

ATEC Environmental Consultants

Division of ATEC Associates, Inc.
5150 East 65th Street
Indianapolis, Indiana 46220-4871
[317] 849-4990, FAX # [317] 849-4278

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

March 6, 1991

Lots 6, 7, 8 & 10

Mr. Matthew Stokes
ATEC Environmental Consultants
5150 East 65th Street
Indianapolis, IN 46220

Re: Four Soil VOA
SW 846 Method 8240
City of South Bend
Department of Economic Development
ATEC Project Number 21-17061

Dear Mr. Stokes:

Enclosed are the results of the Organic Analyses for the four soil samples which were submitted to the ATEC Environmental/Analytical Testing Division on February 22, 1991, on behalf of the City of South Bend. These samples were analyzed on a Finnigan 1020 OWA GC/MS/DS system, complete with Superincos Software, via SW 846 Method 8240 for Purgeable Organic Compounds. Prior to analysis the system was tuned against Bromofluorobenzene and calibrated with the appropriate standard.

All associated Quality Control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.

Donna S. Spyker
Donna S. Spyker
Environmental/Analytical
Testing Division

DSS/sdv

Client: City of South Bend
 Client Address: City County Building
 South Bend, IN 46601

Client Project Number: 21-17061
 Client Sample Identification: HA-1
 Sample Matrix: Soil
 Date Sample Collected: February 22, 1991
 Date Sample Received: February 22, 1991
 Date Sample Analyzed: March 1, 1991
 Analytical Equipment: 1020B

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

1 of 2

ATEC Lab No. 9102276-1

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|--------------------------|------------|-----------------------|----------------------------|
| Chloromethane | 74-87-3 | <10 | 10 |
| Bromomethane | 74-83-9 | <10 | 10 |
| Vinyl Chloride | 75-01-4 | <10 | 10 |
| Chloroethane | 75-00-3 | <10 | 10 |
| Methylene Chloride | 75-09-2 | < 5* | 5 |
| Acetone | 67-64-1 | <10* | 10 |
| Carbon Disulfide | 75-15-0 | < 5 | 5 |
| 1,1-Dichloroethene | 75-35-4 | < 5 | 5 |
| 1,1-Dichloroethane | 75-35-3 | < 5 | 5 |
| Trans-1,2-Dichloroethene | 156-60-5 | < 5 | 5 |
| Chloroform | 67-66-3 | < 5 | 5 |
| 1,2-Dichloroethane | 107-06-2 | < 5 | 5 |
| 2-Butanone | 78-93-3 | <10 | 10 |
| 1,1,1-Trichloroethane | 71-55-6 | < 5 | 5 |
| Carbon Tetrachloride | 56-23-5 | < 5 | 5 |
| Vinyl Acetate | 108-05-4 | <10 | 10 |
| Bromodichloromethane | 75-27-4 | < 5 | 5 |
| 1,2-Dichloropropane | 78-87-5 | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 9102276-1


| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|----------------------------|------------|-----------------------|----------------------------|
| Trans-1, 3-Dichloropropene | 10061-02-6 | < 5 | 5 |
| Trichloroethene | 79-01-6 | < 5 | 5 |
| Dibromochloromethane | 124-48-1 | < 5 | 5 |
| 1,1,2-Trichloroethane | 79-00-5 | < 5 | 5 |
| Benzene | 71-43-2 | < 5 | 5 |
| cis-1,3-Dichloropropene | 10061-01-5 | < 5 | 5 |
| 2-Chloroethylvinylether | 110-75-8 | <10 | 10 |
| Bromoform | 75-25-2 | < 5 | 5 |
| 4-Methyl-2-Pentanone | 108-10-1 | <10 | 10 |
| 2-Hexanone | 591-78-6 | <10 | 10 |
| Tetrachloroethene | 127-18-4 | < 5 | 5 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | < 5 | 5 |
| Toluene | 108-88-3 | < 5 | 5 |
| Chlorobenzene | 108-90-7 | < 5 | 5 |
| Ethylbenzene | 100-41-4 | < 5 | 5 |
| Styrene | 100-42-5 | < 5 | 5 |
| Total Xylenes | | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
 Verified: B. Keller
 Date Verified: March 4, 1991

Respectfully submitted,


 Environmental/Analytical Testing Division

Client: City of South Bend
 Client Address: City County Building
 South Bend, IN 46601

Client Project Number: 21-17061
 Client Sample Identification: HA-2
 Sample Matrix: Soil
 Date Sample Collected: February 22, 1991
 Date Sample Received: February 22, 1991
 Date Sample Analyzed: March 1, 1991
 Analytical Equipment: 1020B

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 9102276-2

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|--------------------------|------------|-----------------------|----------------------------|
| Chloromethane | 74-87-3 | <10 | 10 |
| Bromomethane | 74-83-9 | <10 | 10 |
| Vinyl Chloride | 75-01-4 | <10 | 10 |
| Chloroethane | 75-00-3 | <10 | 10 |
| Methylene Chloride | 75-09-2 | < 5* | 5 |
| Acetone | 67-64-1 | <10 | 10 |
| Carbon Disulfide | 75-15-0 | < 5 | 5 |
| 1,1-Dichloroethene | 75-35-4 | < 5 | 5 |
| 1,1-Dichloroethane | 75-35-3 | < 5 | 5 |
| Trans-1,2-Dichloroethene | 156-60-5 | < 5 | 5 |
| Chloroform | 67-66-3 | < 5 | 5 |
| 1,2-Dichloroethane | 107-06-2 | < 5 | 5 |
| 2-Butanone | 78-93-3 | <10 | 10 |
| 1,1,1-Trichloroethane | 71-55-6 | < 5 | 5 |
| Carbon Tetrachloride | 56-23-5 | < 5 | 5 |
| Vinyl Acetate | 108-05-4 | <10 | 10 |
| Bromodichloromethane | 75-27-4 | < 5 | 5 |
| 1,2-Dichloropropane | 78-87-5 | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 9102276-2

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|----------------------------|------------|--------------------------|-------------------------------|
| Trans-1, 3-Dichloropropene | 10061-02-6 | < 5 | 5 |
| Trichloroethene | 79-01-6 | < 5 | 5 |
| Dibromochloromethane | 124-48-1 | < 5 | 5 |
| 1,1,2-Trichloroethane | 79-00-5 | < 5 | 5 |
| Benzene | 71-43-2 | < 5 | 5 |
| cis-1,3-Dichloropropene | 10061-01-5 | < 5 | 5 |
| 2-Chloroethylvinylether | 110-75-8 | <10 | 10 |
| Bromoform | 75-25-2 | < 5 | 5 |
| 4-Methyl-2-Pentanone | 108-10-1 | <10 | 10 |
| 2-Hexanone | 591-78-6 | <10 | 10 |
| Tetrachloroethene | 127-18-4 | < 5 | 5 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | < 5 | 5 |
| Toluene | 108-88-3 | < 5 | 5 |
| Chlorobenzene | 108-90-7 | < 5 | 5 |
| Ethylbenzene | 100-41-4 | < 5 | 5 |
| Styrene | 100-42-5 | < 5 | 5 |
| Total Xylenes | | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
 Verified: B. Keller
 Date Verified: March 4, 1991

Respectfully submitted,

Donna S. Spiker
 Environmental/Analytical Testing Division

Client: City of South Bend
Client Address: City County Building
South Bend, IN 46601

Client Project Number: 21-17061
Client Sample Identification: HA-3
Sample Matrix: Soil
Date Sample Collected: February 22, 1991
Date Sample Received: February 22, 1991
Date Sample Analyzed: March 1, 1991
Analytical Equipment: 1020B

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

ATEC Lab No. 9102276-3D

1 of 2

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|--------------------------|------------|-----------------------|----------------------------|
| Chloromethane | 74-87-3 | <10 | 10 |
| Bromomethane | 74-83-9 | <10 | 10 |
| Vinyl Chloride | 75-01-4 | <10 | 10 |
| Chloroethane | 75-00-3 | <10 | 10 |
| Methylene Chloride | 75-09-2 | < 5* | 5 |
| Acetone | 67-64-1 | <10 | 10 |
| Carbon Disulfide | 75-15-0 | < 5 | 5 |
| 1,1-Dichloroethene | 75-35-4 | < 5 | 5 |
| 1,1-Dichloroethane | 75-35-3 | < 5 | 5 |
| Trans-1,2-Dichloroethene | 156-60-5 | < 5 | 5 |
| Chloroform | 67-66-3 | < 5 | 5 |
| 1,2-Dichloroethane | 107-06-2 | < 5 | 5 |
| 2-Butanone | 78-93-3 | <10 | 10 |
| 1,1,1-Trichloroethane | 71-55-6 | < 5 | 5 |
| Carbon Tetrachloride | 56-23-5 | < 5 | 5 |
| Vinyl Acetate | 108-05-4 | <10 | 10 |
| Bromodichloromethane | 75-27-4 | < 5 | 5 |
| 1,2-Dichloropropane | 78-87-5 | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 9102276-3D

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|----------------------------|------------|--------------------------|-------------------------------|
| Trans-1, 3-Dichloropropene | 10061-02-6 | < 5 | 5 |
| Trichloroethene | 79-01-6 | < 5 | 5 |
| Dibromochloromethane | 124-48-1 | < 5 | 5 |
| 1,1,2-Trichloroethane | 79-00-5 | < 5 | 5 |
| Benzene | 71-43-2 | < 5 | 5 |
| cis-1,3-Dichloropropene | 10061-01-5 | < 5 | 5 |
| 2-Chloroethylvinylether | 110-75-8 | <10 | 10 |
| Bromoform | 75-25-2 | < 5 | 5 |
| 4-Methyl-2-Pentanone | 108-10-1 | <10 | 10 |
| 2-Hexanone | 591-78-6 | <10 | 10 |
| Tetrachloroethene | 127-18-4 | < 5 | 5 |
| 1,1,1,2-Tetrachloroethane | 79-34-5 | < 5 | 5 |
| Toluene | 108-88-3 | < 5 | 5 |
| Chlorobenzene | 108-90-7 | < 5 | 5 |
| Ethylbenzene | 100-41-4 | < 5 | 5 |
| Styrene | 100-42-5 | < 5 | 5 |
| Total Xylenes | | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
 Verified: B. Keller
 Date Verified: March 4, 1991

Respectfully submitted,

Donna S. Spitzer
 Environmental/Analytical Testing Division

Client: City of South Bend
Client Address: City County Building
South Bend, IN 46601

Client Project Number: 21-17061
Client Sample Identification: HA-4
Sample Matrix: Soil
Date Sample Collected: February 22, 1991
Date Sample Received: February 22, 1991
Date Sample Analyzed: March 1, 1991
Analytical Equipment: 1020B

VOLATILE COMPOUNDS
ANALYTICAL RESULTS

1 of 2

ATEC Lab No. 9102276-4

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|--------------------------|------------|-----------------------|----------------------------|
| Chloromethane | 74-87-3 | <10 | 10 |
| Bromomethane | 74-83-9 | <10 | 10 |
| Vinyl Chloride | 75-01-4 | <10 | 10 |
| Chloroethane | 75-00-3 | <10 | 10 |
| Methylene Chloride | 75-09-2 | < 5* | 5 |
| Acetone | 67-64-1 | <10* | 10 |
| Carbon Disulfide | 75-15-0 | < 5 | 5 |
| 1,1-Dichloroethene | 75-35-4 | < 5 | 5 |
| 1,1-Dichloroethane | 75-35-3 | < 5 | 5 |
| Trans-1,2-Dichloroethene | 156-60-5 | < 5 | 5 |
| Chloroform | 67-66-3 | < 5 | 5 |
| 1,2-Dichloroethane | 107-06-2 | < 5 | 5 |
| 2-Butanone | 78-93-3 | <10 | 10 |
| 1,1,1-Trichloroethane | 71-55-6 | < 5 | 5 |
| Carbon Tetrachloride | 56-23-5 | < 5 | 5 |
| Vinyl Acetate | 108-05-4 | <10 | 10 |
| Bromodichloromethane | 75-27-4 | < 5 | 5 |
| 1,2-Dichloropropane | 78-87-5 | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

ANALYTICAL RESULTS

ATEC Lab No. 9102276-4

| Analyte | CAS Number | Concentration (ug/kg) | Quantitation Limit (ug/kg) |
|----------------------------|------------|-----------------------|----------------------------|
| Trans-1, 3-Dichloropropene | 10061-02-6 | < 5 | 5 |
| Trichloroethene | 79-01-6 | < 5 | 5 |
| Dibromochloromethane | 124-48-1 | < 5 | 5 |
| 1,1,2-Trichloroethane | 79-00-5 | < 5 | 5 |
| Benzene | 71-43-2 | < 5 | 5 |
| cis-1,3-Dichloropropene | 10061-01-5 | < 5 | 5 |
| 2-Chloroethylvinylether | 110-75-8 | <10 | 10 |
| Bromoform | 75-25-2 | < 5 | 5 |
| 4-Methyl-2-Pentanone | 108-10-1 | <10 | 10 |
| 2-Hexanone | 591-78-6 | <10 | 10 |
| Tetrachloroethene | 127-18-4 | < 5 | 5 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | < 5 | 5 |
| Toluene | 108-88-3 | < 5 | 5 |
| Chlorobenzene | 108-90-7 | < 5 | 5 |
| Ethylbenzene | 100-41-4 | < 5 | 5 |
| Styrene | 100-42-5 | < 5 | 5 |
| Total Xylenes | | < 5 | 5 |

* Analyte detected but amount present is less than the Quantitation Limit.

Analytical Method: SW 846 Method 8240

Analyst: M. McGill
 Verified: B. Keller
 Date Verified: March 4, 1991

Respectfully submitted,

Donna S. Jayke
 Environmental/Analytical Testing Division

ATEC Environmental Consultants

Division of ATEC Associates, Inc.
 5150 East 65th Street
 Indianapolis, Indiana 46220-4871
 (317) 849-4990, FAX # (317) 849-4278

CHAIN OF CUSTODY RECORD

LABORATORY ANALYSIS

LAB PROJ. NO. 9102226

PROJECT NAME: SOIL SAMPLING & TESTING

CLIENT: DEPARTMENT OF ECONOMIC DEVELOPMENT, South Bend

SAMPLERS: (Signature) *D. Ben Chandler, Jr.*

SAMPLING METHOD: HAND AUGER

| SAMPLE I.D. NO. | DATE | TIME | SAMPLING METHOD | | COMPOSITE | GRAB | WATER | SOIL | FILTERED | ACIDIFIED | ICED | NUMBER OF CONTAINERS | LAB I.D. NUMBER | VOLATILE ORGANICS | BTX & E | TOTAL HYDROCARBONS | PCBS | TOTAL METALS (6) | SAMPLE LOCATION / REMARKS | |
|--------------------|---------|------|-----------------|--|-----------|------|-------|------|----------|-----------|------|----------------------|-----------------|-------------------|---------|--------------------|------|------------------|---------------------------|--|
| | | | | | | | | | | | | | | | | | | | | |
| HA-1 (0.5-1.0') | 2/22/91 | | | | | ✓ | ✓ | ✓ | | | ✓ | 1 | 1 | ✓ | | | | | | |
| HA-2 (0.5-1.0') | 2/22/91 | | | | | ✓ | ✓ | ✓ | | | ✓ | 1 | 2 | ✓ | | | | | | |
| HA-3 (0.5-1.0') | 2/22/91 | | | | | ✓ | ✓ | ✓ | | | ✓ | 1 | 3 | ✓ | | | | | | |
| HA-4 (0.5-1.0') | 2/22/91 | | | | | ✓ | ✓ | ✓ | | | ✓ | 1 | 4 | ✓ | | | | | | |

| | | | |
|---|-----------------------------|---|-----------------------------|
| Relinquished by: (Signature) <i>D. Ben Chandler, Jr.</i> | Date / Time 2/22/91 5:10 | Received by: (Signature) | Date / Time |
| Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) <i>D. Anderson</i> | Date / Time |
| Relinquished by: (Signature) | Date / Time | Project Manager / Phone #: | Date / Time 2/23/91 5:10 |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Date / Time |