.92 | 20 | 609.35 | 595.27 |
| 12/01/93" | 22:00:00" | 5.92 | 20 | 609.35 | 595.27 |
| 12/01/93" | 22:15:00" | 5.94 | 20 | 609.35 | 595.29 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 5.94 | 20 | 609.35 | 595.29 |
| 12/01/93" | 22:45:00" | 5.93 | 20 | 609.35 | 595.28 |
| 12/01/93" | 23:00:00" | 5.94 | 20 | 609.35 | 595.29 |
| 12/01/93" | 23:15:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/01/93" | 23:30:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/01/93" | 23:45:00" | 5.94 | 20 | 609.35 | 595.29 |
| 12/02/93" | 00:00:00" | 5.94 | 20 | 609.35 | 595.29 |
| 12/02/93" | 00:15:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/02/93" | 00:30:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/02/93" | 00:45:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/02/93" | 01:00:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/02/93" | 01:15:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/02/93" | 01:30:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/02/93" | 01:45:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/02/93" | 02:00:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/02/93" | 02:15:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/02/93" | 02:30:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/02/93" | 02:45:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/02/93" | 03:00:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/02/93" | 03:15:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/02/93" | 03:30:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/02/93" | 03:45:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/02/93" | 04:00:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/02/93" | 04:15:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/02/93" | 04:30:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/02/93" | 04:45:00" | 6 | 20 | 609.35 | 595.35 |
| 12/02/93" | 05:00:00" | 6 | 20 | 609.35 | 595.35 |
| 12/02/93" | 05:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 05:30:00" | 6 | 20 | 609.35 | 595.35 |
| 12/02/93" | 05:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 06:00:00" | 6 | 20 | 609.35 | 595.35 |
| 12/02/93" | 06:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 06:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 06:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 07:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 07:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 07:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 07:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 08:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 08:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 08:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 08:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 09:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 09:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 09:30:00" | 6 | 20 | 609.35 | 595.35 |
| 12/02/93" | 09:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 10:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 10:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 10:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 10:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 11:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/02/93" | 11:15:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/02/93" | 11:30:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/02/93" | 11:45:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/02/93" | 12:00:00" | 6.05 | 20 | 609.35 | 595.4 |
| 12/02/93" | 12:15:00" | 6.05 | 20 | 609.35 | 595.4 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/02/93" | 12:45:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/02/93" | 13:00:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 13:15:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 13:30:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 13:45:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 14:00:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 14:15:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 14:30:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/02/93" | 14:45:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/02/93" | 15:00:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/02/93" | 15:15:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/02/93" | 15:30:00" | 6.11 | 20 | 609.35 | 595.46 |
| 12/02/93" | 15:45:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/02/93" | 16:00:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 16:15:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 16:30:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 16:45:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 17:00:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 17:15:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 17:30:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 17:45:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 18:00:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 18:15:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 18:30:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 18:45:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 19:00:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 19:15:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 19:30:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 19:45:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 20:00:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 20:15:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 20:30:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 20:45:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 21:00:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 21:15:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 21:30:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 21:45:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 22:00:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 22:15:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 22:30:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/02/93" | 22:45:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 23:00:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 23:15:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 23:30:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/02/93" | 23:45:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 00:00:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 00:15:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 00:30:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 00:45:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 01:00:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 01:15:00" | 6.05 | 20 | 609.35 | 595.4 |
| 12/03/93" | 01:30:00" | 6.05 | 20 | 609.35 | 595.4 |
| 12/03/93" | 01:45:00" | 6.05 | 20 | 609.35 | 595.4 |
| 12/03/93" | 02:00:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 02:15:00" | 6.03 | 20 | 609.35 | 595.38 |

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|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 02:45:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 03:00:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 03:15:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 03:30:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 03:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 04:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 04:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 04:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 04:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 05:00:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 05:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 05:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 05:45:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 06:00:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 06:15:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 06:30:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 06:45:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 07:00:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 07:15:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 07:30:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 07:45:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 08:00:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 08:15:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 08:30:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 08:45:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 09:00:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 09:15:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 09:30:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 09:45:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 10:00:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/03/93" | 10:15:00" | 5.95 | 20 | 609.35 | 595.3 |
| 12/03/93" | 10:30:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/03/93" | 10:45:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/03/93" | 11:00:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/03/93" | 11:15:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/03/93" | 11:30:00" | 5.96 | 20 | 609.35 | 595.31 |
| 12/03/93" | 11:45:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 12:00:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 12:15:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 12:30:00" | 5.98 | 20 | 609.35 | 595.33 |
| 12/03/93" | 12:45:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 13:00:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 13:15:00" | 5.99 | 20 | 609.35 | 595.34 |
| 12/03/93" | 13:30:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 13:45:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 14:00:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 14:15:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 14:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 14:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 15:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 15:15:00" | 6 | 20 | 609.35 | 595.35 |
| 12/03/93" | 15:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 15:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 16:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 16:15:00" | 6.01 | 20 | 609.35 | 595.36 |

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|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 16:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 17:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 17:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 17:30:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 17:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 18:00:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 18:15:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 18:30:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 18:45:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 19:00:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 19:15:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 19:30:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 19:45:00" | 6.01 | 20 | 609.35 | 595.36 |
| 12/03/93" | 20:00:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 20:15:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 20:30:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 20:45:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 21:00:00" | 6.02 | 20 | 609.35 | 595.37 |
| 12/03/93" | 21:15:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 21:30:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 21:45:00" | 6.03 | 20 | 609.35 | 595.38 |
| 12/03/93" | 22:00:00" | 6.05 | 20 | 609.35 | 595.4 |
| 12/03/93" | 22:15:00" | 6.05 | 20 | 609.35 | 595.4 |
| 12/03/93" | 22:30:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 22:45:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 23:00:00" | 6.06 | 20 | 609.35 | 595.41 |
| 12/03/93" | 23:15:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/03/93" | 23:30:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/03/93" | 23:45:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/04/93" | 00:00:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/04/93" | 00:15:00" | 6.07 | 20 | 609.35 | 595.42 |
| 12/04/93" | 00:30:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/04/93" | 00:45:00" | 6.08 | 20 | 609.35 | 595.43 |
| 12/04/93" | 01:00:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/04/93" | 01:15:00" | 6.09 | 20 | 609.35 | 595.44 |
| 12/04/93" | 01:30:00" | 6.11 | 20 | 609.35 | 595.46 |
| 12/04/93" | 01:45:00" | 6.11 | 20 | 609.35 | 595.46 |
| 12/04/93" | 02:00:00" | 6.11 | 20 | 609.35 | 595.46 |
| 12/04/93" | 02:15:00" | 6.12 | 20 | 609.35 | 595.47 |
| 12/04/93" | 02:30:00" | 6.12 | 20 | 609.35 | 595.47 |
| 12/04/93" | 02:45:00" | 6.12 | 20 | 609.35 | 595.47 |
| 12/04/93" | 03:00:00" | 6.13 | 20 | 609.35 | 595.48 |
| 12/04/93" | 03:15:00" | 6.13 | 20 | 609.35 | 595.48 |
| 12/04/93" | 03:30:00" | 6.13 | 20 | 609.35 | 595.48 |
| 12/04/93" | 03:45:00" | 6.13 | 20 | 609.35 | 595.48 |
| 12/04/93" | 04:00:00" | 6.13 | 20 | 609.35 | 595.48 |
| 12/04/93" | 04:15:00" | 6.14 | 20 | 609.35 | 595.49 |
| 12/04/93" | 04:30:00" | 6.15 | 20 | 609.35 | 595.5 |
| 12/04/93" | 04:45:00" | 6.15 | 20 | 609.35 | 595.5 |
| 12/04/93" | 05:00:00" | 6.15 | 20 | 609.35 | 595.5 |
| 12/04/93" | 05:15:00" | 6.16 | 20 | 609.35 | 595.51 |
| 12/04/93" | 05:30:00" | 6.16 | 20 | 609.35 | 595.51 |
| 12/04/93" | 05:45:00" | 6.16 | 20 | 609.35 | 595.51 |
| 12/04/93" | 06:00:00" | 6.18 | 20 | 609.35 | 595.53 |
| 12/04/93" | 06:15:00" | 6.18 | 20 | 609.35 | 595.53 |

| | | | | | |
|---|---|---|---|---|---|
| 12/04/93" | 06:30:00" | 6.18 | 20 | 609.35 | 595.53 |
| 12/04/93" | 06:45:00" | 6.19 | 20 | 609.35 | 595.54 |
| 12/04/93" | 07:00:00" | 6.19 | 20 | 609.35 | 595.54 |
| 12/04/93" | 07:15:00" | 6.19 | 20 | 609.35 | 595.54 |
| 12/04/93" | 07:30:00" | 6.19 | 20 | 609.35 | 595.54 |
| 12/04/93" | 07:45:00" | 6.2 | 20 | 609.35 | 595.55 |
| 12/04/93" | 08:00:00" | 6.2 | 20 | 609.35 | 595.55 |
| 12/04/93" | 08:15:00" | 6.2 | 20 | 609.35 | 595.55 |
| 12/04/93" | 08:30:00" | 6.21 | 20 | 609.35 | 595.56 |
| 12/04/93" | 08:45:00" | 6.21 | 20 | 609.35 | 595.56 |
| 12/04/93" | 09:00:00" | 6.22 | 20 | 609.35 | 595.57 |
| 12/04/93" | 09:15:00" | 6.22 | 20 | 609.35 | 595.57 |
| 12/04/93" | 09:30:00" | 6.22 | 20 | 609.35 | 595.57 |
| 12/04/93" | 09:45:00" | 6.22 | 20 | 609.35 | 595.57 |
| 12/04/93" | 10:00:00" | 6.22 | 20 | 609.35 | 595.57 |
| 12/04/93" | 10:15:00" | 6.23 | 20 | 609.35 | 595.58 |
| 12/04/93" | 10:30:00" | 6.25 | 20 | 609.35 | 595.6 |
| 12/04/93" | 10:45:00" | 6.25 | 20 | 609.35 | 595.6 |
| 12/04/93" | 11:00:00" | 6.27 | 20 | 609.35 | 595.62 |
| 12/04/93" | 11:15:00" | 6.27 | 20 | 609.35 | 595.62 |
| 12/04/93" | 11:30:00" | 6.28 | 20 | 609.35 | 595.63 |
| 12/04/93" | 11:45:00" | 6.29 | 20 | 609.35 | 595.64 |
| 12/04/93" | 12:00:00" | 6.3 | 20 | 609.35 | 595.65 |
| 12/04/93" | 12:15:00" | 6.32 | 20 | 609.35 | 595.67 |
| 12/04/93" | 12:30:00" | 6.32 | 20 | 609.35 | 595.67 |
| 12/04/93" | 12:45:00" | 6.33 | 20 | 609.35 | 595.68 |
| 12/04/93" | 13:00:00" | 6.34 | 20 | 609.35 | 595.69 |
| 12/04/93" | 13:15:00" | 6.34 | 20 | 609.35 | 595.69 |
| 12/04/93" | 13:30:00" | 6.35 | 20 | 609.35 | 595.7 |
| 12/04/93" | 13:45:00" | 6.36 | 20 | 609.35 | 595.71 |
| 12/04/93" | 14:00:00" | 6.38 | 20 | 609.35 | 595.73 |
| 12/04/93" | 14:15:00" | 6.39 | 20 | 609.35 | 595.74 |
| 12/04/93" | 14:30:00" | 6.39 | 20 | 609.35 | 595.74 |
| 12/04/93" | 14:45:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/04/93" | 15:00:00" | 6.41 | 20 | 609.35 | 595.76 |
| 12/04/93" | 15:15:00" | 6.41 | 20 | 609.35 | 595.76 |
| 12/04/93" | 15:30:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/04/93" | 15:45:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/04/93" | 16:00:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/04/93" | 16:15:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/04/93" | 16:30:00" | 6.45 | 20 | 609.35 | 595.8 |
| 12/04/93" | 16:45:00" | 6.45 | 20 | 609.35 | 595.8 |
| 12/04/93" | 17:00:00" | 6.45 | 20 | 609.35 | 595.8 |
| 12/04/93" | 17:15:00" | 6.46 | 20 | 609.35 | 595.81 |
| 12/04/93" | 17:30:00" | 6.46 | 20 | 609.35 | 595.81 |
| 12/04/93" | 17:45:00" | 6.47 | 20 | 609.35 | 595.82 |
| 12/04/93" | 18:00:00" | 6.47 | 20 | 609.35 | 595.82 |
| 12/04/93" | 18:15:00" | 6.48 | 20 | 609.35 | 595.83 |
| 12/04/93" | 18:30:00" | 6.48 | 20 | 609.35 | 595.83 |
| 12/04/93" | 18:45:00" | 6.48 | 20 | 609.35 | 595.83 |
| 12/04/93" | 19:00:00" | 6.49 | 20 | 609.35 | 595.84 |
| 12/04/93" | 19:15:00" | 6.49 | 20 | 609.35 | 595.84 |
| 12/04/93" | 19:30:00" | 6.5 | 20 | 609.35 | 595.85 |
| 12/04/93" | 19:45:00" | 6.5 | 20 | 609.35 | 595.85 |
| 12/04/93" | 20:00:00" | 6.52 | 20 | 609.35 | 595.87 |
| 12/04/93" | 20:15:00" | 6.52 | 20 | 609.35 | 595.87 |

| | | | | | |
|---|---|---|---|---|---|
| 12/04/93" | 20:30:00" | 6.53 | 20 | 609.35 | 595.88 |
| 12/04/93" | 20:45:00" | 6.54 | 20 | 609.35 | 595.89 |
| 12/04/93" | 21:00:00" | 6.54 | 20 | 609.35 | 595.89 |
| 12/04/93" | 21:15:00" | 6.55 | 20 | 609.35 | 595.9 |
| 12/04/93" | 21:30:00" | 6.55 | 20 | 609.35 | 595.9 |
| 12/04/93" | 21:45:00" | 6.56 | 20 | 609.35 | 595.91 |
| 12/04/93" | 22:00:00" | 6.58 | 20 | 609.35 | 595.93 |
| 12/04/93" | 22:15:00" | 6.58 | 20 | 609.35 | 595.93 |
| 12/04/93" | 22:30:00" | 6.58 | 20 | 609.35 | 595.93 |
| 12/04/93" | 22:45:00" | 6.59 | 20 | 609.35 | 595.94 |
| 12/04/93" | 23:00:00" | 6.59 | 20 | 609.35 | 595.94 |
| 12/04/93" | 23:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/04/93" | 23:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/04/93" | 23:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 00:00:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 00:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 00:30:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 00:45:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 01:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 01:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 01:30:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 01:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 02:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 02:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 02:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 02:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 03:00:00" | 6.65 | 20 | 609.35 | 596 |
| 12/05/93" | 03:15:00" | 6.65 | 20 | 609.35 | 596 |
| 12/05/93" | 03:30:00" | 6.65 | 20 | 609.35 | 596 |
| 12/05/93" | 03:45:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 04:00:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 04:15:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 04:30:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 04:45:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 05:00:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/05/93" | 05:15:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 05:30:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 05:45:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 06:00:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/05/93" | 06:15:00" | 6.65 | 20 | 609.35 | 596 |
| 12/05/93" | 06:30:00" | 6.65 | 20 | 609.35 | 596 |
| 12/05/93" | 06:45:00" | 6.65 | 20 | 609.35 | 596 |
| 12/05/93" | 07:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 07:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 07:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 07:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 08:00:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 08:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 08:30:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 08:45:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 09:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 09:15:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 09:30:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 09:45:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 10:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 10:15:00" | 6.61 | 20 | 609.35 | 595.96 |

| | | | | | |
|---|---|---|---|---|---|
| 12/05/93" | 10:30:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 10:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 11:00:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 11:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 11:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 11:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 12:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 12:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 12:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 12:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 13:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 13:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 13:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 13:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 14:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 14:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 14:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/05/93" | 14:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 15:00:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 15:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 15:30:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 15:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 16:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 16:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 16:30:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 16:45:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 17:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 17:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 17:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 17:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 18:00:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 18:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 18:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 18:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 19:00:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 19:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 19:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 19:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 20:00:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 20:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 20:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 20:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 21:00:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 21:15:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 21:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 21:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 22:00:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/05/93" | 22:15:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 22:30:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 22:45:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 23:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 23:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/05/93" | 23:30:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/05/93" | 23:45:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/06/93" | 00:00:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 00:15:00" | 6.62 | 20 | 609.35 | 595.97 |



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| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 00:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 01:00:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 01:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 01:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 01:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 02:00:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 02:15:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 02:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 02:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 03:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 03:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 03:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 03:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 04:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 04:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 04:30:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 04:45:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 05:00:00" | 6.65 | 20 | 609.35 | 596 |
| 12/06/93" | 05:15:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/06/93" | 05:30:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/06/93" | 05:45:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/06/93" | 06:00:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/06/93" | 06:15:00" | 6.68 | 20 | 609.35 | 596.03 |
| 12/06/93" | 06:30:00" | 6.68 | 20 | 609.35 | 596.03 |
| 12/06/93" | 06:45:00" | 6.68 | 20 | 609.35 | 596.03 |
| 12/06/93" | 07:00:00" | 6.68 | 20 | 609.35 | 596.03 |
| 12/06/93" | 07:15:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 07:30:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 07:45:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 08:00:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 08:15:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 08:30:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 08:45:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 09:00:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 09:15:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 09:30:00" | 6.7 | 20 | 609.35 | 596.05 |
| 12/06/93" | 09:45:00" | 6.7 | 20 | 609.35 | 596.05 |
| 12/06/93" | 10:00:00" | 6.72 | 20 | 609.35 | 596.07 |
| 12/06/93" | 10:15:00" | 6.73 | 20 | 609.35 | 596.08 |
| 12/06/93" | 10:30:00" | 6.72 | 20 | 609.35 | 596.07 |
| 12/06/93" | 10:45:00" | 6.73 | 20 | 609.35 | 596.08 |
| 12/06/93" | 11:00:00" | 6.73 | 20 | 609.35 | 596.08 |
| 12/06/93" | 11:15:00" | 6.74 | 20 | 609.35 | 596.09 |
| 12/06/93" | 11:30:00" | 6.74 | 20 | 609.35 | 596.09 |
| 12/06/93" | 11:45:00" | 6.74 | 20 | 609.35 | 596.09 |
| 12/06/93" | 12:00:00" | 6.75 | 20 | 609.35 | 596.1 |
| 12/06/93" | 12:15:00" | 6.75 | 20 | 609.35 | 596.1 |
| 12/06/93" | 12:30:00" | 6.76 | 20 | 609.35 | 596.11 |
| 12/06/93" | 12:45:00" | 6.76 | 20 | 609.35 | 596.11 |
| 12/06/93" | 13:00:00" | 6.76 | 20 | 609.35 | 596.11 |
| 12/06/93" | 13:15:00" | 6.77 | 20 | 609.35 | 596.12 |
| 12/06/93" | 13:30:00" | 6.77 | 20 | 609.35 | 596.12 |
| 12/06/93" | 13:45:00" | 6.77 | 20 | 609.35 | 596.12 |
| 12/06/93" | 14:00:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 14:15:00" | 6.79 | 20 | 609.35 | 596.14 |

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|---|---|---|---|---|---|
| 12/06/93" | 14:30:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 14:45:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 15:00:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 15:15:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 15:30:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 15:45:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 16:00:00" | 6.79 | 20 | 609.35 | 596.14 |
| 12/06/93" | 16:15:00" | 6.77 | 20 | 609.35 | 596.12 |
| 12/06/93" | 16:30:00" | 6.77 | 20 | 609.35 | 596.12 |
| 12/06/93" | 16:45:00" | 6.77 | 20 | 609.35 | 596.12 |
| 12/06/93" | 17:00:00" | 6.76 | 20 | 609.35 | 596.11 |
| 12/06/93" | 17:15:00" | 6.76 | 20 | 609.35 | 596.11 |
| 12/06/93" | 17:30:00" | 6.75 | 20 | 609.35 | 596.1 |
| 12/06/93" | 17:45:00" | 6.75 | 20 | 609.35 | 596.1 |
| 12/06/93" | 18:00:00" | 6.75 | 20 | 609.35 | 596.1 |
| 12/06/93" | 18:15:00" | 6.74 | 20 | 609.35 | 596.09 |
| 12/06/93" | 18:30:00" | 6.73 | 20 | 609.35 | 596.08 |
| 12/06/93" | 18:45:00" | 6.73 | 20 | 609.35 | 596.08 |
| 12/06/93" | 19:00:00" | 6.72 | 20 | 609.35 | 596.07 |
| 12/06/93" | 19:15:00" | 6.72 | 20 | 609.35 | 596.07 |
| 12/06/93" | 19:30:00" | 6.72 | 20 | 609.35 | 596.07 |
| 12/06/93" | 19:45:00" | 6.7 | 20 | 609.35 | 596.05 |
| 12/06/93" | 20:00:00" | 6.7 | 20 | 609.35 | 596.05 |
| 12/06/93" | 20:15:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 20:30:00" | 6.69 | 20 | 609.35 | 596.04 |
| 12/06/93" | 20:45:00" | 6.68 | 20 | 609.35 | 596.03 |
| 12/06/93" | 21:00:00" | 6.68 | 20 | 609.35 | 596.03 |
| 12/06/93" | 21:15:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/06/93" | 21:30:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/06/93" | 21:45:00" | 6.67 | 20 | 609.35 | 596.02 |
| 12/06/93" | 22:00:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/06/93" | 22:15:00" | 6.66 | 20 | 609.35 | 596.01 |
| 12/06/93" | 22:30:00" | 6.65 | 20 | 609.35 | 596 |
| 12/06/93" | 22:45:00" | 6.65 | 20 | 609.35 | 596 |
| 12/06/93" | 23:00:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 23:15:00" | 6.63 | 20 | 609.35 | 595.98 |
| 12/06/93" | 23:30:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/06/93" | 23:45:00" | 6.62 | 20 | 609.35 | 595.97 |
| 12/07/93" | 00:00:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/07/93" | 00:15:00" | 6.61 | 20 | 609.35 | 595.96 |
| 12/07/93" | 00:30:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/07/93" | 00:45:00" | 6.6 | 20 | 609.35 | 595.95 |
| 12/07/93" | 01:00:00" | 6.59 | 20 | 609.35 | 595.94 |
| 12/07/93" | 01:15:00" | 6.59 | 20 | 609.35 | 595.94 |
| 12/07/93" | 01:30:00" | 6.58 | 20 | 609.35 | 595.93 |
| 12/07/93" | 01:45:00" | 6.56 | 20 | 609.35 | 595.91 |
| 12/07/93" | 02:00:00" | 6.56 | 20 | 609.35 | 595.91 |
| 12/07/93" | 02:15:00" | 6.55 | 20 | 609.35 | 595.9 |
| 12/07/93" | 02:30:00" | 6.55 | 20 | 609.35 | 595.9 |
| 12/07/93" | 02:45:00" | 6.54 | 20 | 609.35 | 595.89 |
| 12/07/93" | 03:00:00" | 6.53 | 20 | 609.35 | 595.88 |
| 12/07/93" | 03:15:00" | 6.53 | 20 | 609.35 | 595.88 |
| 12/07/93" | 03:30:00" | 6.53 | 20 | 609.35 | 595.88 |
| 12/07/93" | 03:45:00" | 6.52 | 20 | 609.35 | 595.87 |
| 12/07/93" | 04:00:00" | 6.52 | 20 | 609.35 | 595.87 |
| 12/07/93" | 04:15:00" | 6.52 | 20 | 609.35 | 595.87 |

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|---|---|---|---|---|---|
| 12/07/93" | 04:30:00" | 6.5 | 20 | 609.35 | 595.85 |
| 12/07/93" | 04:45:00" | 6.5 | 20 | 609.35 | 595.85 |
| 12/07/93" | 05:00:00" | 6.49 | 20 | 609.35 | 595.84 |
| 12/07/93" | 05:15:00" | 6.5 | 20 | 609.35 | 595.85 |
| 12/07/93" | 05:30:00" | 6.49 | 20 | 609.35 | 595.84 |
| 12/07/93" | 05:45:00" | 6.48 | 20 | 609.35 | 595.83 |
| 12/07/93" | 06:00:00" | 6.48 | 20 | 609.35 | 595.83 |
| 12/07/93" | 06:15:00" | 6.47 | 20 | 609.35 | 595.82 |
| 12/07/93" | 06:30:00" | 6.46 | 20 | 609.35 | 595.81 |
| 12/07/93" | 06:45:00" | 6.46 | 20 | 609.35 | 595.81 |
| 12/07/93" | 07:00:00" | 6.45 | 20 | 609.35 | 595.8 |
| 12/07/93" | 07:15:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/07/93" | 07:30:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/07/93" | 07:45:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/07/93" | 08:00:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/07/93" | 08:15:00" | 6.43 | 20 | 609.35 | 595.78 |
| 12/07/93" | 08:30:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/07/93" | 08:45:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/07/93" | 09:00:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/07/93" | 09:15:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 09:30:00" | 6.41 | 20 | 609.35 | 595.76 |
| 12/07/93" | 09:45:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 10:00:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 10:15:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 10:30:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 10:45:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 11:00:00" | 6.4 | 20 | 609.35 | 595.75 |
| 12/07/93" | 11:15:00" | 6.41 | 20 | 609.35 | 595.76 |
| 12/07/93" | 11:30:00" | 6.41 | 20 | 609.35 | 595.76 |
| 12/07/93" | 11:45:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/07/93" | 12:00:00" | 6.42 | 20 | 609.35 | 595.77 |
| 12/07/93" | 12:15:00" | 6.42 | 20 | 609.35 | 595.77 |
| | | | | | 0 |
| | | | | | 0 |
| | | | | | 0 |

" Saved Recorder Status
"Type: 2109e-5
" Time at Recorder: 12/07/93 14:29:44 Sync'd @ 12/01/93 11:48:54
" Signal process: Not Applicable Accum: Not Scaled
" Values being saved: averages
" Alarm status: Low alarm @ 2.348 is OFF Upper alarm @ 11.977 is OFF
" Nbr of Events: Alarm recording is not enabled
" Averaging period: 00:15:00 Amount of data recorded: 6 days 02:15:00
" Sample Rate: 00:05:00 Excitation time (msec): 015
" Storage Capacity: 8004 value records: 83 days 09:00:00
"Output compressed by a factor of 1

BW4
MONITORING WELL BW4
INITIAL DEPTH TO WATER FROM TOP OF CASING = 10.88 FEET (OUTER CASING)
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 5.14 (CALCULATED BASED ON RECALIBRATION

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 5.137 | 16.02 | 607.71 | 596.827 |
| 12/01/93" | 13:45:00" | 5.143 | 16.02 | 607.71 | 596.833 |
| 12/01/93" | 14:00:00" | 5.146 | 16.02 | 607.71 | 596.836 |
| 12/01/93" | 14:15:00" | 5.149 | 16.02 | 607.71 | 596.839 |
| 12/01/93" | 14:30:00" | 5.158 | 16.02 | 607.71 | 596.848 |
| 12/01/93" | 14:45:00" | 5.161 | 16.02 | 607.71 | 596.851 |
| 12/01/93" | 15:00:00" | 5.155 | 16.02 | 607.71 | 596.845 |
| 12/01/93" | 15:15:00" | 5.158 | 16.02 | 607.71 | 596.848 |
| 12/01/93" | 15:30:00" | 5.161 | 16.02 | 607.71 | 596.851 |
| 12/01/93" | 15:45:00" | 5.158 | 16.02 | 607.71 | 596.848 |
| 12/01/93" | 16:00:00" | 5.161 | 16.02 | 607.71 | 596.851 |
| 12/01/93" | 16:15:00" | 5.164 | 16.02 | 607.71 | 596.854 |
| 12/01/93" | 16:30:00" | 5.167 | 16.02 | 607.71 | 596.857 |
| 12/01/93" | 16:45:00" | 5.167 | 16.02 | 607.71 | 596.857 |
| 12/01/93" | 17:00:00" | 5.167 | 16.02 | 607.71 | 596.857 |
| 12/01/93" | 17:15:00" | 5.167 | 16.02 | 607.71 | 596.857 |
| 12/01/93" | 17:30:00" | 5.17 | 16.02 | 607.71 | 596.86 |
| 12/01/93" | 17:45:00" | 5.172 | 16.02 | 607.71 | 596.862 |
| 12/01/93" | 18:00:00" | 5.172 | 16.02 | 607.71 | 596.862 |
| 12/01/93" | 18:15:00" | 5.172 | 16.02 | 607.71 | 596.862 |
| 12/01/93" | 18:30:00" | 5.175 | 16.02 | 607.71 | 596.865 |
| 12/01/93" | 18:45:00" | 5.172 | 16.02 | 607.71 | 596.862 |
| 12/01/93" | 19:00:00" | 5.175 | 16.02 | 607.71 | 596.865 |
| 12/01/93" | 19:15:00" | 5.175 | 16.02 | 607.71 | 596.865 |
| 12/01/93" | 19:30:00" | 5.175 | 16.02 | 607.71 | 596.865 |
| 12/01/93" | 19:45:00" | 5.175 | 16.02 | 607.71 | 596.865 |
| 12/01/93" | 20:00:00" | 5.178 | 16.02 | 607.71 | 596.868 |
| 12/01/93" | 20:15:00" | 5.181 | 16.02 | 607.71 | 596.871 |
| 12/01/93" | 20:30:00" | 5.181 | 16.02 | 607.71 | 596.871 |
| 12/01/93" | 20:45:00" | 5.184 | 16.02 | 607.71 | 596.874 |
| 12/01/93" | 21:00:00" | 5.187 | 16.02 | 607.71 | 596.877 |
| 12/01/93" | 21:15:00" | 5.19 | 16.02 | 607.71 | 596.88 |
| 12/01/93" | 21:30:00" | 5.19 | 16.02 | 607.71 | 596.88 |
| 12/01/93" | 21:45:00" | 5.193 | 16.02 | 607.71 | 596.883 |
| 12/01/93" | 22:00:00" | 5.196 | 16.02 | 607.71 | 596.886 |
| 12/01/93" | 22:15:00" | 5.199 | 16.02 | 607.71 | 596.889 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 5.202 | 16.02 | 607.71 | 596.892 |
| 12/01/93" | 22:45:00" | 5.205 | 16.02 | 607.71 | 596.895 |
| 12/01/93" | 23:00:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/01/93" | 23:15:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/01/93" | 23:30:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/01/93" | 23:45:00" | 5.211 | 16.02 | 607.71 | 596.901 |
| 12/02/93" | 00:00:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/02/93" | 00:15:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/02/93" | 00:30:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/02/93" | 00:45:00" | 5.211 | 16.02 | 607.71 | 596.901 |
| 12/02/93" | 01:00:00" | 5.208 | 16.02 | 607.71 | 596.898 |
| 12/02/93" | 01:15:00" | 5.211 | 16.02 | 607.71 | 596.901 |
| 12/02/93" | 01:30:00" | 5.214 | 16.02 | 607.71 | 596.904 |
| 12/02/93" | 01:45:00" | 5.214 | 16.02 | 607.71 | 596.904 |
| 12/02/93" | 02:00:00" | 5.214 | 16.02 | 607.71 | 596.904 |
| 12/02/93" | 02:15:00" | 5.219 | 16.02 | 607.71 | 596.909 |
| 12/02/93" | 02:30:00" | 5.225 | 16.02 | 607.71 | 596.915 |
| 12/02/93" | 02:45:00" | 5.228 | 16.02 | 607.71 | 596.918 |
| 12/02/93" | 03:00:00" | 5.228 | 16.02 | 607.71 | 596.918 |
| 12/02/93" | 03:15:00" | 5.222 | 16.02 | 607.71 | 596.912 |
| 12/02/93" | 03:30:00" | 5.222 | 16.02 | 607.71 | 596.912 |
| 12/02/93" | 03:45:00" | 5.228 | 16.02 | 607.71 | 596.918 |
| 12/02/93" | 04:00:00" | 5.231 | 16.02 | 607.71 | 596.921 |
| 12/02/93" | 04:15:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 04:30:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 04:45:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 05:00:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 05:15:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 05:30:00" | 5.24 | 16.02 | 607.71 | 596.93 |
| 12/02/93" | 05:45:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 06:00:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 06:15:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 06:30:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 06:45:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 07:00:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 07:15:00" | 5.24 | 16.02 | 607.71 | 596.93 |
| 12/02/93" | 07:30:00" | 5.24 | 16.02 | 607.71 | 596.93 |
| 12/02/93" | 07:45:00" | 5.243 | 16.02 | 607.71 | 596.933 |
| 12/02/93" | 08:00:00" | 5.24 | 16.02 | 607.71 | 596.93 |
| 12/02/93" | 08:15:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 08:30:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 08:45:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 09:00:00" | 5.231 | 16.02 | 607.71 | 596.921 |
| 12/02/93" | 09:15:00" | 5.231 | 16.02 | 607.71 | 596.921 |
| 12/02/93" | 09:30:00" | 5.234 | 16.02 | 607.71 | 596.924 |
| 12/02/93" | 09:45:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 10:00:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 10:15:00" | 5.237 | 16.02 | 607.71 | 596.927 |
| 12/02/93" | 10:30:00" | 5.243 | 16.02 | 607.71 | 596.933 |
| 12/02/93" | 10:45:00" | 5.246 | 16.02 | 607.71 | 596.936 |
| 12/02/93" | 11:00:00" | 5.249 | 16.02 | 607.71 | 596.939 |
| 12/02/93" | 11:15:00" | 5.255 | 16.02 | 607.71 | 596.945 |
| 12/02/93" | 11:30:00" | 5.269 | 16.02 | 607.71 | 596.959 |
| 12/02/93" | 11:45:00" | 5.281 | 16.02 | 607.71 | 596.971 |
| 12/02/93" | 12:00:00" | 5.29 | 16.02 | 607.71 | 596.98 |
| 12/02/93" | 12:15:00" | 5.299 | 16.02 | 607.71 | 596.989 |

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|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 5.31 | 16.02 | 607.71 | 597 |
| 12/02/93" | 12:45:00" | 5.308 | 16.02 | 607.71 | 596.998 |
| 12/02/93" | 13:00:00" | 5.313 | 16.02 | 607.71 | 597.003 |
| 12/02/93" | 13:15:00" | 5.322 | 16.02 | 607.71 | 597.012 |
| 12/02/93" | 13:30:00" | 5.328 | 16.02 | 607.71 | 597.018 |
| 12/02/93" | 13:45:00" | 5.331 | 16.02 | 607.71 | 597.021 |
| 12/02/93" | 14:00:00" | 5.331 | 16.02 | 607.71 | 597.021 |
| 12/02/93" | 14:15:00" | 5.337 | 16.02 | 607.71 | 597.027 |
| 12/02/93" | 14:30:00" | 5.34 | 16.02 | 607.71 | 597.03 |
| 12/02/93" | 14:45:00" | 5.34 | 16.02 | 607.71 | 597.03 |
| 12/02/93" | 15:00:00" | 5.34 | 16.02 | 607.71 | 597.03 |
| 12/02/93" | 15:15:00" | 5.34 | 16.02 | 607.71 | 597.03 |
| 12/02/93" | 15:30:00" | 5.337 | 16.02 | 607.71 | 597.027 |
| 12/02/93" | 15:45:00" | 5.334 | 16.02 | 607.71 | 597.024 |
| 12/02/93" | 16:00:00" | 5.325 | 16.02 | 607.71 | 597.015 |
| 12/02/93" | 16:15:00" | 5.322 | 16.02 | 607.71 | 597.012 |
| 12/02/93" | 16:30:00" | 5.319 | 16.02 | 607.71 | 597.009 |
| 12/02/93" | 16:45:00" | 5.313 | 16.02 | 607.71 | 597.003 |
| 12/02/93" | 17:00:00" | 5.313 | 16.02 | 607.71 | 597.003 |
| 12/02/93" | 17:15:00" | 5.308 | 16.02 | 607.71 | 596.998 |
| 12/02/93" | 17:30:00" | 5.302 | 16.02 | 607.71 | 596.992 |
| 12/02/93" | 17:45:00" | 5.296 | 16.02 | 607.71 | 596.986 |
| 12/02/93" | 18:00:00" | 5.293 | 16.02 | 607.71 | 596.983 |
| 12/02/93" | 18:15:00" | 5.29 | 16.02 | 607.71 | 596.98 |
| 12/02/93" | 18:30:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/02/93" | 18:45:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/02/93" | 19:00:00" | 5.281 | 16.02 | 607.71 | 596.971 |
| 12/02/93" | 19:15:00" | 5.281 | 16.02 | 607.71 | 596.971 |
| 12/02/93" | 19:30:00" | 5.284 | 16.02 | 607.71 | 596.974 |
| 12/02/93" | 19:45:00" | 5.281 | 16.02 | 607.71 | 596.971 |
| 12/02/93" | 20:00:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/02/93" | 20:15:00" | 5.29 | 16.02 | 607.71 | 596.98 |
| 12/02/93" | 20:30:00" | 5.29 | 16.02 | 607.71 | 596.98 |
| 12/02/93" | 20:45:00" | 5.293 | 16.02 | 607.71 | 596.983 |
| 12/02/93" | 21:00:00" | 5.296 | 16.02 | 607.71 | 596.986 |
| 12/02/93" | 21:15:00" | 5.299 | 16.02 | 607.71 | 596.989 |
| 12/02/93" | 21:30:00" | 5.299 | 16.02 | 607.71 | 596.989 |
| 12/02/93" | 21:45:00" | 5.302 | 16.02 | 607.71 | 596.992 |
| 12/02/93" | 22:00:00" | 5.305 | 16.02 | 607.71 | 596.995 |
| 12/02/93" | 22:15:00" | 5.308 | 16.02 | 607.71 | 596.998 |
| 12/02/93" | 22:30:00" | 5.305 | 16.02 | 607.71 | 596.995 |
| 12/02/93" | 22:45:00" | 5.305 | 16.02 | 607.71 | 596.995 |
| 12/02/93" | 23:00:00" | 5.305 | 16.02 | 607.71 | 596.995 |
| 12/02/93" | 23:15:00" | 5.299 | 16.02 | 607.71 | 596.989 |
| 12/02/93" | 23:30:00" | 5.296 | 16.02 | 607.71 | 596.986 |
| 12/02/93" | 23:45:00" | 5.293 | 16.02 | 607.71 | 596.983 |
| 12/03/93" | 00:00:00" | 5.29 | 16.02 | 607.71 | 596.98 |
| 12/03/93" | 00:15:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/03/93" | 00:30:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/03/93" | 00:45:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/03/93" | 01:00:00" | 5.281 | 16.02 | 607.71 | 596.971 |
| 12/03/93" | 01:15:00" | 5.281 | 16.02 | 607.71 | 596.971 |
| 12/03/93" | 01:30:00" | 5.284 | 16.02 | 607.71 | 596.974 |
| 12/03/93" | 01:45:00" | 5.278 | 16.02 | 607.71 | 596.968 |
| 12/03/93" | 02:00:00" | 5.272 | 16.02 | 607.71 | 596.962 |
| 12/03/93" | 02:15:00" | 5.266 | 16.02 | 607.71 | 596.956 |

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|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 5.261 | 16.02 | 607.71 | 596.951 |
| 12/03/93" | 02:45:00" | 5.258 | 16.02 | 607.71 | 596.948 |
| 12/03/93" | 03:00:00" | 5.252 | 16.02 | 607.71 | 596.942 |
| 12/03/93" | 03:15:00" | 5.252 | 16.02 | 607.71 | 596.942 |
| 12/03/93" | 03:30:00" | 5.246 | 16.02 | 607.71 | 596.936 |
| 12/03/93" | 03:45:00" | 5.246 | 16.02 | 607.71 | 596.936 |
| 12/03/93" | 04:00:00" | 5.246 | 16.02 | 607.71 | 596.936 |
| 12/03/93" | 04:15:00" | 5.237 | 16.02 | 607.71 | 596.927 |
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| 12/03/93" | 06:00:00" | 5.228 | 16.02 | 607.71 | 596.918 |
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| 12/03/93" | 14:00:00" | 5.287 | 16.02 | 607.71 | 596.977 |
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| 12/03/93" | 14:45:00" | 5.293 | 16.02 | 607.71 | 596.983 |
| 12/03/93" | 15:00:00" | 5.29 | 16.02 | 607.71 | 596.98 |
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| 12/03/93" | 16:00:00" | 5.284 | 16.02 | 607.71 | 596.974 |
| 12/03/93" | 16:15:00" | 5.284 | 16.02 | 607.71 | 596.974 |

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| 12/03/93" | 16:30:00" | 5.287 | 16.02 | 607.71 | 596.977 |
| 12/03/93" | 16:45:00" | 5.284 | 16.02 | 607.71 | 596.974 |
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| 12/03/93" | 19:00:00" | 5.296 | 16.02 | 607.71 | 596.986 |
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| 12/03/93" | 20:00:00" | 5.293 | 16.02 | 607.71 | 596.983 |
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| 12/03/93" | 22:00:00" | 5.316 | 16.02 | 607.71 | 597.006 |
| 12/03/93" | 22:15:00" | 5.322 | 16.02 | 607.71 | 597.012 |
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| 12/04/93" | 00:00:00" | 5.34 | 16.02 | 607.71 | 597.03 |
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| 12/04/93" | 01:00:00" | 5.357 | 16.02 | 607.71 | 597.047 |
| 12/04/93" | 01:15:00" | 5.363 | 16.02 | 607.71 | 597.053 |
| 12/04/93" | 01:30:00" | 5.366 | 16.02 | 607.71 | 597.056 |
| 12/04/93" | 01:45:00" | 5.372 | 16.02 | 607.71 | 597.062 |
| 12/04/93" | 02:00:00" | 5.375 | 16.02 | 607.71 | 597.065 |
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| 12/04/93" | 02:30:00" | 5.381 | 16.02 | 607.71 | 597.071 |
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| 12/04/93" | 03:00:00" | 5.393 | 16.02 | 607.71 | 597.083 |
| 12/04/93" | 03:15:00" | 5.401 | 16.02 | 607.71 | 597.091 |
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| 12/04/93" | 04:00:00" | 5.407 | 16.02 | 607.71 | 597.097 |
| 12/04/93" | 04:15:00" | 5.41 | 16.02 | 607.71 | 597.1 |
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| 12/04/93" | 05:45:00" | 5.437 | 16.02 | 607.71 | 597.127 |
| 12/04/93" | 06:00:00" | 5.44 | 16.02 | 607.71 | 597.13 |
| 12/04/93" | 06:15:00" | 5.443 | 16.02 | 607.71 | 597.133 |

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| 12/04/93" | 06:30:00" | 5.445 | 16.02 | 607.71 | 597.135 |
| 12/04/93" | 06:45:00" | 5.451 | 16.02 | 607.71 | 597.141 |
| 12/04/93" | 07:00:00" | 5.451 | 16.02 | 607.71 | 597.141 |
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| 12/04/93" | 08:00:00" | 5.463 | 16.02 | 607.71 | 597.153 |
| 12/04/93" | 08:15:00" | 5.466 | 16.02 | 607.71 | 597.156 |
| 12/04/93" | 08:30:00" | 5.472 | 16.02 | 607.71 | 597.162 |
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| 12/04/93" | 09:00:00" | 5.487 | 16.02 | 607.71 | 597.177 |
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| 12/04/93" | 09:30:00" | 5.492 | 16.02 | 607.71 | 597.182 |
| 12/04/93" | 09:45:00" | 5.49 | 16.02 | 607.71 | 597.18 |
| 12/04/93" | 10:00:00" | 5.492 | 16.02 | 607.71 | 597.182 |
| 12/04/93" | 10:15:00" | 5.498 | 16.02 | 607.71 | 597.188 |
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| 12/04/93" | 11:00:00" | 5.534 | 16.02 | 607.71 | 597.224 |
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| 12/04/93" | 11:30:00" | 5.557 | 16.02 | 607.71 | 597.247 |
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| 12/04/93" | 12:00:00" | 5.589 | 16.02 | 607.71 | 597.279 |
| 12/04/93" | 12:15:00" | 5.601 | 16.02 | 607.71 | 597.291 |
| 12/04/93" | 12:30:00" | 5.616 | 16.02 | 607.71 | 597.306 |
| 12/04/93" | 12:45:00" | 5.622 | 16.02 | 607.71 | 597.312 |
| 12/04/93" | 13:00:00" | 5.633 | 16.02 | 607.71 | 597.323 |
| 12/04/93" | 13:15:00" | 5.648 | 16.02 | 607.71 | 597.338 |
| 12/04/93" | 13:30:00" | 5.66 | 16.02 | 607.71 | 597.35 |
| 12/04/93" | 13:45:00" | 5.677 | 16.02 | 607.71 | 597.367 |
| 12/04/93" | 14:00:00" | 5.686 | 16.02 | 607.71 | 597.376 |
| 12/04/93" | 14:15:00" | 5.698 | 16.02 | 607.71 | 597.388 |
| 12/04/93" | 14:30:00" | 5.713 | 16.02 | 607.71 | 597.403 |
| 12/04/93" | 14:45:00" | 5.724 | 16.02 | 607.71 | 597.414 |
| 12/04/93" | 15:00:00" | 5.733 | 16.02 | 607.71 | 597.423 |
| 12/04/93" | 15:15:00" | 5.745 | 16.02 | 607.71 | 597.435 |
| 12/04/93" | 15:30:00" | 5.751 | 16.02 | 607.71 | 597.441 |
| 12/04/93" | 15:45:00" | 5.765 | 16.02 | 607.71 | 597.455 |
| 12/04/93" | 16:00:00" | 5.774 | 16.02 | 607.71 | 597.464 |
| 12/04/93" | 16:15:00" | 5.792 | 16.02 | 607.71 | 597.482 |
| 12/04/93" | 16:30:00" | 5.804 | 16.02 | 607.71 | 597.494 |
| 12/04/93" | 16:45:00" | 5.809 | 16.02 | 607.71 | 597.499 |
| 12/04/93" | 17:00:00" | 5.815 | 16.02 | 607.71 | 597.505 |
| 12/04/93" | 17:15:00" | 5.833 | 16.02 | 607.71 | 597.523 |
| 12/04/93" | 17:30:00" | 5.842 | 16.02 | 607.71 | 597.532 |
| 12/04/93" | 17:45:00" | 5.856 | 16.02 | 607.71 | 597.546 |
| 12/04/93" | 18:00:00" | 5.865 | 16.02 | 607.71 | 597.555 |
| 12/04/93" | 18:15:00" | 5.877 | 16.02 | 607.71 | 597.567 |
| 12/04/93" | 18:30:00" | 5.889 | 16.02 | 607.71 | 597.579 |
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| 12/04/93" | 19:00:00" | 5.909 | 16.02 | 607.71 | 597.599 |
| 12/04/93" | 19:15:00" | 5.921 | 16.02 | 607.71 | 597.611 |
| 12/04/93" | 19:30:00" | 5.933 | 16.02 | 607.71 | 597.623 |
| 12/04/93" | 19:45:00" | 5.947 | 16.02 | 607.71 | 597.637 |
| 12/04/93" | 20:00:00" | 5.959 | 16.02 | 607.71 | 597.649 |
| 12/04/93" | 20:15:00" | 5.971 | 16.02 | 607.71 | 597.661 |

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| 12/04/93" | 20:30:00" | 5.986 | 16.02 | 607.71 | 597.676 |
| 12/04/93" | 20:45:00" | 5.994 | 16.02 | 607.71 | 597.684 |
| 12/04/93" | 21:00:00" | 6.003 | 16.02 | 607.71 | 597.693 |
| 12/04/93" | 21:15:00" | 6.015 | 16.02 | 607.71 | 597.705 |
| 12/04/93" | 21:30:00" | 6.024 | 16.02 | 607.71 | 597.714 |
| 12/04/93" | 21:45:00" | 6.036 | 16.02 | 607.71 | 597.726 |
| 12/04/93" | 22:00:00" | 6.044 | 16.02 | 607.71 | 597.734 |
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| 12/04/93" | 22:30:00" | 6.062 | 16.02 | 607.71 | 597.752 |
| 12/04/93" | 22:45:00" | 6.071 | 16.02 | 607.71 | 597.761 |
| 12/04/93" | 23:00:00" | 6.083 | 16.02 | 607.71 | 597.773 |
| 12/04/93" | 23:15:00" | 6.088 | 16.02 | 607.71 | 597.778 |
| 12/04/93" | 23:30:00" | 6.097 | 16.02 | 607.71 | 597.787 |
| 12/04/93" | 23:45:00" | 6.091 | 16.02 | 607.71 | 597.781 |
| 12/05/93" | 00:00:00" | 6.1 | 16.02 | 607.71 | 597.79 |
| 12/05/93" | 00:15:00" | 6.103 | 16.02 | 607.71 | 597.793 |
| 12/05/93" | 00:30:00" | 6.109 | 16.02 | 607.71 | 597.799 |
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| 12/05/93" | 01:00:00" | 6.118 | 16.02 | 607.71 | 597.808 |
| 12/05/93" | 01:15:00" | 6.127 | 16.02 | 607.71 | 597.817 |
| 12/05/93" | 01:30:00" | 6.132 | 16.02 | 607.71 | 597.822 |
| 12/05/93" | 01:45:00" | 6.141 | 16.02 | 607.71 | 597.831 |
| 12/05/93" | 02:00:00" | 6.147 | 16.02 | 607.71 | 597.837 |
| 12/05/93" | 02:15:00" | 6.15 | 16.02 | 607.71 | 597.84 |
| 12/05/93" | 02:30:00" | 6.153 | 16.02 | 607.71 | 597.843 |
| 12/05/93" | 02:45:00" | 6.15 | 16.02 | 607.71 | 597.84 |
| 12/05/93" | 03:00:00" | 6.156 | 16.02 | 607.71 | 597.846 |
| 12/05/93" | 03:15:00" | 6.162 | 16.02 | 607.71 | 597.852 |
| 12/05/93" | 03:30:00" | 6.165 | 16.02 | 607.71 | 597.855 |
| 12/05/93" | 03:45:00" | 6.165 | 16.02 | 607.71 | 597.855 |
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| 12/05/93" | 04:30:00" | 6.174 | 16.02 | 607.71 | 597.864 |
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| 12/05/93" | 05:15:00" | 6.179 | 16.02 | 607.71 | 597.869 |
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| 12/05/93" | 05:45:00" | 6.176 | 16.02 | 607.71 | 597.866 |
| 12/05/93" | 06:00:00" | 6.174 | 16.02 | 607.71 | 597.864 |
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| 12/05/93" | 06:30:00" | 6.168 | 16.02 | 607.71 | 597.858 |
| 12/05/93" | 06:45:00" | 6.162 | 16.02 | 607.71 | 597.852 |
| 12/05/93" | 07:00:00" | 6.159 | 16.02 | 607.71 | 597.849 |
| 12/05/93" | 07:15:00" | 6.156 | 16.02 | 607.71 | 597.846 |
| 12/05/93" | 07:30:00" | 6.156 | 16.02 | 607.71 | 597.846 |
| 12/05/93" | 07:45:00" | 6.153 | 16.02 | 607.71 | 597.843 |
| 12/05/93" | 08:00:00" | 6.15 | 16.02 | 607.71 | 597.84 |
| 12/05/93" | 08:15:00" | 6.144 | 16.02 | 607.71 | 597.834 |
| 12/05/93" | 08:30:00" | 6.141 | 16.02 | 607.71 | 597.831 |
| 12/05/93" | 08:45:00" | 6.138 | 16.02 | 607.71 | 597.828 |
| 12/05/93" | 09:00:00" | 6.138 | 16.02 | 607.71 | 597.828 |
| 12/05/93" | 09:15:00" | 6.138 | 16.02 | 607.71 | 597.828 |
| 12/05/93" | 09:30:00" | 6.141 | 16.02 | 607.71 | 597.831 |
| 12/05/93" | 09:45:00" | 6.147 | 16.02 | 607.71 | 597.837 |
| 12/05/93" | 10:00:00" | 6.153 | 16.02 | 607.71 | 597.843 |
| 12/05/93" | 10:15:00" | 6.159 | 16.02 | 607.71 | 597.849 |

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| 12/05/93" | 10:30:00" | 6.159 | 16.02 | 607.71 | 597.849 |
| 12/05/93" | 10:45:00" | 6.165 | 16.02 | 607.71 | 597.855 |
| 12/05/93" | 11:00:00" | 6.171 | 16.02 | 607.71 | 597.861 |
| 12/05/93" | 11:15:00" | 6.176 | 16.02 | 607.71 | 597.866 |
| 12/05/93" | 11:30:00" | 6.182 | 16.02 | 607.71 | 597.872 |
| 12/05/93" | 11:45:00" | 6.185 | 16.02 | 607.71 | 597.875 |
| 12/05/93" | 12:00:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 12:15:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 12:30:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 12:45:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 13:00:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 13:15:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 13:30:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 13:45:00" | 6.188 | 16.02 | 607.71 | 597.878 |
| 12/05/93" | 14:00:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 14:15:00" | 6.194 | 16.02 | 607.71 | 597.884 |
| 12/05/93" | 14:30:00" | 6.194 | 16.02 | 607.71 | 597.884 |
| 12/05/93" | 14:45:00" | 6.194 | 16.02 | 607.71 | 597.884 |
| 12/05/93" | 15:00:00" | 6.194 | 16.02 | 607.71 | 597.884 |
| 12/05/93" | 15:15:00" | 6.191 | 16.02 | 607.71 | 597.881 |
| 12/05/93" | 15:30:00" | 6.185 | 16.02 | 607.71 | 597.875 |
| 12/05/93" | 15:45:00" | 6.182 | 16.02 | 607.71 | 597.872 |
| 12/05/93" | 16:00:00" | 6.182 | 16.02 | 607.71 | 597.872 |
| 12/05/93" | 16:15:00" | 6.179 | 16.02 | 607.71 | 597.869 |
| 12/05/93" | 16:30:00" | 6.179 | 16.02 | 607.71 | 597.869 |
| 12/05/93" | 16:45:00" | 6.176 | 16.02 | 607.71 | 597.866 |
| 12/05/93" | 17:00:00" | 6.174 | 16.02 | 607.71 | 597.864 |
| 12/05/93" | 17:15:00" | 6.171 | 16.02 | 607.71 | 597.861 |
| 12/05/93" | 17:30:00" | 6.171 | 16.02 | 607.71 | 597.861 |
| 12/05/93" | 17:45:00" | 6.171 | 16.02 | 607.71 | 597.861 |
| 12/05/93" | 18:00:00" | 6.165 | 16.02 | 607.71 | 597.855 |
| 12/05/93" | 18:15:00" | 6.165 | 16.02 | 607.71 | 597.855 |
| 12/05/93" | 18:30:00" | 6.168 | 16.02 | 607.71 | 597.858 |
| 12/05/93" | 18:45:00" | 6.174 | 16.02 | 607.71 | 597.864 |
| 12/05/93" | 19:00:00" | 6.174 | 16.02 | 607.71 | 597.864 |
| 12/05/93" | 19:15:00" | 6.176 | 16.02 | 607.71 | 597.866 |
| 12/05/93" | 19:30:00" | 6.179 | 16.02 | 607.71 | 597.869 |
| 12/05/93" | 19:45:00" | 6.179 | 16.02 | 607.71 | 597.869 |
| 12/05/93" | 20:00:00" | 6.182 | 16.02 | 607.71 | 597.872 |
| 12/05/93" | 20:15:00" | 6.182 | 16.02 | 607.71 | 597.872 |
| 12/05/93" | 20:30:00" | 6.185 | 16.02 | 607.71 | 597.875 |
| 12/05/93" | 20:45:00" | 6.188 | 16.02 | 607.71 | 597.878 |
| 12/05/93" | 21:00:00" | 6.188 | 16.02 | 607.71 | 597.878 |
| 12/05/93" | 21:15:00" | 6.185 | 16.02 | 607.71 | 597.875 |
| 12/05/93" | 21:30:00" | 6.194 | 16.02 | 607.71 | 597.884 |
| 12/05/93" | 21:45:00" | 6.197 | 16.02 | 607.71 | 597.887 |
| 12/05/93" | 22:00:00" | 6.197 | 16.02 | 607.71 | 597.887 |
| 12/05/93" | 22:15:00" | 6.197 | 16.02 | 607.71 | 597.887 |
| 12/05/93" | 22:30:00" | 6.203 | 16.02 | 607.71 | 597.893 |
| 12/05/93" | 22:45:00" | 6.206 | 16.02 | 607.71 | 597.896 |
| 12/05/93" | 23:00:00" | 6.206 | 16.02 | 607.71 | 597.896 |
| 12/05/93" | 23:15:00" | 6.209 | 16.02 | 607.71 | 597.899 |
| 12/05/93" | 23:30:00" | 6.215 | 16.02 | 607.71 | 597.905 |
| 12/05/93" | 23:45:00" | 6.212 | 16.02 | 607.71 | 597.902 |
| 12/06/93" | 00:00:00" | 6.215 | 16.02 | 607.71 | 597.905 |
| 12/06/93" | 00:15:00" | 6.218 | 16.02 | 607.71 | 597.908 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 6.22 | 16.02 | 607.71 | 597.91 |
| 12/06/93" | 00:45:00" | 6.22 | 16.02 | 607.71 | 597.91 |
| 12/06/93" | 01:00:00" | 6.223 | 16.02 | 607.71 | 597.913 |
| 12/06/93" | 01:15:00" | 6.232 | 16.02 | 607.71 | 597.922 |
| 12/06/93" | 01:30:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 01:45:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 02:00:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 02:15:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 02:30:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 02:45:00" | 6.241 | 16.02 | 607.71 | 597.931 |
| 12/06/93" | 03:00:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 03:15:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 03:30:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/06/93" | 03:45:00" | 6.244 | 16.02 | 607.71 | 597.934 |
| 12/06/93" | 04:00:00" | 6.247 | 16.02 | 607.71 | 597.937 |
| 12/06/93" | 04:15:00" | 6.253 | 16.02 | 607.71 | 597.943 |
| 12/06/93" | 04:30:00" | 6.253 | 16.02 | 607.71 | 597.943 |
| 12/06/93" | 04:45:00" | 6.256 | 16.02 | 607.71 | 597.946 |
| 12/06/93" | 05:00:00" | 6.259 | 16.02 | 607.71 | 597.949 |
| 12/06/93" | 05:15:00" | 6.27 | 16.02 | 607.71 | 597.96 |
| 12/06/93" | 05:30:00" | 6.279 | 16.02 | 607.71 | 597.969 |
| 12/06/93" | 05:45:00" | 6.288 | 16.02 | 607.71 | 597.978 |
| 12/06/93" | 06:00:00" | 6.297 | 16.02 | 607.71 | 597.987 |
| 12/06/93" | 06:15:00" | 6.3 | 16.02 | 607.71 | 597.99 |
| 12/06/93" | 06:30:00" | 6.3 | 16.02 | 607.71 | 597.99 |
| 12/06/93" | 06:45:00" | 6.303 | 16.02 | 607.71 | 597.993 |
| 12/06/93" | 07:00:00" | 6.309 | 16.02 | 607.71 | 597.999 |
| 12/06/93" | 07:15:00" | 6.311 | 16.02 | 607.71 | 598.001 |
| 12/06/93" | 07:30:00" | 6.311 | 16.02 | 607.71 | 598.001 |
| 12/06/93" | 07:45:00" | 6.314 | 16.02 | 607.71 | 598.004 |
| 12/06/93" | 08:00:00" | 6.314 | 16.02 | 607.71 | 598.004 |
| 12/06/93" | 08:15:00" | 6.311 | 16.02 | 607.71 | 598.001 |
| 12/06/93" | 08:30:00" | 6.314 | 16.02 | 607.71 | 598.004 |
| 12/06/93" | 08:45:00" | 6.317 | 16.02 | 607.71 | 598.007 |
| 12/06/93" | 09:00:00" | 6.32 | 16.02 | 607.71 | 598.01 |
| 12/06/93" | 09:15:00" | 6.326 | 16.02 | 607.71 | 598.016 |
| 12/06/93" | 09:30:00" | 6.329 | 16.02 | 607.71 | 598.019 |
| 12/06/93" | 09:45:00" | 6.332 | 16.02 | 607.71 | 598.022 |
| 12/06/93" | 10:00:00" | 6.332 | 16.02 | 607.71 | 598.022 |
| 12/06/93" | 10:15:00" | 6.344 | 16.02 | 607.71 | 598.034 |
| 12/06/93" | 10:30:00" | 6.35 | 16.02 | 607.71 | 598.04 |
| 12/06/93" | 10:45:00" | 6.353 | 16.02 | 607.71 | 598.043 |
| 12/06/93" | 11:00:00" | 6.358 | 16.02 | 607.71 | 598.048 |
| 12/06/93" | 11:15:00" | 6.361 | 16.02 | 607.71 | 598.051 |
| 12/06/93" | 11:30:00" | 6.37 | 16.02 | 607.71 | 598.06 |
| 12/06/93" | 11:45:00" | 6.373 | 16.02 | 607.71 | 598.063 |
| 12/06/93" | 12:00:00" | 6.376 | 16.02 | 607.71 | 598.066 |
| 12/06/93" | 12:15:00" | 6.382 | 16.02 | 607.71 | 598.072 |
| 12/06/93" | 12:30:00" | 6.391 | 16.02 | 607.71 | 598.081 |
| 12/06/93" | 12:45:00" | 6.394 | 16.02 | 607.71 | 598.084 |
| 12/06/93" | 13:00:00" | 6.397 | 16.02 | 607.71 | 598.087 |
| 12/06/93" | 13:15:00" | 6.4 | 16.02 | 607.71 | 598.09 |
| 12/06/93" | 13:30:00" | 6.402 | 16.02 | 607.71 | 598.092 |
| 12/06/93" | 13:45:00" | 6.408 | 16.02 | 607.71 | 598.098 |
| 12/06/93" | 14:00:00" | 6.408 | 16.02 | 607.71 | 598.098 |
| 12/06/93" | 14:15:00" | 6.408 | 16.02 | 607.71 | 598.098 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 14:30:00" | 6.411 | 16.02 | 607.71 | 598.101 |
| 12/06/93" | 14:45:00" | 6.414 | 16.02 | 607.71 | 598.104 |
| 12/06/93" | 15:00:00" | 6.414 | 16.02 | 607.71 | 598.104 |
| 12/06/93" | 15:15:00" | 6.414 | 16.02 | 607.71 | 598.104 |
| 12/06/93" | 15:30:00" | 6.408 | 16.02 | 607.71 | 598.098 |
| 12/06/93" | 15:45:00" | 6.408 | 16.02 | 607.71 | 598.098 |
| 12/06/93" | 16:00:00" | 6.402 | 16.02 | 607.71 | 598.092 |
| 12/06/93" | 16:15:00" | 6.4 | 16.02 | 607.71 | 598.09 |
| 12/06/93" | 16:30:00" | 6.397 | 16.02 | 607.71 | 598.087 |
| 12/06/93" | 16:45:00" | 6.391 | 16.02 | 607.71 | 598.081 |
| 12/06/93" | 17:00:00" | 6.388 | 16.02 | 607.71 | 598.078 |
| 12/06/93" | 17:15:00" | 6.382 | 16.02 | 607.71 | 598.072 |
| 12/06/93" | 17:30:00" | 6.373 | 16.02 | 607.71 | 598.063 |
| 12/06/93" | 17:45:00" | 6.37 | 16.02 | 607.71 | 598.06 |
| 12/06/93" | 18:00:00" | 6.367 | 16.02 | 607.71 | 598.057 |
| 12/06/93" | 18:15:00" | 6.361 | 16.02 | 607.71 | 598.051 |
| 12/06/93" | 18:30:00" | 6.356 | 16.02 | 607.71 | 598.046 |
| 12/06/93" | 18:45:00" | 6.353 | 16.02 | 607.71 | 598.043 |
| 12/06/93" | 19:00:00" | 6.347 | 16.02 | 607.71 | 598.037 |
| 12/06/93" | 19:15:00" | 6.344 | 16.02 | 607.71 | 598.034 |
| 12/06/93" | 19:30:00" | 6.338 | 16.02 | 607.71 | 598.028 |
| 12/06/93" | 19:45:00" | 6.335 | 16.02 | 607.71 | 598.025 |
| 12/06/93" | 20:00:00" | 6.329 | 16.02 | 607.71 | 598.019 |
| 12/06/93" | 20:15:00" | 6.323 | 16.02 | 607.71 | 598.013 |
| 12/06/93" | 20:30:00" | 6.32 | 16.02 | 607.71 | 598.01 |
| 12/06/93" | 20:45:00" | 6.314 | 16.02 | 607.71 | 598.004 |
| 12/06/93" | 21:00:00" | 6.306 | 16.02 | 607.71 | 597.996 |
| 12/06/93" | 21:15:00" | 6.3 | 16.02 | 607.71 | 597.99 |
| 12/06/93" | 21:30:00" | 6.297 | 16.02 | 607.71 | 597.987 |
| 12/06/93" | 21:45:00" | 6.291 | 16.02 | 607.71 | 597.981 |
| 12/06/93" | 22:00:00" | 6.279 | 16.02 | 607.71 | 597.969 |
| 12/06/93" | 22:15:00" | 6.273 | 16.02 | 607.71 | 597.963 |
| 12/06/93" | 22:30:00" | 6.27 | 16.02 | 607.71 | 597.96 |
| 12/06/93" | 22:45:00" | 6.267 | 16.02 | 607.71 | 597.957 |
| 12/06/93" | 23:00:00" | 6.262 | 16.02 | 607.71 | 597.952 |
| 12/06/93" | 23:15:00" | 6.256 | 16.02 | 607.71 | 597.946 |
| 12/06/93" | 23:30:00" | 6.253 | 16.02 | 607.71 | 597.943 |
| 12/06/93" | 23:45:00" | 6.25 | 16.02 | 607.71 | 597.94 |
| 12/07/93" | 00:00:00" | 6.244 | 16.02 | 607.71 | 597.934 |
| 12/07/93" | 00:15:00" | 6.238 | 16.02 | 607.71 | 597.928 |
| 12/07/93" | 00:30:00" | 6.232 | 16.02 | 607.71 | 597.922 |
| 12/07/93" | 00:45:00" | 6.226 | 16.02 | 607.71 | 597.916 |
| 12/07/93" | 01:00:00" | 6.223 | 16.02 | 607.71 | 597.913 |
| 12/07/93" | 01:15:00" | 6.218 | 16.02 | 607.71 | 597.908 |
| 12/07/93" | 01:30:00" | 6.212 | 16.02 | 607.71 | 597.902 |
| 12/07/93" | 01:45:00" | 6.203 | 16.02 | 607.71 | 597.893 |
| 12/07/93" | 02:00:00" | 6.194 | 16.02 | 607.71 | 597.884 |
| 12/07/93" | 02:15:00" | 6.185 | 16.02 | 607.71 | 597.875 |
| 12/07/93" | 02:30:00" | 6.182 | 16.02 | 607.71 | 597.872 |
| 12/07/93" | 02:45:00" | 6.179 | 16.02 | 607.71 | 597.869 |
| 12/07/93" | 03:00:00" | 6.174 | 16.02 | 607.71 | 597.864 |
| 12/07/93" | 03:15:00" | 6.168 | 16.02 | 607.71 | 597.858 |
| 12/07/93" | 03:30:00" | 6.165 | 16.02 | 607.71 | 597.855 |
| 12/07/93" | 03:45:00" | 6.162 | 16.02 | 607.71 | 597.852 |
| 12/07/93" | 04:00:00" | 6.156 | 16.02 | 607.71 | 597.846 |
| 12/07/93" | 04:15:00" | 6.15 | 16.02 | 607.71 | 597.84 |

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|---|---|---|---|---|---|
| 12/07/93" | 04:30:00" | 6.147 | 16.02 | 607.71 | 597.837 |
| 12/07/93" | 04:45:00" | 6.147 | 16.02 | 607.71 | 597.837 |
| 12/07/93" | 05:00:00" | 6.147 | 16.02 | 607.71 | 597.837 |
| 12/07/93" | 05:15:00" | 6.144 | 16.02 | 607.71 | 597.834 |
| 12/07/93" | 05:30:00" | 6.129 | 16.02 | 607.71 | 597.819 |
| 12/07/93" | 05:45:00" | 6.129 | 16.02 | 607.71 | 597.819 |
| 12/07/93" | 06:00:00" | 6.121 | 16.02 | 607.71 | 597.811 |
| 12/07/93" | 06:15:00" | 6.112 | 16.02 | 607.71 | 597.802 |
| 12/07/93" | 06:30:00" | 6.109 | 16.02 | 607.71 | 597.799 |
| 12/07/93" | 06:45:00" | 6.103 | 16.02 | 607.71 | 597.793 |
| 12/07/93" | 07:00:00" | 6.097 | 16.02 | 607.71 | 597.787 |
| 12/07/93" | 07:15:00" | 6.091 | 16.02 | 607.71 | 597.781 |
| 12/07/93" | 07:30:00" | 6.085 | 16.02 | 607.71 | 597.775 |
| 12/07/93" | 07:45:00" | 6.083 | 16.02 | 607.71 | 597.773 |
| 12/07/93" | 08:00:00" | 6.085 | 16.02 | 607.71 | 597.775 |
| 12/07/93" | 08:15:00" | 6.083 | 16.02 | 607.71 | 597.773 |
| 12/07/93" | 08:30:00" | 6.08 | 16.02 | 607.71 | 597.77 |
| 12/07/93" | 08:45:00" | 6.074 | 16.02 | 607.71 | 597.764 |
| 12/07/93" | 09:00:00" | 6.074 | 16.02 | 607.71 | 597.764 |
| 12/07/93" | 09:15:00" | 6.068 | 16.02 | 607.71 | 597.758 |
| 12/07/93" | 09:30:00" | 6.068 | 16.02 | 607.71 | 597.758 |
| 12/07/93" | 09:45:00" | 6.065 | 16.02 | 607.71 | 597.755 |
| 12/07/93" | 10:00:00" | 6.059 | 16.02 | 607.71 | 597.749 |
| 12/07/93" | 10:15:00" | 6.062 | 16.02 | 607.71 | 597.752 |
| 12/07/93" | 10:30:00" | 6.062 | 16.02 | 607.71 | 597.752 |
| 12/07/93" | 10:45:00" | 6.065 | 16.02 | 607.71 | 597.755 |
| 12/07/93" | 11:00:00" | 6.074 | 16.02 | 607.71 | 597.764 |
| 12/07/93" | 11:15:00" | 6.083 | 16.02 | 607.71 | 597.773 |
| 12/07/93" | 11:30:00" | 6.094 | 16.02 | 607.71 | 597.784 |
| 12/07/93" | 11:45:00" | 6.1 | 16.02 | 607.71 | 597.79 |
| 12/07/93" | 12:00:00" | 6.106 | 16.02 | 607.71 | 597.796 |
| 12/07/93" | 12:15:00" | 6.112 | 16.02 | 607.71 | 597.802 |
| 12/07/93" | 12:30:00" | 6.112 | 16.02 | 607.71 | 597.802 |
| 12/07/93" | 12:45:00" | 6.115 | 16.02 | 607.71 | 597.805 |
| 12/07/93" | 13:00:00" | 6.124 | 16.02 | 607.71 | 597.814 |
| 12/07/93" | 13:15:00" | 6.127 | | | |
| 12/07/93" | 13:30:00" | 6.132 | | | |
| 12/07/93" | 13:45:00" | 6.135 | | | |
| 12/07/93" | 14:00:00" | 6.135 | | | |

" Saved Recorder Status
"Type: 2109-5
" Time at Recorder: 12/07/93 14:53:36 Sync'd @ 12/01/93 13:22:48
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ 0.04 is OFF Upper alarm @ 11.68 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 6 days 01:15:00
"
" Storage Capacity: 3238 value records: 33 days 17:30:00
"Output compressed by a factor of 1

CW3B
MONITORING WELL CW3B
INITIAL DEPTH TO WATER FROM TOP OF CASING = 9.96 FEET
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 5.04 (CALCULATED BASED ON RECALIBRATION

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 5.04 | 15 | 600.7 | 590.74 |
| 12/01/93" | 13:45:00" | 5.04 | 15 | 600.7 | 590.74 |
| 12/01/93" | 14:00:00" | 5.05 | 15 | 600.7 | 590.75 |
| 12/01/93" | 14:15:00" | 5.03 | 15 | 600.7 | 590.73 |
| 12/01/93" | 14:30:00" | 5.05 | 15 | 600.7 | 590.75 |
| 12/01/93" | 14:45:00" | 5.06 | 15 | 600.7 | 590.76 |
| 12/01/93" | 15:00:00" | 5.07 | 15 | 600.7 | 590.77 |
| 12/01/93" | 15:15:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/01/93" | 15:30:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/01/93" | 15:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 16:00:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/01/93" | 16:15:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/01/93" | 16:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/01/93" | 16:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/01/93" | 17:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/01/93" | 17:15:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/01/93" | 17:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/01/93" | 17:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/01/93" | 18:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 18:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 18:30:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/01/93" | 18:45:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/01/93" | 19:00:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/01/93" | 19:15:00" | 5.07 | 15 | 600.7 | 590.77 |
| 12/01/93" | 19:30:00" | 5.07 | 15 | 600.7 | 590.77 |
| 12/01/93" | 19:45:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/01/93" | 20:00:00" | 5.07 | 15 | 600.7 | 590.77 |
| 12/01/93" | 20:15:00" | 5.07 | 15 | 600.7 | 590.77 |
| 12/01/93" | 20:30:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/01/93" | 20:45:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/01/93" | 21:00:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/01/93" | 21:15:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/01/93" | 21:30:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/01/93" | 21:45:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/01/93" | 22:00:00" | 5.11 | 15 | 600.7 | 590.81 |
| 12/01/93" | 22:15:00" | 5.11 | 15 | 600.7 | 590.81 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 5.11 | 15 | 600.7 | 590.81 |
| 12/01/93" | 22:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 23:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 23:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 23:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/01/93" | 23:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 00:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 00:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 00:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 00:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 01:00:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 01:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 01:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 01:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 02:00:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 02:15:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 02:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 02:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 03:00:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 03:15:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 03:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 03:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 04:00:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 04:15:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 04:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 04:45:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 05:00:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 05:15:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 05:30:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 05:45:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 06:00:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 06:15:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 06:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 06:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 07:00:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 07:15:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 07:30:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 07:45:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 08:00:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 08:15:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 08:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 08:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 09:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 09:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 09:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 09:45:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 10:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 10:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 10:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 10:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 11:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 11:15:00" | 5.05 | 15 | 600.7 | 590.75 |
| 12/02/93" | 11:30:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/02/93" | 11:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 12:00:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/02/93" | 12:15:00" | 5.12 | 15 | 600.7 | 590.82 |

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|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/02/93" | 12:45:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/02/93" | 13:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 13:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 13:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 13:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 14:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 14:15:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/02/93" | 14:30:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/02/93" | 14:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 15:00:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 15:15:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 15:30:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/02/93" | 15:45:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/02/93" | 16:00:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/02/93" | 16:15:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/02/93" | 16:30:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/02/93" | 16:45:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 17:00:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 17:15:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 17:30:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/02/93" | 17:45:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/02/93" | 18:00:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/02/93" | 18:15:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/02/93" | 18:30:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 18:45:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/02/93" | 19:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 19:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 19:30:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 19:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 20:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 20:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 20:30:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 20:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 21:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 21:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 21:30:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 21:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 22:00:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 22:15:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 22:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 22:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/02/93" | 23:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 23:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 23:30:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/02/93" | 23:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 00:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 00:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 00:30:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/03/93" | 00:45:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/03/93" | 01:00:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/03/93" | 01:15:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 01:30:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/03/93" | 01:45:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/03/93" | 02:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 02:15:00" | 5.18 | 15 | 600.7 | 590.88 |

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|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 02:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 03:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 03:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 03:30:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 03:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 04:00:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 04:15:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 04:30:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 04:45:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 05:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 05:15:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 05:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 05:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 06:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 06:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 06:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 06:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 07:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 07:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 07:30:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 07:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 08:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 08:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 08:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 08:45:00" | 5.13 | 15 | 600.7 | 590.83 |
| 12/03/93" | 09:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 09:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 09:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 09:45:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/03/93" | 10:00:00" | 5.11 | 15 | 600.7 | 590.81 |
| 12/03/93" | 10:15:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/03/93" | 10:30:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/03/93" | 10:45:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/03/93" | 11:00:00" | 5.11 | 15 | 600.7 | 590.81 |
| 12/03/93" | 11:15:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 11:30:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/03/93" | 11:45:00" | 5.08 | 15 | 600.7 | 590.78 |
| 12/03/93" | 12:00:00" | 5.1 | 15 | 600.7 | 590.8 |
| 12/03/93" | 12:15:00" | 5.11 | 15 | 600.7 | 590.81 |
| 12/03/93" | 12:30:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 12:45:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 13:00:00" | 5.12 | 15 | 600.7 | 590.82 |
| 12/03/93" | 13:15:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 13:30:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 13:45:00" | 5.14 | 15 | 600.7 | 590.84 |
| 12/03/93" | 14:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 14:15:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 14:30:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 14:45:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 15:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 15:15:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 15:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 15:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 16:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 16:15:00" | 5.18 | 15 | 600.7 | 590.88 |

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|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 16:45:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 17:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 17:15:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 17:30:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 17:45:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 18:00:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 18:15:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 18:30:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 18:45:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 19:00:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 19:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 19:30:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 19:45:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 20:00:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 20:15:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 20:30:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 20:45:00" | 5.15 | 15 | 600.7 | 590.85 |
| 12/03/93" | 21:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 21:15:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 21:30:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 21:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 22:00:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 22:15:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 22:30:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 22:45:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 23:00:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/03/93" | 23:15:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/03/93" | 23:30:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/03/93" | 23:45:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 00:00:00" | 5.18 | 15 | 600.7 | 590.88 |
| 12/04/93" | 00:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/04/93" | 00:30:00" | 5.17 | 15 | 600.7 | 590.87 |
| 12/04/93" | 00:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/04/93" | 01:00:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 01:15:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/04/93" | 01:30:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 01:45:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/04/93" | 02:00:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 02:15:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 02:30:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 02:45:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/04/93" | 03:00:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/04/93" | 03:15:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/04/93" | 03:30:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 03:45:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/04/93" | 04:00:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/04/93" | 04:15:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/04/93" | 04:30:00" | 5.21 | 15 | 600.7 | 590.91 |
| 12/04/93" | 04:45:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 05:00:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 05:15:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 05:30:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 05:45:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 06:00:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 06:15:00" | 5.22 | 15 | 600.7 | 590.92 |

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|---|---|---|---|---|---|
| 12/04/93" | 06:30:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 06:45:00" | 5.22 | 15 | 600.7 | 590.92 |
| 12/04/93" | 07:00:00" | 5.24 | 15 | 600.7 | 590.94 |
| 12/04/93" | 07:15:00" | 5.24 | 15 | 600.7 | 590.94 |
| 12/04/93" | 07:30:00" | 5.24 | 15 | 600.7 | 590.94 |
| 12/04/93" | 07:45:00" | 5.24 | 15 | 600.7 | 590.94 |
| 12/04/93" | 08:00:00" | 5.24 | 15 | 600.7 | 590.94 |
| 12/04/93" | 08:15:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 08:30:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 08:45:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 09:00:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 09:15:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 09:30:00" | 5.26 | 15 | 600.7 | 590.96 |
| 12/04/93" | 09:45:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 10:00:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 10:15:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 10:30:00" | 5.25 | 15 | 600.7 | 590.95 |
| 12/04/93" | 10:45:00" | 5.27 | 15 | 600.7 | 590.97 |
| 12/04/93" | 11:00:00" | 5.26 | 15 | 600.7 | 590.96 |
| 12/04/93" | 11:15:00" | 5.27 | 15 | 600.7 | 590.97 |
| 12/04/93" | 11:30:00" | 5.27 | 15 | 600.7 | 590.97 |
| 12/04/93" | 11:45:00" | 5.27 | 15 | 600.7 | 590.97 |
| 12/04/93" | 12:00:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/04/93" | 12:15:00" | 5.29 | 15 | 600.7 | 590.99 |
| 12/04/93" | 12:30:00" | 5.32 | 15 | 600.7 | 591.02 |
| 12/04/93" | 12:45:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/04/93" | 13:00:00" | 5.32 | 15 | 600.7 | 591.02 |
| 12/04/93" | 13:15:00" | 5.33 | 15 | 600.7 | 591.03 |
| 12/04/93" | 13:30:00" | 5.34 | 15 | 600.7 | 591.04 |
| 12/04/93" | 13:45:00" | 5.32 | 15 | 600.7 | 591.02 |
| 12/04/93" | 14:00:00" | 5.34 | 15 | 600.7 | 591.04 |
| 12/04/93" | 14:15:00" | 5.35 | 15 | 600.7 | 591.05 |
| 12/04/93" | 14:30:00" | 5.35 | 15 | 600.7 | 591.05 |
| 12/04/93" | 14:45:00" | 5.34 | 15 | 600.7 | 591.04 |
| 12/04/93" | 15:00:00" | 5.34 | 15 | 600.7 | 591.04 |
| 12/04/93" | 15:15:00" | 5.35 | 15 | 600.7 | 591.05 |
| 12/04/93" | 15:30:00" | 5.35 | 15 | 600.7 | 591.05 |
| 12/04/93" | 15:45:00" | 5.36 | 15 | 600.7 | 591.06 |
| 12/04/93" | 16:00:00" | 5.35 | 15 | 600.7 | 591.05 |
| 12/04/93" | 16:15:00" | 5.36 | 15 | 600.7 | 591.06 |
| 12/04/93" | 16:30:00" | 5.36 | 15 | 600.7 | 591.06 |
| 12/04/93" | 16:45:00" | 5.36 | 15 | 600.7 | 591.06 |
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| 12/04/93" | 20:45:00" | 5.37 | 15 | 600.7 | 591.07 |
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| 12/06/93" | 00:45:00" | 5.37 | 15 | 600.7 | 591.07 |
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| 12/06/93" | 02:30:00" | 5.37 | 15 | 600.7 | 591.07 |
| 12/06/93" | 02:45:00" | 5.39 | 15 | 600.7 | 591.09 |
| 12/06/93" | 03:00:00" | 5.37 | 15 | 600.7 | 591.07 |
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| 12/07/93" | 07:00:00" | 5.33 | 15 | 600.7 | 591.03 |
| 12/07/93" | 07:15:00" | 5.33 | 15 | 600.7 | 591.03 |
| 12/07/93" | 07:30:00" | 5.33 | 15 | 600.7 | 591.03 |
| 12/07/93" | 07:45:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 08:00:00" | 5.29 | 15 | 600.7 | 590.99 |
| 12/07/93" | 08:15:00" | 5.28 | 15 | 600.7 | 590.98 |
| 12/07/93" | 08:30:00" | 5.26 | 15 | 600.7 | 590.96 |
| 12/07/93" | 08:45:00" | 5.2 | 15 | 600.7 | 590.9 |
| 12/07/93" | 09:00:00" | 5.19 | 15 | 600.7 | 590.89 |
| 12/07/93" | 09:15:00" | 5.24 | 15 | 600.7 | 590.94 |
| 12/07/93" | 09:30:00" | 5.26 | 15 | 600.7 | 590.96 |
| 12/07/93" | 09:45:00" | 5.29 | 15 | 600.7 | 590.99 |
| 12/07/93" | 10:00:00" | 5.32 | 15 | 600.7 | 591.02 |
| 12/07/93" | 10:15:00" | 5.32 | 15 | 600.7 | 591.02 |
| 12/07/93" | 10:30:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 10:45:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 11:00:00" | 5.29 | 15 | 600.7 | 590.99 |
| 12/07/93" | 11:15:00" | 5.28 | 15 | 600.7 | 590.98 |
| 12/07/93" | 11:30:00" | 5.29 | 15 | 600.7 | 590.99 |
| 12/07/93" | 11:45:00" | 5.29 | 15 | 600.7 | 590.99 |
| 12/07/93" | 12:00:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 12:15:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 12:30:00" | 5.32 | 15 | 600.7 | 591.02 |
| 12/07/93" | 12:45:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 13:00:00" | 5.31 | 15 | 600.7 | 591.01 |
| 12/07/93" | 13:15:00" | 5.32 | | | |
| 12/07/93" | 13:30:00" | 5.33 | | | |
| 12/07/93" | 13:45:00" | 5.33 | | | |
| 12/07/93" | 14:00:00" | 5.32 | | | |
| 12/07/93" | 14:15:00" | 5.31 | | | |

" Saved Recorder Status
"Type: 2109-10
" Time at Recorder: 12/07/93 13:54:28 Sync'd @ 12/01/93 11:00:46
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ 0.07 is OFF Upper alarm @ 47.31 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 6 days 02:30:00
"
" Storage Capacity: 3238 value records: 33 days 17:30:00
"Output compressed by a factor of 1

GW7B
MONITORING WELL GW7B
INITIAL DEPTH TO WATER FROM TOP OF CASING = 8.78 FEET
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 10.22 (CALCULATED BASED ON RECALIBRATIOI

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 13:45:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 14:00:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 14:15:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 14:30:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 14:45:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 15:00:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 15:15:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 15:30:00" | 10.2 | 19 | 603.08 | 594.28 |
| 12/01/93" | 15:45:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 16:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 16:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 16:30:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 16:45:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 17:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 17:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 17:30:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 17:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 18:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 18:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/01/93" | 18:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 18:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 19:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 19:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 19:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 19:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 20:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 20:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 20:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 20:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 21:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 21:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 21:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 21:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 22:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 22:15:00" | 10.3 | 19 | 603.08 | 594.38 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/01/93" | 22:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 23:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 23:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 23:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/01/93" | 23:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 00:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 00:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 00:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 00:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 01:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 01:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 01:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 01:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 02:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 02:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 02:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 02:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 03:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 03:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 03:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 03:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 04:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 04:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 04:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 04:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 05:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 05:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 05:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 05:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 06:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 06:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 06:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 06:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 07:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 07:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 07:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 07:45:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 08:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 08:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 08:30:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 08:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 09:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 09:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 09:30:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 09:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 10:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 10:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 10:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 10:45:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 11:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 11:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 11:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 11:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 12:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 12:15:00" | 10.3 | 19 | 603.08 | 594.38 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 12:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 13:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 13:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 13:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 13:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 14:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 14:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 14:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 14:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 15:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 15:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 15:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 15:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 16:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 16:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 16:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 16:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 17:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 17:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 17:30:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 17:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 18:00:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 18:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 18:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 18:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 19:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 19:15:00" | 10.25 | 19 | 603.08 | 594.33 |
| 12/02/93" | 19:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 19:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 20:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 20:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 20:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 20:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 21:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 21:15:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 21:30:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 21:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 22:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/02/93" | 22:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 22:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 22:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 23:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 23:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 23:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/02/93" | 23:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 00:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 00:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 00:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 00:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 01:00:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/03/93" | 01:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 01:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 01:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 02:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 02:15:00" | 10.34 | 19 | 603.08 | 594.42 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 02:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 03:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 03:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 03:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 03:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 04:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 04:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 04:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 04:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 05:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 05:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 05:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 05:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 06:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 06:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 06:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 06:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 07:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 07:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 07:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 07:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 08:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 08:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 08:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 08:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 09:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 09:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 09:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 09:45:00" | 10.3 | 19 | 603.08 | 594.38 |
| 12/03/93" | 10:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 10:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 10:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 10:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 11:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 11:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 11:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 11:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 12:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 12:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 12:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 12:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 13:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 13:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 13:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 13:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 14:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 14:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 14:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 14:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 15:00:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 15:15:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 15:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 15:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 16:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 16:15:00" | 10.39 | 19 | 603.08 | 594.47 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 16:45:00" | 10.34 | 19 | 603.08 | 594.42 |
| 12/03/93" | 17:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 17:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 17:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 17:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 18:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 18:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 18:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 18:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 19:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 19:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 19:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 19:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 20:00:00" | 10.39 | 19 | 603.08 | 594.47 |
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| 12/03/93" | 20:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 20:45:00" | 10.39 | 19 | 603.08 | 594.47 |
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| 12/03/93" | 21:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 21:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 22:00:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/03/93" | 22:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 22:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 22:45:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/03/93" | 23:00:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/03/93" | 23:15:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/03/93" | 23:30:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/03/93" | 23:45:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/04/93" | 00:00:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 00:15:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/04/93" | 00:30:00" | 10.39 | 19 | 603.08 | 594.47 |
| 12/04/93" | 00:45:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 01:00:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 01:15:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 01:30:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 01:45:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 02:00:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 02:15:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 02:30:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 02:45:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 03:00:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 03:15:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 03:30:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 03:45:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 04:00:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 04:15:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 04:30:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 04:45:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 05:00:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 05:15:00" | 10.44 | 19 | 603.08 | 594.52 |
| 12/04/93" | 05:30:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 05:45:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 06:00:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 06:15:00" | 10.48 | 19 | 603.08 | 594.56 |

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| 12/04/93" | 06:30:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 06:45:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 07:00:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 07:15:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 07:30:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 07:45:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 08:00:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 08:15:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 08:30:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 08:45:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 09:00:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 09:15:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 09:30:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 09:45:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 10:00:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 10:15:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 10:30:00" | 10.48 | 19 | 603.08 | 594.56 |
| 12/04/93" | 10:45:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 11:00:00" | 10.53 | 19 | 603.08 | 594.61 |
| 12/04/93" | 11:15:00" | 10.58 | 19 | 603.08 | 594.66 |
| 12/04/93" | 11:30:00" | 10.58 | 19 | 603.08 | 594.66 |
| 12/04/93" | 11:45:00" | 10.58 | 19 | 603.08 | 594.66 |
| 12/04/93" | 12:00:00" | 10.58 | 19 | 603.08 | 594.66 |
| 12/04/93" | 12:15:00" | 10.62 | 19 | 603.08 | 594.7 |
| 12/04/93" | 12:30:00" | 10.62 | 19 | 603.08 | 594.7 |
| 12/04/93" | 12:45:00" | 10.67 | 19 | 603.08 | 594.75 |
| 12/04/93" | 13:00:00" | 10.67 | 19 | 603.08 | 594.75 |
| 12/04/93" | 13:15:00" | 10.72 | 19 | 603.08 | 594.8 |
| 12/04/93" | 13:30:00" | 10.72 | 19 | 603.08 | 594.8 |
| 12/04/93" | 13:45:00" | 10.72 | 19 | 603.08 | 594.8 |
| 12/04/93" | 14:00:00" | 10.76 | 19 | 603.08 | 594.84 |
| 12/04/93" | 14:15:00" | 10.81 | 19 | 603.08 | 594.89 |
| 12/04/93" | 14:30:00" | 10.76 | 19 | 603.08 | 594.84 |
| 12/04/93" | 14:45:00" | 10.81 | 19 | 603.08 | 594.89 |
| 12/04/93" | 15:00:00" | 10.86 | 19 | 603.08 | 594.94 |
| 12/04/93" | 15:15:00" | 10.86 | 19 | 603.08 | 594.94 |
| 12/04/93" | 15:30:00" | 10.9 | 19 | 603.08 | 594.98 |
| 12/04/93" | 15:45:00" | 10.9 | 19 | 603.08 | 594.98 |
| 12/04/93" | 16:00:00" | 10.9 | 19 | 603.08 | 594.98 |
| 12/04/93" | 16:15:00" | 10.95 | 19 | 603.08 | 595.03 |
| 12/04/93" | 16:30:00" | 11 | 19 | 603.08 | 595.08 |
| 12/04/93" | 16:45:00" | 11 | 19 | 603.08 | 595.08 |
| 12/04/93" | 17:00:00" | 11 | 19 | 603.08 | 595.08 |
| 12/04/93" | 17:15:00" | 11.04 | 19 | 603.08 | 595.12 |
| 12/04/93" | 17:30:00" | 11.09 | 19 | 603.08 | 595.17 |
| 12/04/93" | 17:45:00" | 11.04 | 19 | 603.08 | 595.12 |
| 12/04/93" | 18:00:00" | 11.09 | 19 | 603.08 | 595.17 |
| 12/04/93" | 18:15:00" | 11.13 | 19 | 603.08 | 595.21 |
| 12/04/93" | 18:30:00" | 11.09 | 19 | 603.08 | 595.17 |
| 12/04/93" | 18:45:00" | 11.13 | 19 | 603.08 | 595.21 |
| 12/04/93" | 19:00:00" | 11.18 | 19 | 603.08 | 595.26 |
| 12/04/93" | 19:15:00" | 11.18 | 19 | 603.08 | 595.26 |
| 12/04/93" | 19:30:00" | 11.18 | 19 | 603.08 | 595.26 |
| 12/04/93" | 19:45:00" | 11.18 | 19 | 603.08 | 595.26 |
| 12/04/93" | 20:00:00" | 11.18 | 19 | 603.08 | 595.26 |
| 12/04/93" | 20:15:00" | 11.27 | 19 | 603.08 | 595.35 |

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|---|---|---|---|---|---|
| 12/04/93" | 20:30:00" | 11.23 | 19 | 603.08 | 595.31 |
| 12/04/93" | 20:45:00" | 11.23 | 19 | 603.08 | 595.31 |
| 12/04/93" | 21:00:00" | 11.27 | 19 | 603.08 | 595.35 |
| 12/04/93" | 21:15:00" | 11.27 | 19 | 603.08 | 595.35 |
| 12/04/93" | 21:30:00" | 11.32 | 19 | 603.08 | 595.4 |
| 12/04/93" | 21:45:00" | 11.32 | 19 | 603.08 | 595.4 |
| 12/04/93" | 22:00:00" | 11.32 | 19 | 603.08 | 595.4 |
| 12/04/93" | 22:15:00" | 11.37 | 19 | 603.08 | 595.45 |
| 12/04/93" | 22:30:00" | 11.41 | 19 | 603.08 | 595.49 |
| 12/04/93" | 22:45:00" | 11.37 | 19 | 603.08 | 595.45 |
| 12/04/93" | 23:00:00" | 11.37 | 19 | 603.08 | 595.45 |
| 12/04/93" | 23:15:00" | 11.41 | 19 | 603.08 | 595.49 |
| 12/04/93" | 23:30:00" | 11.41 | 19 | 603.08 | 595.49 |
| 12/04/93" | 23:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/05/93" | 00:00:00" | 11.41 | 19 | 603.08 | 595.49 |
| 12/05/93" | 00:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/05/93" | 00:30:00" | 11.41 | 19 | 603.08 | 595.49 |
| 12/05/93" | 00:45:00" | 11.41 | 19 | 603.08 | 595.49 |
| 12/05/93" | 01:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/05/93" | 01:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/05/93" | 01:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 01:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/05/93" | 02:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/05/93" | 02:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 02:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 02:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 03:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 03:15:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 03:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 03:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 04:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/05/93" | 04:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 04:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 04:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 05:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 05:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 05:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 05:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 06:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 06:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 06:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 06:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 07:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 07:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 07:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 07:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 08:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 08:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 08:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 08:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 09:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 09:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 09:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 09:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 10:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 10:15:00" | 11.55 | 19 | 603.08 | 595.63 |

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|---|---|---|---|---|---|
| 12/05/93" | 10:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 10:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 11:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 11:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 11:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 11:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 12:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 12:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 12:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 12:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 13:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 13:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 13:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 13:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 14:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 14:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/05/93" | 14:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 14:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/05/93" | 15:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/05/93" | 15:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 15:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 15:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 16:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 16:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 16:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 16:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 17:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 17:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 17:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 17:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 18:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 18:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/05/93" | 18:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 18:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 19:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 19:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 19:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 19:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 20:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 20:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 20:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 20:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 21:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 21:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 21:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 21:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 22:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 22:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 22:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 22:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 23:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 23:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/05/93" | 23:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/05/93" | 23:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 00:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 00:15:00" | 11.6 | 19 | 603.08 | 595.68 |

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|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 00:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 01:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 01:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 01:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 01:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 02:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 02:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 02:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 02:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 03:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 03:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 03:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 03:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 04:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 04:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 04:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 04:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 05:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 05:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 05:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 05:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 06:00:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 06:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 06:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 06:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 07:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 07:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 07:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 07:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 08:00:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 08:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 08:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 08:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 09:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 09:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 09:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 09:45:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 10:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 10:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 10:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 10:45:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 11:00:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 11:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 11:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 11:45:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 12:00:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 12:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 12:30:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 12:45:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 13:00:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 13:15:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 13:30:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 13:45:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 14:00:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 14:15:00" | 11.69 | 19 | 603.08 | 595.77 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 14:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 14:45:00" | 11.79 | 19 | 603.08 | 595.87 |
| 12/06/93" | 15:00:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 15:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 15:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 15:45:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 16:00:00" | 11.79 | 19 | 603.08 | 595.87 |
| 12/06/93" | 16:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 16:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 16:45:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 17:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 17:15:00" | 11.74 | 19 | 603.08 | 595.82 |
| 12/06/93" | 17:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 17:45:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 18:00:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 18:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 18:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 18:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 19:00:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 19:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 19:30:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 19:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 20:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 20:15:00" | 11.69 | 19 | 603.08 | 595.77 |
| 12/06/93" | 20:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 20:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 21:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 21:15:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 21:30:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 21:45:00" | 11.65 | 19 | 603.08 | 595.73 |
| 12/06/93" | 22:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 22:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 22:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 22:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 23:00:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 23:15:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 23:30:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/06/93" | 23:45:00" | 11.6 | 19 | 603.08 | 595.68 |
| 12/07/93" | 00:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 00:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 00:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 00:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 01:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 01:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 01:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 01:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 02:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 02:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 02:30:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 02:45:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 03:00:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 03:15:00" | 11.55 | 19 | 603.08 | 595.63 |
| 12/07/93" | 03:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 03:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 04:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 04:15:00" | 11.51 | 19 | 603.08 | 595.59 |

| | | | | | |
|---|---|---|---|---|---|
| 12/07/93" | 04:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 04:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 05:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 05:15:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 05:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 05:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 06:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 06:15:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 06:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 06:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 07:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 07:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 07:30:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 07:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 08:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 08:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 08:30:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 08:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 09:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 09:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 09:30:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 09:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 10:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 10:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 10:30:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 10:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 11:00:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 11:15:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 11:30:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 11:45:00" | 11.46 | 19 | 603.08 | 595.54 |
| 12/07/93" | 12:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 12:15:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 12:30:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 12:45:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 13:00:00" | 11.51 | 19 | 603.08 | 595.59 |
| 12/07/93" | 13:15:00" | 11.51 | | | |

" Saved Recorder Status
"Type: 2109-5
" Time at Recorder: 12/07/93 13:26:35 Sync'd @ 12/01/93 12:16:43
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ 0.04 is OFF Upper alarm @ 11.10 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 6 days 00:45:00
"
" Storage Capacity: 6512 value records: 67 days 20:00:00
"Output compressed by a factor of 1

GW8B
MONITORING WELL GW8B
INITIAL DEPTH TO WATER FROM TOP OF CASING =
CURRENT READING AT RECORDER AT TIME OF PLACEMENT =

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/01/93" | 13:45:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/01/93" | 14:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/01/93" | 14:15:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/01/93" | 14:30:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/01/93" | 14:45:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/01/93" | 15:00:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/01/93" | 15:15:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/01/93" | 15:30:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/01/93" | 15:45:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/01/93" | 16:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/01/93" | 16:15:00" | 5.53 | 14 | 603.9 | 595.43 |
| 12/01/93" | 16:30:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/01/93" | 16:45:00" | 5.26 | 14 | 603.9 | 595.16 |
| 12/01/93" | 17:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/01/93" | 17:15:00" | 5.56 | 14 | 603.9 | 595.46 |
| 12/01/93" | 17:30:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/01/93" | 17:45:00" | 5.34 | 14 | 603.9 | 595.24 |
| 12/01/93" | 18:00:00" | 5.38 | 14 | 603.9 | 595.28 |
| 12/01/93" | 18:15:00" | 5.36 | 14 | 603.9 | 595.26 |
| 12/01/93" | 18:30:00" | 5.38 | 14 | 603.9 | 595.28 |
| 12/01/93" | 18:45:00" | 5.34 | 14 | 603.9 | 595.24 |
| 12/01/93" | 19:00:00" | 5.32 | 14 | 603.9 | 595.22 |
| 12/01/93" | 19:15:00" | 5.32 | 14 | 603.9 | 595.22 |
| 12/01/93" | 19:30:00" | 5.32 | 14 | 603.9 | 595.22 |
| 12/01/93" | 19:45:00" | 5.32 | 14 | 603.9 | 595.22 |
| 12/01/93" | 20:00:00" | 5.33 | 14 | 603.9 | 595.23 |
| 12/01/93" | 20:15:00" | 5.33 | 14 | 603.9 | 595.23 |
| 12/01/93" | 20:30:00" | 5.33 | 14 | 603.9 | 595.23 |
| 12/01/93" | 20:45:00" | 5.33 | 14 | 603.9 | 595.23 |
| 12/01/93" | 21:00:00" | 5.34 | 14 | 603.9 | 595.24 |
| 12/01/93" | 21:15:00" | 5.36 | 14 | 603.9 | 595.26 |
| 12/01/93" | 21:30:00" | 5.36 | 14 | 603.9 | 595.26 |
| 12/01/93" | 21:45:00" | 5.36 | 14 | 603.9 | 595.26 |
| 12/01/93" | 22:00:00" | 5.38 | 14 | 603.9 | 595.28 |
| 12/01/93" | 22:15:00" | 5.39 | 14 | 603.9 | 595.29 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/01/93" | 22:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/01/93" | 23:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/01/93" | 23:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/01/93" | 23:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/01/93" | 23:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/02/93" | 00:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/02/93" | 00:15:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 00:30:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 00:45:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 01:00:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 01:15:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 01:30:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 01:45:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 02:00:00" | 5.42 | 14 | 603.9 | 595.32 |
| 12/02/93" | 02:15:00" | 5.42 | 14 | 603.9 | 595.32 |
| 12/02/93" | 02:30:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/02/93" | 02:45:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/02/93" | 03:00:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/02/93" | 03:15:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 03:30:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 03:45:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 04:00:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 04:15:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 04:30:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 04:45:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/02/93" | 05:00:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/02/93" | 05:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 05:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 05:45:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 06:00:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/02/93" | 06:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 06:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 06:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 07:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 07:15:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/02/93" | 07:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 07:45:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/02/93" | 08:00:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/02/93" | 08:15:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/02/93" | 08:30:00" | 5.53 | 14 | 603.9 | 595.43 |
| 12/02/93" | 08:45:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/02/93" | 09:00:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/02/93" | 09:15:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/02/93" | 09:30:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/02/93" | 09:45:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/02/93" | 10:00:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/02/93" | 10:15:00" | 5.58 | 14 | 603.9 | 595.48 |
| 12/02/93" | 10:30:00" | 5.58 | 14 | 603.9 | 595.48 |
| 12/02/93" | 10:45:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/02/93" | 11:00:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/02/93" | 11:15:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/02/93" | 11:30:00" | 5.56 | 14 | 603.9 | 595.46 |
| 12/02/93" | 11:45:00" | 5.55 | 14 | 603.9 | 595.45 |
| 12/02/93" | 12:00:00" | 5.55 | 14 | 603.9 | 595.45 |
| 12/02/93" | 12:15:00" | 5.6 | 14 | 603.9 | 595.5 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/02/93" | 12:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/02/93" | 13:00:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/02/93" | 13:15:00" | 5.42 | 14 | 603.9 | 595.32 |
| 12/02/93" | 13:30:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/02/93" | 13:45:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/02/93" | 14:00:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/02/93" | 14:15:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 14:30:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/02/93" | 14:45:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 15:00:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 15:15:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 15:30:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 15:45:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 16:00:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 16:15:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/02/93" | 16:30:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/02/93" | 16:45:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/02/93" | 17:00:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/02/93" | 17:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 17:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 17:45:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 18:00:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 18:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 18:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/02/93" | 18:45:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 19:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 19:15:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 19:30:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 19:45:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 20:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/02/93" | 20:15:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/02/93" | 20:30:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/02/93" | 20:45:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/02/93" | 21:00:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/02/93" | 21:15:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/02/93" | 21:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 21:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 22:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 22:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 22:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 22:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 23:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 23:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 23:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/02/93" | 23:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 00:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 00:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 00:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 00:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 01:00:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 01:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 01:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 01:45:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 02:00:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 02:15:00" | 5.49 | 14 | 603.9 | 595.39 |

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|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 02:45:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 03:00:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 03:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 03:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 03:45:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 04:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/03/93" | 04:15:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 04:30:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/03/93" | 04:45:00" | 5.44 | 14 | 603.9 | 595.34 |
| 12/03/93" | 05:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 05:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 05:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 05:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 06:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 06:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 06:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 06:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 07:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 07:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 07:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 07:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 08:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 08:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 08:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 08:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 09:00:00" | 5.39 | 14 | 603.9 | 595.29 |
| 12/03/93" | 09:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 09:30:00" | 5.39 | 14 | 603.9 | 595.29 |
| 12/03/93" | 09:45:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 10:00:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 10:15:00" | 5.39 | 14 | 603.9 | 595.29 |
| 12/03/93" | 10:30:00" | 5.39 | 14 | 603.9 | 595.29 |
| 12/03/93" | 10:45:00" | 5.39 | 14 | 603.9 | 595.29 |
| 12/03/93" | 11:00:00" | 5.39 | 14 | 603.9 | 595.29 |
| 12/03/93" | 11:15:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 11:30:00" | 5.4 | 14 | 603.9 | 595.3 |
| 12/03/93" | 11:45:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/03/93" | 12:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/03/93" | 12:15:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 12:30:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/03/93" | 12:45:00" | 5.41 | 14 | 603.9 | 595.31 |
| 12/03/93" | 13:00:00" | 5.43 | 14 | 603.9 | 595.33 |
| 12/03/93" | 13:15:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 13:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 13:45:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/03/93" | 14:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 14:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 14:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 14:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 15:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 15:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 15:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 15:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 16:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 16:15:00" | 5.5 | 14 | 603.9 | 595.4 |

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|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 16:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 17:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 17:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 17:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 17:45:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 18:00:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 18:15:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 18:30:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 18:45:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 19:00:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 19:15:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/03/93" | 19:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/03/93" | 19:45:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 20:00:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 20:15:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 20:30:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 20:45:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 21:00:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 21:15:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 21:30:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 21:45:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 22:00:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 22:15:00" | 5.45 | 14 | 603.9 | 595.35 |
| 12/03/93" | 22:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/03/93" | 22:45:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/03/93" | 23:00:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/03/93" | 23:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/03/93" | 23:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/03/93" | 23:45:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 00:00:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 00:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 00:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 00:45:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/04/93" | 01:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/04/93" | 01:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 01:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 01:45:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 02:00:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 02:15:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 02:30:00" | 5.46 | 14 | 603.9 | 595.36 |
| 12/04/93" | 02:45:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/04/93" | 03:00:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/04/93" | 03:15:00" | 5.48 | 14 | 603.9 | 595.38 |
| 12/04/93" | 03:30:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/04/93" | 03:45:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/04/93" | 04:00:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/04/93" | 04:15:00" | 5.49 | 14 | 603.9 | 595.39 |
| 12/04/93" | 04:30:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/04/93" | 04:45:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/04/93" | 05:00:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/04/93" | 05:15:00" | 5.5 | 14 | 603.9 | 595.4 |
| 12/04/93" | 05:30:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/04/93" | 05:45:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/04/93" | 06:00:00" | 5.51 | 14 | 603.9 | 595.41 |
| 12/04/93" | 06:15:00" | 5.51 | 14 | 603.9 | 595.41 |

| | | | | | |
|---|---|---|---|---|---|
| 12/04/93" | 06:30:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/04/93" | 06:45:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/04/93" | 07:00:00" | 5.52 | 14 | 603.9 | 595.42 |
| 12/04/93" | 07:15:00" | 5.53 | 14 | 603.9 | 595.43 |
| 12/04/93" | 07:30:00" | 5.53 | 14 | 603.9 | 595.43 |
| 12/04/93" | 07:45:00" | 5.53 | 14 | 603.9 | 595.43 |
| 12/04/93" | 08:00:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/04/93" | 08:15:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/04/93" | 08:30:00" | 5.54 | 14 | 603.9 | 595.44 |
| 12/04/93" | 08:45:00" | 5.55 | 14 | 603.9 | 595.45 |
| 12/04/93" | 09:00:00" | 5.55 | 14 | 603.9 | 595.45 |
| 12/04/93" | 09:15:00" | 5.55 | 14 | 603.9 | 595.45 |
| 12/04/93" | 09:30:00" | 5.56 | 14 | 603.9 | 595.46 |
| 12/04/93" | 09:45:00" | 5.56 | 14 | 603.9 | 595.46 |
| 12/04/93" | 10:00:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/04/93" | 10:15:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/04/93" | 10:30:00" | 5.57 | 14 | 603.9 | 595.47 |
| 12/04/93" | 10:45:00" | 5.58 | 14 | 603.9 | 595.48 |
| 12/04/93" | 11:00:00" | 5.58 | 14 | 603.9 | 595.48 |
| 12/04/93" | 11:15:00" | 5.6 | 14 | 603.9 | 595.5 |
| 12/04/93" | 11:30:00" | 5.6 | 14 | 603.9 | 595.5 |
| 12/04/93" | 11:45:00" | 5.61 | 14 | 603.9 | 595.51 |
| 12/04/93" | 12:00:00" | 5.61 | 14 | 603.9 | 595.51 |
| 12/04/93" | 12:15:00" | 5.61 | 14 | 603.9 | 595.51 |
| 12/04/93" | 12:30:00" | 5.62 | 14 | 603.9 | 595.52 |
| 12/04/93" | 12:45:00" | 5.62 | 14 | 603.9 | 595.52 |
| 12/04/93" | 13:00:00" | 5.63 | 14 | 603.9 | 595.53 |
| 12/04/93" | 13:15:00" | 5.63 | 14 | 603.9 | 595.53 |
| 12/04/93" | 13:30:00" | 5.64 | 14 | 603.9 | 595.54 |
| 12/04/93" | 13:45:00" | 5.64 | 14 | 603.9 | 595.54 |
| 12/04/93" | 14:00:00" | 5.65 | 14 | 603.9 | 595.55 |
| 12/04/93" | 14:15:00" | 5.65 | 14 | 603.9 | 595.55 |
| 12/04/93" | 14:30:00" | 5.66 | 14 | 603.9 | 595.56 |
| 12/04/93" | 14:45:00" | 5.67 | 14 | 603.9 | 595.57 |
| 12/04/93" | 15:00:00" | 5.67 | 14 | 603.9 | 595.57 |
| 12/04/93" | 15:15:00" | 5.68 | 14 | 603.9 | 595.58 |
| 12/04/93" | 15:30:00" | 5.68 | 14 | 603.9 | 595.58 |
| 12/04/93" | 15:45:00" | 5.68 | 14 | 603.9 | 595.58 |
| 12/04/93" | 16:00:00" | 5.69 | 14 | 603.9 | 595.59 |
| 12/04/93" | 16:15:00" | 5.69 | 14 | 603.9 | 595.59 |
| 12/04/93" | 16:30:00" | 5.7 | 14 | 603.9 | 595.6 |
| 12/04/93" | 16:45:00" | 5.7 | 14 | 603.9 | 595.6 |
| 12/04/93" | 17:00:00" | 5.7 | 14 | 603.9 | 595.6 |
| 12/04/93" | 17:15:00" | 5.71 | 14 | 603.9 | 595.61 |
| 12/04/93" | 17:30:00" | 5.71 | 14 | 603.9 | 595.61 |
| 12/04/93" | 17:45:00" | 5.71 | 14 | 603.9 | 595.61 |
| 12/04/93" | 18:00:00" | 5.71 | 14 | 603.9 | 595.61 |
| 12/04/93" | 18:15:00" | 5.73 | 14 | 603.9 | 595.63 |
| 12/04/93" | 18:30:00" | 5.73 | 14 | 603.9 | 595.63 |
| 12/04/93" | 18:45:00" | 5.73 | 14 | 603.9 | 595.63 |
| 12/04/93" | 19:00:00" | 5.73 | 14 | 603.9 | 595.63 |
| 12/04/93" | 19:15:00" | 5.74 | 14 | 603.9 | 595.64 |
| 12/04/93" | 19:30:00" | 5.74 | 14 | 603.9 | 595.64 |
| 12/04/93" | 19:45:00" | 5.74 | 14 | 603.9 | 595.64 |
| 12/04/93" | 20:00:00" | 5.75 | 14 | 603.9 | 595.65 |
| 12/04/93" | 20:15:00" | 5.75 | 14 | 603.9 | 595.65 |

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|---|---|---|---|---|---|
| 12/04/93" | 20:30:00" | 5.75 | 14 | 603.9 | 595.65 |
| 12/04/93" | 20:45:00" | 5.75 | 14 | 603.9 | 595.65 |
| 12/04/93" | 21:00:00" | 5.76 | 14 | 603.9 | 595.66 |
| 12/04/93" | 21:15:00" | 5.76 | 14 | 603.9 | 595.66 |
| 12/04/93" | 21:30:00" | 5.76 | 14 | 603.9 | 595.66 |
| 12/04/93" | 21:45:00" | 5.76 | 14 | 603.9 | 595.66 |
| 12/04/93" | 22:00:00" | 5.76 | 14 | 603.9 | 595.66 |
| 12/04/93" | 22:15:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/04/93" | 22:30:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/04/93" | 22:45:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/04/93" | 23:00:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/04/93" | 23:15:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/04/93" | 23:30:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/04/93" | 23:45:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/05/93" | 00:00:00" | 5.77 | 14 | 603.9 | 595.67 |
| 12/05/93" | 00:15:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 00:30:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 00:45:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 01:00:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 01:15:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 01:30:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 01:45:00" | 5.78 | 14 | 603.9 | 595.68 |
| 12/05/93" | 02:00:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 02:15:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 02:30:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 02:45:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 03:00:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 03:15:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 03:30:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 03:45:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/05/93" | 04:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 04:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 04:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 04:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 05:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 05:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 05:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 05:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 06:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 06:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 06:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 06:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 07:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 07:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 07:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 07:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 08:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 08:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 08:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 08:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 09:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 09:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 09:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 09:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 10:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 10:15:00" | 5.8 | 14 | 603.9 | 595.7 |

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|---|---|---|---|---|---|
| 12/05/93" | 10:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 10:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 11:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 11:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 11:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 11:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/05/93" | 12:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 12:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 12:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 12:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 13:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 13:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 13:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 13:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 14:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 14:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 14:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 14:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 15:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 15:15:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 15:30:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 15:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 16:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 16:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 16:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 16:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 17:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 17:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 17:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 17:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 18:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 18:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 18:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 18:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 19:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 19:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 19:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 19:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 20:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 20:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 20:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 20:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 21:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 21:15:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 21:30:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 21:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/05/93" | 22:00:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 22:15:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 22:30:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 22:45:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 23:00:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 23:15:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 23:30:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/05/93" | 23:45:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/06/93" | 00:00:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/06/93" | 00:15:00" | 5.83 | 14 | 603.9 | 595.73 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/06/93" | 00:45:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/06/93" | 01:00:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/06/93" | 01:15:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/06/93" | 01:30:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/06/93" | 01:45:00" | 5.85 | 14 | 603.9 | 595.75 |
| 12/06/93" | 02:00:00" | 5.85 | 14 | 603.9 | 595.75 |
| 12/06/93" | 02:15:00" | 5.86 | 14 | 603.9 | 595.76 |
| 12/06/93" | 02:30:00" | 5.87 | 14 | 603.9 | 595.77 |
| 12/06/93" | 02:45:00" | 5.89 | 14 | 603.9 | 595.79 |
| 12/06/93" | 03:00:00" | 5.92 | 14 | 603.9 | 595.82 |
| 12/06/93" | 03:15:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/06/93" | 03:30:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/06/93" | 03:45:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/06/93" | 04:00:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/06/93" | 04:15:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/06/93" | 04:30:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/06/93" | 04:45:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/06/93" | 05:00:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/06/93" | 05:15:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/06/93" | 05:30:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/06/93" | 05:45:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/06/93" | 06:00:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/06/93" | 06:15:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/06/93" | 06:30:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/06/93" | 06:45:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/06/93" | 07:00:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/06/93" | 07:15:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/06/93" | 07:30:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/06/93" | 07:45:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/06/93" | 08:00:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/06/93" | 08:15:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/06/93" | 08:30:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/06/93" | 08:45:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/06/93" | 09:00:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/06/93" | 09:15:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/06/93" | 09:30:00" | 5.99 | 14 | 603.9 | 595.89 |
| 12/06/93" | 09:45:00" | 5.99 | 14 | 603.9 | 595.89 |
| 12/06/93" | 10:00:00" | 5.99 | 14 | 603.9 | 595.89 |
| 12/06/93" | 10:15:00" | 5.99 | 14 | 603.9 | 595.89 |
| 12/06/93" | 10:30:00" | 6 | 14 | 603.9 | 595.9 |
| 12/06/93" | 10:45:00" | 6.01 | 14 | 603.9 | 595.91 |
| 12/06/93" | 11:00:00" | 6.01 | 14 | 603.9 | 595.91 |
| 12/06/93" | 11:15:00" | 6.01 | 14 | 603.9 | 595.91 |
| 12/06/93" | 11:30:00" | 6.01 | 14 | 603.9 | 595.91 |
| 12/06/93" | 11:45:00" | 6.02 | 14 | 603.9 | 595.92 |
| 12/06/93" | 12:00:00" | 6.02 | 14 | 603.9 | 595.92 |
| 12/06/93" | 12:15:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/06/93" | 12:30:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/06/93" | 12:45:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/06/93" | 13:00:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 13:15:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 13:30:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 13:45:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 14:00:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 14:15:00" | 6.05 | 14 | 603.9 | 595.95 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 14:30:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 14:45:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 15:00:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 15:15:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 15:30:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 15:45:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 16:00:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 16:15:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 16:30:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 16:45:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 17:00:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 17:15:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 17:30:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 17:45:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 18:00:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 18:15:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 18:30:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 18:45:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 19:00:00" | 6.07 | 14 | 603.9 | 595.97 |
| 12/06/93" | 19:15:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 19:30:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 19:45:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 20:00:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 20:15:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 20:30:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 20:45:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 21:00:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 21:15:00" | 6.06 | 14 | 603.9 | 595.96 |
| 12/06/93" | 21:30:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 21:45:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 22:00:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 22:15:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 22:30:00" | 6.05 | 14 | 603.9 | 595.95 |
| 12/06/93" | 22:45:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 23:00:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 23:15:00" | 6.04 | 14 | 603.9 | 595.94 |
| 12/06/93" | 23:30:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/06/93" | 23:45:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/07/93" | 00:00:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/07/93" | 00:15:00" | 6.03 | 14 | 603.9 | 595.93 |
| 12/07/93" | 00:30:00" | 6.02 | 14 | 603.9 | 595.92 |
| 12/07/93" | 00:45:00" | 6.02 | 14 | 603.9 | 595.92 |
| 12/07/93" | 01:00:00" | 6.02 | 14 | 603.9 | 595.92 |
| 12/07/93" | 01:15:00" | 6.01 | 14 | 603.9 | 595.91 |
| 12/07/93" | 01:30:00" | 6.01 | 14 | 603.9 | 595.91 |
| 12/07/93" | 01:45:00" | 6 | 14 | 603.9 | 595.9 |
| 12/07/93" | 02:00:00" | 6 | 14 | 603.9 | 595.9 |
| 12/07/93" | 02:15:00" | 6 | 14 | 603.9 | 595.9 |
| 12/07/93" | 02:30:00" | 6 | 14 | 603.9 | 595.9 |
| 12/07/93" | 02:45:00" | 5.99 | 14 | 603.9 | 595.89 |
| 12/07/93" | 03:00:00" | 5.99 | 14 | 603.9 | 595.89 |
| 12/07/93" | 03:15:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/07/93" | 03:30:00" | 5.98 | 14 | 603.9 | 595.88 |
| 12/07/93" | 03:45:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/07/93" | 04:00:00" | 5.97 | 14 | 603.9 | 595.87 |
| 12/07/93" | 04:15:00" | 5.97 | 14 | 603.9 | 595.87 |

| | | | | | |
|---|---|---|---|---|---|
| 12/07/93" | 04:30:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/07/93" | 04:45:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/07/93" | 05:00:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/07/93" | 05:15:00" | 5.95 | 14 | 603.9 | 595.85 |
| 12/07/93" | 05:30:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/07/93" | 05:45:00" | 5.94 | 14 | 603.9 | 595.84 |
| 12/07/93" | 06:00:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/07/93" | 06:15:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/07/93" | 06:30:00" | 5.93 | 14 | 603.9 | 595.83 |
| 12/07/93" | 06:45:00" | 5.9 | 14 | 603.9 | 595.8 |
| 12/07/93" | 07:00:00" | 5.85 | 14 | 603.9 | 595.75 |
| 12/07/93" | 07:15:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/07/93" | 07:30:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/07/93" | 07:45:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/07/93" | 08:00:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/07/93" | 08:15:00" | 5.83 | 14 | 603.9 | 595.73 |
| 12/07/93" | 08:30:00" | 5.82 | 14 | 603.9 | 595.72 |
| 12/07/93" | 08:45:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/07/93" | 09:00:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/07/93" | 09:15:00" | 5.81 | 14 | 603.9 | 595.71 |
| 12/07/93" | 09:30:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/07/93" | 09:45:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/07/93" | 10:00:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/07/93" | 10:15:00" | 5.8 | 14 | 603.9 | 595.7 |
| 12/07/93" | 10:30:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 10:45:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 11:00:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 11:15:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 11:30:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 11:45:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 12:00:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 12:15:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 12:30:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 12:45:00" | 5.79 | 14 | 603.9 | 595.69 |
| 12/07/93" | 13:00:00" | 5.79 | 14 | 603.9 | 595.69 |

" Saved Recorder Status
"Type: 2109-5
" Time at Recorder: 12/07/93 13:37:21 Sync'd @ 12/01/93 10:42:14
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ 0.05 is OFF Upper alarm @ 11.67 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 6 days 02:45:00
"
" Storage Capacity: 3238 value records: 33 days 17:30:00
"Output compressed by a factor of 1

GW9B
MONITORING WELL GW9B
INITIAL DEPTH TO WATER FROM TOP OF CASING = 11.12 FEET (INNER CASING)
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 4.9

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 4.9 | 16.02 | 603.4 | 592.28 |
| 12/01/93" | 13:45:00" | 4.9 | 16.02 | 603.4 | 592.28 |
| 12/01/93" | 14:00:00" | 4.9 | 16.02 | 603.4 | 592.28 |
| 12/01/93" | 14:15:00" | 4.9 | 16.02 | 603.4 | 592.28 |
| 12/01/93" | 14:30:00" | 4.9 | 16.02 | 603.4 | 592.28 |
| 12/01/93" | 14:45:00" | 4.9 | 16.02 | 603.4 | 592.28 |
| 12/01/93" | 15:00:00" | 4.91 | 16.02 | 603.4 | 592.29 |
| 12/01/93" | 15:15:00" | 4.91 | 16.02 | 603.4 | 592.29 |
| 12/01/93" | 15:30:00" | 4.91 | 16.02 | 603.4 | 592.29 |
| 12/01/93" | 15:45:00" | 4.91 | 16.02 | 603.4 | 592.29 |
| 12/01/93" | 16:00:00" | 4.93 | 16.02 | 603.4 | 592.31 |
| 12/01/93" | 16:15:00" | 4.93 | 16.02 | 603.4 | 592.31 |
| 12/01/93" | 16:30:00" | 4.94 | 16.02 | 603.4 | 592.32 |
| 12/01/93" | 16:45:00" | 4.94 | 16.02 | 603.4 | 592.32 |
| 12/01/93" | 17:00:00" | 4.94 | 16.02 | 603.4 | 592.32 |
| 12/01/93" | 17:15:00" | 4.94 | 16.02 | 603.4 | 592.32 |
| 12/01/93" | 17:30:00" | 4.95 | 16.02 | 603.4 | 592.33 |
| 12/01/93" | 17:45:00" | 4.95 | 16.02 | 603.4 | 592.33 |
| 12/01/93" | 18:00:00" | 4.95 | 16.02 | 603.4 | 592.33 |
| 12/01/93" | 18:15:00" | 4.95 | 16.02 | 603.4 | 592.33 |
| 12/01/93" | 18:30:00" | 4.95 | 16.02 | 603.4 | 592.33 |
| 12/01/93" | 18:45:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 19:00:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 19:15:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 19:30:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 19:45:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 20:00:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 20:15:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 20:30:00" | 4.98 | 16.02 | 603.4 | 592.36 |
| 12/01/93" | 20:45:00" | 4.96 | 16.02 | 603.4 | 592.34 |
| 12/01/93" | 21:00:00" | 4.98 | 16.02 | 603.4 | 592.36 |
| 12/01/93" | 21:15:00" | 4.98 | 16.02 | 603.4 | 592.36 |
| 12/01/93" | 21:30:00" | 4.98 | 16.02 | 603.4 | 592.36 |
| 12/01/93" | 21:45:00" | 5 | 16.02 | 603.4 | 592.38 |
| 12/01/93" | 22:00:00" | 5 | 16.02 | 603.4 | 592.38 |
| 12/01/93" | 22:15:00" | 5.01 | 16.02 | 603.4 | 592.39 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 4.99 | 16.02 | 603.4 | 592.37 |
| 12/01/93" | 22:45:00" | 4.99 | 16.02 | 603.4 | 592.37 |
| 12/01/93" | 23:00:00" | 5 | 16.02 | 603.4 | 592.38 |
| 12/01/93" | 23:15:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/01/93" | 23:30:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/01/93" | 23:45:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/02/93" | 00:00:00" | 5 | 16.02 | 603.4 | 592.38 |
| 12/02/93" | 00:15:00" | 5 | 16.02 | 603.4 | 592.38 |
| 12/02/93" | 00:30:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/02/93" | 00:45:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/02/93" | 01:00:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/02/93" | 01:15:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/02/93" | 01:30:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/02/93" | 01:45:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/02/93" | 02:00:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/02/93" | 02:15:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/02/93" | 02:30:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/02/93" | 02:45:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/02/93" | 03:00:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/02/93" | 03:15:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/02/93" | 03:30:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/02/93" | 03:45:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/02/93" | 04:00:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/02/93" | 04:15:00" | 5.05 | 16.02 | 603.4 | 592.43 |
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| 12/02/93" | 05:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 05:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
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| 12/02/93" | 06:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 06:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 06:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 06:45:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/02/93" | 07:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 07:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 07:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 07:45:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/02/93" | 08:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 08:15:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/02/93" | 08:30:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/02/93" | 08:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 09:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 09:15:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/02/93" | 09:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 09:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 10:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 10:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 10:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 10:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 11:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 11:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/02/93" | 11:30:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/02/93" | 11:45:00" | 5.08 | 16.02 | 603.4 | 592.46 |
| 12/02/93" | 12:00:00" | 5.08 | 16.02 | 603.4 | 592.46 |
| 12/02/93" | 12:15:00" | 5.08 | 16.02 | 603.4 | 592.46 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/02/93" | 12:45:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/02/93" | 13:00:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/02/93" | 13:15:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/02/93" | 13:30:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/02/93" | 13:45:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/02/93" | 14:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 14:15:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/02/93" | 14:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 14:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 15:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 15:15:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/02/93" | 15:30:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/02/93" | 15:45:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/02/93" | 16:00:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/02/93" | 16:15:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/02/93" | 16:30:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/02/93" | 16:45:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/02/93" | 17:00:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/02/93" | 17:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 17:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 17:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 18:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 18:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 18:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 18:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 19:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 19:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 19:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 19:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 20:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 20:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 20:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 20:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 21:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 21:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 21:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 21:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 22:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 22:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 22:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 22:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 23:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 23:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/02/93" | 23:30:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/02/93" | 23:45:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/03/93" | 00:00:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/03/93" | 00:15:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/03/93" | 00:30:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/03/93" | 00:45:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/03/93" | 01:00:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/03/93" | 01:15:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/03/93" | 01:30:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/03/93" | 01:45:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/03/93" | 02:00:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/03/93" | 02:15:00" | 5.09 | 16.02 | 603.4 | 592.47 |

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|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 5.08 | 16.02 | 603.4 | 592.46 |
| 12/03/93" | 02:45:00" | 5.08 | 16.02 | 603.4 | 592.46 |
| 12/03/93" | 03:00:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 03:15:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/03/93" | 03:30:00" | 5.08 | 16.02 | 603.4 | 592.46 |
| 12/03/93" | 03:45:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 04:00:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 04:15:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 04:30:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 04:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 05:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 05:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 05:30:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 05:45:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 06:00:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 06:15:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 06:30:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 06:45:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 07:00:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 07:15:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 07:30:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 07:45:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 08:00:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 08:15:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 08:30:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 08:45:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 09:00:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 09:15:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 09:30:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 09:45:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 10:00:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 10:15:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/03/93" | 10:30:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/03/93" | 10:45:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/03/93" | 11:00:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/03/93" | 11:15:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 11:30:00" | 5.01 | 16.02 | 603.4 | 592.39 |
| 12/03/93" | 11:45:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 12:00:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 12:15:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 12:30:00" | 5.02 | 16.02 | 603.4 | 592.4 |
| 12/03/93" | 12:45:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 13:00:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 13:15:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 13:30:00" | 5.03 | 16.02 | 603.4 | 592.41 |
| 12/03/93" | 13:45:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 14:00:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 14:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 14:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 14:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 15:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 15:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 15:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 15:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 16:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 16:15:00" | 5.06 | 16.02 | 603.4 | 592.44 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 16:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 17:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 17:15:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 17:30:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 17:45:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 18:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 18:15:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 18:30:00" | 5.05 | 16.02 | 603.4 | 592.43 |
| 12/03/93" | 18:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 19:00:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 19:15:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 19:30:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 19:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 20:00:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 20:15:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 20:30:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 20:45:00" | 5.06 | 16.02 | 603.4 | 592.44 |
| 12/03/93" | 21:00:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 21:15:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 21:30:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 21:45:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 22:00:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 22:15:00" | 5.07 | 16.02 | 603.4 | 592.45 |
| 12/03/93" | 22:30:00" | 5.08 | 16.02 | 603.4 | 592.46 |
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| 12/03/93" | 23:00:00" | 5.08 | 16.02 | 603.4 | 592.46 |
| 12/03/93" | 23:15:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/03/93" | 23:30:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/03/93" | 23:45:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/04/93" | 00:00:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/04/93" | 00:15:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/04/93" | 00:30:00" | 5.09 | 16.02 | 603.4 | 592.47 |
| 12/04/93" | 00:45:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/04/93" | 01:00:00" | 5.1 | 16.02 | 603.4 | 592.48 |
| 12/04/93" | 01:15:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/04/93" | 01:30:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/04/93" | 01:45:00" | 5.12 | 16.02 | 603.4 | 592.5 |
| 12/04/93" | 02:00:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/04/93" | 02:15:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/04/93" | 02:30:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/04/93" | 02:45:00" | 5.13 | 16.02 | 603.4 | 592.51 |
| 12/04/93" | 03:00:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/04/93" | 03:15:00" | 5.14 | 16.02 | 603.4 | 592.52 |
| 12/04/93" | 03:30:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/04/93" | 03:45:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/04/93" | 04:00:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/04/93" | 04:15:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/04/93" | 04:30:00" | 5.15 | 16.02 | 603.4 | 592.53 |
| 12/04/93" | 04:45:00" | 5.16 | 16.02 | 603.4 | 592.54 |
| 12/04/93" | 05:00:00" | 5.16 | 16.02 | 603.4 | 592.54 |
| 12/04/93" | 05:15:00" | 5.16 | 16.02 | 603.4 | 592.54 |
| 12/04/93" | 05:30:00" | 5.17 | 16.02 | 603.4 | 592.55 |
| 12/04/93" | 05:45:00" | 5.17 | 16.02 | 603.4 | 592.55 |
| 12/04/93" | 06:00:00" | 5.17 | 16.02 | 603.4 | 592.55 |
| 12/04/93" | 06:15:00" | 5.17 | 16.02 | 603.4 | 592.55 |

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|---|---|---|---|---|---|
| 12/04/93" | 06:30:00" | 5.18 | 16.02 | 603.4 | 592.56 |
| 12/04/93" | 06:45:00" | 5.18 | 16.02 | 603.4 | 592.56 |
| 12/04/93" | 07:00:00" | 5.18 | 16.02 | 603.4 | 592.56 |
| 12/04/93" | 07:15:00" | 5.18 | 16.02 | 603.4 | 592.56 |
| 12/04/93" | 07:30:00" | 5.18 | 16.02 | 603.4 | 592.56 |
| 12/04/93" | 07:45:00" | 5.2 | 16.02 | 603.4 | 592.58 |
| 12/04/93" | 08:00:00" | 5.2 | 16.02 | 603.4 | 592.58 |
| 12/04/93" | 08:15:00" | 5.2 | 16.02 | 603.4 | 592.58 |
| 12/04/93" | 08:30:00" | 5.2 | 16.02 | 603.4 | 592.58 |
| 12/04/93" | 08:45:00" | 5.21 | 16.02 | 603.4 | 592.59 |
| 12/04/93" | 09:00:00" | 5.21 | 16.02 | 603.4 | 592.59 |
| 12/04/93" | 09:15:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/04/93" | 09:30:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/04/93" | 09:45:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/04/93" | 10:00:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/04/93" | 10:15:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/04/93" | 10:30:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/04/93" | 10:45:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/04/93" | 11:00:00" | 5.24 | 16.02 | 603.4 | 592.62 |
| 12/04/93" | 11:15:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/04/93" | 11:30:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/04/93" | 11:45:00" | 5.27 | 16.02 | 603.4 | 592.65 |
| 12/04/93" | 12:00:00" | 5.28 | 16.02 | 603.4 | 592.66 |
| 12/04/93" | 12:15:00" | 5.29 | 16.02 | 603.4 | 592.67 |
| 12/04/93" | 12:30:00" | 5.29 | 16.02 | 603.4 | 592.67 |
| 12/04/93" | 12:45:00" | 5.3 | 16.02 | 603.4 | 592.68 |
| 12/04/93" | 13:00:00" | 5.3 | 16.02 | 603.4 | 592.68 |
| 12/04/93" | 13:15:00" | 5.31 | 16.02 | 603.4 | 592.69 |
| 12/04/93" | 13:30:00" | 5.32 | 16.02 | 603.4 | 592.7 |
| 12/04/93" | 13:45:00" | 5.32 | 16.02 | 603.4 | 592.7 |
| 12/04/93" | 14:00:00" | 5.32 | 16.02 | 603.4 | 592.7 |
| 12/04/93" | 14:15:00" | 5.34 | 16.02 | 603.4 | 592.72 |
| 12/04/93" | 14:30:00" | 5.34 | 16.02 | 603.4 | 592.72 |
| 12/04/93" | 14:45:00" | 5.35 | 16.02 | 603.4 | 592.73 |
| 12/04/93" | 15:00:00" | 5.35 | 16.02 | 603.4 | 592.73 |
| 12/04/93" | 15:15:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/04/93" | 15:30:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/04/93" | 15:45:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/04/93" | 16:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/04/93" | 16:15:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/04/93" | 16:30:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/04/93" | 16:45:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/04/93" | 17:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/04/93" | 17:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 17:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 17:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 18:00:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 18:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 18:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 18:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 19:00:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 19:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/04/93" | 19:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/04/93" | 19:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/04/93" | 20:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/04/93" | 20:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |

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| 12/04/93" | 20:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/04/93" | 20:45:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/04/93" | 21:00:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/04/93" | 21:15:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/04/93" | 21:30:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/04/93" | 21:45:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/04/93" | 22:00:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/04/93" | 22:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/04/93" | 22:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/04/93" | 22:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
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| 12/04/93" | 23:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/04/93" | 23:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/04/93" | 23:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 00:00:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 00:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 00:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 00:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 01:00:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 01:15:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 01:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 01:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 02:00:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 02:15:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 02:30:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 02:45:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 03:00:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 03:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 03:30:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 03:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 04:00:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 04:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 04:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 04:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 05:00:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 05:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 05:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 05:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 06:00:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 06:15:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/05/93" | 06:30:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/05/93" | 06:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/05/93" | 07:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 07:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 07:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 07:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 08:00:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/05/93" | 08:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 08:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 08:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 09:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 09:15:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 09:30:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 09:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 10:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 10:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |

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|---|---|---|---|---|---|
| 12/05/93" | 10:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 10:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 11:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 11:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 11:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 11:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 12:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 12:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 12:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 12:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 13:00:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/05/93" | 13:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 13:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 13:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 14:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 14:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 14:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 14:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 15:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 15:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 15:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 15:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 16:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 16:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 16:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 16:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 17:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 17:15:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 17:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 17:45:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 18:00:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 18:15:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/05/93" | 18:30:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 18:45:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 19:00:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/05/93" | 19:15:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 19:30:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/05/93" | 19:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 20:00:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 20:15:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 20:30:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 20:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 21:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 21:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 21:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/05/93" | 21:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 22:00:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 22:15:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 22:30:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 22:45:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/05/93" | 23:00:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 23:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 23:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/05/93" | 23:45:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/06/93" | 00:00:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/06/93" | 00:15:00" | 5.4 | 16.02 | 603.4 | 592.78 |

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|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/06/93" | 00:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/06/93" | 01:00:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/06/93" | 01:15:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/06/93" | 01:30:00" | 5.39 | 16.02 | 603.4 | 592.77 |
| 12/06/93" | 01:45:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/06/93" | 02:00:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/06/93" | 02:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 02:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 02:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 03:00:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 03:15:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/06/93" | 03:30:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/06/93" | 03:45:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/06/93" | 04:00:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 04:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 04:30:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/06/93" | 04:45:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/06/93" | 05:00:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 05:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 05:30:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/06/93" | 05:45:00" | 5.44 | 16.02 | 603.4 | 592.82 |
| 12/06/93" | 06:00:00" | 5.44 | 16.02 | 603.4 | 592.82 |
| 12/06/93" | 06:15:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 06:30:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 06:45:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 07:00:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 07:15:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 07:30:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 07:45:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 08:00:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 08:15:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 08:30:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 08:45:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 09:00:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 09:15:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 09:30:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 09:45:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 10:00:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 10:15:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 10:30:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 10:45:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 11:00:00" | 5.5 | 16.02 | 603.4 | 592.88 |
| 12/06/93" | 11:15:00" | 5.5 | 16.02 | 603.4 | 592.88 |
| 12/06/93" | 11:30:00" | 5.51 | 16.02 | 603.4 | 592.89 |
| 12/06/93" | 11:45:00" | 5.5 | 16.02 | 603.4 | 592.88 |
| 12/06/93" | 12:00:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 12:15:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 12:30:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 12:45:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 13:00:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 13:15:00" | 5.51 | 16.02 | 603.4 | 592.89 |
| 12/06/93" | 13:30:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 13:45:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 14:00:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 14:15:00" | 5.53 | 16.02 | 603.4 | 592.91 |

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|---|---|---|---|---|---|
| 12/06/93" | 14:30:00" | 5.54 | 16.02 | 603.4 | 592.92 |
| 12/06/93" | 14:45:00" | 5.54 | 16.02 | 603.4 | 592.92 |
| 12/06/93" | 15:00:00" | 5.54 | 16.02 | 603.4 | 592.92 |
| 12/06/93" | 15:15:00" | 5.54 | 16.02 | 603.4 | 592.92 |
| 12/06/93" | 15:30:00" | 5.54 | 16.02 | 603.4 | 592.92 |
| 12/06/93" | 15:45:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 16:00:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 16:15:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 16:30:00" | 5.53 | 16.02 | 603.4 | 592.91 |
| 12/06/93" | 16:45:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 17:00:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 17:15:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 17:30:00" | 5.52 | 16.02 | 603.4 | 592.9 |
| 12/06/93" | 17:45:00" | 5.51 | 16.02 | 603.4 | 592.89 |
| 12/06/93" | 18:00:00" | 5.51 | 16.02 | 603.4 | 592.89 |
| 12/06/93" | 18:15:00" | 5.51 | 16.02 | 603.4 | 592.89 |
| 12/06/93" | 18:30:00" | 5.51 | 16.02 | 603.4 | 592.89 |
| 12/06/93" | 18:45:00" | 5.5 | 16.02 | 603.4 | 592.88 |
| 12/06/93" | 19:00:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 19:15:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 19:30:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 19:45:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 20:00:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 20:15:00" | 5.49 | 16.02 | 603.4 | 592.87 |
| 12/06/93" | 20:30:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 20:45:00" | 5.47 | 16.02 | 603.4 | 592.85 |
| 12/06/93" | 21:00:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 21:15:00" | 5.46 | 16.02 | 603.4 | 592.84 |
| 12/06/93" | 21:30:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 21:45:00" | 5.45 | 16.02 | 603.4 | 592.83 |
| 12/06/93" | 22:00:00" | 5.44 | 16.02 | 603.4 | 592.82 |
| 12/06/93" | 22:15:00" | 5.44 | 16.02 | 603.4 | 592.82 |
| 12/06/93" | 22:30:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/06/93" | 22:45:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 23:00:00" | 5.43 | 16.02 | 603.4 | 592.81 |
| 12/06/93" | 23:15:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 23:30:00" | 5.42 | 16.02 | 603.4 | 592.8 |
| 12/06/93" | 23:45:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/07/93" | 00:00:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/07/93" | 00:15:00" | 5.4 | 16.02 | 603.4 | 592.78 |
| 12/07/93" | 00:30:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/07/93" | 00:45:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/07/93" | 01:00:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/07/93" | 01:15:00" | 5.38 | 16.02 | 603.4 | 592.76 |
| 12/07/93" | 01:30:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/07/93" | 01:45:00" | 5.37 | 16.02 | 603.4 | 592.75 |
| 12/07/93" | 02:00:00" | 5.36 | 16.02 | 603.4 | 592.74 |
| 12/07/93" | 02:15:00" | 5.35 | 16.02 | 603.4 | 592.73 |
| 12/07/93" | 02:30:00" | 5.34 | 16.02 | 603.4 | 592.72 |
| 12/07/93" | 02:45:00" | 5.35 | 16.02 | 603.4 | 592.73 |
| 12/07/93" | 03:00:00" | 5.34 | 16.02 | 603.4 | 592.72 |
| 12/07/93" | 03:15:00" | 5.32 | 16.02 | 603.4 | 592.7 |
| 12/07/93" | 03:30:00" | 5.31 | 16.02 | 603.4 | 592.69 |
| 12/07/93" | 03:45:00" | 5.32 | 16.02 | 603.4 | 592.7 |
| 12/07/93" | 04:00:00" | 5.31 | 16.02 | 603.4 | 592.69 |
| 12/07/93" | 04:15:00" | 5.3 | 16.02 | 603.4 | 592.68 |

| | | | | | |
|---|---|---|---|---|---|
| 12/07/93" | 04:30:00" | 5.3 | 16.02 | 603.4 | 592.68 |
| 12/07/93" | 04:45:00" | 5.3 | 16.02 | 603.4 | 592.68 |
| 12/07/93" | 05:00:00" | 5.31 | 16.02 | 603.4 | 592.69 |
| 12/07/93" | 05:15:00" | 5.31 | 16.02 | 603.4 | 592.69 |
| 12/07/93" | 05:30:00" | 5.31 | 16.02 | 603.4 | 592.69 |
| 12/07/93" | 05:45:00" | 5.3 | 16.02 | 603.4 | 592.68 |
| 12/07/93" | 06:00:00" | 5.28 | 16.02 | 603.4 | 592.66 |
| 12/07/93" | 06:15:00" | 5.28 | 16.02 | 603.4 | 592.66 |
| 12/07/93" | 06:30:00" | 5.28 | 16.02 | 603.4 | 592.66 |
| 12/07/93" | 06:45:00" | 5.27 | 16.02 | 603.4 | 592.65 |
| 12/07/93" | 07:00:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/07/93" | 07:15:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/07/93" | 07:30:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/07/93" | 07:45:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/07/93" | 08:00:00" | 5.24 | 16.02 | 603.4 | 592.62 |
| 12/07/93" | 08:15:00" | 5.24 | 16.02 | 603.4 | 592.62 |
| 12/07/93" | 08:30:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 08:45:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 09:00:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 09:15:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 09:30:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 09:45:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 10:00:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 10:15:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 10:30:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 10:45:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 11:00:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 11:15:00" | 5.22 | 16.02 | 603.4 | 592.6 |
| 12/07/93" | 11:30:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 11:45:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 12:00:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 12:15:00" | 5.24 | 16.02 | 603.4 | 592.62 |
| 12/07/93" | 12:30:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 12:45:00" | 5.23 | 16.02 | 603.4 | 592.61 |
| 12/07/93" | 13:00:00" | 5.25 | 16.02 | 603.4 | 592.63 |
| 12/07/93" | 13:15:00" | 5.25 | | | |



recycled paper

ecology and environment

" Saved Recorder Status
"Type: 2109-5
" Time at Recorder: 12/07/93 12:16:35 Sync'd @ 12/01/93 12:46:10
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ 0.05 is OFF Upper alarm @ 11.84 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 5 days 23:15:00
"
" Storage Capacity: 3238 value records: 33 days 17:30:00
"Output compressed by a factor of 1

GW10B
MONITORING WELL GW10B
INITIAL DEPTH TO WATER FROM TOP OF CASING = 11.82 FEET
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 5.17

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 5.17 | 16.99 | 603.29 | 591.47 |
| 12/01/93" | 13:45:00" | 5.17 | 16.99 | 603.29 | 591.47 |
| 12/01/93" | 14:00:00" | 5.17 | 16.99 | 603.29 | 591.47 |
| 12/01/93" | 14:15:00" | 5.18 | 16.99 | 603.29 | 591.48 |
| 12/01/93" | 14:30:00" | 5.18 | 16.99 | 603.29 | 591.48 |
| 12/01/93" | 14:45:00" | 5.18 | 16.99 | 603.29 | 591.48 |
| 12/01/93" | 15:00:00" | 5.18 | 16.99 | 603.29 | 591.48 |
| 12/01/93" | 15:15:00" | 5.18 | 16.99 | 603.29 | 591.48 |
| 12/01/93" | 15:30:00" | 5.19 | 16.99 | 603.29 | 591.49 |
| 12/01/93" | 15:45:00" | 5.19 | 16.99 | 603.29 | 591.49 |
| 12/01/93" | 16:00:00" | 5.19 | 16.99 | 603.29 | 591.49 |
| 12/01/93" | 16:15:00" | 5.19 | 16.99 | 603.29 | 591.49 |
| 12/01/93" | 16:30:00" | 5.19 | 16.99 | 603.29 | 591.49 |
| 12/01/93" | 16:45:00" | 5.19 | 16.99 | 603.29 | 591.49 |
| 12/01/93" | 17:00:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 17:15:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 17:30:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 17:45:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 18:00:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 18:15:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 18:30:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 18:45:00" | 5.21 | 16.99 | 603.29 | 591.51 |
| 12/01/93" | 19:00:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 19:15:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 19:30:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 19:45:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 20:00:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 20:15:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 20:30:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 20:45:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 21:00:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 21:15:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 21:30:00" | 5.22 | 16.99 | 603.29 | 591.52 |
| 12/01/93" | 21:45:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 22:00:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 22:15:00" | 5.23 | 16.99 | 603.29 | 591.53 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 22:45:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 23:00:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 23:15:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 23:30:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/01/93" | 23:45:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/02/93" | 00:00:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/02/93" | 00:15:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/02/93" | 00:30:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/02/93" | 00:45:00" | 5.23 | 16.99 | 603.29 | 591.53 |
| 12/02/93" | 01:00:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 01:15:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 01:30:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 01:45:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 02:00:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 02:15:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 02:30:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 02:45:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 03:00:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 03:15:00" | 5.24 | 16.99 | 603.29 | 591.54 |
| 12/02/93" | 03:30:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 03:45:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 04:00:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 04:15:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 04:30:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 04:45:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 05:00:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 05:15:00" | 5.25 | 16.99 | 603.29 | 591.55 |
| 12/02/93" | 05:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 05:45:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 06:00:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 06:15:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 06:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 06:45:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 07:00:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 07:15:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 07:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 07:45:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 08:00:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 08:15:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 08:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 08:45:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 09:00:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 09:15:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 09:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 09:45:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 10:00:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 10:15:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 10:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 10:45:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 11:00:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 11:15:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 11:30:00" | 5.26 | 16.99 | 603.29 | 591.56 |
| 12/02/93" | 11:45:00" | 5.28 | 16.99 | 603.29 | 591.58 |
| 12/02/93" | 12:00:00" | 5.28 | 16.99 | 603.29 | 591.58 |
| 12/02/93" | 12:15:00" | 5.28 | 16.99 | 603.29 | 591.58 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 12:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 13:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 13:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 13:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 13:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 14:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 14:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 14:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 14:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 15:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 15:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 15:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 15:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 16:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 16:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 16:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 16:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/02/93" | 17:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 17:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 17:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 17:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 18:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 18:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 18:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 18:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 19:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 19:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 19:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 19:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 20:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 20:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 20:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 20:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 21:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 21:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 21:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 21:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 22:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 22:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 22:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 22:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 23:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/02/93" | 23:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 23:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/02/93" | 23:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 00:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 00:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 00:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 00:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 01:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 01:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 01:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 01:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 02:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 02:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 02:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 03:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 03:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 03:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 03:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 04:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 04:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 04:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 04:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 05:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 05:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 05:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 05:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 06:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 06:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 06:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 06:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 07:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 07:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 07:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 07:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 08:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 08:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 08:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 08:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 09:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 09:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 09:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 09:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 10:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 10:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 10:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 10:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 11:00:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 11:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 11:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 11:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 12:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 12:15:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 12:30:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 12:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 13:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 13:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 13:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 13:45:00" | 5.29 | 16.99 | 603.29 | 591.59 |
| 12/03/93" | 14:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 14:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 14:30:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 14:45:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 15:00:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 15:15:00" | 5.3 | 16.99 | 603.29 | 591.6 |
| 12/03/93" | 15:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 15:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 16:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 16:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 16:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 17:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 17:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 17:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 17:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 18:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 18:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 18:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 18:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 19:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 19:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 19:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 19:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 20:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 20:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 20:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 20:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 21:00:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 21:15:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 21:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 21:45:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 22:00:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/03/93" | 22:15:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/03/93" | 22:30:00" | 5.31 | 16.99 | 603.29 | 591.61 |
| 12/03/93" | 22:45:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/03/93" | 23:00:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/03/93" | 23:15:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/03/93" | 23:30:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/03/93" | 23:45:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/04/93" | 00:00:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 00:15:00" | 5.32 | 16.99 | 603.29 | 591.62 |
| 12/04/93" | 00:30:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 00:45:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 01:00:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 01:15:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 01:30:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 01:45:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 02:00:00" | 5.33 | 16.99 | 603.29 | 591.63 |
| 12/04/93" | 02:15:00" | 5.35 | 16.99 | 603.29 | 591.65 |
| 12/04/93" | 02:30:00" | 5.35 | 16.99 | 603.29 | 591.65 |
| 12/04/93" | 02:45:00" | 5.35 | 16.99 | 603.29 | 591.65 |
| 12/04/93" | 03:00:00" | 5.35 | 16.99 | 603.29 | 591.65 |
| 12/04/93" | 03:15:00" | 5.35 | 16.99 | 603.29 | 591.65 |
| 12/04/93" | 03:30:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 03:45:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 04:00:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 04:15:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 04:30:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 04:45:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 05:00:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 05:15:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 05:30:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 05:45:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 06:00:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 06:15:00" | 5.36 | 16.99 | 603.29 | 591.66 |

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|---|---|---|---|---|---|
| 12/04/93" | 06:30:00" | 5.36 | 16.99 | 603.29 | 591.66 |
| 12/04/93" | 06:45:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 07:00:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 07:15:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 07:30:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 07:45:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 08:00:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 08:15:00" | 5.37 | 16.99 | 603.29 | 591.67 |
| 12/04/93" | 08:30:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 08:45:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 09:00:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 09:15:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 09:30:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 09:45:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 10:00:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 10:15:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 10:30:00" | 5.38 | 16.99 | 603.29 | 591.68 |
| 12/04/93" | 10:45:00" | 5.39 | 16.99 | 603.29 | 591.69 |
| 12/04/93" | 11:00:00" | 5.39 | 16.99 | 603.29 | 591.69 |
| 12/04/93" | 11:15:00" | 5.4 | 16.99 | 603.29 | 591.7 |
| 12/04/93" | 11:30:00" | 5.4 | 16.99 | 603.29 | 591.7 |
| 12/04/93" | 11:45:00" | 5.4 | 16.99 | 603.29 | 591.7 |
| 12/04/93" | 12:00:00" | 5.4 | 16.99 | 603.29 | 591.7 |
| 12/04/93" | 12:15:00" | 5.4 | 16.99 | 603.29 | 591.7 |
| 12/04/93" | 12:30:00" | 5.42 | 16.99 | 603.29 | 591.72 |
| 12/04/93" | 12:45:00" | 5.42 | 16.99 | 603.29 | 591.72 |
| 12/04/93" | 13:00:00" | 5.42 | 16.99 | 603.29 | 591.72 |
| 12/04/93" | 13:15:00" | 5.43 | 16.99 | 603.29 | 591.73 |
| 12/04/93" | 13:30:00" | 5.43 | 16.99 | 603.29 | 591.73 |
| 12/04/93" | 13:45:00" | 5.43 | 16.99 | 603.29 | 591.73 |
| 12/04/93" | 14:00:00" | 5.43 | 16.99 | 603.29 | 591.73 |
| 12/04/93" | 14:15:00" | 5.43 | 16.99 | 603.29 | 591.73 |
| 12/04/93" | 14:30:00" | 5.44 | 16.99 | 603.29 | 591.74 |
| 12/04/93" | 14:45:00" | 5.44 | 16.99 | 603.29 | 591.74 |
| 12/04/93" | 15:00:00" | 5.44 | 16.99 | 603.29 | 591.74 |
| 12/04/93" | 15:15:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 15:30:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 15:45:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 16:00:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 16:15:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 16:30:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 16:45:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 17:00:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 17:15:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 17:30:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 17:45:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 18:00:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 18:15:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 18:30:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 18:45:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 19:00:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 19:15:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 19:30:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 19:45:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 20:00:00" | 5.45 | 16.99 | 603.29 | 591.75 |
| 12/04/93" | 20:15:00" | 5.45 | 16.99 | 603.29 | 591.75 |

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|---|---|---|---|---|---|
| 12/04/93" | 20:30:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 20:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 21:00:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 21:15:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 21:30:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 21:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 22:00:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 22:15:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 22:30:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 22:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 23:00:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 23:15:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 23:30:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/04/93" | 23:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 00:00:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 00:15:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 00:30:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 00:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 01:00:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 01:15:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 01:30:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 01:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 02:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 02:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 02:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 02:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 03:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 03:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 03:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 03:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 04:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 04:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 04:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 04:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 05:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 05:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 05:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 05:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 06:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 06:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 06:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 06:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 07:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 07:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 07:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 07:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 08:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 08:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 08:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 08:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 09:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 09:15:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 09:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 09:45:00" | 5.46 | 16.99 | 603.29 | 591.76 |
| 12/05/93" | 10:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 10:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |

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|---|---|---|---|---|---|
| 12/05/93" | 10:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 10:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 11:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 11:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 11:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 11:45:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 12:00:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 12:15:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 12:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 12:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 13:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 13:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 13:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 13:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 14:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 14:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 14:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 14:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 15:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 15:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 15:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 15:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 16:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 16:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 16:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 16:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 17:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 17:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 17:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 17:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 18:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 18:15:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 18:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 18:45:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 19:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/05/93" | 19:15:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 19:30:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 19:45:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 20:00:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 20:15:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 20:30:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 20:45:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 21:00:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 21:15:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 21:30:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 21:45:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 22:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 22:15:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/05/93" | 22:30:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 22:45:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 23:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 23:15:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 23:30:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/05/93" | 23:45:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 00:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 00:15:00" | 5.5 | 16.99 | 603.29 | 591.8 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 00:45:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 01:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 01:15:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 01:30:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 01:45:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 02:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 02:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 02:30:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 02:45:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 03:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/06/93" | 03:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 03:30:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 03:45:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 04:00:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 04:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 04:30:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 04:45:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 05:00:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 05:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 05:30:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/06/93" | 05:45:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 06:00:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 06:15:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 06:30:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 06:45:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 07:00:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 07:15:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/06/93" | 07:30:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 07:45:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 08:00:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 08:15:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 08:30:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 08:45:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 09:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 09:15:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 09:30:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 09:45:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 10:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 10:15:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 10:30:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 10:45:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 11:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 11:15:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 11:30:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 11:45:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 12:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 12:15:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 12:30:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 12:45:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 13:00:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 13:15:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 13:30:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 13:45:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 14:00:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 14:15:00" | 5.57 | 16.99 | 603.29 | 591.87 |

| | | | | | |
|---|---|---|---|---|---|
| 12/06/93" | 14:30:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 14:45:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 15:00:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 15:15:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 15:30:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 15:45:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 16:00:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 16:15:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 16:30:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 16:45:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 17:00:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 17:15:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 17:30:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 17:45:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 18:00:00" | 5.57 | 16.99 | 603.29 | 591.87 |
| 12/06/93" | 18:15:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 18:30:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 18:45:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 19:00:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 19:15:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 19:30:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 19:45:00" | 5.56 | 16.99 | 603.29 | 591.86 |
| 12/06/93" | 20:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 20:15:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 20:30:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 20:45:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 21:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 21:15:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 21:30:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 21:45:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 22:00:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 22:15:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 22:30:00" | 5.55 | 16.99 | 603.29 | 591.85 |
| 12/06/93" | 22:45:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 23:00:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 23:15:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 23:30:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/06/93" | 23:45:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 00:00:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 00:15:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 00:30:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 00:45:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/07/93" | 01:00:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/07/93" | 01:15:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 01:30:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 01:45:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 02:00:00" | 5.53 | 16.99 | 603.29 | 591.83 |
| 12/07/93" | 02:15:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/07/93" | 02:30:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/07/93" | 02:45:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/07/93" | 03:00:00" | 5.52 | 16.99 | 603.29 | 591.82 |
| 12/07/93" | 03:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 03:30:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 03:45:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 04:00:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 04:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |

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|---|---|---|---|---|---|
| 12/07/93" | 04:30:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 04:45:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 05:00:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 05:15:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 05:30:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 05:45:00" | 5.51 | 16.99 | 603.29 | 591.81 |
| 12/07/93" | 06:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 06:15:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 06:30:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 06:45:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 07:00:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 07:15:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 07:30:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/07/93" | 07:45:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/07/93" | 08:00:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/07/93" | 08:15:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 08:30:00" | 5.5 | 16.99 | 603.29 | 591.8 |
| 12/07/93" | 08:45:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/07/93" | 09:00:00" | 5.49 | 16.99 | 603.29 | 591.79 |
| 12/07/93" | 09:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 09:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 09:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 10:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 10:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 10:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 10:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 11:00:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 11:15:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 11:30:00" | 5.48 | 16.99 | 603.29 | 591.78 |
| 12/07/93" | 11:45:00" | 5.48 | 16.99 | 603.29 | 591.78 |

" Saved Recorder Status
"Type: 2109-5
" Time at Recorder: 12/07/93 14:12:15 Sync'd @ 12/01/93 11:14:07
" Signal process: Not Applicable
" Values being saved: averages
" Alarm status: Low alarm @ -0.01 is OFF Upper alarm @ 11.43 is OFF
"
" Averaging period: 00:15:00 Amount of data recorded: 6 days 02:45:00
"
" Storage Capacity: 3238 value records: 33 days 17:30:00
"Output compressed by a factor of 1

GW11B
MONITORING WELL GW11B
INITIAL DEPTH TO WATER FROM TOP OF CASING = 7.59
CURRENT READING AT RECORDER AT TIME OF PLACEMENT = 4.45 (CALCULATED BASED ON RECALIBRATION

| DATE | TIME | TRANS READING | TRANS POSITION | TOC ELEVATION | GROUNDWATER ELEVATION |
|---|---|---|---|---|---|
| 12/01/93" | 13:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 13:45:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 14:00:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 14:15:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 14:30:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 14:45:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 15:00:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 15:15:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 15:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 15:45:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 16:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 16:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 16:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 16:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 17:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 17:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 17:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 17:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 18:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 18:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 18:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 18:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 19:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 19:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 19:30:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 19:45:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 20:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 20:15:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 20:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/01/93" | 20:45:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 21:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 21:15:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/01/93" | 21:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 21:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 22:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 22:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |

| | | | | | |
|---|---|---|---|---|---|
| 12/01/93" | 22:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 22:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 23:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 23:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 23:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/01/93" | 23:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 00:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 00:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 00:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 00:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 01:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 01:15:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 01:30:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 01:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 02:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 02:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 02:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 02:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 03:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 03:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 03:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 03:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 04:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 04:15:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 04:30:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 04:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 05:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 05:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 05:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 05:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 06:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 06:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 06:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 06:45:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 07:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 07:15:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 07:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 07:45:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 08:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 08:15:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 08:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 08:45:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 09:00:00" | 4.44 | 12.04 | 601.89 | 594.29 |
| 12/02/93" | 09:15:00" | 4.44 | 12.04 | 601.89 | 594.29 |
| 12/02/93" | 09:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 09:45:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 10:00:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 10:15:00" | 4.44 | 12.04 | 601.89 | 594.29 |
| 12/02/93" | 10:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 10:45:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 11:00:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 11:15:00" | 4.4 | 12.04 | 601.89 | 594.25 |
| 12/02/93" | 11:30:00" | 4.45 | 12.04 | 601.89 | 594.3 |
| 12/02/93" | 11:45:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 12:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 12:15:00" | 4.48 | 12.04 | 601.89 | 594.33 |

| | | | | | |
|---|---|---|---|---|---|
| 12/02/93" | 12:30:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 12:45:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 13:00:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 13:15:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 13:30:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 13:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 14:00:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/02/93" | 14:15:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 14:30:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 14:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 15:00:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 15:15:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 15:30:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 15:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 16:00:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 16:15:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 16:30:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 16:45:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 17:00:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 17:15:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 17:30:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 17:45:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 18:00:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 18:15:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 18:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 18:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 19:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 19:15:00" | 4.46 | 12.04 | 601.89 | 594.31 |
| 12/02/93" | 19:30:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 19:45:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 20:00:00" | 4.47 | 12.04 | 601.89 | 594.32 |
| 12/02/93" | 20:15:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 20:30:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 20:45:00" | 4.48 | 12.04 | 601.89 | 594.33 |
| 12/02/93" | 21:00:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 21:15:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/02/93" | 21:30:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 21:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 22:00:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/02/93" | 22:15:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/02/93" | 22:30:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/02/93" | 22:45:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/02/93" | 23:00:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/02/93" | 23:15:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/02/93" | 23:30:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/02/93" | 23:45:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 00:00:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 00:15:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 00:30:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 00:45:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 01:00:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 01:15:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 01:30:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 01:45:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 02:00:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 02:15:00" | 4.54 | 12.04 | 601.89 | 594.39 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 02:30:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 02:45:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 03:00:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 03:15:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 03:30:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 03:45:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 04:00:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 04:15:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 04:30:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 04:45:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 05:00:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 05:15:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 05:30:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 05:45:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 06:00:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 06:15:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 06:30:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 06:45:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 07:00:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 07:15:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 07:30:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 07:45:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 08:00:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 08:15:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 08:30:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 08:45:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 09:00:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 09:15:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 09:30:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/03/93" | 09:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/03/93" | 10:00:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/03/93" | 10:15:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/03/93" | 10:30:00" | 4.49 | 12.04 | 601.89 | 594.34 |
| 12/03/93" | 10:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/03/93" | 11:00:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 11:15:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 11:30:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 11:45:00" | 4.51 | 12.04 | 601.89 | 594.36 |
| 12/03/93" | 12:00:00" | 4.52 | 12.04 | 601.89 | 594.37 |
| 12/03/93" | 12:15:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 12:30:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 12:45:00" | 4.53 | 12.04 | 601.89 | 594.38 |
| 12/03/93" | 13:00:00" | 4.54 | 12.04 | 601.89 | 594.39 |
| 12/03/93" | 13:15:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 13:30:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 13:45:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 14:00:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 14:15:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 14:30:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 14:45:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 15:00:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 15:15:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 15:30:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 15:45:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 16:00:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 16:15:00" | 4.57 | 12.04 | 601.89 | 594.42 |

| | | | | | |
|---|---|---|---|---|---|
| 12/03/93" | 16:30:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 16:45:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 17:00:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 17:15:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 17:30:00" | 4.55 | 12.04 | 601.89 | 594.4 |
| 12/03/93" | 17:45:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 18:00:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 18:15:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 18:30:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 18:45:00" | 4.59 | 12.04 | 601.89 | 594.44 |
| 12/03/93" | 19:00:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 19:15:00" | 4.59 | 12.04 | 601.89 | 594.44 |
| 12/03/93" | 19:30:00" | 4.59 | 12.04 | 601.89 | 594.44 |
| 12/03/93" | 19:45:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 20:00:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 20:15:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 20:30:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 20:45:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 21:00:00" | 4.56 | 12.04 | 601.89 | 594.41 |
| 12/03/93" | 21:15:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 21:30:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 21:45:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 22:00:00" | 4.57 | 12.04 | 601.89 | 594.42 |
| 12/03/93" | 22:15:00" | 4.59 | 12.04 | 601.89 | 594.44 |
| 12/03/93" | 22:30:00" | 4.59 | 12.04 | 601.89 | 594.44 |
| 12/03/93" | 22:45:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/03/93" | 23:00:00" | 4.59 | 12.04 | 601.89 | 594.44 |
| 12/03/93" | 23:15:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/03/93" | 23:30:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/03/93" | 23:45:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/04/93" | 00:00:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/04/93" | 00:15:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/04/93" | 00:30:00" | 4.6 | 12.04 | 601.89 | 594.45 |
| 12/04/93" | 00:45:00" | 4.61 | 12.04 | 601.89 | 594.46 |
| 12/04/93" | 01:00:00" | 4.61 | 12.04 | 601.89 | 594.46 |
| 12/04/93" | 01:15:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 01:30:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 01:45:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 02:00:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 02:15:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 02:30:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 02:45:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 03:00:00" | 4.62 | 12.04 | 601.89 | 594.47 |
| 12/04/93" | 03:15:00" | 4.63 | 12.04 | 601.89 | 594.48 |
| 12/04/93" | 03:30:00" | 4.63 | 12.04 | 601.89 | 594.48 |
| 12/04/93" | 03:45:00" | 4.63 | 12.04 | 601.89 | 594.48 |
| 12/04/93" | 04:00:00" | 4.63 | 12.04 | 601.89 | 594.48 |
| 12/04/93" | 04:15:00" | 4.63 | 12.04 | 601.89 | 594.48 |
| 12/04/93" | 04:30:00" | 4.64 | 12.04 | 601.89 | 594.49 |
| 12/04/93" | 04:45:00" | 4.64 | 12.04 | 601.89 | 594.49 |
| 12/04/93" | 05:00:00" | 4.64 | 12.04 | 601.89 | 594.49 |
| 12/04/93" | 05:15:00" | 4.64 | 12.04 | 601.89 | 594.49 |
| 12/04/93" | 05:30:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 05:45:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 06:00:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 06:15:00" | 4.64 | 12.04 | 601.89 | 594.49 |

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|---|---|---|---|---|---|
| 12/04/93" | 06:30:00" | 4.64 | 12.04 | 601.89 | 594.49 |
| 12/04/93" | 06:45:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 07:00:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 07:15:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 07:30:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 07:45:00" | 4.65 | 12.04 | 601.89 | 594.5 |
| 12/04/93" | 08:00:00" | 4.66 | 12.04 | 601.89 | 594.51 |
| 12/04/93" | 08:15:00" | 4.66 | 12.04 | 601.89 | 594.51 |
| 12/04/93" | 08:30:00" | 4.66 | 12.04 | 601.89 | 594.51 |
| 12/04/93" | 08:45:00" | 4.66 | 12.04 | 601.89 | 594.51 |
| 12/04/93" | 09:00:00" | 4.68 | 12.04 | 601.89 | 594.53 |
| 12/04/93" | 09:15:00" | 4.68 | 12.04 | 601.89 | 594.53 |
| 12/04/93" | 09:30:00" | 4.68 | 12.04 | 601.89 | 594.53 |
| 12/04/93" | 09:45:00" | 4.68 | 12.04 | 601.89 | 594.53 |
| 12/04/93" | 10:00:00" | 4.68 | 12.04 | 601.89 | 594.53 |
| 12/04/93" | 10:15:00" | 4.69 | 12.04 | 601.89 | 594.54 |
| 12/04/93" | 10:30:00" | 4.69 | 12.04 | 601.89 | 594.54 |
| 12/04/93" | 10:45:00" | 4.71 | 12.04 | 601.89 | 594.56 |
| 12/04/93" | 11:00:00" | 4.72 | 12.04 | 601.89 | 594.57 |
| 12/04/93" | 11:15:00" | 4.73 | 12.04 | 601.89 | 594.58 |
| 12/04/93" | 11:30:00" | 4.76 | 12.04 | 601.89 | 594.61 |
| 12/04/93" | 11:45:00" | 4.78 | 12.04 | 601.89 | 594.63 |
| 12/04/93" | 12:00:00" | 4.8 | 12.04 | 601.89 | 594.65 |
| 12/04/93" | 12:15:00" | 4.81 | 12.04 | 601.89 | 594.66 |
| 12/04/93" | 12:30:00" | 4.84 | 12.04 | 601.89 | 594.69 |
| 12/04/93" | 12:45:00" | 4.85 | 12.04 | 601.89 | 594.7 |
| 12/04/93" | 13:00:00" | 4.87 | 12.04 | 601.89 | 594.72 |
| 12/04/93" | 13:15:00" | 4.89 | 12.04 | 601.89 | 594.74 |
| 12/04/93" | 13:30:00" | 4.92 | 12.04 | 601.89 | 594.77 |
| 12/04/93" | 13:45:00" | 4.93 | 12.04 | 601.89 | 594.78 |
| 12/04/93" | 14:00:00" | 4.95 | 12.04 | 601.89 | 594.8 |
| 12/04/93" | 14:15:00" | 4.96 | 12.04 | 601.89 | 594.81 |
| 12/04/93" | 14:30:00" | 4.98 | 12.04 | 601.89 | 594.83 |
| 12/04/93" | 14:45:00" | 5.01 | 12.04 | 601.89 | 594.86 |
| 12/04/93" | 15:00:00" | 5.02 | 12.04 | 601.89 | 594.87 |
| 12/04/93" | 15:15:00" | 5.04 | 12.04 | 601.89 | 594.89 |
| 12/04/93" | 15:30:00" | 5.05 | 12.04 | 601.89 | 594.9 |
| 12/04/93" | 15:45:00" | 5.07 | 12.04 | 601.89 | 594.92 |
| 12/04/93" | 16:00:00" | 5.1 | 12.04 | 601.89 | 594.95 |
| 12/04/93" | 16:15:00" | 5.12 | 12.04 | 601.89 | 594.97 |
| 12/04/93" | 16:30:00" | 5.14 | 12.04 | 601.89 | 594.99 |
| 12/04/93" | 16:45:00" | 5.15 | 12.04 | 601.89 | 595 |
| 12/04/93" | 17:00:00" | 5.18 | 12.04 | 601.89 | 595.03 |
| 12/04/93" | 17:15:00" | 5.2 | 12.04 | 601.89 | 595.05 |
| 12/04/93" | 17:30:00" | 5.22 | 12.04 | 601.89 | 595.07 |
| 12/04/93" | 17:45:00" | 5.23 | 12.04 | 601.89 | 595.08 |
| 12/04/93" | 18:00:00" | 5.26 | 12.04 | 601.89 | 595.11 |
| 12/04/93" | 18:15:00" | 5.27 | 12.04 | 601.89 | 595.12 |
| 12/04/93" | 18:30:00" | 5.29 | 12.04 | 601.89 | 595.14 |
| 12/04/93" | 18:45:00" | 5.3 | 12.04 | 601.89 | 595.15 |
| 12/04/93" | 19:00:00" | 5.31 | 12.04 | 601.89 | 595.16 |
| 12/04/93" | 19:15:00" | 5.34 | 12.04 | 601.89 | 595.19 |
| 12/04/93" | 19:30:00" | 5.35 | 12.04 | 601.89 | 595.2 |
| 12/04/93" | 19:45:00" | 5.37 | 12.04 | 601.89 | 595.22 |
| 12/04/93" | 20:00:00" | 5.39 | 12.04 | 601.89 | 595.24 |
| 12/04/93" | 20:15:00" | 5.42 | 12.04 | 601.89 | 595.27 |

| | | | | | |
|---|---|---|---|---|---|
| 12/04/93" | 20:30:00" | 5.43 | 12.04 | 601.89 | 595.28 |
| 12/04/93" | 20:45:00" | 5.45 | 12.04 | 601.89 | 595.3 |
| 12/04/93" | 21:00:00" | 5.46 | 12.04 | 601.89 | 595.31 |
| 12/04/93" | 21:15:00" | 5.47 | 12.04 | 601.89 | 595.32 |
| 12/04/93" | 21:30:00" | 5.49 | 12.04 | 601.89 | 595.34 |
| 12/04/93" | 21:45:00" | 5.51 | 12.04 | 601.89 | 595.36 |
| 12/04/93" | 22:00:00" | 5.52 | 12.04 | 601.89 | 595.37 |
| 12/04/93" | 22:15:00" | 5.52 | 12.04 | 601.89 | 595.37 |
| 12/04/93" | 22:30:00" | 5.54 | 12.04 | 601.89 | 595.39 |
| 12/04/93" | 22:45:00" | 5.55 | 12.04 | 601.89 | 595.4 |
| 12/04/93" | 23:00:00" | 5.56 | 12.04 | 601.89 | 595.41 |
| 12/04/93" | 23:15:00" | 5.58 | 12.04 | 601.89 | 595.43 |
| 12/04/93" | 23:30:00" | 5.59 | 12.04 | 601.89 | 595.44 |
| 12/04/93" | 23:45:00" | 5.59 | 12.04 | 601.89 | 595.44 |
| 12/05/93" | 00:00:00" | 5.6 | 12.04 | 601.89 | 595.45 |
| 12/05/93" | 00:15:00" | 5.6 | 12.04 | 601.89 | 595.45 |
| 12/05/93" | 00:30:00" | 5.61 | 12.04 | 601.89 | 595.46 |
| 12/05/93" | 00:45:00" | 5.62 | 12.04 | 601.89 | 595.47 |
| 12/05/93" | 01:00:00" | 5.62 | 12.04 | 601.89 | 595.47 |
| 12/05/93" | 01:15:00" | 5.63 | 12.04 | 601.89 | 595.48 |
| 12/05/93" | 01:30:00" | 5.64 | 12.04 | 601.89 | 595.49 |
| 12/05/93" | 01:45:00" | 5.66 | 12.04 | 601.89 | 595.51 |
| 12/05/93" | 02:00:00" | 5.67 | 12.04 | 601.89 | 595.52 |
| 12/05/93" | 02:15:00" | 5.67 | 12.04 | 601.89 | 595.52 |
| 12/05/93" | 02:30:00" | 5.68 | 12.04 | 601.89 | 595.53 |
| 12/05/93" | 02:45:00" | 5.68 | 12.04 | 601.89 | 595.53 |
| 12/05/93" | 03:00:00" | 5.68 | 12.04 | 601.89 | 595.53 |
| 12/05/93" | 03:15:00" | 5.69 | 12.04 | 601.89 | 595.54 |
| 12/05/93" | 03:30:00" | 5.7 | 12.04 | 601.89 | 595.55 |
| 12/05/93" | 03:45:00" | 5.7 | 12.04 | 601.89 | 595.55 |
| 12/05/93" | 04:00:00" | 5.7 | 12.04 | 601.89 | 595.55 |
| 12/05/93" | 04:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 04:30:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 04:45:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 05:00:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 05:15:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 05:30:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 05:45:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 06:00:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 06:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 06:30:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 06:45:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 07:00:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 07:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 07:30:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 07:45:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 08:00:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 08:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 08:30:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 08:45:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 09:00:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 09:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 09:30:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/05/93" | 09:45:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 10:00:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/05/93" | 10:15:00" | 5.74 | 12.04 | 601.89 | 595.59 |

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|---|---|---|---|---|---|
| 12/05/93" | 10:30:00" | 5.74 | 12.04 | 601.89 | 595.59 |
| 12/05/93" | 10:45:00" | 5.75 | 12.04 | 601.89 | 595.6 |
| 12/05/93" | 11:00:00" | 5.75 | 12.04 | 601.89 | 595.6 |
| 12/05/93" | 11:15:00" | 5.75 | 12.04 | 601.89 | 595.6 |
| 12/05/93" | 11:30:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 11:45:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 12:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 12:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 12:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 12:45:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 13:00:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 13:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 13:30:00" | 5.77 | 12.04 | 601.89 | 595.62 |
| 12/05/93" | 13:45:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 14:00:00" | 5.77 | 12.04 | 601.89 | 595.62 |
| 12/05/93" | 14:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 14:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 14:45:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 15:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 15:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 15:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 15:45:00" | 5.77 | 12.04 | 601.89 | 595.62 |
| 12/05/93" | 16:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 16:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 16:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 16:45:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 17:00:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 17:15:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 17:30:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 17:45:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 18:00:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 18:15:00" | 5.75 | 12.04 | 601.89 | 595.6 |
| 12/05/93" | 18:30:00" | 5.75 | 12.04 | 601.89 | 595.6 |
| 12/05/93" | 18:45:00" | 5.77 | 12.04 | 601.89 | 595.62 |
| 12/05/93" | 19:00:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 19:15:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/05/93" | 19:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 19:45:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 20:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 20:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 20:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 20:45:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 21:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 21:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 21:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 21:45:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/05/93" | 22:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 22:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/05/93" | 22:30:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/05/93" | 22:45:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/05/93" | 23:00:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/05/93" | 23:15:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/05/93" | 23:30:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/05/93" | 23:45:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/06/93" | 00:00:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/06/93" | 00:15:00" | 5.79 | 12.04 | 601.89 | 595.64 |

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|---|---|---|---|---|---|
| 12/06/93" | 00:30:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 00:45:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/06/93" | 01:00:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 01:15:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 01:30:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 01:45:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 02:00:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 02:15:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 02:30:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 02:45:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 03:00:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 03:15:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 03:30:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 03:45:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 04:00:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 04:15:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 04:30:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 04:45:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 05:00:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 05:15:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 05:30:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 05:45:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 06:00:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 06:15:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 06:30:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 06:45:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 07:00:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 07:15:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 07:30:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 07:45:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 08:00:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 08:15:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 08:30:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 08:45:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 09:00:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 09:15:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 09:30:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 09:45:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 10:00:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 10:15:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 10:30:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 10:45:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 11:00:00" | 5.86 | 12.04 | 601.89 | 595.71 |
| 12/06/93" | 11:15:00" | 5.86 | 12.04 | 601.89 | 595.71 |
| 12/06/93" | 11:30:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 11:45:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 12:00:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 12:15:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 12:30:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 12:45:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 13:00:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 13:15:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 13:30:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 13:45:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 14:00:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 14:15:00" | 5.88 | 12.04 | 601.89 | 595.73 |

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| 12/06/93" | 14:30:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 14:45:00" | 5.9 | 12.04 | 601.89 | 595.75 |
| 12/06/93" | 15:00:00" | 5.9 | 12.04 | 601.89 | 595.75 |
| 12/06/93" | 15:15:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 15:30:00" | 5.88 | 12.04 | 601.89 | 595.73 |
| 12/06/93" | 15:45:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 16:00:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 16:15:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 16:30:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 16:45:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 17:00:00" | 5.87 | 12.04 | 601.89 | 595.72 |
| 12/06/93" | 17:15:00" | 5.86 | 12.04 | 601.89 | 595.71 |
| 12/06/93" | 17:30:00" | 5.86 | 12.04 | 601.89 | 595.71 |
| 12/06/93" | 17:45:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 18:00:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 18:15:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 18:30:00" | 5.85 | 12.04 | 601.89 | 595.7 |
| 12/06/93" | 18:45:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 19:00:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 19:15:00" | 5.84 | 12.04 | 601.89 | 595.69 |
| 12/06/93" | 19:30:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 19:45:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 20:00:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 20:15:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 20:30:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 20:45:00" | 5.83 | 12.04 | 601.89 | 595.68 |
| 12/06/93" | 21:00:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 21:15:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 21:30:00" | 5.82 | 12.04 | 601.89 | 595.67 |
| 12/06/93" | 21:45:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 22:00:00" | 5.8 | 12.04 | 601.89 | 595.65 |
| 12/06/93" | 22:15:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/06/93" | 22:30:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/06/93" | 22:45:00" | 5.79 | 12.04 | 601.89 | 595.64 |
| 12/06/93" | 23:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/06/93" | 23:15:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/06/93" | 23:30:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/06/93" | 23:45:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/07/93" | 00:00:00" | 5.78 | 12.04 | 601.89 | 595.63 |
| 12/07/93" | 00:15:00" | 5.77 | 12.04 | 601.89 | 595.62 |
| 12/07/93" | 00:30:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/07/93" | 00:45:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/07/93" | 01:00:00" | 5.76 | 12.04 | 601.89 | 595.61 |
| 12/07/93" | 01:15:00" | 5.75 | 12.04 | 601.89 | 595.6 |
| 12/07/93" | 01:30:00" | 5.74 | 12.04 | 601.89 | 595.59 |
| 12/07/93" | 01:45:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/07/93" | 02:00:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/07/93" | 02:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/07/93" | 02:30:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/07/93" | 02:45:00" | 5.72 | 12.04 | 601.89 | 595.57 |
| 12/07/93" | 03:00:00" | 5.72 | 12.04 | 601.89 | 595.57 |
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| 12/07/93" | 03:45:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/07/93" | 04:00:00" | 5.7 | 12.04 | 601.89 | 595.55 |
| 12/07/93" | 04:15:00" | 5.7 | 12.04 | 601.89 | 595.55 |

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| 12/07/93" | 04:30:00" | 5.7 | 12.04 | 601.89 | 595.55 |
| 12/07/93" | 04:45:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/07/93" | 05:00:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/07/93" | 05:15:00" | 5.71 | 12.04 | 601.89 | 595.56 |
| 12/07/93" | 05:30:00" | 5.7 | 12.04 | 601.89 | 595.55 |
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| 12/07/93" | 11:00:00" | 5.64 | 12.04 | 601.89 | 595.49 |
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| 12/07/93" | 12:15:00" | 5.67 | 12.04 | 601.89 | 595.52 |
| 12/07/93" | 12:30:00" | 5.67 | 12.04 | 601.89 | 595.52 |
| 12/07/93" | 12:45:00" | 5.67 | 12.04 | 601.89 | 595.52 |
| 12/07/93" | 13:00:00" | 5.67 | 12.04 | 601.89 | 595.52 |
| 12/07/93" | 13:15:00" | 5.68 | | | |
| 12/07/93" | 13:30:00" | 5.69 | | | |
| 12/07/93" | 13:45:00" | 5.68 | - | | |



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# APPENDIX H

# COPIES OF PERTINENT RECORDS

## INDEX OF PERTINENT RECORDS


1. Conestoga-Rovers & Associates, October 1988, Site Investigation, area west of Solid Waste Management Facility, Union Carbide Corporation, Republic Plant, Town of Niagara, New York, prepared for Union Carbide Corporation.

2. Ecology and Environment Engineering, P.C., October 1991, *Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Preliminary Site Assessment, Task 1, Union Carbide-Carbon Products Division Site,* prepared for New York State Department of Environmental Conservation, Albany, New York.

4. NUS Corporation, June 1988, Final Draft Site Inspection Report, prepared for the United States Environmental Protection Agency.

5. _____, April 8, 1991, letter from Mr. Al Ogg to Ms. Valerie Loses of NYSDEC concerning results of 11 quarterly sampling rounds.

6. _____, December 7, 1987, letter from Mr. Rick Bolton to Mr. Robert Mitrey of NYSDEC concerning EP Toxicity results of drum samples.

7. Wehran Engineering, P.C., January 1987, *Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase I Investigation, Union Carbide-Carbon Products Division Site,* prepared for New York State Department of Environmental.

8. USGS, 1987, Effect of Niagara Power Project on groundwater flow in the upper part of the Lockport Dolomite, Niagara Falls area, New York Water Reservation investigation report 86-4130 by Todd S. Miller and William M. Kappel.

9. UCAR Carbon Company, Inc., July 1, 1994, letter from A. Ogg to Jim Richert, Ecology and Environment, Inc., concerning Niagara Mohawk Power Corporation land and the disposal of ash.

10. Union Carbide Corporation Carbon Products Division 7, August 30, 1984, Generator Form Part II.

RECORD 1

UNION CARBIDE

UNION CARBIDE CORPORATION
CARBON PRODUCTS DIVISION

# SITE INVESTIGATION

## AREA WEST OF SOLID WASTE MANAGEMENT FACILITY

**Union Carbide Corporation**
**Republic Plant**
**Town of Niagara, New York**

October 1988
Ref. No. 2293



CONESTOGA-ROVERS & ASSOCIATES

## EXECUTIVE SUMMARY

The Union Carbide Corporation (UCC) operated the Republic Plant located in Niagara Falls, New York from 1934 until 1987. Prior to UCC operations, the Republic Plant was operated and maintained by the Aluminum Corporation of America, Carborundum Corporation and Acheson Graphite. Historically, UCC waste from the facility was disposed in the area east of the building complex. During the last 40 years of the plant operation, waste was disposed in an isolated eastern area which in 1978 became an approved solid waste management facility (SWMF). Operations at the Republic Plant ceased in 1987 and the SWMF was closed in accordance with a NYSDEC approved closure plan. The plant facility was purchased by Niagara Vest and UCC retained title to 64 acres which included the SWMF.

In June 1987, UCC consented to the construction of a watermain by the Town of Niagara. The watermain was to cross the area west of the closed Solid Waste Management Facility (SWMF). During excavation for the watermain, waste was identified outside the SWMF and on property now owned by Niagara Vest. Hence, the watermain across the property was installed in a berm located above ground and a site investigation was undertaken to assess the areal extent of waste deposition west of the SWMF.

This executive summary presents a brief overview of the investigation conducted, the result obtained,



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and the recommendations and conclusions formulated. Further detail of the investigation and subsequent data evaluation is presented in the ensuing report.

INSERT D

The Site Investigation included:

1) Collection of water samples for chemical analysis from two locations along the newly installed watermain traversing the Site;

2) Excavation of test pits at eight locations along the newly constructed watermain and the collection of soil samples immediately underlying the bedding gravel for chemical analysis;

3) Completion of electromagnetic (EM) and magnetometer (MAG) geophysical surveys over the area west of the SWMF to identify potential locations for disposed waste and buried drums;

4) Excavation of a total of 22 test pits over the area west of the SWMF to confirm the presence or absence of potential buried drums based on the geophysical survey data;

5) Collection of samples for chemical analysis from the three drums encountered during the test pit excavations;

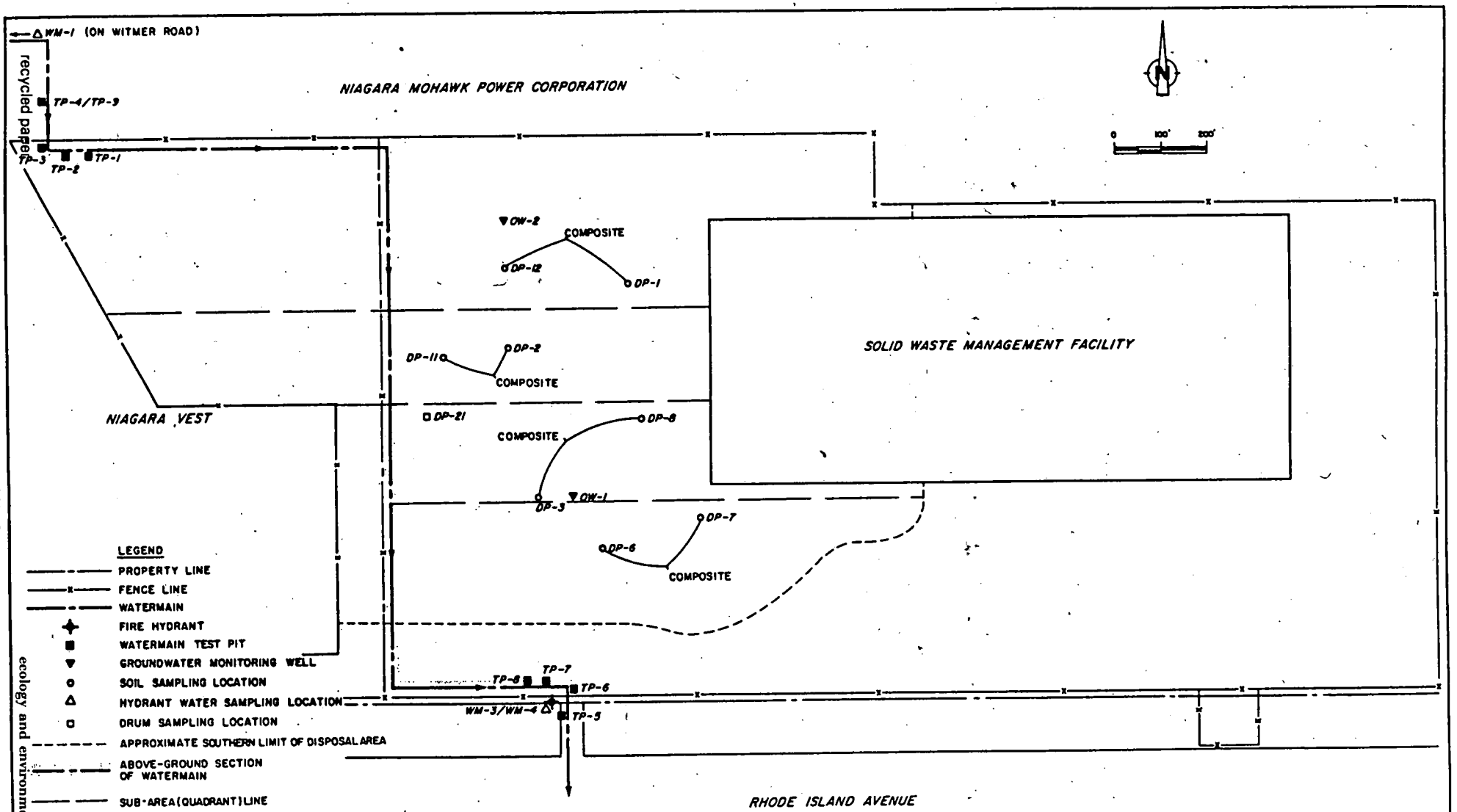


figure 5

1988 ANALYTICAL SAMPLING LOCATIONS
REPUBLIC PLANT
*Union Carbide Corporation*

CRA

2293-30/09/88-2-D-2

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## 4.0 SITE CHARACTERIZATION

The overburden materials encountered during the investigation are typical of those encountered in previous test pit and monitoring well installation programs conducted at the SWMF and surrounding area. In general, the Site is underlain by four geologic units. These are: Fill Material, Glaciolacustrine Clay, Glacial Till and Bedrock. During this study, only the two uppermost geologic units were encountered as the study did not require penetration beyond the top of the clay strata. Descriptions of the fill and clay encountered during this study are presented in Appendix C and are further discussed in the following subsections.

### 4.1 FILL MATERIAL

The uppermost unit consists of Fill Material. The Fill Material typically consists of demolition debris, including Acheson furnace sidewall block fragments (large chunks of material resembling reinforced concrete), wood, ash, brick, glass and vegetation, intermixed in a black sand to cobble-size carbonaceous matrix. Also present in the fill matrix is gravel, sand, silt and clay. The thickness of the Fill Material varies across the Site from 0 to 12.0 feet and averages 5.4 feet (see Figure 6). The thickest fill deposits exist along the northeast corner and in the northwest portion

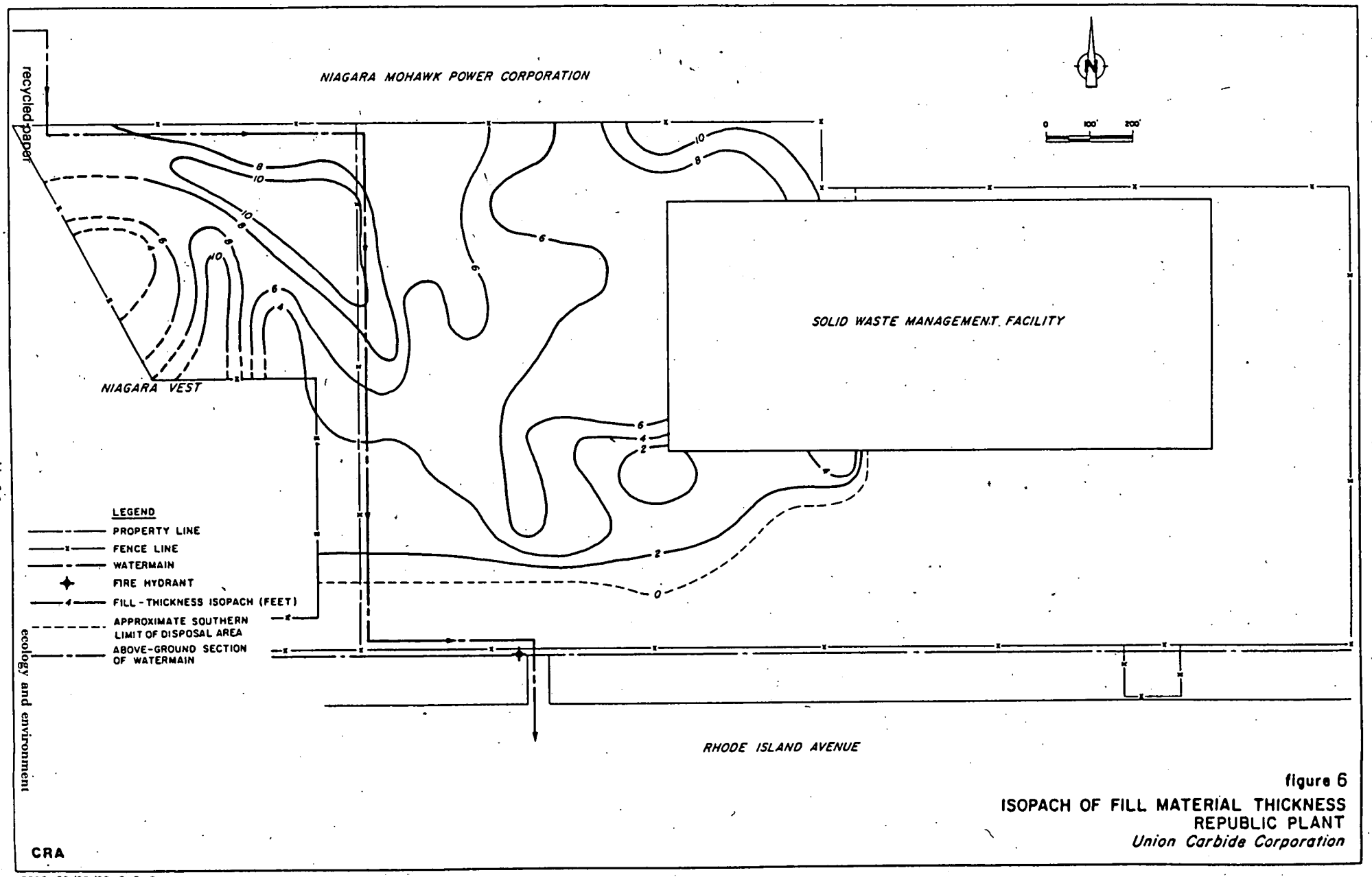


figure 6
ISOPACH OF FILL MATERIAL THICKNESS
REPUBLIC PLANT
*Union Carbide Corporation*

2293-30/09/88-2-D-2

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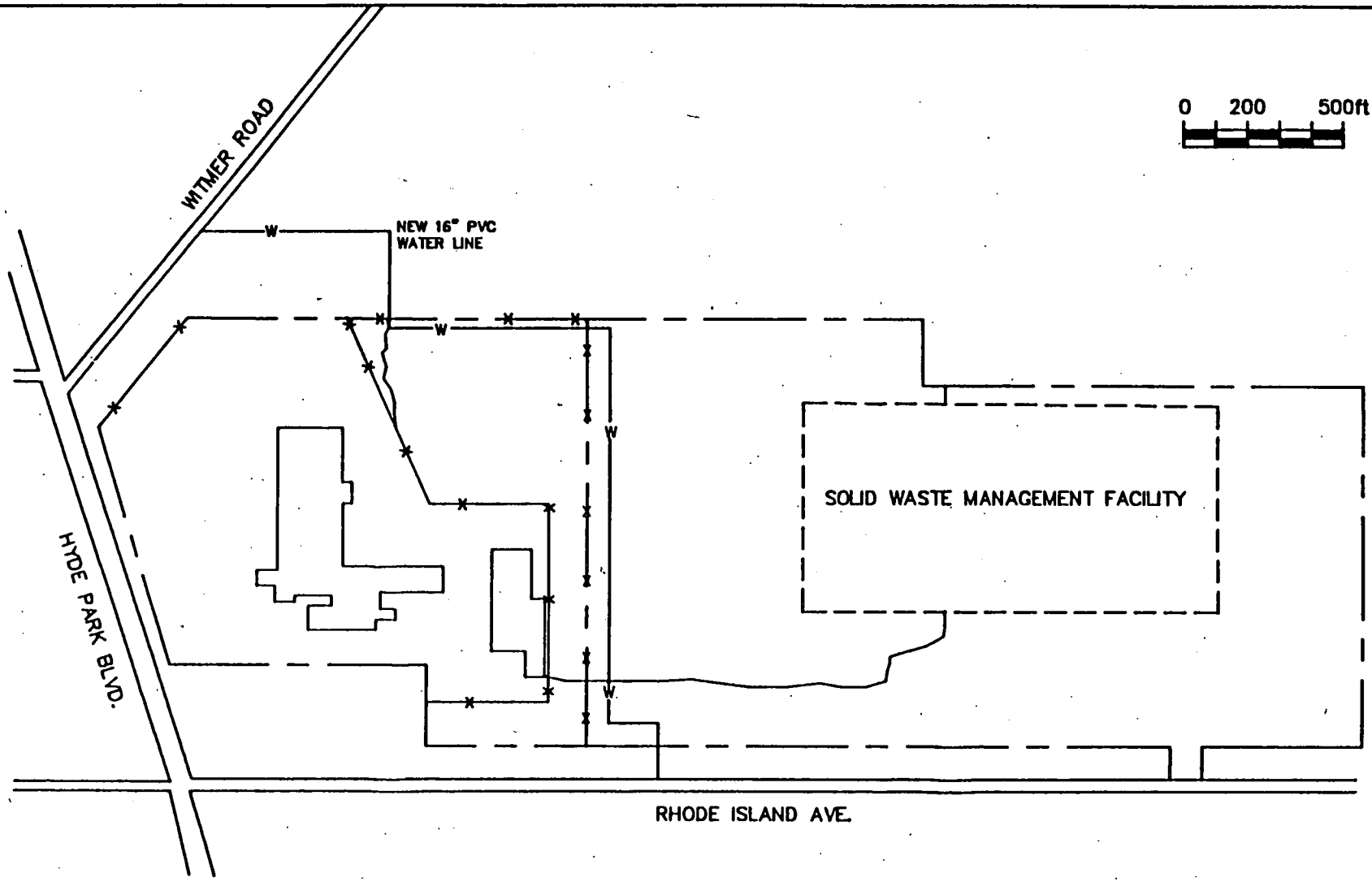


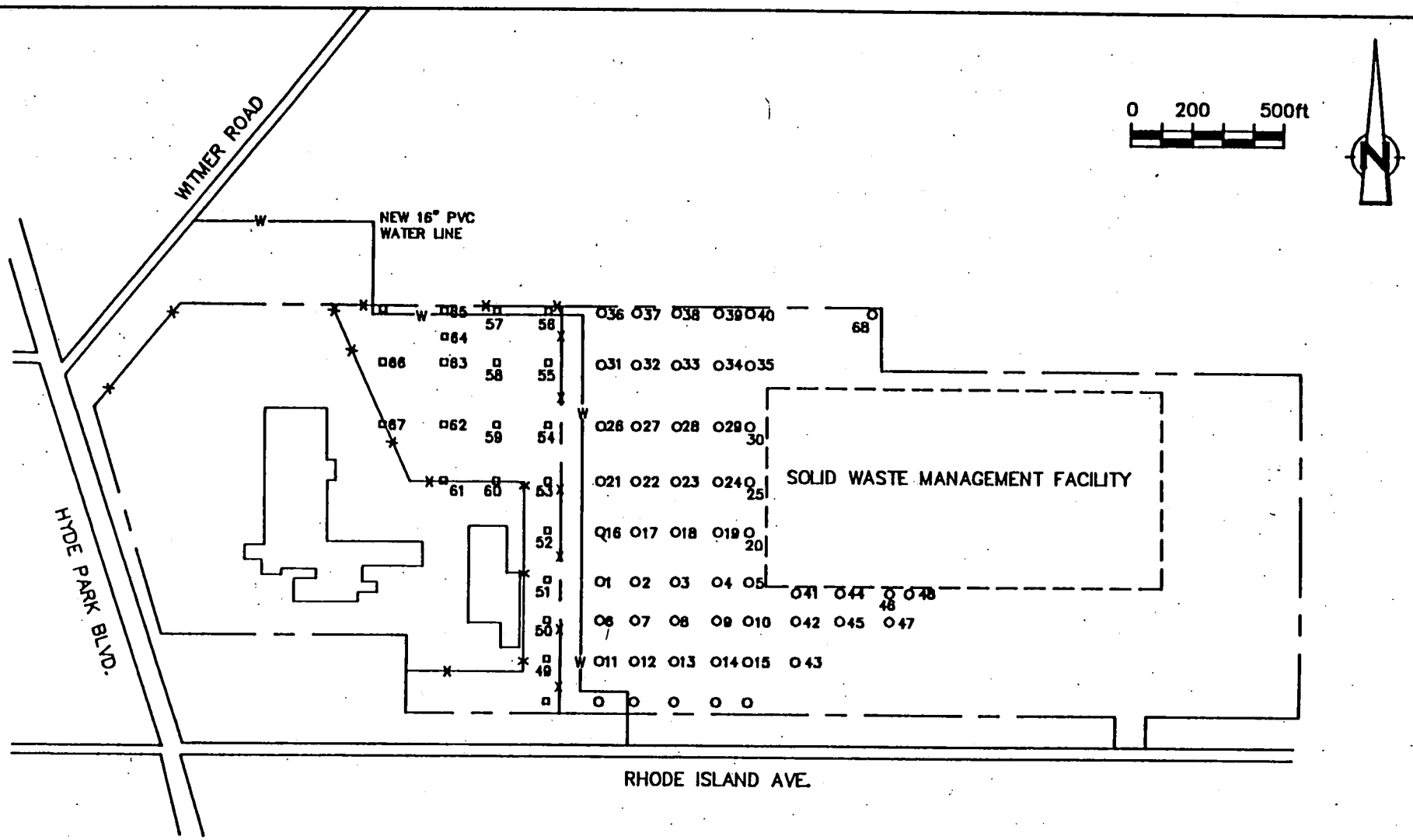

LEGEND

- PROPERTY LINE
- FENCE LINE
- PVC WATER LINE
- UCC PROPERTY CONTAINING WASTE (±20 acres)
- NIAGARA VEST PROPERTY CONTAINING WASTE (7 acres)

figure 2

AREAS CONTAINING WASTE
NIAGARA PLANT–REPUBLIC LOCATION
*Union Carbide Corporation*

1851-10/07/87-P-0




LEGEND

PROPERTY LINE

FENCE LINE

PVC WATER LINE

o 5 UCC TEST HOLE

□ 62 NIAGARA VEST TEST HOLE

figure 3

TEST HOLE LAYOUT
NIAGARA PLANT–REPUBLIC LOCATION
*Union Carbide Corporation*

1851-10/07/87-P-0

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further states "EPA considers these to be safe levels and protective of public health"[5]. Since this acceptable risk range is applied to the drinking water for the general population, it is considered a very conservative range for the assessment of the potential risks to a comparatively small population of workers or neighbors which are the potential receptors for this Site assessment.

Tables 11 and 12 present the estimated cancer risk based on the EPA Potency Factors presented in the Manual. The risk levels are based on worst case assumptions and provide a very conservative evaluation. Since these worst case estimates are all below a $1 \times 10^{-6}$ risk level for neighbors and within the acceptable range of $10^{-4}$ to $10^{-6}$ for the workers, the estimated risks are considered acceptable with a wide margin of safety for the small populations potentially exposed.

### 6.1.4 Summary and Conclusion

On-Site exposure of workers to surface soils and off-Site exposure to neighbors to dust from surface soils are the only complete pathways of exposure. Using worst case estimates for exposure, the estimated exposure will result in a calculated risk estimate that is well within levels of acceptable risk.

## 6.2 ENVIRONMENTAL EXPOSURE

The Site is in an urban area essentially surrounded by industrial plants and residential areas. Although wildlife, such as upland birds, ducks and deer have been observed to enter the Site, it is not well suited as a wildlife habitat. Cover and food sources are limited and the ponded water is shallow, especially in drier periods.

Regardless of the number of animals and/or birds that would frequent the Site, the acute and subchronic toxicity levels, the comparatively low concentrations of Site related chemicals to which the wildlife could be exposed, and the limited time that the wildlife would spend on the Site preclude any potential adverse impacts on health.

The prohibition of hunting within city boundaries and the limited area involved limits the potential for using exposed wildlife for food. The limited exposure to wildlife containing Site-related chemical residues precludes the human consumption of unacceptable dose levels of Site-related chemicals.

In summary, the available information would indicate that wildlife would not be impacted by on-Site chemical residues in surface soils and surface water. The potential for human consumption of meat from wildlife

precludes unacceptable exposure to Site-related chemicals due to consumption of game birds or animals from the Site area.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of the Site Investigation, the following conclusions and recommendations have been formulated:

1) The site does not pose a significant current or potential future threat to public health or the environment.

2) Water quality in the Town watermain is unaffected by the fill material and/or berm construction material. Contaminants in the berm construction material are not site related.

3) Groundwater is essentially unaffected by the site and is contained as a perched water zone. Discharge to surface water is not a problem (based on chemical analysis). Bedrock groundwater is protected by a relatively thick clay aquitard.

4) Three buried drums were located during the investigation. These drums have been removed and disposed off Site at a permitted waste disposal facility.

5) On-site exposure of workers to surface soils and exposure to off-site areas to dust from surface soils are the only complete potential pathways of exposure resulting from

on-site wastes. Using worst case estimates for exposure resulted in a calculated risk estimate that is well within the published levels of acceptable risk for the public.

6) Soils containing PAHs and pesticides are present on site. The PAHs and pesticides detected are consistent with results from the SWMF.

7) PAHs stay sorbed to soils and do not create an unacceptable risk to public health or the environment.

8) As no existing or potential risk was identified at the Site, it is recommended that remedial measures are not required.

**RECORD 2**

# ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK

## PRELIMINARY SITE ASSESSMENT
## TASK 1

**Union Carbide Corp., Carbon Products Division Site**
**Site Number 932035**
**Town of Niagara, Niagara County**

**October 1991**

Prepared for:

**New York State Department of Environmental Conservation**
50 Wolf Road, Albany, New York 12233
*Thomas C. Jorling, Commissioner*

**Division of Hazardous Waste Remediation**
*Michael J. O'Toole, Jr., P.E., Director*

Prepared by:

ecology and environment engineering, p.c.
BUFFALO CORPORATE CENTER
368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060

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# 5. ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

## 5.1 HAZARDOUS WASTE DEPOSITION

Hazardous waste disposal has been confirmed at this site. The New York State Community Right-To-Know documents submitted by UCC indicate that solid and liquid F001 and solid D003 wastes were disposed of at the SWMF (Ref. 13).

A total of 0.6 tons of spent sludges from degreasing containing (1,1,1-trichloroethane) were landfilled on site over a two year period between 1975 and 1976 (Ref. 2).

Approximately 0.16 tons of Halowax 1000 (D003) waste was disposed of in the SWMF between 1968 and 1976 (Ref. 13). Hazardous substances, including PAHs and metals were identified in three soil and three groundwater samples collected during a 1987 site inspection performed by EPA.

## 5.2 SIGNIFICANT THREAT DETERMINATION

Information obtained from UCC permit applications, the NYSDEC Phase I report, and EPA Site Investigation reports concerning waste disposal at the site was not complete. Company permit applications indicate carbonaceous wastes and other nonhazardous materials make up the contents of the landfill. Other sources (Ref. 2) indicate that coke, pitch, coal tars, machining oils, and spent degreasing sludge were also disposed of in the landfill. Water quality data from groundwater samples taken from well BW-4-86, from 1978 to 1984 and as recently as 1990 show elevated levels

of 1,1,2,2-Tetrachloroethylene (Refs. 2, 3). However, understanding of the hydrogeology of the site is limited. It is unclear whether the contamination observed in well BW-4-86 is migrating from the site and whether the location of some of the wells (possible in fill) compromised the sample reliability.

Analysis of samples taken from on-site monitoring wells monitored from September 1978 to December 1984 (see Table 5-2) showed levels of phenols (0.26 ppm), chromium (0.09 ppm), lead (0.72 ppm), and mercury (36,600 ppm) above New York State standards of 0.005 ppm, 0.05 ppm, 0.025 ppm, and 0.002 ppm, respectively (Ref. 14). According to the Niagara County Health Department (NCHD), the levels of heavy metals in these wells are typical of the Niagara Falls area (Ref. 2). There are no private drinking water wells in the vicinity of the site. All residents are supplied with public water (Ref. 15).

Surface water downstream of the site is not used since the Niagara River intakes are located upstream from the site (Ref. 2).

Past investigations and E & E's own site investigation and air monitoring surveys did not detect volatiles through the use of a photoionization (HNu) detector. Radiation levels at the site also remain at background levels as determined by minirad meters used in the site inspection (Ref. 1).

The threat of fire and explosion at the site has not been determined by a state or local fire marshall (Ref. 2).

Direct contact with hazardous wastes found at the site is possible as unauthorized use of the site was documented during the site inspection. Overall, a significant threat to humans and the environment is not suggested by E & E's investigation. The elevated levels of semivolatile and volatile organics found in the samples from BW-4-86 result in E & E recommending continued monitoring of the site. The site does not threaten wetlands, endangered species, or critical habitat (Ref. 2).

## 5.3 RECOMMENDATIONS

Since evidence suggests that hazardous waste is present at the site and in light of the low probability of significant threats to the environment determined by this investigation, E & E recommends that the site be reclassified to a Class 3 with the following caveat:

- Quarterly groundwater analysis of well BW-4-86 should continue. Split samples should be collected to possibly determine the flux of contaminants. If concentrations of hazardous wastes containing semivolatile or volatile organics continue to be found, the source of these contaminants should be further investigated. Long-term monitoring of all on-site monitoring wells would also be appropriate.

# RECORD 3

02-8706-25-SR
Rev. No. 0

# FINAL DRAFT
# SITE INSPECTION REPORT
# UNION CARBIDE
# NIAGARA, NEW YORK

INcomplete
on
12-4-94

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8706-25
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

INCLUDES MAPS

JUNE 15, 1988

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

Brian Pedersen
BRIAN PEDERSEN
SITE MANAGER

REVIEWED/APPROVED BY:

Ronald M Naman
RONALD M. NAMAN
FIT OFFICE MANAGER

N.F. 932035

Niagara

NUS CORPORATION
A Halliburton Company

# POTENTIAL HAZARDOUS WASTE SITE
# SITE INSPECTION REPORT
# EXECUTIVE SUMMARY

**DRAFT**

| | |
|---|---|
| Union Carbide<br>Site Name | NYD002106896<br>EPA Site ID Number |
| 3501 Hyde Park Blvd.<br>Niagara, Niagara Co., NY<br>Address | 02-8706-25<br>TDD Number |

## SITE DESCRIPTION

The Union Carbide Republic Plant Landfill is a 16-acre inactive site which was used exclusively by Union Carbide. The landfill was used by the National, Acheson, and Republic locations of the Union Carbide Niagara Plant to dispose of carbonaceous dust and scrap, firebrick, waste wood and pallets, coke, pitch, silica sand, coal and petroleum tars, machining oils, and spent sludges. The facility operated from 1934 to June 1987.

The site is located on Hyde Park Boulevard in Niagara, Niagara County, New York. Immediately southwest of the site is the industrial city of Niagara Falls. The area within a 3-mile radius is an industrial, commercial, and residential zone.

The facility has undergone an New York State Department of Environmental Conservation- (NYSDEC) approved closure program. The capping operation was completed as of June 30, 1987. A well monitoring program conducted for the NYSDEC has determined that the groundwater is contaminated by phenols, heavy metals, and low levels of halogenated hydrocarbons.

A site inspection was performed by NUS Region 2 FIT on August 20 and 21, 1987. Three groundwater and three soil samples were taken during the site inspection. The samples were sent to laboratories for analysis.

**HAZARD RANKING SCORE:** Pending receipt of analytical data.

Prepared by: Brian Pedersen of NUS Corporation  Date: 09/09/87

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# UNION CARBIDE
# NIAGARA, NEW YORK
# SUMMARY STATEMENT

The Union Carbide Site is a 16-acre inactive landfill that is located in the Town of Niagara, Niagara County, New York. The site is owned and was used by Union Carbide - Carbon Products Division from 1934 to June 1987. Union Carbide operated the Niagara Plant which included three locations: the National, Acheson, and Republic Plants. The landfill is located at the Republic Plant location. The plants used the landfill to dispose of waste that consisted of carbonaceous dust and scrap, firebrick, waste wood and pallets, coke, pitch, silica sand, coal and petroleum tars, machining oils, and spent sludges.

The site is located in Niagara, New York on the border of the city of Niagara Falls. The area around the site is heavily industrialized and highly populated. The surrounding topography is mainly a flat plain area with the exception of where the Niagara River has formed the Niagara Gorge located 1.5 miles to the west.

The site is not believed to be a significant source of concern for the off-site migration of contaminants. Analysis of on-site soil samples have detected low levels of polynuclear aromatic hydrocarbons (PAH).

There have been no enforcement actions taken against the site. The landfill has undergone a New York State Department of Environmental Conservation (NYSDEC) - approved closure plan consisting of an adequate cap covering the landfill. The closure plan was undertaken because the Union Carbide Niagara Plant had ceased operations except for a small section operating at the National Plant.

**RECORD 4**

UCAR CARBON COMPANY INC. P.O. BOX 887, NIAGARA FALLS, NEW YORK 14302

RECEIVED
JUL - 1
HAZARDOUS
DIVISION
WASTE REM

June 29, 1993

Valerie J. Woodward
N.Y. State Department of
Environmental Conservation
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010

Dear Valerie,

During our meeting on June 9, 1993, in Albany, I advised you and your staff that we had located in our archives blueprint drawings of the Republic Division property as well as other information which supports that the City of Niagara Falls used Niagara Mohawk Power Corporation land, north of our facility, as well as portion of our property to dispose of ash from their former municipal waste incinerator. In the meantime, you requested additional information regarding Code 88.

I am going to attempt to discuss each of these subjects in the following order.

National Carbon Co. Republic Division Property Map RR AX1B1 8/21/58

This attached print shows the active dump line on August 25, 1958. This print confirms that the area west of the S.W.M.F. was filled with plant wastes. We have no available information regarding any leases with Frontier Stone Products.

National Carbon Co. Republic Division Property Map RR AX1B2 5/18/59

This attached print depicts areas of land exchanged between National Carbon Co. and Niagara Mohawk Power Corporation to permit Niagara Mohawk Power Corporation to construct two 115M volt power lines as a part of their anticipated expansion program as Niagara Falls industries converted to 60 cycle power. National Carbon Co. gave up Areas I & II and received Area III. This agreement was completed on November 23, 1959.

Union Carbide Corporation Republic Plant Property Map Sketch B 12/18/64

This attached print shows additional site road layouts and buildings in the plant on December 18, 1964. It also shows an initial excavation and an area (approximately 61,500 $yds^3$) where wastes from the Niagara Falls Municipal Incinerator were buried. The northern portion of our present cap is either on or near this material. Niagara Mohawk Power Corporation had prior arrangements with the City of Niagara Falls to allow the city to dump incinerator residue on their land.

Republic Dump Plot Plan AX-1A-14 1/20/78

The attached print shows the road layout on January 20, 1978, additional buildings on the site, an existing perimeter fence (installed December 12, 1975) and the location of the active dumping areas.

Code 88

Additional information requested regarding Code 88 treat included the treat formulation, preparation and processing information.

Code 88 at Niagara was a solution which contained 45.45% furfural, 45.45% #15 vacuum pitch, and 9.1% diethyl sulfate (catalyst). The crushed pitch required approximately twelve hours to dissolve in the furfural solution. The treat was highly exothermic once the diethyl sulfate was added and required refrigerated storage below 5 degrees C.

The process consisted of subjecting the selected product to a vacuum/pressure cycle in an impregnator, followed by a bake cure cycle.

To the best of our understanding at this time, Code 88 production ceased at Niagara on or about April 2, 1980.

Please accept the delay in this publication. It was necessary to retrieve information where available from UCAR sources outside of Niagara.

Please advise if you have any questions or comments.

Very truly yours,

A.C. Ogg

A.C. Ogg
nm
encls.
cc: R.A. Bolton
M.A. Hinton, Region 9 NYSDEC
J.R. McKnight (letter only)
K.G. Narwold
T.E. Reidy



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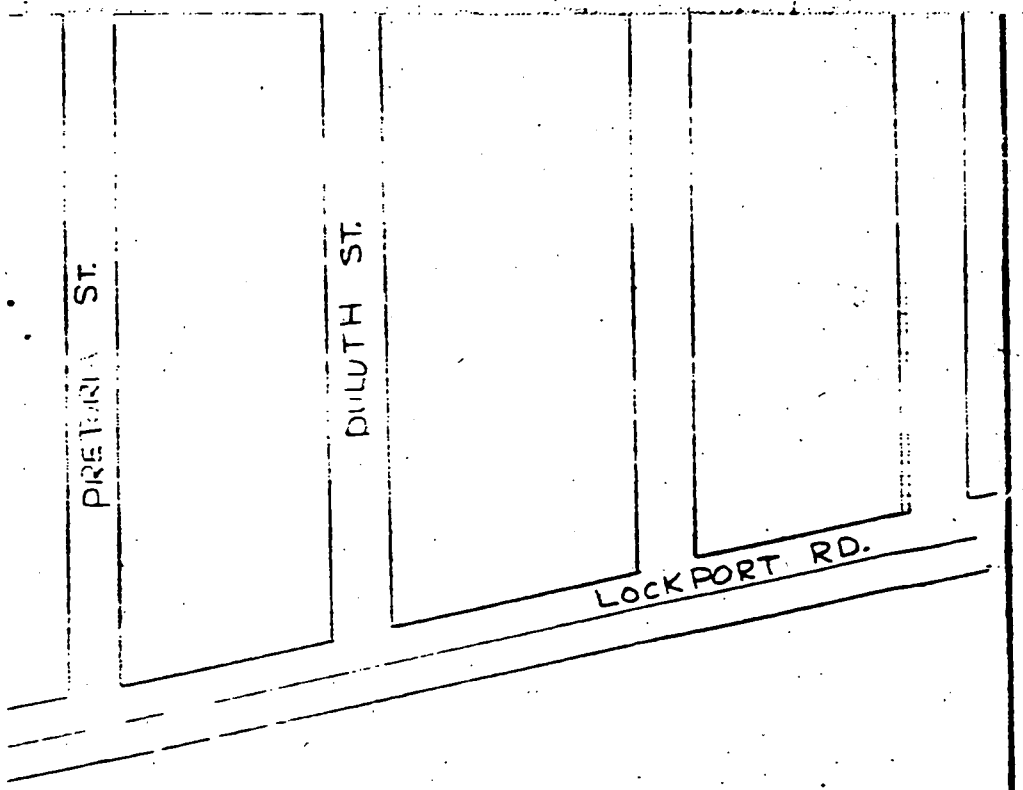


| | | |
|---|---|---|
| SCALE 1" = 200' | | UNION CARBIDE CORP. |
| DESIGNED 12-18-64 | DRAWN R. ALVITI | REPUBLIC PLANT |
| CHECKED | APPROVED | PROPERTY MAP |
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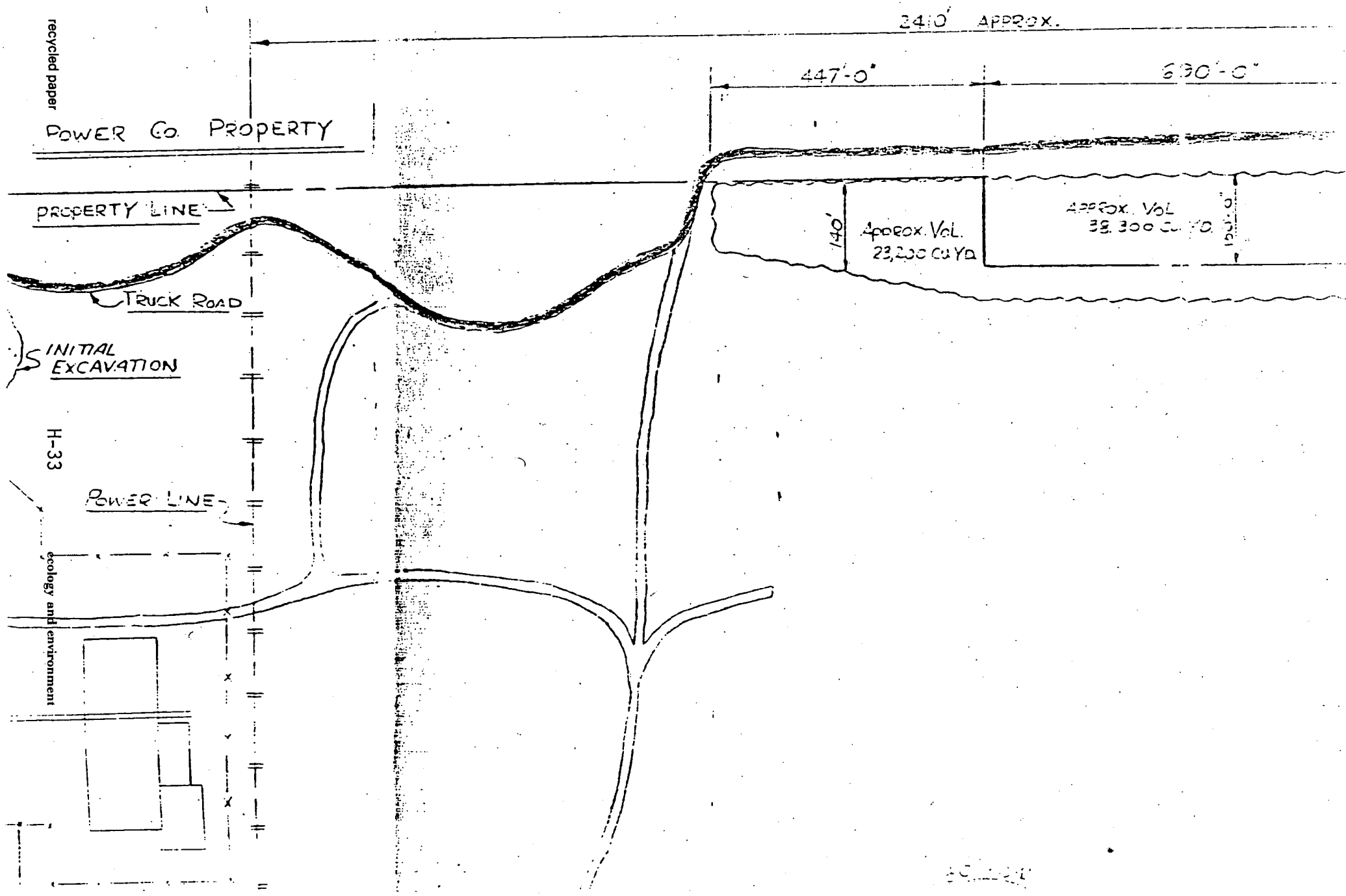




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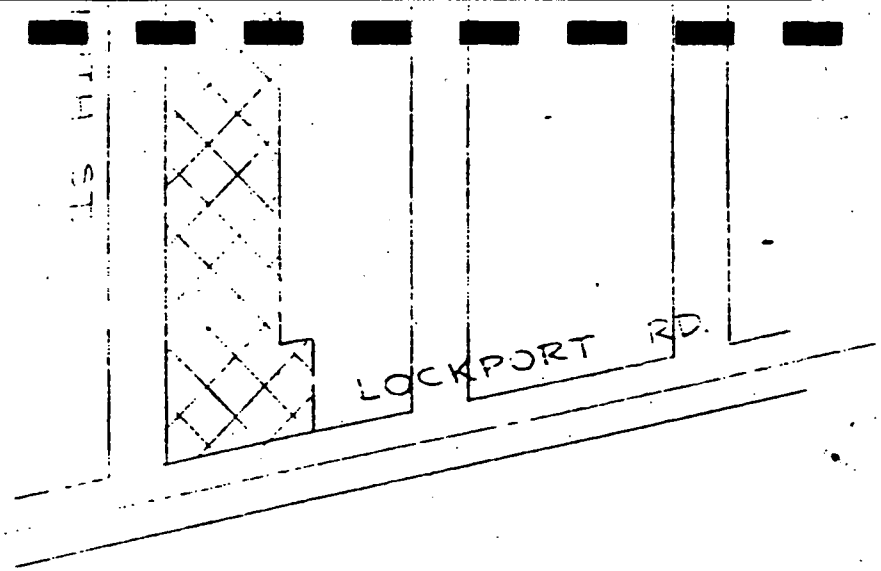


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DRAWN L.C. SCHUL 8-21-58

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NATIONAL CARBON COMPANY
A DIVISION OF
UNION CARBIDE & CARBON CORP.
CLEVELAND, OHIO, U. S. A.
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NATIONAL CARBON CO.
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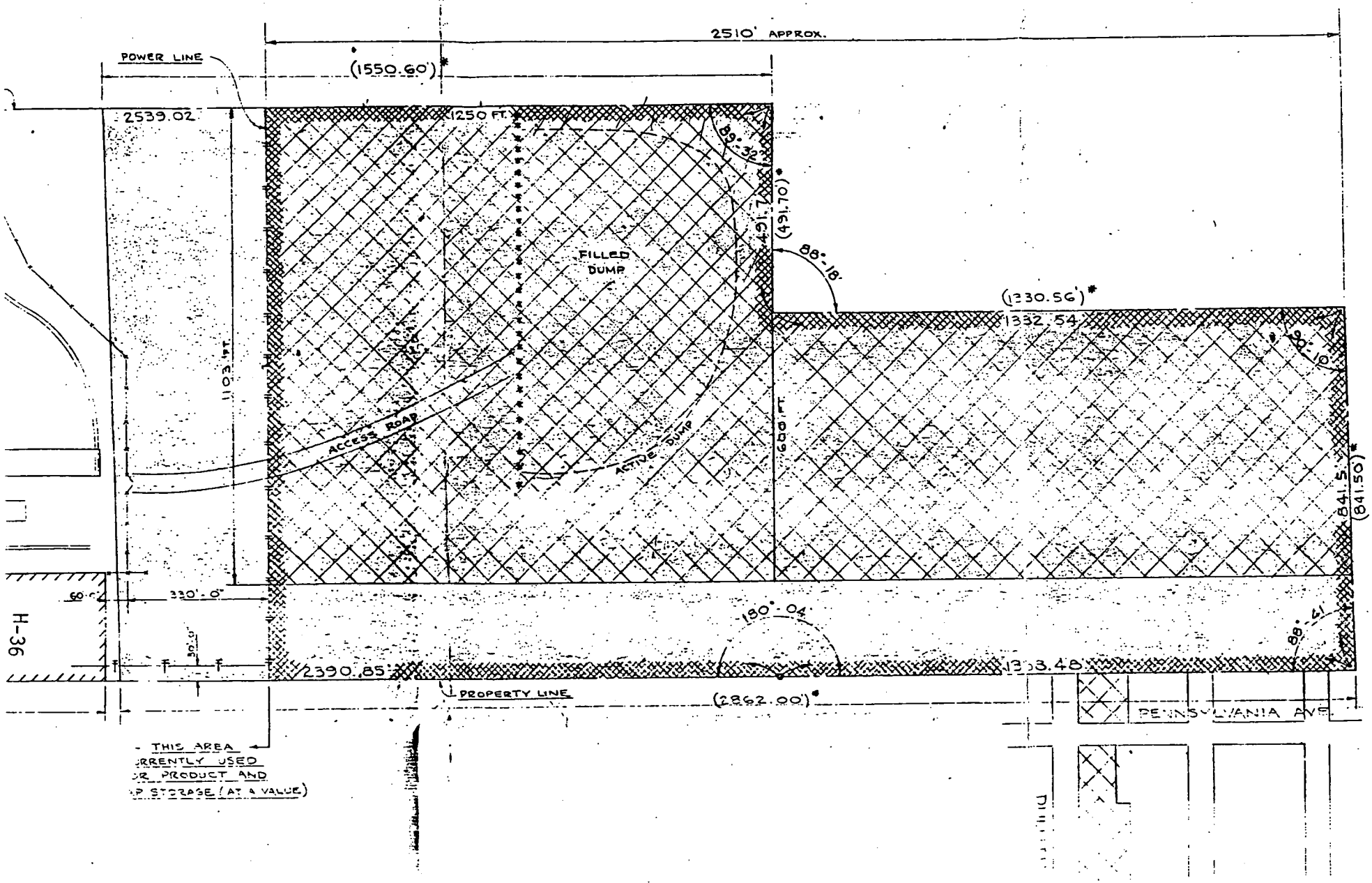




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829 - 3

- THIS AREA
RRENTLY USED
R PRODUCT AND
P STORAGE (AT A VALUE)

LEASED B
STONE PO
OR LOCA

REQUESTED BY NEW YORK
STATE POWER AUTHORITY - 70.5893 ACRES

PROPOSED AREA TO BE LEASED TO NEW
YORK STATE POWER AUTHORITY - APPROX. 61.5 ACRES

* THESE DIMENSIONS TAKEN FROM NEW YORK
STATE POWER AUTHORITY MAP NO. 1269



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**RECORD 5**

UCAR CARBON COMPANY INC. P.O. BOX 887, NIAGARA FALLS, NEW YORK 14302

April 8, 1991

New York State Department of Environmental Conservation
Att: Ms. Valerie Lauzze
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233

Re. Preliminary Site Assessments at Inactive Hazardous Waste Disposal Sites - New York State Superfund, Chapter 857, Laws of 1982

Dear Ms. Lauzze:

We received Mr. W.E. Demick's subject letter of March 22, 1991 on March 28, 1991.

UCAR Carbon Company Inc., formerly associated with Union Carbide Corporation, is responsible for the Solid Waste Management Facility located to the east off Hyde Park Boulevard and east of our former Republic Plant.

We have enclosed three pieces of literature which may assist you or your contractor in the proposed Task I of the Preliminary Site Assessment. They include the following:

1. Conestoga-Rovers & Associates (CRA) report "Final Landfill Closure, Solid Waste Management Facility, Union Carbide Corporation, Republic Plant, Town of Niagara, New York" dated September 1987.

2. Conestoga-Rovers & Associates (CRA) report, "Site Investigation, Area West of Solid Waste Management Facility" dated October 1988.

3. An updated summary of groundwater monitoring data. (The eleventh quarter ended December 31, 1990.) Complete copies are available in NYS DEC Region 9 office, Mr. Robert Mitrey, Albany, Mr. Dave O'Tool, Niagara County Health Department Mr. J. Devald, Sr., and Town of Niagara.

NYS DEC Region 9 office has a complete file regarding any correspondence, plans, completed reports and current groundwater monitoring reports pertaining to this site.

Please advise if you have any further questions or comments.

Very truly yours,

A.C. Ogg
Superintendent of Operations

APR - 9 1991

A.C. Ogg
nmd
Enclosures:

H-40

CC: Messrs. R.A. Bolton; W.E. Demick, P.E., NYS DEC, Albany; J.R. McKnight, Ms. K.G. Narwold - letter only

QUARTERLY REPORT OF GROUNDWATER ANALYSIS - REPUBLIC SOLID WASTE MANAGEMENT FACALIT
POST-CLOSURE MONITORING PROGRAM
POSITIVE ORGANIC PARAMETERS FROM BW-4 (PPB)

| Quarter | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | | 13 | | 150 | 22 | 29 | 10 | 19 | 37 | 85 | 28 | | |
| Trichloroethylene | | | 30 | 570 | 740 | 350 | 320 | 290 | 270 | 400 | 130 | | |
| Vinyl Chloride | | | | | | 34 | 44 | 250 | 29 | 43 | 55 | | |
| Chloroform | | | | | | 6 | 6 | | | 9 | | | |
| Tetrachloroethylene | | | | | | | | 300 | 290 | 380 | 72 | | |
| 1,1,2,2,-Tetrachloroethylene | | 44 | 1300 | 1600 | 1500 | 510 | 380 | | | | | | |
| Methylene Chloride | | | | | | | 13 | | | | 12 | | |
| Butybenzylphthalate | | | | | | | 11 | | | | | | |
| Acetone | | | | | | | 51 | | | | | | |

A.C. OGG 2/1/91



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# RECORD 6

RB/F

UNION CARBIDE

UNION CARBIDE CORPORATION P.O. BOX 513, COLUMBIA, TENNESSEE 38402-0513
Carbon Products Division

December 7, 1987

Mr. Robert J. Mitrey, P.E.
Associate Sanitary Engineer
New York State Dept. of Environmental Conservation
600 Delaware Avenue
Buffalo, NY 14202-1073

C /

Re: EP Toxicity Test Results

Dear Mr. Mitrey:

Per our conversation on Tuesday afternoon, December 1, 1987, I am enclosing a copy of the EP Toxicity Test results on the suspected buried drum material.

I will add these parameters to our Waste Characterization Study for the area in question.

If you or other members of your staff have any questions or comments on these results, please give me a call.

Very truly yours,

UNION CARBIDE CORPORATION
Carbon Products Division

Rick Bolton

R. A. Bolton, Manager
Health, Safety & Environmental Affairs

RABolton:gwa
Enclosure

BCC: Messrs. A. C. Ogg - Niagara
Jim Kay, P.E.
Conestoga-Rovers & Associated Ltd.
651 Colby Drive
Waterloo, Ontario Canada N2V1C2

## SCOPE OF WORK

Mr. R. A. Bolton of Union Carbide Corporation requested that a sample of Code 88 material be tested for Extraction Procedure (EP) Toxicity for specific components of that product. Those components were coal tar pitch, diethyl sulfate, and furfural.

The purpose was to determine the leaching potential, if any, from Code 88 material.

## ANALYTICAL RATIONALE

A brief description of each of the three components was copied from The Merck Index and provided in Appendix A.

On the basis of the description for coal tar, nine components were tested in the EP extract.

## COMMENT

There was only 65 grams of sample available.

The Extraction Procedure was performed with the same ratio of sample to water as specified in method 1310.

## SUMMARY AND CONCLUSIONS

The following conclusions have been made about this Extraction Procedure (EP) Toxicity Extract of Code 88 material:

### Components of Coal Tar Pitch

Of the nine components of coal tar pitch, only five were measured at trace levels. (Please note that the volatile compounds are expressed in µg/l, or ppb.)

The compounds associated with coal - anthracene and naphthalene were not measured.

It is concluded that there is virtually no significant coal tar pitch in the extract.

### Diethyl Sulfate

There were difficulties with this analysis. Sulfates

were measured at 89 mg/l, but they could be due to a wide variety of compounds. However, diethyl sulfate is practically insoluble in water.

Furfural

This compound is present at 22.7 mg/l.

RECORD 7

# ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK
# PHASE I INVESTIGATIONS

## UNION CARBIDE-CARBON PRODUCTS DIVISION
## NIAGARA FALLS, NIAGARA COUNTY, NEW YORK
## Site Code:932035

JANUARY 1987

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD, ALBANY, NEW YORK 12233
HENRY G. WILLIAMS, COMMISSIONER

Division of Solid and Hazardous Waste
NORMAN H. NOSENCHUCK, P.E. DIRECTOR

WEHRAN ENGINEERING, P.C.
Middletown & Grand Island, New York



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# ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE I INVESTIGATIONS

## UNION CARBIDE REPUBLIC PLANT LANDFILL
## NIAGARA FALLS, NIAGARA COUNTY, NEW YORK
## SITE CODE: 932035

Prepared for

DIVISION OF SOLID AND HAZARDOUS WASTE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233-0001

Prepared by

WEHRAN ENGINEERING, P.C.
666 EAST MAIN STREET
MIDDLETOWN, NEW YORK 10940

WE Project No. 01424339

January 1987

UNION CARBIDE

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## 1.0 EXECUTIVE SUMMARY

The Union Carbide Republic Plant Landfill site is a 16-acre active landfill on Hyde Park Boulevard, Niagara Falls, Niagara County, New York. The site is used by Union Carbide to dispose of carbonaceous waste, fire brick and wood pallets generated during their production process. The site is not open to the general public. The site has been active during the period of 1934 through the present. The landfill services the National, Acheson and Republic locations of Union Carbide's Niagara Plant. The Union Carbide Products Division is expected to close the landfill by December 1986 in accordance with Part 360. Carbon and graphite manufacturing occurred at each of these plants. Industrial processes included calcine, mill, mix and forming carbon products, baking and graphitizing carbon products, pitch impregnation and machining of carbon products. Raw materials utilized include anthracite coal, petroleum coke and coal tar pitch.

Wehran Engineering conducted a site visit, which included a walk around the site, noting any disturbed areas, leachate etc.; as well as the use of an HNU photoionizing organic vapor detector to measure the ambient air quality.

The site appeared to be well maintained and organized. The working face is kept to a limited area and the the site is progressively closed and capped as the operation continues. There was no leachate visible and it appears that it would not be a problem due to the type of material disposed of at the site. No organic vapors were detected by the HNU.

The wastes disposed of at this site include carbonaceous dust and scrap, firebrick, waste wood and pallets. Other waste types generated and deposited on the site in the past include coke, pitch, lunch waste, silica sand, coal tars and petroleum tars (see P. Millock - S. Dorr interview, November 15, 1978), machining oils and spent sludges from degreasing (1,1,1-trichloroethane). Water quality data indicates that phenols, heavy metals, and low levels of halogenated organics exceed New York State groundwater criteria in the till hydrologic zone. Additional investigation is necessary in order to identify the types and concentrations of disposed materials and the potential health and environmental hazards. A Phase II work plan has been proposed to more accurately assess this site. The preliminary HRS score is $S_M = 11.03$.

## 5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM

### 5.1 NARRATIVE SUMMARY

The Union Carbide Republic Plant Landfill site is a 16-acre active landfill on Hyde Park Boulevard, Niagara Falls, Niagara County, New York. The site is used exclusively by Union Carbide to dispose of carbonaceous and packaging wastes generated during their production process from the National, Acheson and Republic plants. The site was purchased by Union Carbide on July 24, 1934 from Aluminum Co. of America and has been active since that time. The site is currently permitted by the DEC and the Town of Niagara as a non-hazardous active landfill. The Union Carbide Products Division is expected to close the landfill by December 1986 in accordance with Part 360.

The wastes disposed of at this site include carbonaceous dust and scrap, firebrick, waste wood and pallets. Other waste types generated and deposited on the site in the past included coke, pitch, lunch waste, silica sand, coal tars and petroleum tars (see P. Millock - S. Dorr interview, November 15, 1978), machining oils and spent sludges from degreasing (1,1,1-trichloroethane).

The site is currently monitored on a quarterly basis by the extraction of groundwater samples from three monitoring wells installed around the perimeter of the site. Two of these wells have been completed through the waste. Water quality data indicates that phenols, heavy metals and low levels of halogenated organics exceed New York State groundwater criteria in the till hydrologic zone. Additional investigation is necessary in order to identify the types and concentrations of disposed materials. The E.P. toxicity tests and leachate tests performed on the waste materials indicate that all levels are within acceptable limits, with the exception of phenols, which are approximately 100 times the groundwater standard.

A site visit indicated that the site is well managed; however, there have been documented dust incidents as reported by the Niagara County Health Department during the period 1981-1982. Final cover and seeding are taking place as directed in their operations permit. The site is bordered on the



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south-southeast by a residential area. The waste types currently disposed of do not produce any odors and carbonaceous dust is bagged to prevent blowing. The area is generally served by public water, although private drinking water wells exist 2,000 feet north of the site.

The overall site appearance and conditions are very good.

**RECORD 8**

Jim Richert

# EFFECT OF NIAGARA POWER PROJECT ON GROUND-WATER FLOW IN THE UPPER PART OF THE LOCKPORT DOLOMITE, NIAGARA FALLS AREA, NEW YORK

By Todd S. Miller and William M. Kappel

---

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 86-4130

RECEIVED
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Prepared in cooperation with
U.S. ENVIRONMENTAL PROTECTION AGENCY, and the
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Ithaca, New York

1987

# Effect of Niagara Power Project on Ground Water Flow in the Upper Part of the Lockport Dolomite, Niagara Falls Area, New York

By Todd S. Miller and William M. Kappel

## ABSTRACT

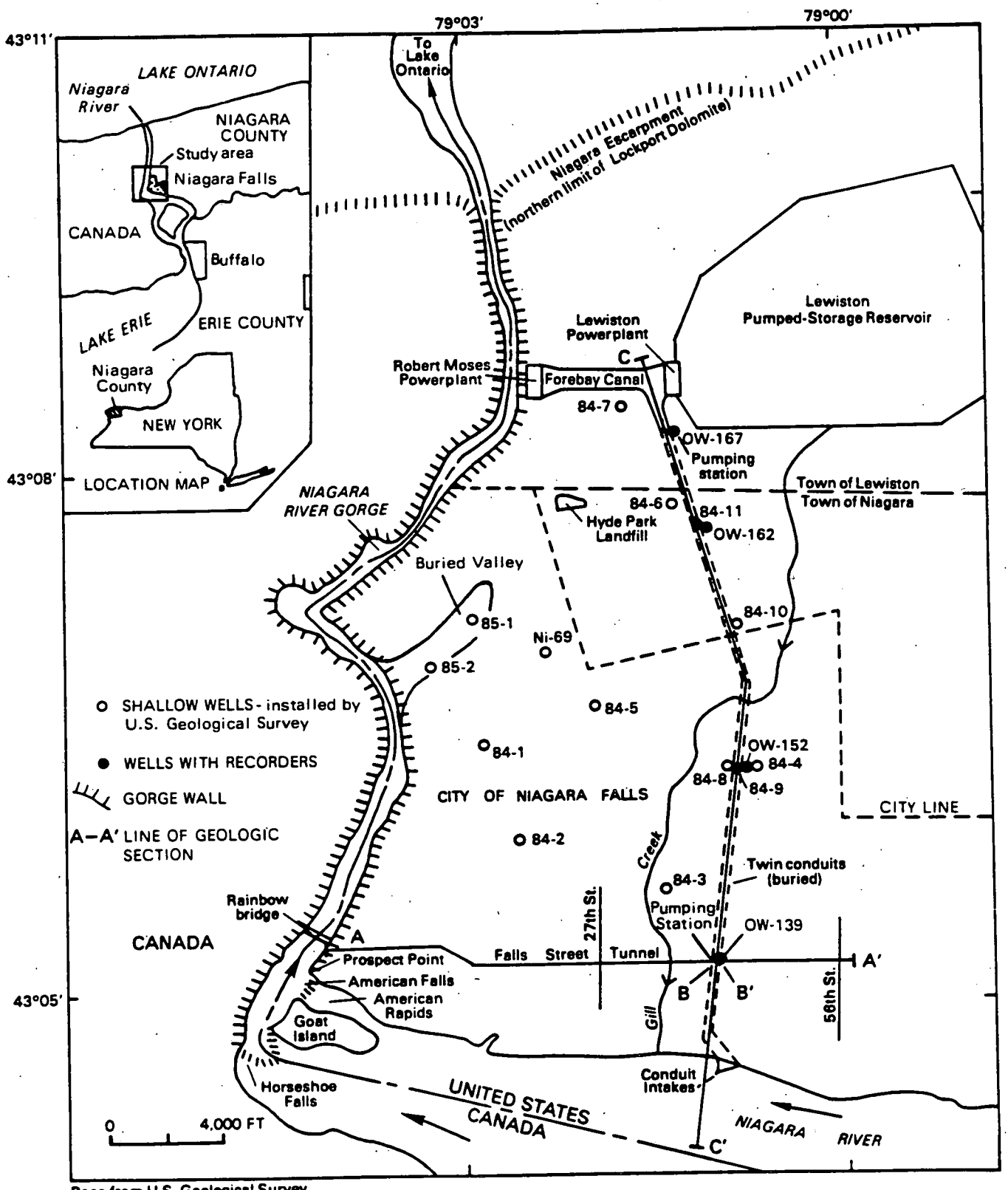
The Niagara River Power Project near Niagara Falls, N.Y., has created recharge and discharge areas that have modified the direction of ground-water flow east and northeast of the falls. Before construction of the power project in 1962, the configuration of the potentiometric surface in the upper part of the Silurian Lockport Dolomite generally paralleled the buried upper surface of the bedrock. Ground water in the central and east parts of the city of Niagara Falls flowed south and southwestward toward the upper Niagara River (above the falls), and ground water in the western part flowed westward into the Niagara River gorge.

The power project consists of two hydroelectric powerplants separated by a forebay canal that receives water from the upper Niagara River through two 4-mile-long, parallel, buried conduits. During periods of nonpeak power demand, some water in the forebay canal is pumped to a storage reservoir for later release to generate electricity during peak-demand periods.

Since the power project began operation in 1962, ground water within 0.5 mile of the buried conduits has seeped into the drain system that surrounds the conduits, then flows both south from the forebay canal and north from the Niagara River toward the Falls Street tunnel--a former sewer that crosses the conduits 0.65 mile north of the upper Niagara River. Approximately 6 million gallons of ground water a day leaks into the Falls Street tunnel, which carries it 2.3 miles westward to the Niagara River gorge below the falls.

Daily water-level fluctuations in the forebay canal affect water levels in the drain system that surrounds the conduits, and this, in turn, affects the potentiometric surface in the Lockport Dolomite within 0.5 mile of the conduits. The resulting water-level fluctuations in the drains and Lockport Dolomite diminish with distance from the forebay canal. The drains transmit changes in pressure head near the forebay canal southward at least as far as the Falls Street tunnel area and possibly to the upper Niagara River. High water levels in the forebay canal decrease the gradient of the potentiometric surface toward the conduit drains, and low water levels in the forebay canal increase the gradient.

Some water in the pumped-storage reservoir recharges ground water in the Lockport Dolomite by seepage through bedding joints, which are exposed in the unlined reservoir bottom, and through the grout curtain beneath the reservoir's dike. Water-level fluctuations in the reservoir cause slight ground-water fluctuations near the reservoir.




Base from U.S. Geological Survey
Lewiston, 1965, and Niagara Falls, 1965, 1:24,000

*Figure 1.--Major features of Niagara Power Project and location of wells installed or monitored by the U.S. Geological Survey during 1984-85.*

## Seasonal Diversions

A seasonal operating schedule determines the quantity of water diverted from the river to the forebay canal (table 1). During the tourist season (April 1 to October 31), at least 100,000 $ft^3/s$ must flow over the falls during daylight hours, and at least 50,000 $ft^3/s$ must flow over the falls at night. During the rest of the year, a minimum of 50,000 $ft^3/s$ must flow over the falls at all times. The remainder of the flow, usually between 100,000 and 150,000 $ft^3/s$, is divided between the NYPA project and the Canadian Ontario Hydropower project. Average flow in the Niagara River at Buffalo, N.Y., 12 mi upstream from the falls, is 204,000 $ft^3/s$ (U.S. Geological Survey, 1984).

The water level in the forebay canal also is regulated by a daily schedule, depending on the amount of water needed for power generation at the Robert Moses and Lewiston powerplants. During periods of peak power demand, generally weekdays from 8:00 a.m. to 4:00 p.m., water is discharged from the pumped-storage reservoir to the forebay canal through the Lewiston powerplant, which supplements flow from the twin conduits; the combined flow is then discharged through the Robert Moses powerplant. The combined discharge of water from the reservoir and conduits raises the water level in the forebay canal (fig. 7). During periods of low power demand, generally weeknights from 8:00 p.m. to 4:00 a.m. and during weekends, the Lewiston powerplant turbines are used as pumps to lift water from the forebay canal up into the reservoir; this generally lowers water level in the forebay canal. During the weekend, the water is pumped from the forebay canal to the Lewiston Reservoir until Monday morning, when it reaches its peak level, about 650 ft above sea level (fig. 8). This power-generation schedule causes water levels in the forebay canal to fluctuate 4 to 20 ft a day (fig. 7) and those in the reservoir to fluctuate by as much as 10 ft a day. The reservoir's water level is highest on Monday morning and slowly decreases through the week.

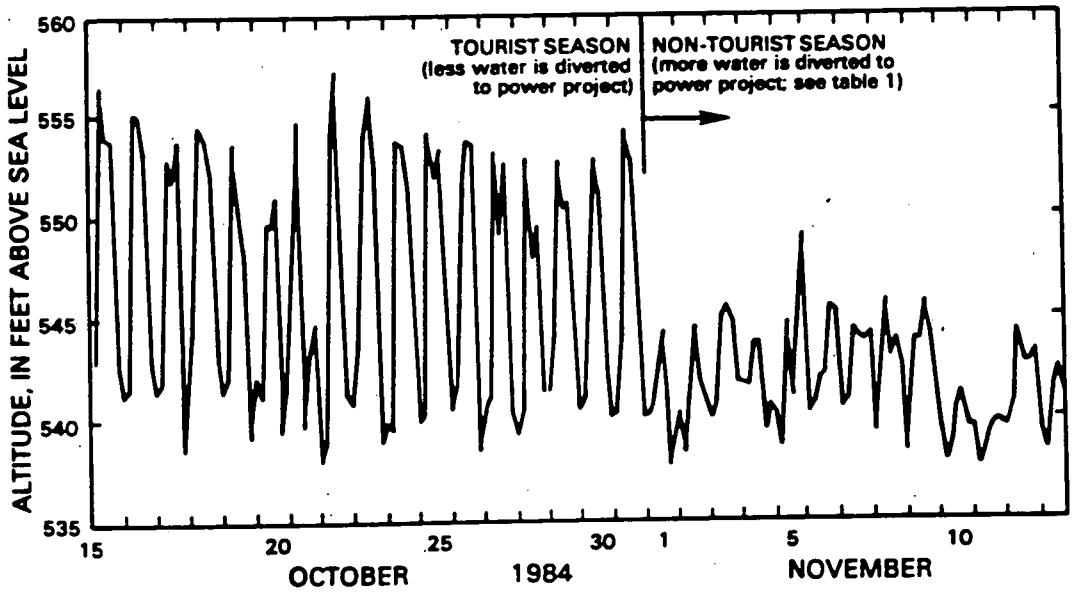



*Figure 7.--Daily water-level fluctuation in the forebay canal during late October and early November 1985, showing effect of change in annual diversion schedule.*



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*Table 1.--Flow of Niagara River over Horseshoe and American Falls.*[1]

| Season | Dates | Hours | | Minimum flow over falls ($ft^3/s$) |
|---|---|---|---|---|
| Tourist season | Apr. 1 to Sept. 15 | Day: | 8:00 am to 10:00 pm | 100,000 |
| | | Night: | 10:00 pm to 8:00 am | 50,000 |
| | Sept. 1 to Oct. 31 | Day: | 8:00 am to 8:00 pm | 100,000 |
| | | Night: | 8:00 pm to 8:00 am | 50,000 |
| Non-tourist season | Nov. 1 to Mar. 30 | | 12:00 am to 12:00 am | 50,000 |

[1] The diverted water (average total flow of river, 204,000 $ft^3/s$, minus flow over falls) is divided between Canada and United States.

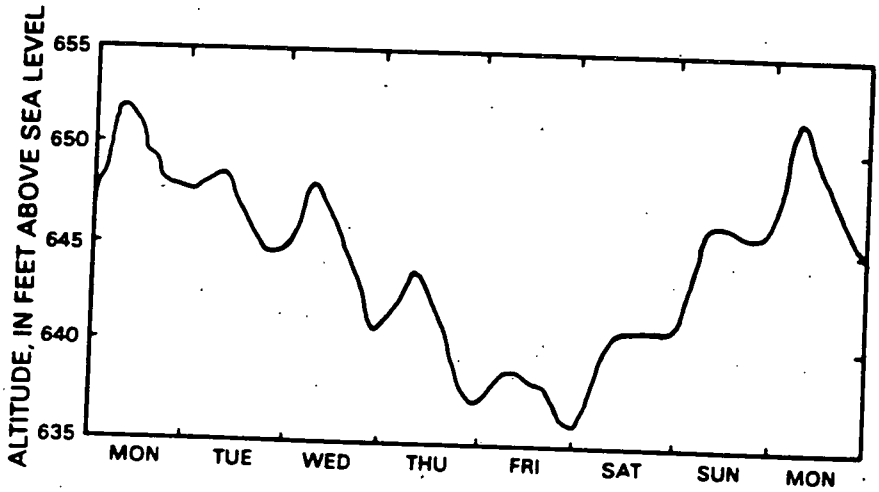


*Figure 8.*

*Typical Lewiston Reservoir water levels during a weekly pumped-storage/release cycle.*

## Ground-Water Flow and Water Levels

Construction of the twin buried conduits, the forebay canal, and the pumped-storage reservoir has modified hydrologic conditions within the Niagara Falls area. The daily and seasonal regulation of water levels in the reservoir and forebay canal have changed the natural flow patterns and water levels in the upper part of the Lockport Dolomite. To determine the effect of the power project on ground-water movement, water levels in the upper part of the Lockport Dolomite were measured at 104 wells on October 23-24, 1984 and on March 26-27, 1985 (values are given in table 2, at end of report). The difference between water levels in October and those in March were relatively small (generally within 3 to 5 ft); therefore, only the water levels measured in March were used to construct a potentiometric-surface map (pl. 1A), which includes arrows showing the directions of ground-water flow.

### *Effect of Twin Buried Conduits*

The twin buried conduits were constructed in two separate parallel bedrock trenches approximately 4 mi long. Each trench is 52 ft wide and penetrates 100 to 160 ft into the Lockport Dolomite; at the north end they

Ground-water recharge from the reservoir.--Within 3 weeks after the reservoir was first filled in October 1961, water levels in nearby wells that tap the upper parts of the Lockport Dolomite rose between 1.6 and 17.0 ft, and several wells near the southwest corner of the reservoir started to flow (Johnston, 1964). Johnston attributes the artesian flow and water-level rise to seepage through joints exposed on the floor of the reservoir that intersect the open-hole wells south of the reservoir. Apparently the grout wall beneath the dike did not completely seal off flow beneath the dike. Heads measured elsewhere along the south side of the reservoir reflected the increased reservoir water level, but to a much lesser degree.

Effects of water-level fluctuations.--Ground-water levels in some areas near the reservoir are affected by water-level fluctuations in the reservoir. The degree of fluctuation is dependent on a well's location, the effectiveness of the grout curtain upgradient from the well, and whether the well intersects bedding planes or fractures that extend back to the ungrouted reservoir floor (Johnston, 1964, p. 61-62). Water-level fluctuations in the reservoir affect ground-water levels to the southwest and, to a lesser degree, to the south, but the fluctuations are generally minor (fig. 16), ranging from 0.1 to 1.0 ft (Johnston, 1964). Water-level measurements taken in October 1984 and March 1985 at wells on the south side of the reservoir (table 2, at end of report) indicate that the same range of fluctuation still occurs.

## SUMMARY

The U.S. Geological Survey, in cooperation with the U.S. Environmental Protection Agency and the New York State Department of Environmental Conservation, studied the hydrogeology of the Niagara Falls area during 1984-85 to extend knowledge of ground-water movement in the upper part of the Lockport Dolomite in the area and define the hydraulic effects of the Niagara Power Project. The power project has created recharge and discharge zones that have modified the direction of ground-water flow in the Niagara Falls area. Before construction of the power project in 1958-62, ground water in the upper part of the Lockport Dolomite generally flowed southward, parallel to the buried surface of the Lockport Dolomite. Ground water in the central and eastern parts of the city flowed south and southwestward toward the upper Niagara River, and ground water in the western part of the city flowed westward to the Niagara River gorge.

Since completion of the power project, ground water within 0.5 mi of both sides of the buried twin conduits flows toward the conduits and into the drain system that surrounds them. Water in the drains flows southward from the forebay canal to Royal Avenue, where it leaks into the Falls Street tunnel. In addition, water from the upper Niagara River flows northward in the drains to Royal Avenue, where it also leaks into the Falls Street tunnel. Approximately 6 Mgal/d leaks into the Falls Street tunnel where it crosses the conduits. Water in the tunnel flows westward to the Niagara River gorge below the falls.

Water-level fluctuations in the forebay canal, which connects the Lewiston pumped-storage reservoir with the Robert Moses powerplant, affects



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the potentiometric-surface gradient in the upper part of the Lockport Dolomite. The potentiometric surface within about 0.5 mi of the conduits slopes toward the conduits from both sides. High water levels in the canal raise the water level in the drains that surround the conduits and thus decreases the water-table gradient toward the conduits and reduces ground-water discharge to the drains. Low water levels in the forebay canal decrease the water level in the drains, which increases the water-table gradient toward the conduits and increases ground-water discharge to the drains.

Water levels in bedrock wells adjacent to the conduits fluctuate instantaneously with those in the forebay canal, but the magnitude of fluctuation diminishes with distance from the forebay canal. The drains that surround the conduits transmit changes in hydraulic pressure head from the forebay canal at least 3.4 mi south to the Fall Street tunnel area.

Water in the Lewiston pumped-storage reservoir recharges ground water south of the reservoir by seepage through bedding joints that crop out in its unlined bottom. Water then flows through the partially effective grout curtain, which was constructed under the reservoir's dike, then flows south-southwestward to the conduits. Water-level fluctuations in the Lewiston pumped-storage reservoir cause only slight fluctuations of water levels in nearby wells.

Although the Niagara Power Project has altered the natural pattern of ground-water movement in the Niagara Falls area, the effects occur primarily within 0.5 mi of any part of the project. Localized changes in flow direction may have a direct bearing on how and where solutes from known hazardous waste sites could be migrating.

## REFERENCES CITED

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# RECORD 9

UCAR CARBON COMPANY INC. P.O. BOX 887, NIAGARA FALLS, NEW YORK 14302

July 1, 1994

James J. Richert
Ecology and Environment, Inc.
Buffalo Corporate Center
368 Pleasantview Drive
Lancaster, New York 14086

Revised NYSDEC Site Investigation
UCAR Carbon Republic Site (Code 932035)
Niagara Falls, New York

Dear Jim,

During our telephone conversation on June 28, 1994, you requested supportive documentation that the City of Niagara Falls, used Niagara Mohawk Power Corporation Land, north of our facility, as well as a portion of our property to dispose of ash from their former municipal waste incinerator.

Please find enclosed three (3) internal company memorandums dated December 9, December 11, 1964 and January 9, 1965 entitled "Excavation and Refilling of Republic Disposal Area in Town of Niagara". These documents should answer your question.

Please advise if you have further questions regarding the subject.

Very truly yours,

A.C. Ogg
Site Manager

ACO/jee

cc: C.F. Dunnigan - CRA
K.G. Norwold - Letter Only
H.A. Overcash - Letter Only
V.J. Woodward - NYSDEC Albany

ROUGH DRAFT

MEMORANDUM

SUBJECT: Excavation and Refilling at Republic Disposal Area in Town of Niagara

HISTORY:

Early in the Fall of 1964, after being approached by Cerrone Trucking Company, verbal arrangements were made between Union Carbide Corporation, Carbon Products Division and Cerrone Trucking Company for the removal of approximately 100,000 cubic yards of material from the Republic disposal area. To avoid trucking over Town of Niagara streets, a truck route was arranged with the Power Co. along the north property line on Power Co. land.

The Town of Niagara on learning of the excavation within Town boundries, prior to receiving a request for a permit, complained to UCC. The Cerrone Trucking Company was in error in not obtaining the permit prior to starting work as was originally outlined by UCC. Since work progressed without further complaint we assumed that suitable arrangements were made between the Town of Niagara and Cerrone Trucking.

Early in November, the Niagara Mohawk Power Corporation discovered that the excavation had extended onto their property and as such had created a "hazard" for which they would be held responsible. Mutual arrangements were made between NMPC and UCC to have NMPC take care of filling in the excavation. NMPC having prior arrangements with the City of Niagara Falls to allow the City to dump incinerator residue on NMPC land, initiated action to have the City fill the subject area on property located in the Town of Niagara. The City planned to truck down Rhode Island Avenue and across UCC property to reach the excavation. UCC then started arrangements for a legal document to be prepared covering City trucks crossing our property.



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The local newspaper (Gazette) published an article on 12/1/64 stating

Memorandum

behind the Republic Plant of UCC. This article was published prior to the Town of Niagara receiving a formal request from the City of Niagara Falls. On December 3rd an article again appeared stating that the City officials had not applied for a permit to use property in the Town of Niagara as a dump and no such permission has been given according to Jessie Castricone, Town Supervisor.

We understand that both the City of Niagara Falls and the NMPC have requested permits to dump in the Town of Niagara.

PRESENT STANDING:

On 12/8/64 Mr. R.H.Beyer was contacted by Mr. J. Castricone for a meeting on the subject problem, but since Mr. Beyer was leaving town that day, the meeting was tabled.

On the morning of December 9th, Messrs. C.B.Leypoldt and C.R.Drisco of UCC and C.Kennedy and W.S.Hayward of NMPC met to review the situation. It was learned that Mr. Kennedy had attended the Town of Niagara meeting on December 7th. At that time the requests for dumping permits were tabled. It was brought out that the Town would not allow City trucks on Rhode Island Avenue.

It was the Power Company's opinion that UCC and NMPC meet with the City of Niagara Falls prior to UCC arranging a meeting with the Town of Niagara as they have requested, in order to ascertain the details of the City's contact with the Town.

The Power Company mentioned that in the event this problem becomes an issue, they (NMPC) would make private arrangements with UCC for the filling of this excavation, thus making this a separate arrangement from that now maintained by NMPC with the City for dumping.

On 12/9/64 the City of Niagara Falls contacted UCC to arrange a meeting on Thursday, 12/10, at 10:00 A.M., but due to Mr. Beyer's absence was tentatively arranged for Friday, subject to his approval.

CC: RHB, CBL, VW, HJM, CRD

ROUGH DRAFT

MEMORANDUM

SUBJECT: Excavation and Refilling of Republic Disposal Area in Town of Niagara

HISTORY:

8/64 to 12/9/64 - See Subject memo dated 12/9/64.

On 12/10/64 Messrs. R.H.Beyer and C.B.Leypoldt of UCC met with Messrs. Weaver, City Manager; Maloney, City Attorney; and Massaro, Dept. of Public Works; and Messrs. Kennedy and Hayward of NMPC, to discuss the situation.

It was brought out in this meeting that the City of Niagara Falls is in urgent need of a disposal area and would go to great lengths to procure the site. NMPC agreed to have the area staked out as regard to NMPC boundries.

On 12/11/64, Mr. Beyer met with Mr. Jesse Castricone, Town Supervisor of the Town of Niagara, to discuss the Town's view on the subject problem.

With certain limitations it was Mr. Castricone's feeling that the Town would reach an agreement with the City if the following conditions were met:

1. City trucks are not to use Town streets
2. 24-hour supervision of dump area
3. Erection of a snow fence around the total excavation

The above information was relayed to Mr. Massaro of the Dept. of Public Works, City of Niagara Falls, via a phone call originating by Mr. Massaro.

C.R.Drisko/baf
12/11/64



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MEMORANDUM

SUBJECT: Excavation and Refilling of Republic Disposal Area in Town of Niagara

To follow up Mr. Drisko's memorandums of 12/9/64 and 12/11/64, we list the following events:

12/14/64 - The Town of Niagara Board issued a permit to the City of Niagara Falls and Niagara Mohawk Power Corporation.

Copy of this permit delivered by Mr. C. Cantara to Mr. H.J. Mann on 12/16/64.

12/16/64 - Niagara Mohawk Power Corp. prepared an agreement for City vehicle access to Republic and Niagara Mohawk Power Corp. lands covering both parties.

12/17/64 - This agreement edited by Mr. Hugh Chace in our behalf and forwarded with revision to H.J.Mann.

12/18/64 - Agreement signed by R.H.Beyer for Union Carbide Corp. - map of roadway added to agreement as Sketch "B".

12/21/64 - Agreement given to S. Hayward of Niagara Mohawk Power Corp. who arranged for signature of Mr. C.Wicks of Niagara Mohawk Power Co.

12/21/64 - Met with C.Cantara, P.Weaver, F.Massara of City; C.Kennedy of Niagara Mohawk Power Corp.; E.K.Dingman, C.B.Leypoldt, V.Whitley and H.J.Mann of Union Carbide Corp., at Republic Plant. Agreement delivered to Mr. Massara for Mayor's signature.

At this time City agreed:

(1) Put their lock on our front gate as double lock system and keep gate locked at all times.

(2) Keep crossing over our railroad track clear.

(3) Establish protective snow fence around excavated site.

(4) To re-establish dumping permit within the 45 day active period.

(5) Keep man on job during 5 days of day shift to supervise dumping and control activities.

(6) City also advise they may desire to install gate in back fence. UCC has no objections to this if City so desires.

(7) Open access road for Niagara Mohawk Power Corp. at pit site.

Memorandum (cont'd)

Niagara Mohawk Power Co. agreed:

Their surveying crew will stake out accurate Niagara Mohawk Power Co. property lines for City.

12/22/64 - H.J.Mann advised by H.Chace, City did not sign agreement 12/21/64. After consulation Mr. Chace advised to inform City, UCC and NMPCo. could not permit use of land until agreement signed. Expected date of signature 12/28/64.

12/29/64 - Signed agreement delivered to H.J.Mann and S.Hayward by Courier about 1:30 P.M. No further contact from City.

H.J.Mann
baf
1-19-65

CC: Messrs. R.H.Beyer
C.B.Leypoldt
V.Whitley



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**RECORD 10**

| NAME Union Carbide Corp. Carbon Products Div. | ICS NUMBER - EPA ID NUMBER NYD 002106995 | |
|---|---|---|
| ADDRESS Buffalo Ave. & Elizabeth St. | | |
| CITY Niagara Falls | STATE N.Y. | ZIP 14303 |

**GENERATOR FORM**
**PART - II**

**G**

DATE 8/30/84

| HAZARDOUS WASTE DISPOSAL SITE (SEE INSTRUCTIONS) | 2. DESCRIPTION OF HAZARDOUS WASTES DEPOSITED AT THIS LOCATION (SEE INSTRUCTIONS) | 3. EPA WASTE CODE | 4. WASTE DISPOSED OF QUANTITY OF WASTE (TONS) | FORM: LIQUID | FORM: SOLID | FORM: DRUMS | 5. WASTE DISPOSAL DATES | 6. TRANSPORTER OF HAZARDOUS WASTE (SEE INSTRUCTIONS) |
|---|---|---|---|---|---|---|---|---|
| Union Carbide Corporation Carbon Products Division Niagara Plant Republic Location<br>DISPOSAL SITE<br>Republic Solid Waste Management Facility (Landfill) 3501 Hyde Park Blvd. Town of Niagara, N.Y. 14305<br>MAPS: Attachment "A" - USGS Attachment "B" - Plant<br>METHOD OF TREATMENT: Landfilling | Spent sludges from degreasing operations, specifically: 1,1,1 Trichloroethane | F001 | Estimated at .01 tons/year times 2 years<br>Total tonnage at .02 tons | X | X | | 1/75 | Union Carbide Corp. Carbon Products Div. Niagara Plant<br>9A-048 |

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★
★ In Regard to the Above-mentioned Wastes, the Quantities of Wastes ★
★ Disposed of Are only Estimates. ★
★ "NO POSITIVE RECORDS OR CORRESPONDENCE SUBSTANTIATE ★
★ THESE QUANTITIES, OR THEIR EXISTENCE." ★
★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Halowax 1006 | D003 | Estimated at .02 tons/year times 8 years<br>Total tonnage .16 tons | | X | | 1/68<br>12/76 | Union Carbide Corp. Carbon Products Div. Niagara Plant |

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★
★ In Regard to the Above-mentioned Wastes, the Quantities of Wastes ★
★ Disposed of Are only Estimates. ★
★ "NO POSITIVE RECORDS OR CORRESPONDENCE SUBSTANTIATE ★
THESE QUANTITIES, OR THEIR EXISTENCE." ★
★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Buffalo Waste Oil/Booth Oil Co. Inc. 76 Robinson Street North Tonawanda, N.Y.14120<br>DISPOSAL SITE<br>Modern Disposal | Spent sludges from degreasing operations, specifically: 1,1,1 Trichloroethane | F001 | Estimated at .01 tons/year times 3 years<br>Total tonnage at .03 tons | X | X | | 1/77<br>12/79 | 9X-004<br>Buffalo Waste Oil<br>76 Robinson<br>N. Tonawanda, NY |

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★
★ In Regard to the Above-mentioned Wastes, the Quantities of Wastes ★
★ Disposed of Are only Estimates. ★
★ "NO POSITIVE RECORDS OR CORRESPONDENCE SUBSTANTIATE ★
★ THESE QUANTITIES, OR THEIR EXISTENCE." ★

Contacted: Michael G. Stoffan
11/13/84

H-73

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# APPENDIX I

# PERTINENT FIELD LOGBOOK NOTES

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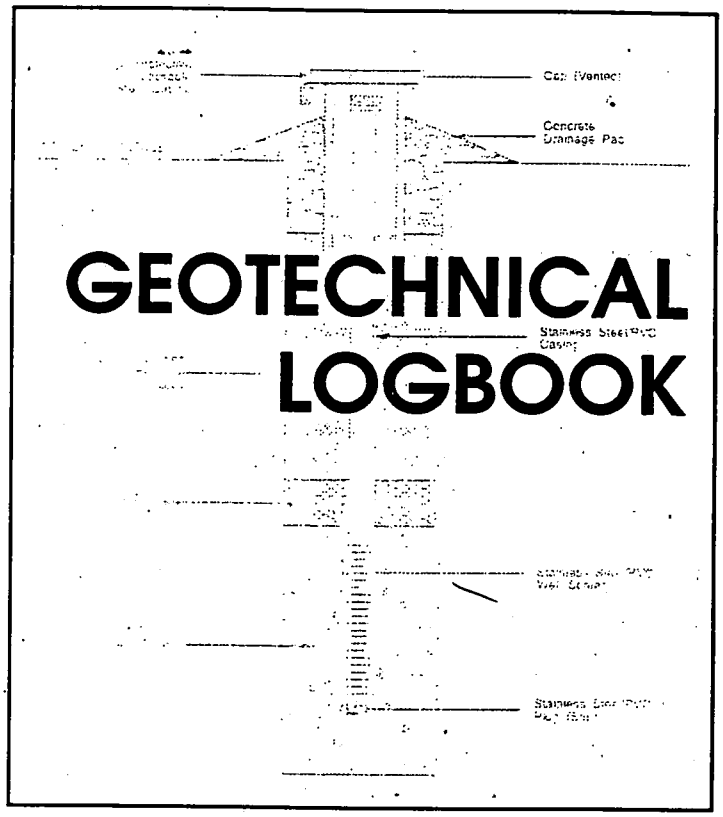


# GEOTECHNICAL LOGBOOK

PROJECT NUMBER: YR-9040

CLIENT/SITE NAME: NYSDEC - UNION Carbide

DRILLING COMPANY: BUFFALO DRILLING

DATE OF FIELD ACTIVITIES: 9-22-93 / 10/5/93

HOLES LOGGED IN BOOK: B-1, B-2, GW-8B, GW-8A, GW-11B

I-3 BOOK 1 OF 2

DAILY LOGS

BOREHOLE RECORDS

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CLIENT: NYSDEC

JOB NUMBER: YR 9040

SITE NAME: UNION CARBIDE

DRILLER: BUFFALO DRILLING CO.

LOCATION: CITY/TOWN: TOWN OF NIAGARA

STATE: NY

PROJECT MANAGER: JIM RICHERT

FIELD TEAM LEADERS: JIM RICHERT /

SITE SAFETY OFFICER(S): JIM RICHERT /

TEAM MEMBERS: KEVIN HAYES (GEOLOGIST)

JOB START/FINISH DATE: 9/22/93 / 10/5/93

BOOK 1 OF 2

E&E CORPORATE: (716) 684-8060 FAX (716) 684-0844

E&E EMERGENCY RESPONSE CENTER: (716) 684-8940

E&E ANALYTIC SERVICE CENTER: (716) 631-0360 FAX (716) 631-0378

E&E EQUIPMENT SERVICE CENTER: (716) 681-9797 FAX (716) 681-4356

FEDERAL EXPRESS TOLL FREE: (800) 238-5355

| PROJECT/CLIENT CONTACT(S) | AFFILIATION | PHONE |
|---|---|---|
| | | |
| | | |
| | | |

For inquires regarding the distribution, scope, and/or organization of the Geotechnical Logbook please contact:
Michael Welch, Buffalo Corporate Office. Your comments and suggestions are welcomed and will be considered in future revisions.

DAILY LOGS

BOREHOLE RECORDS

BOREHOLE NO. B-1

Karen R. Hayes
9/22/93

BOREHOLE RECORDS



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wed 9-22-93 YR-9040 Jim Rechert

0630 Jim Richert (JR) of E&E picks up Kevin Hayes (KH) of E&E

0700 JR picks up Kevin Hayes (KH) of E&E

0730 E&E arrives on site, drillers & NYSDEC on site.

All sign in

BUFFALO DRILLING: DON RIMBECK driller

DON SMITH HELPER

NYSDEC VAL WOODWARD

ALYSE PICKHOLTZ

CRA (UCAR CONSULTANT) DOUG OSCAR

MEET w/ MR OGG OF UNION CARBIDE (UCAR)

CRA HAS GATE KEYS & BDC HAS DAILY PERMIT

0740 All move to site to begin drilling program

weather: dense fog, much dew 56°F

forecast sunny high 70°F light east winds

GOALS FOR TODAY: drill + sample B-1, B-2

+ GW-8B (START).

0745 Drillers decon augers w/ steam/high pressure water.

0750 VAL WOODWARD (VW) discusses cuttings plan w/ CRA. Plan is to spread on ground unless >25 PPM ABG.

0830 INITIATED DRILLING @ BOREHOLE B-1

0906 MIKE HINTON (DEC REGION 9) ARRIVED ON SITE

0925 J. RICHERT COLLECTED SAMPLE B-1.1 FROM 6'-8' SPLIT SPOON ANALYSIS = FULL TCL, RCRA, & EP TOXICITY

0930 FINISHED DRILLING @ B-1

0940 MOVED RIG TO B-2 LOCATION 20-20 SPLIT SPOON REFUSAL @ 1' BGS.

MOVED RIG 5' SOUTH TO 20-15 GRID LOCATION

1005 J.R. COLLECTED SPL. B-2.1 2'-4' SPLIT SPOON; ANALYSIS = FULL TCL

1020 J.R COLLECTED SPL B-2.2 6'-8' SPLIT SPOON; ANALYSIS = FULL TCL, RCRA, & EP TOXICITY

10:35 MOVED RIG OFF B-2 LOCATION

10:40 MIKE HINTON DEPARTED SITE

11:00 DRILLERS BEGIN DECON

11:20 DECON COMPLETED; GROUTED BOREHOLES B-1 & B-2

11:30 JR & KH (K. HAYES) DEPART SITE; DOUG OSCAR (CRA) & DRILLERS (BDC) ALSO DEPART SITE.

Kevin R. Hayes 9/22/93

11:45 PICKED UP PLYWOOD @ GROSSMANS NIAGARA FALLS NY
PICKED UP LUNCH & ICE
12:30 RETURN TO SITE
12:55 MOVE RIG TO GW-8B DRILL SITE
13:07 BEGIN DRILLING GW-8B WELL SITE
14:00 FINISH DRILLING GW-8B
14:10 KRH $O_2$/EXPLOSIMETER ALARMS @ ~~9 i.e~~ KRH 10 ppm HYDROGEN SULFIDE ($H_2S$)
METER CHECKED @ 150' UPWIND → SAME READINGS RECORDED UPWIND
GAS BELIEVED TO HAVE ORIGINATED OFFSITE.
14:15 SHUT DOWN RIG TO SET UP CORING OPERATION
15:10 ALL E&E, BDC, & NYSDEC & CRA PERSONNEL DEPART SITE
CRA LOCKS GATE TO SITE
NOTE: GW-8B IS SECURED & CUSTODY SEALED
15:15 JR & KH (E&E) SIGN OUT @ UCAR OFFICE
15:16 E&E PERSONNEL PACK SAMPLES FOR TRANSPORT TO ASC.
15:35 E&E PERSONNEL DEPART UCAR OFFICE PARKING LOT.

Kevin R. Hayes
9/22/93



BOREHOLE RECORDS

THURS 9/23/93 NYSDEC UNION CARBIDE YR9040

0630 JIM RICHERT (J.R.) OF E&E DEPARTS HOME

0700 J.R. PICKS UP KEVIN HAYES (KH) OF E&E @ HOME.

0728 JR & KH ARRIVE @ UNION CARBIDE OFFICE & SIGN IN. HAZARDOUS WORK PERMIT IS ALSO PICKED UP.

0735 DON SMITH (DS), DON RIMBELK (DR), MIKE GERSTUNG (MG) OF BUFFALO DRILLING CO (BDC), DOUG OSCAR (DO) OF (CRA) CONESTOGA ROVERS & ASSOCIATES, ALYSE PICKWELTZ (AP) & VAL WOODWARD (VW) OF NEW YORK STATE DEC, & KH & JR OF E&E ARRIVE @ SITE

0745 MG OF BDC DEPARTS SITE TO BUY A FLOW METER DR DEPARTS SITE TO

~~0900~~ KRH 9/23/93 ~~KHH~~ MOVE RETRIEVE 300 GALLONS OF WATER FOR ROCK CORING

0845 MG & DR RETURN TO SITE

0900 SITE SAFETY MEETING LED BY JR (E&E). ATTENDED BY KH, DO, MG, D.S, A.P, & VW. (WATER LEVEL 15.9' BGS 17.5' TD) = GW-8B

0920 STARTED DRILLING ROCK SOCKET WITH HQ CORE RODS @ GW-8B.

0940 STOP DRILLING (CORING) ON GW-8B MORE WATER NEEDED TO CORE

1000 AC OGG (AO) (UCAR) ARRIVES ON SITE

1015 CAROL DUNAGIN (CD) (CRA) ARRIVES ON SITE

1020 CORING RUN #2 STARTED

1028 CORING RUN #2 ~~END~~ KRH 9/23/93

1044 CORING RUN #2 END ROCK SOCKET TD = 22.7' BGS DRILL RATE ~ 6 MIN/1 FOOT VERY COMPETENT DOLOSTONE (18.5'-22.7' BGS)

1100 GROUT POURED INTO AUGERS IN GW-8B; PVC 3" ID CASING WITH PLUG AT BASE PUT INTO HOLE, WEIGHTED DOWN WITH WEIGHT OF RIG UNTIL MORE WATER COULD BE OBTAINED. D.S. DEPARTS TO RETRIEVE $H_2O$. AC & CD DEPART SITE

1145 DS RETURNS WITH 300 GALLONS OF $H_2O$, $H_2O$ POURED INTO CASING FOR WEIGHT.

11:55 AUGERS BEING PULLED OUT OF WELL GW-8B

12:15 KH & J.R. (E&E) DISCUSS AFTERNOON SCHEDULE WITH DO.

12:20 AP, VW, MG, DS, DR, & DO DEPART SITE

12:25 KH & JR DEPART SITE TO GET ICE FOR SAMPLES

12:40 KH & JR RETURN TO SITE

12:45 DO, DS, & DR RETURN TO SITE

12:50 AP & VW RETURN TO SITE

13:00 DS & DR (BDC) DECON AUGERS

13:50 ~~START DRILLING GW-8A~~ KH MOVE RIG TO LOCATION GW-8A

13:55 START AUGERING GW-8A - AUGER TO TOP OF BEDROCK & SET 5' SCREEN ON ROCK.

Kevin Hayes
9/23/93

14:06 AUGER DEPTH 14.5' BGS

14:15 BEGIN DRIVING A SPLIT SPOON (2') TO COLLECT CLAYEY SAND SEEN IN GW-8B

14:19 END DRIVING 2' SPLIT SPOON (COLLECTED SPOON FROM 14.5' to 16.5' BGS)

14:20 JR COLLECTS 2 8 oz SPLS FOR GRAIN SIZE & ATTERBERG LIMITS TESTS

14:25 GW-8A REACHES AUGER REFUSAL AT 18.2' BGS

14:30 RODS OUT OF HOLE WITH BIT. DRILLER MEASURES WATER AT 12.3' BGS & TD AT 17.4' (17'5")

14:33 BDC INSTALLS 2" PVC SCREEN & CASING ON BOTTOM. 5' SCREEN @ 17.4' TO 12.4'
SAND 17.5' TO 10.2'
BENTONITE PELLETS 10.2' - 7.8'
GROUT 7.8' TO ≈ 2' BGS
WILL LET GROUT SET UP & SETTLE OVERNIGHT & TOP OFF WITH CEMENT

15:10 Jim GRIFFIS OF E&E ARRIVES ON SITE

15:20 JR & KH COLLECTED DRILLING WATER SAMPLES DW-YR992393B FOR FULLTCL

15:35 Jim GRIFFIS DEPARTS SITE

15:45 BDC EMPLOYEES (DS) & (DR) EMPTY WATER FROM TANK ON TRUCK TO DRUMS ON SITE

16:08 JR & KH DEPART SITE TO SIGN OUT BDC & E&E PERSONNEL AT UCAR (UNION CARBIDE) PLANT OFFICE
D. OSCAR OF CRA REMAINS at SITE TO LOCK GATE AFTER BDC PERSONNEL FINISH TRANSFER OF WATER TO DRUMS

16:13 KH SIGNS E&E & BDC PERSONNEL OUT AT UCAR OFFICE

16:15 D. OSCAR OF CRA ARRIVES AT UCAR OFFICE FOLLOWING LOCKING GATE AT SITE FOLLOWING DEPARTURE OF DS & DR FROM SITE.

16:20 KH & JR (OF E&E) DEPART UCAR OFFICE

16:48 KH ARRIVES @ HOME (DROPPED OFF BY JR.)

Kevin R. Hayes
9/23/93



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FRIDAY 9/24/93 NYSDEC UNION CARBIDE

0650 JIM RICHERT (J.R) PICKS UP KEVIN HAYES (KH) @ HOME

0725 ARRIVE @ UCAR OFFICE & SIGN IN

WEATHER: CLEAR COOL ~45°F

0733 ARRIVE @ SITE; DOUG OSCAR (DO) OF CONESTOGA ROVERS & ASSOC. (CRA)

DON RIMBECK (DR) & DON SMITH (DS) OF BUFFALO DRILLING CO (BDC)

ALSO ARRIVE @ SITE.

0745 ALYSE PICKHOLTZ (AP) & VAL WOODWARD (VW) OF NYSDEC ARRIVE

ON SITE

0800 DS DEPARTS TO RETRIEVE WATER FOR MIXING GROUT & FUTURE DECON

0835 MOVE RIG TO GW-7A SITE; LEAVE RIG TO GO TO GW-8 PAIR AND

SET PROTEC

0920 START AUGERING GW-7A (GW-7A)

0923 COLLECT SPLIT SPOON SAMPLE #1 (0'-2')

0927 COLLECT SPLIT SPOON SAMPLE #2 (2'-4')

0938 COLLECT SPLIT SPOON SAMPLE #3 (4'-6')

0953 COLLECT SPLIT SPOON SAMPLE #4 (6'-7.8') SPLIT SPOON REFUSAL @ 7.8' BGS

0956 AUGER REFUSAL @ 8.5' BGS NO WATER OBSERVED IN BOREHOLE

1015 VAL WOODWARD OF NYSDEC DECIDES TO MAKE GW-7A (OVERBURDEN WELL)

A BEDROCK WELL; RENAMED WELL GW-11B

10:20 MIKE BALENT (NIAGARA VEST) & AL OGG (UCAR) ARRIVE ON SITE

MIKE BALENT OF NIAGARA VEST INDICATED HE IS NOT AWARE OF ANY

UNDERGROUND UTILITIES NEAR THE WELL PAIR GW-10. (BASED ON SITE DRAWINGS)

10:45 MIKE BALENT & AL OGG DEPART SITE

10:55 VAL WOODWARD & ALYSE PICKHOLTZ OF DEC DEPART SITE

NOTE: @ 1045 JR COLLECTED SAMPLE (4'-6') SPLIT SPOON FOR FULL

TCL & SAMPLE COLLECTED FROM (6'-8') SPOON FOR GRAIN SIZE

& ATTERBERG LIMIT TESTS.

11:08 BDC SET UP FOR CORING

11:20 DS OF BDC GOES TO PICK UP WATER FOR CORING

INSTRUMENTS

HNU: DEC S3071 (LAST CALIBRATED ON 09/17/93)

OVA: DEC-075-1

MINIRAM: 01-09-007

$O_2$/EXPLOSIMETER: 01-03-013 SERIAL# UH 585

11:50 ALL BDC, CRA & E&E PERSONNEL DEPART FOR LUNCH

12:20 E&E & CRA PERSONNEL RETURN TO SITE

6

9/24/93

Kevin R Hayes

12:40 BDC PERSONNEL (DS) & (DR) RETURN TO SITE

12:43 BEGIN CORING RUN THROUGH DOLOSTONE BOULDER (PLUCKED BY GLACIAL ACTION?)
RECOVERED <1' BROKEN DOLOSTONE (STARTED RUN @ 8.5' BGS) NOTE: ENDED CORING @ 13:08

1305 AUGERED PAST BOULDER TO 11.9' BGS WHERE COMPETENT BEDROCK
WAS ENCOUNTERED NOTE: (FIRST CORING RUN NOT INCLUDED IN CORE BOX; <1' BROKEN DOLOSTONE)

1352 STARTED CORING RUN 1 FROM 11.9' to 16.9' BGS

1410 COMPLETED CORING RUN 1

1425 MIKE HINTON OF NYSDEC ARRIVES ON SITE; KH LOGS CORE RUN 1.

14:30 BDC BEGINS GROUTING ROCK SOCKET & HOLE TO PLACE PVC CASING (3")
IN ROCK SOCKET; NOTE: CASING SET IN ROCK SOCKET @ 1525

14:45 MIKE HINTON DEPARTS SITE

15:25 GW-11B well; locked cap & VENT SLIT PLACED IN CASING
CUSTODY SEALED

15:35 BDC, CRA & E&E PERSONNEL DEPART GW-11B SITE

15:40 KH & JR PADLOCK WELLS GW-8A & GW-8B (OUTER CASING)
(INNER CASING ALREADY LOCKED WITH KEYED LOCKS)

15:45 ALL BDC, CRA, & E&E PERSONNEL DEPART SITE

15:50 JR SIGNS KH & JR OUT @ UCAR OFFICE

15:53 JR & KH DEPAR UCAR OFFICE PARKING LOT

16:25 KH ARRIVES @ Home

NOTE: SPAN GAS WAS NOT INCLUDED WITH NYSDEC HNU (DEC S3071)
INSTRUMENT COULD NOT BE CALIBRATED ON 9/24/93 IN FIELD
LAST CALIBRATION 9/17/93.

Kevin R. Hayes
9/24/93



BOREHOLE RECORDS

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MON SEPT 27, 1993 YR 9040 UNION CARBIDE - NYSDEC

0700. Jim Richert (JR) of E&E picks up Kevin Hayes (KH) of E&E @ his home

0730 JR & KH sign in @ UCAR office

0735 JR & KH arrive on site; Dan Frey (DF) & Don Rimbeck (DR) of Buffalo Drilling Co (BDC) & Doug Oscar (DO) of Conestoga Rovers & Associates (CRA) also arrive on site.
Drillers from BDC arrive with two $H_2O$ tanks; 300 gallon & 1600 gallon tanks.
Weather; Overcast, Low clouds, ~55°F No noticeable wind.

0810 JR holds site safety meeting; KH, DO, DR, & DF attending
BDC fills 1500 gallon $H_2O$ tank @ hydrant off Rhode Island Ave.
Equipment
HNU: DEC S3071; Serial #: A01158
OVA: DEC 075-1; " " : 41080
$O_2$/Explosimeter: 01-03-013, Serial #: U140585
Miniram: 01-09-007

0844 Water tank being filled

0915 Truck with water tank moved to GW-11B site

0920 BDC personnel depart well GW-11B to decon drill rods & equipment

0938 17.82' TOIC 15.02 BGS depth of rock socket GW-11B
Probably 1' grout plug in bottom of PVC casing

0945 BDC personnel return to GW-11B; Mike Gerstung of BDC arrives on site

0956 Mike Hinton (MH) (NYSDEC Region 9) arrives on site

1012 Start coring (NQ) GW-11B → coring stopped immediately due to water problem due to hose; switches to new hose

1023 Start NQ coring (run 2)

10:28 Stop NQ coring (went thru grout plug?)

10:30 Start NQ over coring into already HQ cored rock (-16.0' BGS) (broke off core run 1)

10:34 Stop NQ coring 4 min/1 foot (~18' BGS)

10:36 Mike Hinton (NYSDEC) departs site

10:39 Start NQ coring

10:45 Loss of drilling $H_2O$ @ ~17.5' BGS; fracture/solution cavity possible

10:50 Drillers hit void/fracture @ ~21' BGS; rig visibly moved down

10:56 Stop NQ coring @ ~21.5' BGS to add rod.

Kevin R. Hayes
9/27/93

MON SEPT 27, 1993 YR-9040 NYSDEC - UNION CARBIDE

11:03 BEGIN/RESTART NQ CORING @ ~22.5' BGS

11:10 STOP NQ CORING @ ~ 24.7' BGS (TD 26.4' BGS MEAS. BY JR) 31.0 6.3' STICK UP 24.7

WATER LEVEL @ 11.41' BGS (BELOW GROUND SURFACE)

12:15 JR & KH DEPART SITE TO PICK UP LUNCH

12:35 JR & KH RETURN TO SITE

13:17 GW-11B; WATER LEVEL @ 11.44' BGS.

13:30 DRILLER SET UP TO SPLIT SPOON GW-7B

SEE NYSDEC-UNION CARBIDE GEOTECHNICAL LOGBOOK 2

Kevin R. Hayes
9/27/93

BOREHOLE RECORDS

BOREHOLE NO. B-7



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WED SEPT 29, 1993 NYSDEC - UNION CARBIDE MR 9040 (CONTINED FROM LOG BOOK 2)

10:00 BUFFALO DRILLING COMPANY DRILLERS DON RIMBERK (DR) & DAN FREY (DF)
SET UP TO NQ CORE GW-8B (5' CORE

10:33 START CORING GW-8B ROCK SOCKET DEPTH MEASURED @ 22.7' BGS ON THURS 9/23/93 BY JIM RICHETT (JR). ON 9/29/93 WED BASE MEASURED @ 21.9' BGS. CASING PULLED UP WHEN AUGERS REMOVED AND/OR GROUT PLUG IN BASE OF PVC CASING (3")

10:37 STOP CORING GW-8B (~1 foot/4 min)
NOTE: AT WELL LOCATION GW-8A&B; PERSONNEL WORKING UNDER HIGH VOLTAGE ELECTRICAL WIRES POSSIBLY AFFECTING HNU;
HNU: DEC S3071 S/N A01158
OVA: DEC. 075-1 S/N 41080
O2/EXPLOSIMETER 01-03-013; S/N UH0585
MINIRAM: 01-09-007

10:52 START CORING GW-8B (NQ)

11:10 STOP CORING GW-8B(NQ); TD @ 27.5' BGS
STICK UP 2.9' TOC 10.2 = WATER LEVEL (BGS)
" " 2.5' TOIC

11:40 MOVE RIG OFF GW-8B SITE; TO DECON PAD
DR & DF OF BDC WILL DECON EQUIPMENT

11:55 ALYSE PICKHOLTZ (AP) OF NYSDEC, DOUG OSCAR (DO) OF CONESTOGA ROVERS & ASSOC. (CRA), DF & DR OF BDC, & KH & JR DEPART SITE (FOR LUNCH).

11:57 KH & JR (E&E) MEET BURIED UTILITY REPS @ FRONT OF NIAGARA VEST PROPERTY. BOB LOUZONIS (NF GAS)
JASON EODICE (NYTELEPHONE)
BOTH SAID THEIR LINES WERE NOT AFFECTED BY E&E WELL LOCATIONS GW-10A & B. (ON NIAGARA VEST PROPERTY)

12:15 JR & KH DEPART FOR LUNCH
SEE NYSDEC - UNION CARBIDE LOGBOOK 2

Kevin R. Hayes
9/29/93

MON Oct 4 1993 NYSDEC UNION CARBIDE
0800 JIM RICHERT (JR) PICKS UP KEVIN HAYES (KH) @ HOME
0830 JR & KH SIGN IN @ UNION CARBIDE OFFICE
0835 KH, JR, & DOUG OSCAR (DO) OF CONESTOGA ROVERS & ASSOC. (CRA) ARRIVE @ LANDFILL SITE
0900 DON RIMBERK (DR) & DAN FREY (DF) OF BUFFALO DRILLING CO. (BDC) ARRIVE ON SITE
0915 BDC PERSONNEL DECON BAILERS
0925 GW-8A; 20.08' TOIC = TD 10.72' TOIC = WATER LEVEL
GW-8B TD = 29.86' TOIC WATER LEVEL = 11.88' TOIC
NOTE WEATHER; VERY WINDY 20-35 mph SSW-SW; ~58°F, OVERCAST.
OBJECTIVE: BEGIN DEVELOPING WELLS @ UNION CARBIDE SITE
1050 GW-8B WATER LEVEL 12.92' TOIC (RISING)
1107 START DEVELOPING GW-8A
1150 STOP DEVELOPMENT ON GW-8A (TEMPORARILY)
1210 KH, JR, DO, DF, DR DEPART SITE FOR LUNCH.
1240 KH & JR & DO RETURN TO SITE.
1245 JR BEGINS DEVELOPING GW-8A, DF & DR RETURN TO SITE, KH, DF & DR MOVE TO GW-9B TO BEGIN PUMPING/DEVELOPMENT
1323 START DEVELOPING GW-9B
1420 END DEVELOPMENT OF GW-9B
NOTE: LOW pH READINGS ON GW-9B & GW-8A PROBABLY DUE TO INSTRUMENT GETTING WET. LACK OF STABILIZATION IN READINGS ALSO.
1445 JR, KH, DR, DF, DO DEPART SITE
1450 JR & KH SIGN OUT @ UNION CARBIDE OFFICE
1530 JR DROPS OFF KH @ HOME

Kevin R. Hayes
10/4/93



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# GEOTECHNICAL LOGBOOK

PROJECT NUMBER: YR 9040

CLIENT/SITE NAME: NYSDEC / UNION CARBIDE

DRILLING COMPANY: BUFFALO DRILLING CO.

DATE OF FIELD ACTIVITIES: 9/27/93, 9/28/93, 9/29/93, 9/30/93, 10/1/93, 10/5/93

HOLES LOGGED IN BOOK: GW-7B, GW-9B, GW-9A, GW-10B

BOOK 2 OF 2

DAILY LOGS

BOREHOLE RECORDS

MON 9/27/93 - UNION CARBIDE - NYSDEC

13:33 START SPLIT SPOONING GW-7B

14:33 SPLIT SPOON REFUSAL @ 14.4' BGS; COLLECTED 8 SPLIT SPOON SAMPLES

14:40 AUGER REFUSAL @ 14.7' BGS; AUGERS LEFT IN HOLE WITH AUGER CAP IN PLACE; LOCKED & CUSTODY SEALED BY K. HAYES OF E&E.

NOTE: AL OGG OF UNION CARBIDE ARRIVED ON SITE @ 13:40; DEPARTED 14:15

15:00 WELL GW-11B PROTECTIVE CASING SET IN CEMENT

15:30 BUFFALO DRILLING (BDC), E&E, & CONESTOGA ROVERS & ASSOCIATES PERSONNEL DEPART SITE

15:35 JIM RICHERT OF E&E SIGNS OUT K. HAYES (E&E) & DON RIMBECK & DAN FREY (BDC) @ THE UNION CARBIDE OFFICE.

15:42 JIM RICHERT & KEVIN HAYES (E&E) DEPART UNION CARBIDE OFFICE PARKING LOT

16:15 JIM RICHERT DROPS KEVIN HAYES OFF @ HOME

Kevin Hayes
9/27/93

BOREHOLE RECORDS



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TUES 9/28/93 NYSDEC-UNION CARBIDE YR 9040

0655 JIM RICHERT (JR) OF E&E PICKS UP KEVIN HAYES (KH) OF E&E @ HOME, 55°, MOSTLY CLOUDY, 15-25 mph WIND WNW-W.

0735 JR & KH SIGN IN @ UNION CARBIDE OFFICE

0740 JR & KH ARRIVE ON SITE; DOUG OSCAR (DO) OF CONESTOGA ROVERS & ASSOC. (CRA), DON RIMBERK (DR) & DAN FREY (DF) OF BUFFALO DRILLING CO (BDC) & ALYSE PICKHOLTZ (AP) OF NYSDEC ALREADY ON SITE

0800 BDC PERSONNEL SET UP TO PUT ROCK SOCKET IN WELL GW-7B

0805 START HQ CORING OF GW-7B ROCK SOCKET @ 14.7' BGS.

0825 STOP HQ CORING @ 19.2' BGS (4.5 FT/20 MIN)

0827 CONTINUE HQ CORING @ 19.2' BGS

0829 STOP HQ CORING @ 19.7' BGS

0840 JR MEASURES TD OF ROCK SOCKET @ 19.4' BGS

0915 DO DEPARTS SITE

0920 CASING (3" ID PVC) SET IN ROCK SOCKET OF GW-7B

0948 DR & DF (BDC) LOAD AUGERS TO GO TO DECON PAD; ALL DEPART GW-7B SITE

0955 ALL ARRIVE @ DECON PAD; DRILLERS DECON EQUIPMENT

10:15 DO RETURNS TO SITE

10:30 ALL PERSONNEL MOVE TO GW-9B SITE; SET UP RIG FOR SPLIT SPOONING

10:44 START SPLIT SPOONING GW-9B; GRAIN SIZE & ATTERBERG SAMPLES COLLECTED IN (8'-10') & (18'-20') SPOONS

12:11 SPLIT SPOON REFUSAL (SAMPLE #10 18'-20' BGS); REFUSAL @ 19.7' BGS
AUGER REFUSAL @ 19.9' BGS

12:30 DRILLERS SET UP TO CORE (HQ) STARTING @ 19.9' BGS

12:35 KH DEPARTS SITE TO PICK UP LUNCH FOR DRILLERS, START HQ CORING

13:00 STOP HQ CORING @ 24.8' BGS

13:05 KH RETURNS TO SITE; DRILLERS WORK TO FREE HQ CORE BARREL STUCK IN HOLE; STEADY RAIN

13:40 DRILLERS FREE CORE BARREL FROM HOLE; KH LOGS CORE (4.6' RECOVERY)
ROCK SOCKET BASE @ 24.8' BGS.

14:30 DRILLERS SET 3" ID PVC CASING IN GW-9B; 1st GROUT PUMPED INTO AUGERS USING TRIMIE ROD; 3" PVC SET IN ROCK SOCKET WITH GROUT; AUGERS PULLED 2.75' STICK UP TOIC (MEASURED BY KH)

14:40 START AUGERING GW-9A

15:00 END AUGERING GW-9A

15:10 GW-9A; TD = 20.25 0.5 ppm OUT OF HOLE (OVA) BOTH MEASURED BY JR. THUNDER HEARD; HEAVIER RAIN. CUSTODY SEAL PUT ON GW-9B CAP.

Kevin R. Hayes 9/28/93

TUES
1528
1530
1548
15
16 2

TUES 9/28/93 NYSDEC-UNION CARBIDE

1525 LIGHTING, THUNDER & COLD RAIN; ALL PERSONNEL DEPART GW-9A FOR DECON PAD.

1530 DRILLERS EMPTY 300 GALLON $H_2O$ TANK INTO 55 GALLON DRUMS @ DECON PAD.

NOTE: AUGER CAP PLACED ON AUGERS IN HOLE GW-9A. PRIOR TO DEPARTING SITE. HOLES INTO AUGERS TAPED BY JR.; GW-9B GROUTED TO ~4' BGS

1548 KH SIGNS E&E & BDC PERSONNEL OUT @ UCAR OFFICE.

1551 KH & JR DEPART UCAR OFFICE PARKING LOT.

1625 JR DROPS KH OFF @ HOME

Kevin R. Hayes
9/28/93

BOREHOLE RECORDS



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WED 9/29/93 NYSDEC-UNION CARBIDE YR9040

0700 Jim Richert (JR) E&E CALLS KEVIN HAYES (KH) @ HOME; JR HAS TO CHANGE TIRE ON MINI VAN. JR CALLS AL OGG OF UNION CARBIDE TO NOTIFY HIM OF SITUATION

0720 JR PICKS UP KH @ HOME

0805 KH & JR SIGN IN @ UNION CARBIDE OFFICE

0808 KH & JR ARRIVE ON SITE; WEATHER: MOSTLY CLOUDY, LIGHT WEST WIND, ~45°F

0815 GW-9A $H_2O$ @ 13.38' TD = 19.7' BGS; ALYSE PICKHOLTZ (AP) OF NYSDEC, DOUG OSCAR (DO) OF CONESTOGA ROVERS & ASSOC. (CRA) & DON RIMBERIC (DR) & DAN FREY (DF) OF BUFFALO DRILLING CO. (BDC) ALREADY ON SITE; GW-9A - 5' SCREEN

SAND PACK: 20.25' - 13.0' BGS

BENTONITE SEAL: 13.0' - 10.8' BGS (ALLOWED TO HYDRATE ~15 min)

GROUT: 10.8' - (~1.5' - 2.0') BGS

NOTE: GW-9A TD OF 20.25' BGS MEASURED BY JR ON 9/28/93 USED BASED ON SCREEN TOUCHING BEDROCK (JR). (TD MEASUREMENT OF 19.7' BGS INCLUDED MUD @ BOTTOM OF WELL.)

0840 GW-9A GROUTING COMPLETED;

0855 DRILL WATER SAMPLES COLLECTED; 3 40ml VOAS (VOC's), 2 liter polys (Cyanide & METALS), & 2 80 oz AMBER JARS (PCB's/PESTICIDES & BNAs)

0915 MOVE (ALL PERSONNEL) TO DECON PAD

0955 AP DEPARTS SITE TO MAKE PHONE CALLS & PICK UP ICE FOR SAMPLES

1000 DRILLERS MOVE TO GW-8B SITE TO DRILL 5' OF NQ (OPEN HOLE) CORE

SEE NYSDEC UNION CARBIDE LOGBOOK #1

Kevin R. Hayes
9/29/93

WED 9/29/93 NYSDEC-UNION CARBIDE YR 9040

12:40 JR & KH ARRIVE @ BF GOODRICH, NIAGARA FALLS TO HAVE MINIVAN TIRE REPAIRED; TIRE COULD NOT BE REPAIRED, GASH EXTENDED TO SIDEWALL. TIRE WAS REPLACED

13:40 START SPLIT SPOONING GW-10B

14:21 FOLLOWING (8'-10') SPOON; OVA READINGS 5-10 ppm ABOVE SOIL PILE NEAR AUGER; JR STOPS DRILLERS; MOVES THEM FROM RIG TO GO BACK FOR MORE READINGS; GAS DISSIPATED QUICKLY DOWN TO (0.5 ppm) @ SOIL SURFACE. PROBABLY METHANE?

NOTE: SAMPLES COLLECTED (2'-4') FULL TCL w/ MS/MSD
(12'-14') GRAIN SIZE & ATTERBERG LIMIT
(22'-24') GRAIN SIZE & ATTERBERG LIMIT.
(2'-4') SAMPLE SPLIT WITH CRA

15:44 SPLIT SPOON REFUSAL @ 25.7' BGS

NOTE: A SECOND SPLIT SPOON WAS DRIVEN IMMEDIATELY NEXT TO GW-10B IN ORDER TO COLLECT ENOUGH OF (2'-4') SAMPLE TO SPLIT WITH CRA.

16:05 DF, DR (BDC), AP (NYSDEC) DEPART SITE

16:10 DO (CRA), JR & KH (E&E) DEPART SITE

16:25 JR & KH SIGN OUT @ UNION CARBIDE OFFICE

16:26 JR & KH DEPART UNION CARBIDE PARKING LOT

16:55 JR DROPS KH @ HOME

Kevin Hayes
9/29/93

BOREHOLE RECORDS



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THURS 9/30/93 NYSDEC-UNION CARBIDE YR 9040 THUR

0655 Jim Richert (JR) PICKS UP KEVIN HAYES (KH) BOTH OF E&E @ HOME 12:12

0731 JR & KH SIGN IN @ UNION CARBIDE OFFICE 12:15

0734 JR & KH ARRIVE @ SITE; ALYSE PICKHOTLZ (AP) OF NYSDEC ALSO ARRIVES ON SITE. DON RIMBECK (DR) & DAN FREY (DF) OF BUFFALO DRILLING CO (BDC) & DOUG OSCAR OF CONESTOGA ROVERS & ASSOC. (CRA) ALREADY ON SITE. 12:35 12:40 12:5 13:05

0755 DRILLERS BEGIN AUGERING GW-10B

0758 AUGER REFUSAL @ 27.2' BGS (CALCULATED BASED ON AUGER STICK UP)
D.R. (BDC) MEASURED 26.8' BGS; TILL @ BASE OF HOLE SLUMPING INTO HOLE.

0805 DRILLERS GO TO DELON PAD TO PICK UP CASING & GET WATER TRUCK

0820 DRILLERS RETURN TO GW-10B WITH WATER TRUCK 13:4

0837 INITIATE HQ CORING OF GW-10B ROCK SOCKET @ 27.2' BGS

0844 STOP HQ CORING ON GW-10B (2'/7 min) 13:55

0845 AC OGG (AO) OF UNION CARBIDE ARRIVES ON SITE 14:0

0850 START HQ CORING ON GW-10B @ ~ 29.2' BGS
WEATHER; CLEAR, COOL (~38°F), NORTH WIND 5-10 mph 14:30
LOW HUMIDITY 14:4

0906 STOP HQ CORING (GW-10B) TO ROCK SOCKET @ 30.72' BGS (30.72' BGS)
WATER LEVEL @ 11.6' BGS; NO WATER RETURN STARTING @ 29'-30' BGS 15:

0930 AP DEPARTS SITE NOTE (AO DEPARTED SITE @ 0905)

0945 KH & JR DEPART SITE 15:5

1000 KH & JR, & AP RETURN TO SITE; KH & JR MARK CORE BOXES GW-11B, & GW-8B 15:50

11:10 JR MEASURES $H_2O$ LEVEL IN GW-10B @ 11.5' BGS
PRIOR TO SETTING 3" PVC CASING IN ROCK SOCKET. 16:5
EQUIPMENT USED SAME AS 9/29/93; DRILLERS PUMPING BENTONITE/GROUT MIXTURE INTO AUGERS; DROP 3" ID PVC CASING WITH PLUG/CAP INTO GROUT (30' OF CASING); J PLUG USED TO PLUG BASE OF PVC; NO OTHER CAPS AVAILABLE. NQ CORING WILL GO THROUGH J PLUG (WING NUT "EARS" TAKEN OFF w/ HACK SAW) 15 16:0 16

11:40 START PULLING AUGERS OUT OF GW-10B; TOP OF PVC CASING/RISER TAPED OFF. STICK UP = 2.85' TOIC (MEASURED BY KH.) 16:3

12:10 COMPLETED PULLING AUGERS OUT OF GW-10B; DF SETS PROTECTIVE CASING

Kevin R. Hayes 9/30/93

THURS 9/30/93 NYSDEC - UNION CARBIDE YR9040

IN CEMENT.

12:12 DO & AP DEPART SITE

12:15 KH DEPARTS SITE; BDC BEGINS SET UP TO AUGER GW-10A

12:35 KH RETURNS TO SITE; BDC AUGERING GW-10A

12:40 AP RETURNS TO SITE.

12:50 CAROL DUNNIGAN (CRA) ARRIVES ON SITE

13:05 STOP AUGERING GW-10A; SET IN 5' SCREEN TO 27.65' BGS; (MEASURED BY DR) 2" ID PVC CASING

SCREEN: 27.65' - 22.65'

SAND: 27.65' - 19.85'

(PELLETS) BENTONITE SEAL: 19.85 - 16.85'

GROUT: 16.85' - ~3.00' BGS

13:40 BDC MIXING GROUT AFTER RETURNING SUPPLIES FROM DECON PAD.

NOTE: MIKE HINTON (NYSDEC) ARRIVES ON SITE @ 13:25

13:55 MIKE HINTON DEPARTS SITE

14:08 LEAD AUGER PULLED OUT OF GW-10A; GROUT PUMPED INTO WELL ANNULUS. (UP TO ~3 ft BGS).

14:30 DRILLERS MOVE TO DECON PAD TO DECON AUGERS

14:45 JR & KH CUT LOCK OFF GW-8A (NO KEYS GIVEN BY DRILLERS FIT LOCK) & PUT NEW LOCK ON WELL

15:15 DRILLERS FINISH DECON OF AUGERS; MOVE TO GW-10A TO SET PROTECTIVE CASING IN CEMENT; ALSO SET WELL DRAINAGE PAD @ GW-10A (NEEDS MORE CEMENT

15:35 DRILLERS (BDC) & JR & KH MOVE TO SET UP DRILL RIG @ GW-7B IN ORDER TO SET UP FOR NQ CORING (ON FRI MORN 10/1/93)

15:50 DOUG OSCAR ARRIVES ON SITE & CAROL DUNNIGAN (BOTH OF CRA) DEPARTS SITE. AP DEPARTS SITE

16:55 DO, DF, DR, JR & KH DEPART GW-7B WELL SITE

15:59 KH & JR PLACE LOCK ON GW-10A WELL (OUTSIDE FENCE) (GW-10B ALREADY PADLOCKED)

16:00 ALL PERSONNEL DEPART SITE

16:03 KH & JR SIGN OUT @ UNION CARBIDE OFFICE; DEPART PARKING LOT.

16:30 JR DROPS KH OFF @ HOME

Kevin R. Hayes
9/30/93



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FRIDAY 10/1/93 NYSDEC - UNION CARBIDE YR 9040

0655 Jim Richert (JR) of E&E Picks up Kevin Hayes (KH) (E&E) @ Home

0730 JR & KH sign in @ Union Carbide office

0733 JR & KH arrive @ site gate; Don Rimbeck (DR), & Dan Frey (DF) of Buffalo Drilling Co (BDC) & Doug Oscar (DO) of Conestoga Rovers & Assoc. (CRA) also arrive @ site gate.

0745 BDC, CRA, & E&E personnel arrive @ site of well GW-7B
10' of NQ coring will be conducted starting @ 19.4' BGS
Alyse Pickholtz (AP) of NYSDEC arrives on site. DR measures rock socket/bottom of riser @ 19.2' BGS.

0810 Start NQ coring @ 19.4' BGS.

0821 cored 4'/11 min

0824 Restart NQ coring void/fracture @ 23.7' BGS; loss of significant amount of $H_2O$ circulation
Weather partly cloudy, ~38°F 15-25 mph SW-S winds
cold front approaching from NW.

0840 Stop drilling (NQ coring) @ ~29.7' BGS 29.66' BGS-TD meas. by JR
$H_2O$ @ 12.62' BGS GW-7B; 2.7' stick up TOIC

0850 KH logs core from GW-7B; 9.85' recovery, RQD=90

0950 Move rig to GW-9B to set up for NQ coring (5' core)

1013 Start NQ coring GW-9B @ 24.9' BGS rock socket measured @ 24.8'.

1024 Stop NQ coring (3.5'/11 min)

1028 Restart NQ coring

1032 Stop NQ coring on GW-9B
GW-9B TD @ 29.46' BGS (JR measured) (29.46')
water level @ 14.30' BGS

1100 AP departs site for Albany, NY

1110 Drillers move to decon pad.
GW-9A 2.2' stick up TOIC (to ground surface)
GW-9B 2.6' " " " (to ground surface)

11:25 KH departs site to pick up lunch

11:55 KH returns to site

12:00 Drillers start NQ coring of GW-10B 5' section
NOTE: The exact starting depth of the coring on GW-10B is uncertain; total coring of rock socket was supposed to be to 32.2' BGS but the depth was measured in well @ 30.7'. Actual

~~EDIT~~ KH

Kevin R. Hayes 10/1/93

FRIDAY 10/1/93 NYSDEC - UNION CARBIDE YR 9040

CORING MOST LIKELY STARTED @ ~ 31' BGS

12:30 STOP NQ CORING TD MEASURED @ 36.25' (JR); WATER LEVEL @ 11.36' BGS

12:50 KH LOGS CORE; 4.65' RECOVERY / 5'

1320 DRILLERS SET DRAINAGE PADS FOR GW-10A & GW-10B

GW-10A 2.7' STICK UP TOIC (TO GROUND SURFACE)

GW-10B 2.9' " " " (TO GROUND SURFACE)

1400 DRILLERS SET PADS FOR GW-8A & GW 8B

GW-8A 2.6' STICK UP TOIC (TO GROUND SURFACE)

GW-8B 2.05' STICK UP TOIC (TO TOP OF CONCRETE PAD)

(2.40' STICK UP TOIC; TO GROUND SURFACE)

1418 DRILLERS SET PAD FOR GW-11B & GW-7B

GW-11B STICK UP = 3.42' TOIC (TO TOP OF CONCR. PAD)

GW-7B " " 2.83' TOIC (TO GROUND SURFACE; NO 2x4s USED AS FRAMES)

1430 DRILLERS SET CONCRETE PADS @ GW-9A & GW-9B.

1445 ALL PERSONNEL MOVE TO DECON PAD

1503 ALL BDC, E&E, & CRA PERSONNEL SIGN OUT @ UNION CARBIDE OFFICE

1515 KH & JR DEPART UNION CARBIDE PARKING LOT.

1550 JR DROPS OFF KH @ HOME

Kevin Hayes
10-1-93



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TUES OCT 5, 1993 NYSDEC - UNION CARBIDE VR9040

0655 JIM RICHERT (JR) PICKS UP KEVIN HAYES (KH) (E&E) @ HOME

0730 JR & KH SIGN IN @ UNION CARBIDE OFFICE

0735 JR, KH, DON RIMBELE (DR) & DAN FREY (DF) OF BUFFALO DRILLING CO. (BDC) ARRIVE @ SITE

0740 DOUG OSCAR (DO) OF CONESTOGA ROVERS & ASSOC. (CRA) ARRIVES ON SITE

0753 GW-9A 2.4 ppm OVA OUT OF HOLE, GW-9A
WATER LEVEL: 14.13' TOIC; TD @ 22.6' TOIC
GW-7B 1.2 ppm OVA OUT OF HOLE
TD @ 31.9' TOIC. WATER 15.45' TOIC

1020 STOP DEVELOPING GW-7B; 230 GALLONS REMOVED
NOTE 1000 STOP DEVELOPING GW-9A; RICK WATT (RW) E&E ARRIVES ON SITE

1040 GW-11B 30 ppm OVA READING (OUT OF HOLE)
WATER LEVEL - 14.36' TOIC; TD = 28.06' TOIC SOLID ROCK @ BOTTOM

11:50 STOP DEVELOPMENT OF GW-11B AFTER 1 HR. KH & JR & RICK WATT DEPART FOR LUNCH

12:40 KH, JR, & RW RETURN TO SITE;

1300 WATER LEVEL = 14.6' TOIC 38.6' = TD TOIC (GW-10B) → 0 ppm OVA (OUT OF HOLE)
WATER LEVEL = 13.88' TOIC TD = 29.84' TOIC (GW-10A) SOFT BOTTOM (MUD @ BOTTOM)
GW-10A 8 ppm OVA (OUT OF HOLE; AFTER 1st OPENING) CAP

13:05 START DEVELOPING GW-10B; RW & DO INSTALL CASING DRAIN HOLES/PLUGS & PAINT WELLS

13:12 START DEVELOPING WELL GW-10A

14:33 STOP DEVELOPING GW-10B; 165 GALLONS

15:16 STOP DEVELOPING GW-10A; 80 GALLONS

15:30 RW PAINTS GW-10A & GW-10B; INSTALLS DRAIN HOLES WHILE DRILLERS BREAK DOWN DECON PAD

15:55 JR SIGNS DRILLERS PAPERS (BDC)

16:05 ALL BDC, E&E, & CRA PERSONNEL DEPART SITE

16:12 KH SIGNS E&E, & BDC PERSONNEL OUT @ UNION CARBIDE OFFICE.

16:15 KH, JR, & RW DEPART UNION CARBIDE PARKING LOT.

16:45 JR DROPS KH OFF @ HOME

Kevin R. Hayes
10/5/93