



4/17/88  
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see below - 1  
see next

loggy  
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field notes

File:  
Union Carbide  
Groundwater  
Monitoring  
Data  
1988

cc: Messrs. Jim Devald  
Dave O'Tool  
A. C. Ogg - Niagara

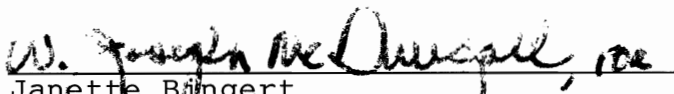


REPUBLIC SOLID WASTE MANAGEMENT FACILITY  
POST-CLOSURE MONITORING PROGRAM  
QUARTERLY REPORT OF GROUNDWATER ANALYSIS

Report Prepared For

UNION CARBIDE CORPORATION  
CARBON PRODUCTS DIVISION

  
\_\_\_\_\_  
Bonnie J. Simpson  
Project Controller

  
\_\_\_\_\_  
Janette Bingert  
Quality Control Manager

March 31, 1988  
AES Report CTC

COMMITMENT  
TO  
HONESTY - QUALITY - SERVICE

#### SCOPE OF WORK

This work was performed at the request of Mr. R. A. Bolton, Environmental Manager of Union Carbide Corporation, Carbon Products Division, in compliance with the Republic Solid Waste Management Facility Post-Closure Monitoring Program.

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: RESULTS - WET CHEMISTRY

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                               |               |                  | AES Lab No. - | 18522  | 18523  | 18524  |
|-------------------------------|---------------|------------------|---------------|--------|--------|--------|
|                               |               |                  | Sample ID -   | BW-1   | BW-2   | BW-3   |
|                               |               |                  |               | GRAB   | GRAB   | GRAB   |
| Analytical<br>Parameter(s)    | Method<br>No. | Quant.<br>Limits | Sample Date-  | 3/9/88 | 3/9/88 | 3/9/88 |
| Ammonia (As N) (mg/l)         | 350.1         | 0.01             |               | 0.88   | 0.56   | 2.0    |
| Total Kjeldahl Nitrogen(mg/l) | 351.2         | 0.1              |               | 1.5    | 0.6    | 1.4    |
| Nitrite (As N) (mg/l)         | 353.2         | 0.01             |               | BQL*   | BQL    | 0.02   |

\* Below quantifiable limits.

*Margaret L. Skowron*  
Margaret L. Skowron  
Wet Chemistry Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: RESULTS - WET CHEMISTRY

Client: UNION CARBIDE

A.E.S. Job Code CTC

| -----                         |               |                  | -----         |        |        |        |
|-------------------------------|---------------|------------------|---------------|--------|--------|--------|
|                               |               |                  | AES Lab No. - | 18525  | 18526  | 18527  |
|                               |               |                  | Sample ID -   | BW-4   | BW-5   | BW-6   |
|                               |               |                  |               | GRAB   | GRAB   | GRAB   |
| Analytical<br>Parameter(s)    | Method<br>No. | Quant.<br>Limits | Sample Date-  | 3/9/88 | 3/9/88 | 3/9/88 |
| -----                         |               |                  |               |        |        |        |
| Ammonia (As N) (mg/l)         | 350.1         | 0.01             |               | 2.8    | 0.06   | 0.26   |
| Total Kjeldahl Nitrogen(mg/l) | 351.2         | 0.1              |               | 1.5    | 0.2    | 0.4    |
| Nitrite (As N) (mg/l)         | 353.2         | 0.01             |               | BQL*   | BQL    | 0.02   |

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\* Below quantifiable limits.

*Margaret L. Skowron*  
-----  
Margaret L. Skowron  
Wet Chemistry Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: RESULTS - WET CHEMISTRY

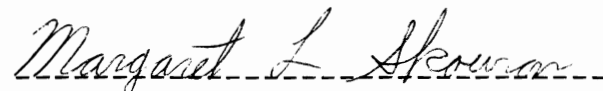
Client: UNION CARBIDE

A.E.S. Job Code CTC

| Analytical<br>Parameter(s)    | Method<br>No. | Quant.<br>Limits | Sample Date- | AES Lab No. - |        |        |        |
|-------------------------------|---------------|------------------|--------------|---------------|--------|--------|--------|
|                               |               |                  |              | Sample ID -   |        |        |        |
|                               |               |                  |              |               | 18528  | 18529  | 18530  |
|                               |               |                  |              |               | MW-3   | FIELD  | TRIP   |
|                               |               |                  |              |               | GRAB   | DUP    | BLANK  |
|                               |               |                  |              |               |        | GRAB   |        |
|                               |               |                  |              |               | 3/9/88 | 3/9/88 | 3/9/88 |
| Ammonia (As N) (mg/l)         | 350.1         | 0.01             |              |               | 0.03   | 0.94   | 0.02*  |
| Total Kjeldahl Nitrogen(mg/l) | 351.2         | 0.1              |              |               | 0.3    | 1.2    | BQL**  |
| Nitrite (As N) (mg/l)         | 353.2         | 0.01             |              |               | 0.01   | BQL    | BQL    |

\* Trip blank was not subtracted from values  
given.

\*\* Below quantifiable limits.

  
Margaret L. Skowron  
Wet Chemistry Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis  
Units of Analysis: Milligrams/Liter or ppm  
Client: UNION CARBIDE                      A.E.S. Job Code:CTC

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| Analytical Parameters   | Sample<br>No. | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|-------------------------|---------------|-------------------|--------------------|------------------|-------|----------------------|
| Ammonia                 | 18527         | 0.26              | 0.26               | 0.26             | None  | None                 |
| Total Kjeldahl Nitrogen | 18527         | 0.4               | 0.4                | 0.4              | None  | None                 |
| Nitrite                 | 18527         | 0.02              | 0.02               | 0.02             | None  | None                 |

Relative Percent Difference =  
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.  
 LABORATORY REPORT  
 QUALITY CONTROL - ACCURACY

=====

Type of Analysis: Matrix Spikes and E.P.A. Standards  
 Client: UNION CARBIDE A.E.S. Job Code: CTC

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(Units:mg/l or ppm)

| Analytical Parameters   | Sample No. | Type | Observed Conc. | Original Conc. | Added Conc. | Percent Recovery* |
|-------------------------|------------|------|----------------|----------------|-------------|-------------------|
| -----                   |            |      |                |                |             |                   |
| Ammonia                 | 18527      | SPK  | 0.86           | 0.26           | 0.50        | 120               |
| Ammonia                 | 9916       | EPA  | 10             | 8.0            | ---         | 125               |
| Total Kjeldahl Nitrogen | 18527      | SPK  | 3.2            | 0.4            | 3.0         | 93                |
| Total Kjeldahl Nitrogen | 486-2      | EPA  | 4.8            | 5.0            | ---         | 96                |
| Nitrite                 | 18527      | SPK  | 0.28           | 0.02           | 0.25        | 104               |

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\* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: SEMI-VOLATILES (HSL)

Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE A.E.S. Job Code CTC

|                            |        |        | AES Lab No.- | 18522  | 18523   | 18524   |
|----------------------------|--------|--------|--------------|--------|---------|---------|
|                            |        |        | Sample ID -  | BW-1   | BW-2    | BW-3    |
|                            |        |        |              | GRAB   | GRAB    | GRAB    |
| Analytical                 | Method | Quant. | Sample Date- | 3/9/88 | 3/10/88 | 3/10/88 |
| Parameter(s)               | No.    | Limits |              |        |         |         |
| Fluorene                   | 8240   | 10     |              | BQL*   | BQL     | BQL     |
| 4-Chlorophenylphenylether  | "      | 10     |              | BQL    | BQL     | BQL     |
| Diphenylamine(N-Nitroso)   | "      | 10     |              | BQL    | BQL     | BQL     |
| Benzly Alcohol             | "      | 10     |              | BQL    | BQL     | BQL     |
| 4-Chloroaniline            | "      | 10     |              | BQL    | BQL     | BQL     |
| 4-Bromophenylphenylether   | "      | 10     |              | BQL    | BQL     | BQL     |
| Hexachlorobenzene          | "      | 10     |              | BQL    | BQL     | BQL     |
| Phenanthrene               | "      | 10     |              | BQL    | BQL     | BQL     |
| Anthracene                 | "      | 10     |              | BQL    | BQL     | BQL     |
| Di-N-Butylphthalate        | "      | 10     |              | BQL    | BQL     | BQL     |
| Fluoranthene               | "      | 10     |              | BQL    | BQL     | BQL     |
| 2-Nitroaniline             | "      | 10     |              | BQL    | BQL     | BQL     |
| Pyrene                     | "      | 10     |              | BQL    | BQL     | BQL     |
| Butylbenzylphthalate       | "      | 10     |              | BQL    | BQL     | BQL     |
| Benzo(a)Anthracene         | "      | 10     |              | BQL    | BQL     | BQL     |
| 3,3'-Dichlorobenzidine     | "      | 30     |              | BQL    | BQL     | BQL     |
| Chrysene                   | "      | 10     |              | BQL    | BQL     | BQL     |
| Bis(2-Ethylhexyl)Phthalate | "      | 10     |              | BQL    | BQL     | BQL     |
| Di-N-Octylphthalate        | "      | 10     |              | BQL    | BQL     | BQL     |
| Benzo(b)Fluoranthene       | "      | 10     |              | BQL    | BQL     | BQL     |
| Benzo(k)Fluoranthene       | "      | 10     |              | BQL    | BQL     | BQL     |
| Benzo(a)Pyrene             | "      | 10     |              | BQL    | BQL     | BQL     |
| Indeno(1,2,3-C,D)Pyrene    | "      | 10     |              | BQL    | BQL     | BQL     |
| Dibenzo(a,h)Anthracene     | "      | 10     |              | BQL    | BQL     | BQL     |
| Benzo(g,h,i)Perylene       | "      | 10     |              | BQL    | BQL     | BQL     |

*Susan C. Scrocchi*

Susan C. Scrocchi  
Gas Chromatography Supervisor

\* Below quantifiable limits.

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: SEMI-VOLATILES

Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                            |               |                  | AES Lab No.- | 18522  | 18523   | 18524   |
|----------------------------|---------------|------------------|--------------|--------|---------|---------|
|                            |               |                  | Sample ID -  | BW-1   | BW-2    | BW-3    |
|                            |               |                  |              | GRAB   | GRAB    | GRAB    |
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | 3/9/88 | 3/10/88 | 3/10/88 |
| Phenol                     | 8270          | 10               |              | BQL*   | BQL     | BQL     |
| 2-Chlorophenol             | "             | 10               |              | BQL    | BQL     | BQL     |
| 2-Nitrophenol              | "             | 10               |              | BQL    | BQL     | BQL     |
| 2,4-Dimethylphenol         | "             | 10               |              | BQL    | BQL     | BQL     |
| p-Chloro-m-Chesol          | "             | 10               |              | BQL    | BQL     | BQL     |
| 2,4,6-Trichlorophenol      | "             | 10               |              | BQL    | BQL     | BQL     |
| 2,4-Dinitrophenol          | "             | 20               |              | BQL    | BQL     | BQL     |
| 4-Nitrophenol              | "             | 20               |              | BQL    | BQL     | BQL     |
| 4,6-Dinitro-O-Cresol       | "             | 20               |              | BQL    | BQL     | BQL     |
| Pentachlorophenol          | "             | 20               |              | BQL    | BQL     | BQL     |
| 2,4-Dichlorophenol         | "             | 10               |              | BQL    | BQL     | BQL     |
| 4-Methylphenol             | "             | 10               |              | BQL    | BQL     | BQL     |
| Benzoic Acid               | "             | 20               |              | BQL    | BQL     | BQL     |
| 2,4,5-Trichlorophenol      | "             | 10               |              | BQL    | BQL     | BQL     |
| 3-Nitroaniline             | "             | 10               |              | BQL    | BQL     | BQL     |
| Dibenzofuran               | "             | 10               |              | BQL    | BQL     | BQL     |
| 4-Nitroaniline             | "             | 10               |              | BQL    | BQL     | BQL     |
| 2-Methylphenol             | "             | 10               |              | BQL    | BQL     | BQL     |
| Benzidine                  | "             | 50               |              | BQL    | BQL     | BQL     |

\* Below quantifiable limits.

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: SEMI-VOLATILES (HSL)

Units Of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE A.E.S. Job Code CTC  
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|                            |               |                  | AES Lab No.- | 18525  | 18526  | 18527  |
|----------------------------|---------------|------------------|--------------|--------|--------|--------|
|                            |               |                  | Sample ID -  | BW-4   | BW-5   | BW-6   |
|                            |               |                  |              | GRAB   | GRAB   | GRAB   |
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | 3/9/88 | 3/9/88 | 3/9/88 |
| Fluorene                   | 8240          | 10               |              | BQL*   | BQL    | BQL    |
| 4-Chlorophenylphenylether  | "             | 10               |              | BQL    | BQL    | BQL    |
| Diphenylamine(N-Nitroso)   | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzly Alcohol             | "             | 10               |              | BQL    | BQL    | BQL    |
| 4-Chloroaniline            | "             | 10               |              | BQL    | BQL    | BQL    |
| 4-Bromophenylphenylether   | "             | 10               |              | BQL    | BQL    | BQL    |
| Hexachlorobenzene          | "             | 10               |              | BQL    | BQL    | BQL    |
| Phenanthrene               | "             | 10               |              | BQL    | BQL    | BQL    |
| Anthracene                 | "             | 10               |              | BQL    | BQL    | BQL    |
| Di-N-Butylphthalate        | "             | 10               |              | BQL    | BQL    | BQL    |
| Fluoranthene               | "             | 10               |              | BQL    | BQL    | BQL    |
| 2-Nitroaniline             | "             | 10               |              | BQL    | BQL    | BQL    |
| Pyrene                     | "             | 10               |              | BQL    | BQL    | BQL    |
| Butylbenzylphthalate       | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzo(a)Anthracene         | "             | 10               |              | BQL    | BQL    | BQL    |
| 3,3'-Dichlorobenzidine     | "             | 30               |              | BQL    | BQL    | BQL    |
| Chrysene                   | "             | 10               |              | BQL    | BQL    | BQL    |
| Bis(2-Ethylhexyl)Phthalate | "             | 10               |              | BQL    | BQL    | BQL    |
| Di-N-Octylphthalate        | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzo(b)Fluoranthene       | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzo(k)Fluoranthene       | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzo(a)Pyrene             | "             | 10               |              | BQL    | BQL    | BQL    |
| Indeno(1,2,3-C,D)Pyrene    | "             | 10               |              | BQL    | BQL    | BQL    |
| Dibenzo(a,h)Anthracene     | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzo(g,h,i)Perylene       | "             | 10               |              | BQL    | BQL    | BQL    |

\* Below quantifiable limits.

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*Susan C. Scrocchi*  
-----  
Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: SEMI-VOLATILES

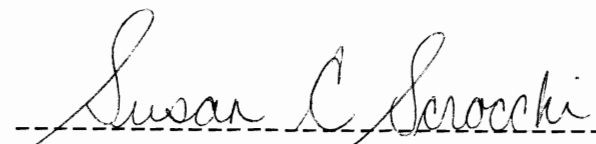
Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                                 |               |                  | AES Lab No.-<br>Sample ID - | 18525<br>BW-4<br>GRAB | 18526<br>BW-5<br>GRAB | 18527<br>BW-6<br>GRAB |
|---------------------------------|---------------|------------------|-----------------------------|-----------------------|-----------------------|-----------------------|
| Analytical<br>Parameter(s)      | Method<br>No. | Quant.<br>Limits | Sample Date-                | 3/9/88                | 3/9/88                | 3/9/88                |
| 2-Methylnaphthalene             | 8270          | 10               |                             | BQL*                  | BQL                   | BQL                   |
| Bis(2-Chloroethyl) Ether        | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 1,3-Dichlorobenzene             | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 1,4-Dichlorobenzene             | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 1,2-Dichlorobenzene             | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Bis(2-Chloroisopropyl)<br>Ether | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Hexachloroethane                | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| N-Nitrosodi-N-Propylamine       | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Nitrobenzene                    | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Isophorone                      | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Bis(2-Chloroethoxy)Methane      | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 1,2,4-Trichlorobenzene          | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Naphthalene                     | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Hexachlorobutadiene             | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Hexachlorocyclopentadiene       | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 2-Chloronaphthalene             | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Dimethylphthalate               | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Acenaphthylene                  | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 2,6-Dinitrotoluene              | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Acenaphthene                    | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 2,4-Dinitrotoluene              | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Diethylphthalate                | "             | 10               |                             | BQL                   | BQL                   | BQL                   |

\* Below quantifiable limits.

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: SEMI-VOLATILES

Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                            |               |                  | AES Lab No.- | 18525  | 18526  | 18527  |
|----------------------------|---------------|------------------|--------------|--------|--------|--------|
|                            |               |                  | Sample ID -  | BW-4   | BW-5   | BW-6   |
|                            |               |                  |              | GRAB   | GRAB   | GRAB   |
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | 3/9/88 | 3/9/88 | 3/9/88 |
| Phenol                     | 8270          | 10               |              | BQL*   | BQL    | BQL    |
| 2-Chlorophenol             | "             | 10               |              | BQL    | BQL    | BQL    |
| 2-Nitrophenol              | "             | 10               |              | BQL    | BQL    | BQL    |
| 2,4-Dimethylphenol         | "             | 10               |              | BQL    | BQL    | BQL    |
| p-Chloro-m-Chesol          | "             | 10               |              | BQL    | BQL    | BQL    |
| 2,4,6-Trichlorophenol      | "             | 10               |              | BQL    | BQL    | BQL    |
| 2,4-Dinitrophenol          | "             | 20               |              | BQL    | BQL    | BQL    |
| 4-Nitrophenol              | "             | 20               |              | BQL    | BQL    | BQL    |
| 4,6-Dinitro-O-Cresol       | "             | 20               |              | BQL    | BQL    | BQL    |
| Pentachlorophenol          | "             | 20               |              | BQL    | BQL    | BQL    |
| 2,4-Dichlorophenol         | "             | 10               |              | BQL    | BQL    | BQL    |
| 4-Methylphenol             | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzoic Acid               | "             | 20               |              | BQL    | BQL    | BQL    |
| 2,4,5-Trichlorophenol      | "             | 10               |              | BQL    | BQL    | BQL    |
| 3-Nitroaniline             | "             | 10               |              | BQL    | BQL    | BQL    |
| Dibenzofuran               | "             | 10               |              | BQL    | BQL    | BQL    |
| 4-Nitroaniline             | "             | 10               |              | BQL    | BQL    | BQL    |
| 2-Methylphenol             | "             | 10               |              | BQL    | BQL    | BQL    |
| Benzidine                  | "             | 50               |              | BQL    | BQL    | BQL    |

\* Below quantifiable limits.

  
\_\_\_\_\_  
Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: SEMI-VOLATILES

Units Of Measure: Micrograms/Liter, or ppb

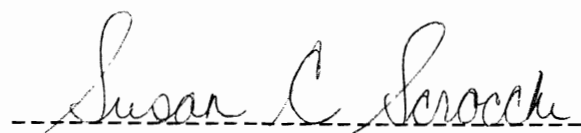
Client: UNION CARBIDE

A.E.S. Job Code CTC

|                            |        |        |              |        |                        |        |
|----------------------------|--------|--------|--------------|--------|------------------------|--------|
|                            |        |        | AES Lab No.- | 18528  | 18529                  | 18530  |
|                            |        |        | Sample ID -  | MW-3   | BLIND                  | TRIP   |
|                            |        |        |              | GRAB   | FIELD DUP <sup>1</sup> | BLANK  |
|                            |        |        |              |        | (BW-1)                 |        |
|                            |        |        | Sample Date- | 3/9/88 | 3/9/88                 | 3/9/88 |
| -----                      | -----  | -----  | -----        | -----  | -----                  | -----  |
| Analytical                 | Method | Quant. |              |        |                        |        |
| Parameter(s)               | No.    | Limits |              |        |                        |        |
| 2-Methylnaphthalene        | 8270   | 10     |              | BQL*   | BQL                    | BQL    |
| Bis(2-Chloroethyl)Ether    | "      | 10     |              | BQL    | BQL                    | BQL    |
| 1,3-Dichlorobenzene        | "      | 10     |              | BQL    | BQL                    | BQL    |
| 1,4-Dichlorobenzene        | "      | 10     |              | BQL    | BQL                    | BQL    |
| 1,2-Dichlorobenzene        | "      | 10     |              | BQL    | BQL                    | BQL    |
| Bis(2-Chloroisopropyl)     |        |        |              |        |                        |        |
| Ether                      | "      | 10     |              | BQL    | BQL                    | BQL    |
| Hexachloroethane           | "      | 10     |              | BQL    | BQL                    | BQL    |
| N-Nitrosodi-N-Propylamine  | "      | 10     |              | BQL    | BQL                    | BQL    |
| Nitrobenzene               | "      | 10     |              | BQL    | BQL                    | BQL    |
| Isophorone                 | "      | 10     |              | BQL    | BQL                    | BQL    |
| Bis(2-Chloroethoxy)Methane | "      | 10     |              | BQL    | BQL                    | BQL    |
| 1,2,4-Trichlorobenzene     | "      | 10     |              | BQL    | BQL                    | BQL    |
| Naphthalene                | "      | 10     |              | BQL    | BQL                    | BQL    |
| Hexachlorobutadiene        | "      | 10     |              | BQL    | BQL                    | BQL    |
| Hexachlorocyclopentadiene  | "      | 10     |              | BQL    | BQL                    | BQL    |
| 2-Chloronaphthalene        | "      | 10     |              | BQL    | BQL                    | BQL    |
| Dimethylphthalate          | "      | 10     |              | BQL    | BQL                    | BQL    |
| Acenaphthylene             | "      | 10     |              | BQL    | BQL                    | BQL    |
| 2,6-Dinitrotoluene         | "      | 10     |              | BQL    | BQL                    | BQL    |
| Acenaphthene               | "      | 10     |              | BQL    | BQL                    | BQL    |
| 2,4-Dinitrotoluene         | "      | 10     |              | BQL    | BQL                    | BQL    |
| Diethylphthalate           | "      | 10     |              | BQL    | BQL                    | BQL    |

<sup>1</sup> Blind Field Dup. was determined after analysis.

\* Below quantifiable limits.

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

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Type of Analysis: SEMI-VOLATILES (HSL)

Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | AES Lab No.-<br>Sample ID - | 18528<br>MW-3<br>GRAB | 18529<br>BLIND<br>FIELD DUP <sup>1</sup><br>(BW-1) | 18530<br>TRIP<br>BLANK |
|----------------------------|---------------|------------------|--------------|-----------------------------|-----------------------|----------------------------------------------------|------------------------|
|                            |               |                  |              |                             | 3/9/88                | 3/9/88                                             | 3/9/88                 |
| Fluorene                   | 8240          | 10               |              |                             | BQL*                  | BQL                                                | BQL                    |
| 4-Chlorophenylphenylether  | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Diphenylamine(N-Nitroso)   | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Benzly Alcohol             | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| 4-Chloroaniline            | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| 4-Bromophenylphenylether   | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Hexachlorobenzene          | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Phenanthrene               | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Anthracene                 | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Di-N-Butylphthalate        | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Fluoranthene               | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| 2-Nitroaniline             | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Pyrene                     | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Butylbenzylphthalate       | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Benzo(a)Anthracene         | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| 3,3'-Dichlorobenzidine     | "             | 30               |              |                             | BQL                   | BQL                                                | BQL                    |
| Chrysene                   | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Bis(2-Ethylhexyl)Phthalate | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Di-N-Octylphthalate        | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Benzo(b)Fluoranthene       | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Benzo(k)Fluoranthene       | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Benzo(a)Pyrene             | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Indeno(1,2,3-C,D)Pyrene    | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Dibenzo(a,h)Anthracene     | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |
| Benzo(g,h,i)Perylene       | "             | 10               |              |                             | BQL                   | BQL                                                | BQL                    |

<sup>1</sup> Blind Field Dup. was determined after analysis.

\* Below quantifiable limits.

*Susan C. Scrocchi*

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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

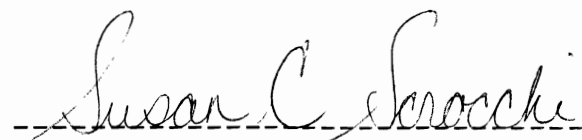
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Type of Analysis: SEMI-VOLATILES

Units Of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE A.E.S. Job Code CTC  
-----

|                            |               |                  | AES Lab No.-<br>Sample ID - | 18528<br>MW-3<br>GRAB | 18529<br>BLIND<br>FIELD DUP <sup>1</sup><br>(BW-1) | 18530<br>TRIP<br>BLANK |
|----------------------------|---------------|------------------|-----------------------------|-----------------------|----------------------------------------------------|------------------------|
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date-                | 3/9/88                | 3/9/88                                             | 3/9/88                 |
| Phenol                     | 8270          | 10               |                             | BQL*                  | BQL                                                | BQL                    |
| 2-Chlorophenol             | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 2-Nitrophenol              | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 2,4-Dimethylphenol         | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| p-Chloro-m-Chesol          | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 2,4,6-Trichlorophenol      | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 2,4-Dinitrophenol          | "             | 20               |                             | BQL                   | BQL                                                | BQL                    |
| 4-Nitrophenol              | "             | 20               |                             | BQL                   | BQL                                                | BQL                    |
| 4,6-Dinitro-O-Cresol       | "             | 20               |                             | BQL                   | BQL                                                | BQL                    |
| Pentachlorophenol          | "             | 20               |                             | BQL                   | BQL                                                | BQL                    |
| 2,4-Dichlorophenol         | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 4-Methylphenol             | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| Benzoic Acid               | "             | 20               |                             | BQL                   | BQL                                                | BQL                    |
| 2,4,5-Trichlorophenol      | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 3-Nitroaniline             | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| Dibenzofuran               | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 4-Nitroaniline             | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| 2-Methylphenol             | "             | 10               |                             | BQL                   | BQL                                                | BQL                    |
| Benzidine                  | "             | 50               |                             | BQL                   | BQL                                                | BQL                    |

<sup>1</sup> Blind Field Dup. was determined after analysis.

\* Below quantifiable limits.

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

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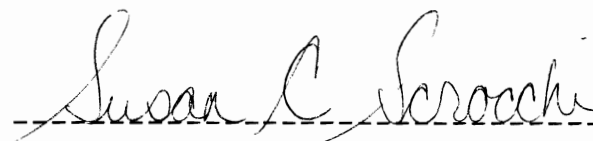
Type of Analysis: VOLATILE ORGANICS (HSL)

Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                            |               |                  | AES Lab No.-<br>Sample ID - | 18522<br>BW-1<br>GRAB | 18523<br>BW-2<br>GRAB | 18524<br>BW-3<br>GRAB |
|----------------------------|---------------|------------------|-----------------------------|-----------------------|-----------------------|-----------------------|
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date-                | 3/9/88                | 3/10/88               | 3/10/88               |
| Chloromethane              | 8240          | 10               |                             | BQL*                  | BQL                   | BQL                   |
| Vinyl Chloride             | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Chloroethane               | "             | 10               |                             | 65                    | BQL                   | BQL                   |
| Bromomethane               | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| 2-Chloroethyl Vinyl Ether  | "             | 10               |                             | BQL                   | BQL                   | BQL                   |
| Ethylbenzene               | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Methylene Chloride         | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Chlorobenzene              | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| 1,1-Dichloroethylene       | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| 1,1-Dichloroethane         | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| trans-1,2-Dichloroethylene | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Chloroform                 | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| 1,2-Dichloroethane         | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| 1,1,1-Trichloroethane      | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Carbon Tetrachloride       | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Bromodichloromethane       | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| 1,2-Dichloropropane        | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| trans-1,3-Dichloropropene  | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Trichloroethylene          | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Benzene                    | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| cis-1,3-Dichloropropene    | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| 1,1,2-Trichloroethane      | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Dibromochloromethane       | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |
| Bromoform                  | "             | 5.0              |                             | BQL                   | BQL                   | BQL                   |



Susan C. Scrocchi

Gas Chromatography Supervisor

\* Below quantifiable limits.

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: VOLATILE ORGANICS (HSL)

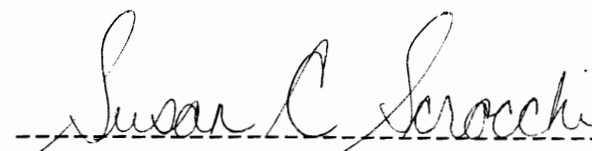
Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                             |        |        | AES Lab No.- | 18522  | 18523   | 18524   |
|-----------------------------|--------|--------|--------------|--------|---------|---------|
|                             |        |        | Sample ID -  | BW-1   | BW-2    | BW-3    |
|                             |        |        |              | GRAB   | GRAB    | GRAB    |
| Analytical                  | Method | Quant. | Sample Date- | 3/9/88 | 3/10/88 | 3/10/88 |
| Parameter(s)                | No.    | Limits |              |        |         |         |
| 1,1,2,2-Tetrachloroethylene | 8240   | 5.0    |              | BQL*   | BQL     | BQL     |
| 1,1,2,2-Tetrachloroethane   | "      | 5.0    |              | BQL    | BQL     | BQL     |
| Toluene                     | "      | 5.0    |              | BQL    | BQL     | BQL     |
| Acetone                     | "      | 50     |              | 410    | BQL     | BQL     |
| Carbon Disulfide            | "      | 5.0    |              | BQL    | BQL     | BQL     |
| 2-Butanone                  | "      | 50     |              | BQL    | BQL     | BQL     |
| Vinyl Acetate               | "      | 5.0    |              | BQL    | BQL     | BQL     |
| 2-Hexanone                  | "      | 50     |              | BQL    | BQL     | BQL     |
| 4-Methyl-2-pentanone        | "      | 50     |              | BQL    | BQL     | BQL     |
| Styrene                     | "      | 5.0    |              | BQL    | BQL     | BQL     |
| Xylenes (Total)             | "      | 5.0    |              | BQL    | BQL     | BQL     |
| Trichlorofluoromethane      | "      | 5.0    |              | BQL    | BQL     | BQL     |

\* Below quantifiable limits.

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

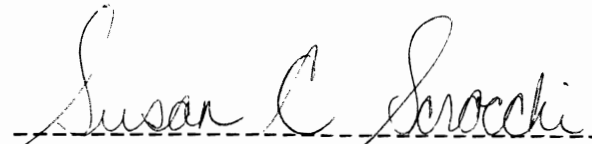
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Type of Analysis: VOLATILE ORGANICS (HSL)

Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE

A.E.S. Job Code CTC

|                            |        |        | AES Lab No.- | 18525  | 18526  | 18527  |
|----------------------------|--------|--------|--------------|--------|--------|--------|
|                            |        |        | Sample ID -  | BW-4   | BW-5   | BW-6   |
|                            |        |        |              | GRAB   | GRAB   | GRAB   |
| Analytical                 | Method | Quant. | Sample Date- | 3/9/88 | 3/9/88 | 3/9/88 |
| Parameter(s)               | No.    | Limits |              |        |        |        |
| Chloromethane              | 8240   | 10     |              | BQL*   | BQL    | BQL    |
| Vinyl Chloride             | "      | 10     |              | BQL    | BQL    | BQL    |
| Chloroethane               | "      | 10     |              | BQL    | BQL    | BQL    |
| Bromomethane               | "      | 10     |              | BQL    | BQL    | BQL    |
| 2-Chloroethyl Vinyl Ether  | "      | 10     |              | BQL    | BQL    | BQL    |
| Ethylbenzene               | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Methylene Chloride         | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Chlorobenzene              | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 1,1-Dichloroethylene       | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 1,1-Dichloroethane         | "      | 5.0    |              | BQL    | BQL    | BQL    |
| trans-1,2-Dichloroethylene | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Chloroform                 | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 1,2-Dichloroethane         | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 1,1,1-Trichloroethane      | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Carbon Tetrachloride       | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Bromodichloromethane       | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 1,2-Dichloropropane        | "      | 5.0    |              | BQL    | BQL    | BQL    |
| trans-1,3-Dichloropropene  | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Trichloroethylene          | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Benzene                    | "      | 5.0    |              | BQL    | BQL    | BQL    |
| cis-1,3-Dichloropropene    | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 1,1,2-Trichloroethane      | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Dibromochloromethane       | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Bromoform                  | "      | 5.0    |              | BQL    | BQL    | BQL    |

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

\* Below quantifiable limits.

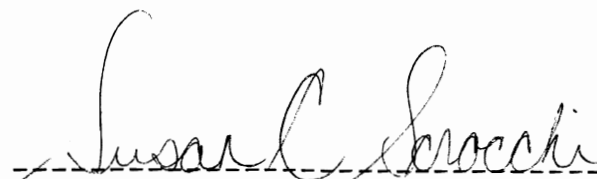
ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: VOLATILE ORGANICS (HSL)

Units Of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE A.E.S. Job Code CTC

|                             |        |        | AES Lab No.- | 18525  | 18526  | 18527  |
|-----------------------------|--------|--------|--------------|--------|--------|--------|
|                             |        |        | Sample ID -  | BW-4   | BW-5   | BW-6   |
|                             |        |        |              | GRAB   | GRAB   | GRAB   |
| Analytical                  | Method | Quant. | Sample Date- | 3/9/88 | 3/9/88 | 3/9/88 |
| Parameter(s)                | No.    | Limits |              |        |        |        |
| 1,1,2,2-Tetrachloroethylene | 8240   | 5.0    |              | BQL*   | BQL    | BQL    |
| 1,1,2,2-Tetrachloroethane   | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Toluene                     | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Acetone                     | "      | 50     |              | BQL    | BQL    | BQL    |
| Carbon Disulfide            | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 2-Butanone                  | "      | 50     |              | BQL    | BQL    | BQL    |
| Vinyl Acetate               | "      | 5.0    |              | BQL    | BQL    | BQL    |
| 2-Hexanone                  | "      | 50     |              | BQL    | BQL    | BQL    |
| 4-Methyl-2-pentanone        | "      | 50     |              | BQL    | BQL    | BQL    |
| Styrene                     | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Xylenes (Total)             | "      | 5.0    |              | BQL    | BQL    | BQL    |
| Trichlorofluoromethane      | "      | 5.0    |              | BQL    | BQL    | BQL    |

\* Below quantifiable limits.

  
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Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: VOLATILE ORGANICS (HSL)

Units Of Measure: Micrograms/Liter, or ppb

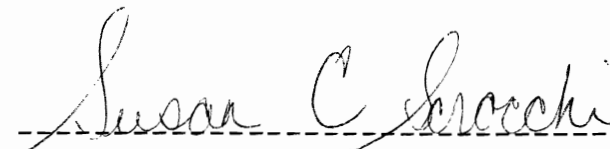
Client: UNION CARBIDE

A.E.S. Job Code CTC

|                            |        |        | AES Lab No.- | 18528  | 18529                  | 18530  |
|----------------------------|--------|--------|--------------|--------|------------------------|--------|
|                            |        |        | Sample ID -  | MW-3   | BLIND                  | TRIP   |
|                            |        |        |              | GRAB   | FIELD DUP <sup>1</sup> | BLANK  |
|                            |        |        |              |        | (BW-1)                 |        |
| Analytical                 | Method | Quant. | Sample Date- | 3/9/88 | 3/9/88                 | 3/9/88 |
| Parameter(s)               | No.    | Limits |              |        |                        |        |
| Chloromethane              | 8240   | 10     |              | BQL*   | BQL                    | BQL    |
| Vinyl Chloride             | "      | 10     |              | BQL    | BQL                    | BQL    |
| Chloroethane               | "      | 10     |              | BQL    | 64                     | BQL    |
| Bromomethane               | "      | 10     |              | BQL    | BQL                    | BQL    |
| 2-Chloroethyl Vinyl Ether  | "      | 10     |              | BQL    | BQL                    | BQL    |
| Ethylbenzene               | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Methylene Chloride         | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Chlorobenzene              | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 1,1-Dichloroethylene       | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 1,1-Dichloroethane         | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| trans-1,2-Dichloroethylene | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Chloroform                 | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 1,2-Dichloroethane         | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 1,1,1-Trichloroethane      | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Carbon Tetrachloride       | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Bromodichloromethane       | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 1,2-Dichloropropane        | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| trans-1,3-Dichloropropene  | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Trichloroethylene          | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Benzene                    | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| cis-1,3-Dichloropropene    | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 1,1,2-Trichloroethane      | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Dibromochloromethane       | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Bromoform                  | "      | 5.0    |              | BQL    | BQL                    | BQL    |

<sup>1</sup> Blind Field Dup. was determined after analysis.

\* Below quantifiable limits.

  
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Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: VOLATILE ORGANICS (HSL)

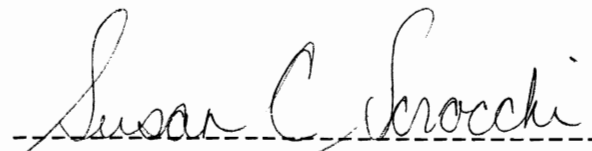
Units Of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE A.E.S. Job Code CTC

|                             |        |        |              |        |                        |        |
|-----------------------------|--------|--------|--------------|--------|------------------------|--------|
|                             |        |        | AES Lab No.- | 18528  | 18529                  | 18530  |
|                             |        |        | Sample ID -  | MW-3   | BLIND                  | TRIP   |
|                             |        |        |              | GRAB   | FIELD DUP <sup>1</sup> | BLANK  |
|                             |        |        |              |        | (BW-1)                 |        |
|                             |        |        | Sample Date- | 3/9/88 | 3/9/88                 | 3/9/88 |
| -----                       | -----  | -----  | -----        | -----  | -----                  | -----  |
| Analytical                  | Method | Quant. |              |        |                        |        |
| Parameter(s)                | No.    | Limits |              |        |                        |        |
| 1,1,2,2-Tetrachloroethylene | 8240   | 5.0    |              | BQL*   | BQL                    | BQL    |
| 1,1,2,2-Tetrachloroethane   | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Toluene                     | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Acetone                     | "      | 50     |              | BQL    | 420                    | BQL    |
| Carbon Disulfide            | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 2-Butanone                  | "      | 50     |              | BQL    | BQL                    | BQL    |
| Vinyl Acetate               | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| 2-Hexanone                  | "      | 50     |              | BQL    | BQL                    | BQL    |
| 4-Methyl-2-pentanone        | "      | 50     |              | BQL    | BQL                    | BQL    |
| Styrene                     | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Xylenes (Total)             | "      | 5.0    |              | BQL    | BQL                    | BQL    |
| Trichlorofluoromethane      | "      | 5.0    |              | BQL    | BQL                    | BQL    |

<sup>1</sup> Blind Field Dup. was determined after analysis.

\* Below quantifiable limits.



Susan C. Scrocchi  
Gas Chromatography Supervisor

## ADVANCED ENVIRONMENTAL SERVICES, INC.

## LABORATORY REPORT

## QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis

Units of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE A.E.S. Job Code:CTC

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| Analytical Parameters      | Sample<br>Code | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|----------------------------|----------------|-------------------|--------------------|------------------|-------|----------------------|
| Chloromethane              | 18527          | <10               | <10                | <10              | None  | None                 |
| Vinyl Chloride             | 18527          | <10               | <10                | <10              | None  | None                 |
| Chloroethane               | 18527          | <10               | <10                | <10              | None  | None                 |
| Bromomethane               | 18527          | <10               | <10                | <10              | None  | None                 |
| 2-Chloroethyl vinyl ether  | 18527          | <10               | <10                | <10              | None  | None                 |
| Ethylbenzene               | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Methylene Chloride         | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Chlorobenzene              | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,1-Dichloroethylene       | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,1-Dichloroethane         | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| trans-1,2-Dichloroethylene | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Chloroform                 | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,2-Dichloroethane         | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,1,1-Trichloroethane      | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Carbon Tetrachloride       | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Bromodichloromethane       | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,2-Dichloropropane        | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| trans-1,3-Dichloropropene  | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Trichloroethylene          | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Benzene                    | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| cis-1,3-Dichloropropene    | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,1,2-Trichloroethane      | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Dibromochloromethane       | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Bromoform                  | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |

Relative Percent Difference =  
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis  
Units of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE                      A.E.S. Job Code:CTC

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| Analytical Parameters       | Sample<br>Code | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|-----------------------------|----------------|-------------------|--------------------|------------------|-------|----------------------|
| 1,1,2,2-Tetrachloroethylene | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 1,1,2,2-Tetrachloroethane   | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Toluene                     | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Acetone                     | 18527          | <50               | <50                | <50              | None  | None                 |
| Carbon Disulfide            | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 2-Butanone                  | 18527          | <50               | <50                | <50              | None  | None                 |
| Vinyl Acetate               | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| 2-Hexanone                  | 18527          | <50               | <50                | <50              | None  | None                 |
| 4-Methyl-2-pentanone        | 18527          | <50               | <50                | <50              | None  | None                 |
| Styrene                     | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Xylenes (Total)             | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |
| Trichlorofluoromethane      | 18527          | <5.0              | <5.0               | <5.0             | None  | None                 |

Relative Percent Difference =  
Range/Average X 100

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AES JOB CODE CTC

## TIME OF ANALYSIS

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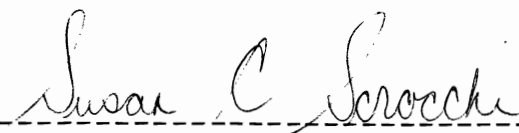
ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====  
Type of Analysis: SEMI-VOLATILES

Units Of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE A.E.S. Job Code CTC

|                            |        |        | AES Lab No.- | 18522  | 18523   | 18524   |
|----------------------------|--------|--------|--------------|--------|---------|---------|
|                            |        |        | Sample ID -  | BW-1   | BW-2    | BW-3    |
|                            |        |        |              | GRAB   | GRAB    | GRAB    |
| Analytical                 | Method | Quant. | Sample Date- | 3/9/88 | 3/10/88 | 3/10/88 |
| Parameter(s)               | No.    | Limits |              |        |         |         |
| 2-Methylnaphthalene        | 8270   | 10     |              | BQL*   | BQL     | BQL     |
| Bis(2-Chloroethyl) Ether   | "      | 10     |              | BQL    | BQL     | BQL     |
| 1,3-Dichlorobenzene        | "      | 10     |              | BQL    | BQL     | BQL     |
| 1,4-Dichlorobenzene        | "      | 10     |              | BQL    | BQL     | BQL     |
| 1,2-Dichlorobenzene        | "      | 10     |              | BQL    | BQL     | BQL     |
| Bis(2-Chloroisopropyl)     | "      | 10     |              | BQL    | BQL     | BQL     |
| Ether                      | "      | 10     |              | BQL    | BQL     | BQL     |
| Hexachloroethane           | "      | 10     |              | BQL    | BQL     | BQL     |
| N-Nitrosodi-N-Propylamine  | "      | 10     |              | BQL    | BQL     | BQL     |
| Nitrobenzene               | "      | 10     |              | BQL    | BQL     | BQL     |
| Isophorone                 | "      | 10     |              | BQL    | BQL     | BQL     |
| Bis(2-Chloroethoxy)Methane | "      | 10     |              | BQL    | BQL     | BQL     |
| 1,2,4-Trichlorobenzene     | "      | 10     |              | BQL    | BQL     | BQL     |
| Naphthalene                | "      | 10     |              | BQL    | BQL     | BQL     |
| Hexachlorobutadiene        | "      | 10     |              | BQL    | BQL     | BQL     |
| Hexachlorocyclopentadiene  | "      | 10     |              | BQL    | BQL     | BQL     |
| 2-Chloronaphthalene        | "      | 10     |              | BQL    | BQL     | BQL     |
| Dimethylphthalate          | "      | 10     |              | BQL    | BQL     | BQL     |
| Acenaphthylene             | "      | 10     |              | BQL    | BQL     | BQL     |
| 2,6-Dinitrotoluene         | "      | 10     |              | BQL    | BQL     | BQL     |
| Acenaphthene               | "      | 10     |              | BQL    | BQL     | BQL     |
| 2,4-Dinitrotoluene         | "      | 10     |              | BQL    | BQL     | BQL     |
| Diethylphthalate           | "      | 10     |              | BQL    | BQL     | BQL     |

\* Below quantifiable limits.

  
-----  
Susan C. Scrocchi  
Gas Chromatography Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis  
Units of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE                      A.E.S. Job Code:CTC

-----

| Analytical Parameters       | Sample<br>Code | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|-----------------------------|----------------|-------------------|--------------------|------------------|-------|----------------------|
| -----                       |                |                   |                    |                  |       |                      |
| 2-Methylnaphthalene         | 18524          | <10               | <10                | <10              | None  | None                 |
| Bis(2-chloroethyl)ether     | 18524          | <10               | <10                | <10              | None  | None                 |
| 1,3-Dichlorobenzene         | 18524          | <10               | <10                | <10              | None  | None                 |
| 1,4-Dichlorobenzene         | 18524          | <10               | <10                | <10              | None  | None                 |
| 1,2-Dichlorobenzene         | 18524          | <10               | <10                | <10              | None  | None                 |
| Bis(2-Chloroisopropyl)Ether | 18524          | <10               | <10                | <10              | None  | None                 |
| Hexachloroethane            | 18524          | <10               | <10                | <10              | None  | None                 |
| N-nitrosodi-n-propylamine   | 18524          | <10               | <10                | <10              | None  | None                 |
| Nitrobenzene                | 18524          | <10               | <10                | <10              | None  | None                 |
| Isophorone                  | 18524          | <10               | <10                | <10              | None  | None                 |
| Bis(2-chloroethoxy)methane  | 18524          | <10               | <10                | <10              | None  | None                 |
| 1,2,4-Trichlorobenzene      | 18524          | <10               | <10                | <10              | None  | None                 |
| Naphthalene                 | 18524          | <10               | <10                | <10              | None  | None                 |
| Hexachlorobutadiene         | 18524          | <10               | <10                | <10              | None  | None                 |
| Hexachlorocyclopentadiene   | 18524          | <10               | <10                | <10              | None  | None                 |
| 2-Chloronaphthalene         | 18524          | <10               | <10                | <10              | None  | None                 |
| Dimethylphthalate           | 18524          | <10               | <10                | <10              | None  | None                 |
| Acenaphthylene              | 18524          | <10               | <10                | <10              | None  | None                 |
| 2,4-Dinitrotoluene          | 18524          | <10               | <10                | <10              | None  | None                 |
| Diethylphthalate            | 18524          | <10               | <10                | <10              | None  | None                 |

Relative Percent Difference =  
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.

LABORATORY REPORT

QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis

Units of Measure: Micrograms/Liter, or ppb

Client: UNION CARBIDE A.E.S. Job Code:CTC

-----

| Analytical Parameters      | Sample<br>Code | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|----------------------------|----------------|-------------------|--------------------|------------------|-------|----------------------|
| -----                      |                |                   |                    |                  |       |                      |
| Fluorene                   | 18524          | <10               | <10                | <10              | None  | None                 |
| 4-Chlorophenylphenylether  | 18524          | <10               | <10                | <10              | None  | None                 |
| Diphenylamine(N-nitroso)   | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzyl Alcohol             | 18524          | <10               | <10                | <10              | None  | None                 |
| 4-Chloroaniline            | 18524          | <10               | <10                | <10              | None  | None                 |
| 4-Bromophenylphenylether   | 18524          | <10               | <10                | <10              | None  | None                 |
| Hexachlorobenzene          | 18524          | <10               | <10                | <10              | None  | None                 |
| Phenanthrene               | 18524          | <10               | <10                | <10              | None  | None                 |
| Anthracene                 | 18524          | <10               | <10                | <10              | None  | None                 |
| Di-n-butylphthalate        | 18524          | <10               | <10                | <10              | None  | None                 |
| Fluoranthene               | 18524          | <10               | <10                | <10              | None  | None                 |
| 2-Nitroaniline             | 18524          | <10               | <10                | <10              | None  | None                 |
| Pyrene                     | 18524          | <10               | <10                | <10              | None  | None                 |
| Butylbenzylphthalate       | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzo(a)Anthracene         | 18524          | <10               | <10                | <10              | None  | None                 |
| 3,3'-Dichlorobenzidine     | 18524          | <30               | <30                | <30              | None  | None                 |
| Chrysene                   | 18524          | <10               | <10                | <10              | None  | None                 |
| Bis(2-ethylhexyl)phthalate | 18524          | <10               | <10                | <10              | None  | None                 |
| Di-n-octylphthalate        | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzo(b)fluoranthene       | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzo(k)fluoranthene       | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzo(a)pyrene             | 18524          | <10               | <10                | <10              | None  | None                 |
| Indeno(1,2,3-c,d)pyrene    | 18524          | <10               | <10                | <10              | None  | None                 |
| Dibenzo(a,h)anthracene     | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzo(g,h,i)perylene       | 18524          | <10               | <10                | <10              | None  | None                 |

Relative Percent Difference =  
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis  
Units of Measure: Micrograms/Liter, or ppb  
Client: UNION CARBIDE                      A.E.S. Job Code:CTC

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| Analytical Parameters | Sample<br>Code | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|-----------------------|----------------|-------------------|--------------------|------------------|-------|----------------------|
| Phenol                | 18524          | <10               | <10                | <10              | None  | None                 |
| 2-Chlorophenol        | 18524          | <10               | <10                | <10              | None  | None                 |
| 2-Nitrophenol         | 18524          | <10               | <10                | <10              | None  | None                 |
| 2,4-Dimethyphenol     | 18524          | <10               | <10                | <10              | None  | None                 |
| p-Chloro-m-cresol     | 18524          | <10               | <10                | <10              | None  | None                 |
| 2,4,6-Trichlorophenol | 18524          | <10               | <10                | <10              | None  | None                 |
| 2,4-Dinitrophenol     | 18524          | <20               | <20                | <20              | None  | None                 |
| 4-Nitrophenol         | 18524          | <20               | <20                | <20              | None  | None                 |
| 4,6-Dinitro-o-cresol  | 18524          | <20               | <20                | <20              | None  | None                 |
| Pentachlorophenol     | 18524          | <20               | <20                | <20              | None  | None                 |
| 2,4-Dichlorophenol    | 18524          | <10               | <10                | <10              | None  | None                 |
| 4-Methylphenol        | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzoic Acid          | 18524          | <20               | <20                | <20              | None  | None                 |
| 2,4,5-Trichlorophenol | 18524          | <10               | <10                | <10              | None  | None                 |
| 3-Nitroaniline        | 18524          | <10               | <10                | <10              | None  | None                 |
| Dibenzofuran          | 18524          | <10               | <10                | <10              | None  | None                 |
| 4-Nitroaniline        | 18524          | <10               | <10                | <10              | None  | None                 |
| 2-Methylphenol        | 18524          | <10               | <10                | <10              | None  | None                 |
| Benzidine             | 18524          | <50               | <50                | <50              | None  | None                 |

Relative Percent Difference =  
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - ACCURACY

=====

Type of Analysis: Matrix Spikes and E.P.A. Standards  
Client: UNION CARBIDE                      A.E.S. Job Code: CTC

-----

(Units: ug/l, or ppb)

| Analytical Parameters   | Sample No. | Type | Observed Conc. | Original Conc. | Added Conc. | Percent Recovery* |
|-------------------------|------------|------|----------------|----------------|-------------|-------------------|
| -----                   |            |      |                |                |             |                   |
| 1,1-Dichloroethane      | 18527      | SPK  | 28             | <5.0           | 24          | 117               |
| Benzene                 | 18527      | SPK  | 16             | <5.0           | 31          | 52                |
| Dichlorobromomethane    | 18527      | SPK  | 20             | <5.0           | 30          | 67                |
| Toluene                 | 18527      | SPK  | 33             | <5.0           | 36          | 92                |
| Dibromochloromethane    | 18527      | SPK  | 34             | <5.0           | 28          | 121               |
| Ethylbenzene            | 18527      | SPK  | 38             | <5.0           | 31          | 122               |
| o-Xylene                | 18527      | SPK  | 31             | <5.0           | 36          | 86                |
| Bromoform               | 18527      | SPK  | 97             | <5.0           | 78          | 124               |
| Phenol                  | 18528      | SPK  | 56             | <10            | 67          | 84                |
| 2,4-Dichlorophenol      | 18528      | SPK  | 30             | <10            | 46          | 65                |
| 4-Chloro-3-methylphenol | 18528      | SPK  | 149            | <10            | 117         | 127               |
| 2,4,6-Trichlorophenol   | 18528      | SPK  | 92             | <10            | 83          | 111               |
| 4-Nitrophenol           | 18528      | SPK  | 55             | <20            | 86          | 64                |
| Pentachlorophenol       | 18528      | SPK  | 91             | <20            | 90          | 101               |

-----  
\* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

ADVANCED ENVIRONMENTAL SERVICES, INC.  
PARAMETER TRACEABILITY REPORT  
GAS CHROMATOGRAPHY DEPARTMENT

AES JOB CODE CTC

ANALYST

ANALYTICAL METHOD

SAMPLE CODE

DATE OF ANALYSIS

### TIME OF ANALYSIS

Jim Faye

8240

18522-18530

3/22/88

15:00 - 27:00

Jim Fuji

8270

18522-18530

3/28/88

12:30 - 19 00

---

AES JOB CODE CTC

Joseph S. Hart

625

18522-30

3/15/88

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: METALS

Client: UNION CARBIDE

A.E.S. Job Code CTC

-----

(All results are in mg/l)

|                            | AES Lab No. - | 18522            | 18523        | 18524  |         |         |
|----------------------------|---------------|------------------|--------------|--------|---------|---------|
|                            | Sample ID -   | BW-1             | BW-2         | BW-3   |         |         |
|                            |               | GRAB             | GRAB         | GRAB   |         |         |
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | 3/9/88 | 3/10/88 | 3/10/88 |
| Total Iron (Fe)            | 236.1         | 0.30             | 6.68         | 1.43   | 0.53    |         |
| Soluble Iron (Fe)          | 236.1         | 0.30             | 2.01         | BQL*   | BQL     |         |
| Total Potassium (K)        | 258.1         | 1.00             | 13.34        | 117.0  | 36.00   |         |
| Soluble Potassium (K)      | 258.1         | 1.00             | 13.68        | 108.0  | 30.30   |         |
| Total Zinc (Zn)            | 289.1         | 0.05             | 20.00        | 5.10   | 2.32    |         |
| Soluble Zinc (Zn)          | 289.1         | 0.05             | 16.00        | 3.50   | 0.57    |         |

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\* Below quantifiable limits.

*Janette Bingert*  
-----  
Janette Bingert  
Atomic Spectroscopy Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: METALS

Client: UNION CARBIDE

A.E.S. Job Code CTC

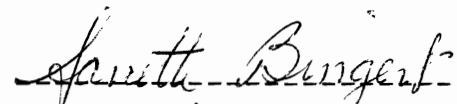
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(All results are in mg/l)

|                            | AES Lab No. - | 18525            | 18526        | 18527  |        |        |
|----------------------------|---------------|------------------|--------------|--------|--------|--------|
|                            | Sample ID -   | BW-4             | BW-5         | BW-6   |        |        |
|                            |               | GRAB             | GRAB         | GRAB   |        |        |
| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | 3/9/88 | 3/9/88 | 3/9/88 |
| Total Iron (Fe)            | 236.1         | 0.30             | 14.05        | 13.10  | 26.10  |        |
| Soluble Iron (Fe)          | 236.1         | 0.30             | 2.46         | 6.70   | 20.90  |        |
| Total Potassium (K)        | 258.1         | 1.00             | 14.76        | 2.18   | 4.38   |        |
| Soluble Potassium (K)      | 258.1         | 1.00             | 14.66        | 2.34   | 4.32   |        |
| Total Zinc (Zn)            | 289.1         | 0.05             | 1.90         | 0.15   | BQL*   |        |
| Soluble Zinc (Zn)          | 289.1         | 0.05             | 0.26         | 0.12   | BQL    |        |

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\* Below quantifiable limits.

  
-----  
Janette Bingert  
Atomic Spectroscopy Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT

=====

Type of Analysis: METALS

Client: UNION CARBIDE

A.E.S. Job Code CTC

-----

(All results are in mg/l)

| Analytical<br>Parameter(s) | Method<br>No. | Quant.<br>Limits | Sample Date- | AES Lab No. - |        |        |
|----------------------------|---------------|------------------|--------------|---------------|--------|--------|
|                            |               |                  |              | Sample ID -   |        |        |
|                            |               |                  |              | 18528         | 18529  | 18530  |
|                            |               |                  |              | MW-3          | FIELD  | TRIP   |
|                            |               |                  |              | GRAB          | DUP    | BLANK  |
|                            |               |                  |              |               | GRAB   |        |
|                            |               |                  |              | 3/9/88        | 3/9/88 | 3/9/88 |
| Total Iron (Fe)            | 236.1         | 0.30             |              | 4.27          | 6.78   | BQL*   |
| Soluble Iron (Fe)          | 236.1         | 0.30             |              | 0.53          | 2.04   | BQL    |
| Total Potassium (K)        | 258.1         | 1.00             |              | 1.43          | 13.18  | BQL    |
| Soluble Potassium (K)      | 258.1         | 1.00             |              | 1.67          | 12.40  | BQL    |
| Total Zinc (Zn)            | 289.1         | 0.05             |              | BQL           | 17.00  | BQL    |
| Soluble Zinc (Zn)          | 289.1         | 0.05             |              | BQL           | 15.70  | BQL    |

\* Below quantifiable limits.

  
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Janette Bingert  
Atomic Spectroscopy Supervisor

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - PRECISION

=====

Type of Analysis: Duplicate Analysis  
Units of Analysis: Milligrams/Liter or ppm  
Client: UNION CARBIDE                      A.E.S. Job Code:CTC

-----

| Analytical Parameters | Sample<br>No. | Original<br>Conc. | Duplicate<br>Conc. | Average<br>Conc. | Range | Rel. %<br>Difference |
|-----------------------|---------------|-------------------|--------------------|------------------|-------|----------------------|
| Total Iron (Fe)       | 18529         | 6.76              | 6.80               | 6.78             | 0.04  | 0.6                  |
| Soluble Iron (Fe)     | 18529         | 2.06              | 2.02               | 2.04             | 0.04  | 2                    |
| Total Potassium (K)   | 18529         | 13.24             | 13.12              | 13.18            | 0.12  | 1                    |
| Soluble Potassium (K) | 18529         | 12.54             | 12.26              | 12.40            | 0.28  | 2                    |
| Total Zinc (Zn)       | 18529         | 16.80             | 17.20              | 17.00            | 0.20  | 1                    |
| Soluble Zinc (Zn)     | 18529         | 16.00             | 15.40              | 15.70            | 0.60  | 4                    |

Relative Percent Difference =  
Range/Average X 100

ADVANCED ENVIRONMENTAL SERVICES, INC.  
LABORATORY REPORT  
QUALITY CONTROL - ACCURACY

=====

Type of Analysis: Matrix Spikes and E.P.A. Standards  
Client: UNION CARBIDE                      A.E.S. Job Code: CTC

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(Units:mg/l or ppm)

| Analytical Parameters | Sample No. | Type    | Observed Conc. | Original Conc. | Added Conc. | Percent Recovery* |
|-----------------------|------------|---------|----------------|----------------|-------------|-------------------|
| Total Iron (Fe)       | 18529      | **SPK   | 8.38           | 3.39           | 5.00        | 100               |
| Soluble Iron (Fe)     | 18529      | SPK     | 6.86           | 2.04           | 5.00        | 96                |
| EPA (Fe) std.         | 386        | EPA     | 0.94           | 0.99           | ---         | 95                |
| Total Potassium (K)   | 18529      | SPK     | 34.78          | 13.18          | 20.00       | 108               |
| Soluble Potassium (K) | 18529      | SPK     | 33.24          | 12.40          | 20.00       | 104               |
| Independent (K) std.  |            | STD     | 10.96          | 10.00          | ---         | 110               |
| Total Zinc (Zn)       | 18529      | ***SPK  | 1.40           | 0.42           | 1.00        | 98                |
| Soluble Zinc (Zn)     | 18529      | ****SPK | 1.66           | 0.78           | 1.00        | 88                |
| EPA (Zn) std.         | 386        | EPA     | 0.49           | 0.50           | ---         | 98                |

-----

\* % Recovery=100 x ((Observed Conc. - "background" Original Conc.)/"Spike" Added Conc.)

\*\* Spike on sample dilution factor of two.

\*\*\* Spike on sample dilution factor of forty.

\*\*\*\* Spike on sample dilution factor of twenty.

AES JOB CODE CTC

### TIME OF ANALYSIS

F. Schvane

236.1

18522-30

3-14-88

2100

258.1

18522-30

3-14-88

2300

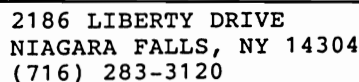
289.

18522-30

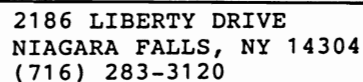
3-14-88

1900

APPENDIX A  
CHAIN OF CUSTODY RECORDS



|                                                |                 |                            |                                            |
|------------------------------------------------|-----------------|----------------------------|--------------------------------------------|
| RELINQUISHED BY (Sign)<br>1 <u>[Signature]</u> | DATE<br>3-10-88 | TIME<br>4 <sup>30</sup> pm | RECEIVED BY (Sign)<br>2 <u>[Signature]</u> |
| RELINQUISHED BY (Sign)<br>2 _____              | DATE            | TIME                       | RECEIVED BY (Sign)<br>3 _____              |
| RELINQUISHED BY (Sign)<br>3 _____              | DATE            | TIME                       | RECEIVED BY (Sign)<br>4 _____              |
| RELINQUISHED BY (Sign)<br>4 _____              | DATE            | TIME                       | RECEIVED BY (Sign)<br>5 _____              |
| REMARKS:                                       |                 |                            |                                            |



|                                                     |                 |              |                                                 |
|-----------------------------------------------------|-----------------|--------------|-------------------------------------------------|
| RELINQUISHED BY (Sign)<br>1 <u>[Signature]</u>      | DATE<br>3-10-89 | TIME<br>9:30 | RECEIVED BY (Sign)<br>2 <u>Margaret Skowron</u> |
| RELINQUISHED BY (Sign)<br>2 <u>Margaret Skowron</u> | DATE<br>3/11/89 | TIME<br>130  | RECEIVED BY (Sign)<br>3 <u>Judy Ostronski</u>   |
| RELINQUISHED BY (Sign)<br>3 _____                   | DATE            | TIME         | RECEIVED BY (Sign)<br>4 _____                   |
| RELINQUISHED BY (Sign)<br>4 _____                   | DATE            | TIME         | RECEIVED BY (Sign)<br>5 _____                   |
| REMARKS:                                            |                 |              |                                                 |

APPENDIX B  
FIELD REPORT

ADVANCED ENVIRONMENTAL SERVICES, INC.

FIELD REPORT

CLIENT: Union Carbide Corp.

AES JOB CODE: CTC

DATE PURGED: 3/7-8/88

DATE SAMPLED: 3/9-10/88

| WELL<br>IDENTIFICATION | TOP OF PIPE<br>ELEVATION | ELEVATION<br>BEFORE PURGING | (GALS.)<br>AMOUNT<br>PURGED | ELEVATION<br>BEFORE SAMPLING |
|------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|
| BW1                    | 610.72                   | 596.03                      | 35.0                        | 596.51                       |
| BW2                    | 608.43                   | 596.42                      | 52.0                        | 597.06                       |
| BW3*                   | 604.72                   | 596.78                      | 24.0                        | 598.24                       |
| BW4                    | 607.08                   | 598.36                      | 30.0                        | 599.33                       |
| BM5*                   | 603.33                   | 596.56                      | 35.0                        | 597.65                       |
| BW6                    | 607.04                   | 594.33                      | 10.0                        | 594.30                       |
| MW1**                  | 609.43                   | 597.88                      | 2.5                         | 598.33                       |
| MW2**                  | 607.54                   | 584.64                      | 2.0 (dry)                   | 584.44                       |
| MW3                    | 601.61                   | 595.05                      | 5.5 (dry)                   | 595.71                       |

\* Water flooded around wells.

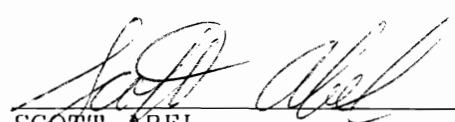
\*\* No sample - wells dry.

BW4 - Visible oil sheen on top of sample.

BW6 - Strong SO<sub>2</sub> odor.

MW1 - Insufficient recharge for sampling.

MW2- Purged black, silty water, coarse sediment on bailer.

  
SCOTT ABEL  
SENIOR FIELD TECHNICIAN