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TECHNICAL MEMORANDA
PRE-DESIGN ACTIVITIES
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

TECHNICAL MEMORANDUM NO. 1 - ACCESS AGREEMENTS

TECHNICAL MEMORANDUM NO. 2 - BOUNDARY AND TOPOGRAPHICAL SURVEY

TECHNICAL MEMORANDUM NO. 3 - INVESTIGATION OF MAGNETIC ANOMALIES, BURIED TANKS AND SEDIMENTS

TECHNICAL MEMORANDUM NO. 4 - GROUNDWATER AND SURFACE WATER CHARACTERIZATION

TECHNICAL MEMORANDUM NO. 5 - CHARACTERIZATION OF THE TIPPLE WELL

TECHNICAL MEMORANDUM NO. 6 - UPPER SHARON AQUIFER CHARACTERIZATION

TECHNICAL MEMORANDUM NO. 7 - BEDROCK PROFILING

TECHNICAL MEMORANDUM NO. 8 - GROUNDWATER TREATABILITY STUDY

TECHNICAL MEMORANDA
PRE-DESIGN ACTIVITIES
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DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

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TECHNICAL MEMORANDUM NO. 8 - GROUNDWATER TREATABILITY STUDY

DECEMBER 1991

CONESTOGA-ROVERS & ASSOCIATES

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

December 19, 1991

Reference No. 2372

Mr. Anthony Rutter
Director, Waste Management Division
Remedial Project Manager
U.S. Environmental Protection Agency
230 S. Dearborn Street
Chicago, Illinois
U.S.A. 60604

Mr. Regan S. Williams
State Project Coordinator
Ohio EPA - Division of
Emergency & Remedial Response
2110 East Aurora Road
Twinsburg, Ohio
U.S.A. 44087

Gentlemen:

Re: Technical Memoranda
Summit National Superfund Site
Deerfield Township of Portage County, Ohio

On behalf of the Summit National Facility Trust, enclosed please find three copies of each of the following:

i) Technical Memorandum No. 1 - Access Agreements;

ii) Technical Memorandum No. 2 - Boundary and Topographical Survey;

iii) Technical Memorandum No. 3 - Investigation of Magnetic Anomalies, Buried Tanks and Sediments;

iv) Technical Memorandum No. 4 - Groundwater and Surface Water Characterization;

v) Technical Memorandum No. 5 - Characterization of the Tipple Well;

vi) Technical Memorandum No. 6 - Upper Sharon Aquifer Characterization;

vii) Technical Memorandum No. 7 - Bedrock Profiling;

viii) Technical Memorandum No. 8 - Groundwater Treatability Study;

Pursuant to Section 4.0 of the Remedial Design Work Plan, these eight Technical Memoranda fulfill all pre-design activities required at the Summit National Superfund Site. The Technical Memoranda are being submitted to the United States Environmental Protection Agency (USEPA) and the Ohio Environmental

Protection Agency (OEPA) pursuant to Section 6.5 of the Remedial Design Work Plan.

As stated in Section 5.4 of the Remedial Design Work Plan, the results of the pre-design activities are to be reflected in the design effort at the 30 percent completion stage. Since Conestoga-Rovers & Associates actively is working on the preliminary design submital, timely comments, if any, on the Technical Memoranda would significantly expedite the completion of the 30 percent design submittal.

Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Jack Michels

Jack Michels, P. Eng.

JM/ec/14
Encl.

c.c.: Peter Felitti - USEPA Regional Counsel (1 copy)
Assistant Attorney General, Land and Natural Resources Division, US Department of Justice (1 copy)
Richard McAvoy - Black & Veatch Waste Science Technology, Inc. (1 copy)
Supervisor, Office of Corrective Action, Director, State, Ohio Environmental Protection Agency (1 copy)
Christopher Korleski, Attorney General, State of Ohio (1 copy)
William Falsgraf, Esq. (1 copy)
Thomas T. Terp, Esq. (1 copy)
Gary W. Gifford (1 copy)
Patrick S. Steerman (1 copy)
Kenneth A. Walanski (1 copy)
Douglas G. Haynam (1 copy)
Rick Shepherd (1 copy)
Jack Michels (1 copy)

SECTION 1

TECHNICAL MEMORANDUM NO. 1

ACCESS AGREEMENTS

APPEND A
Access Agreement

GD

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 1

ACCESS AGREEMENTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

In accordance with the provisions of Paragraph X of the Consent Decree for the Summit National Superfund Site (Site), Deerfield Township of Portage County, Ohio, the Summit National Facility Trust (SNFT) has obtained on- and off-Site access agreements required to implement the pre-design and design activities detailed in the Remedial Design Work Plan for the Site. A summary of the access agreements obtained is presented on the attached Figure TM1-1, and copies of the signed access agreements are included as Attachment TM1-1.

Additional off-Site access agreements required for implementation of the Remedial Action for the Site will be pursued following approval of the preliminary design submittal (30 percent complete).

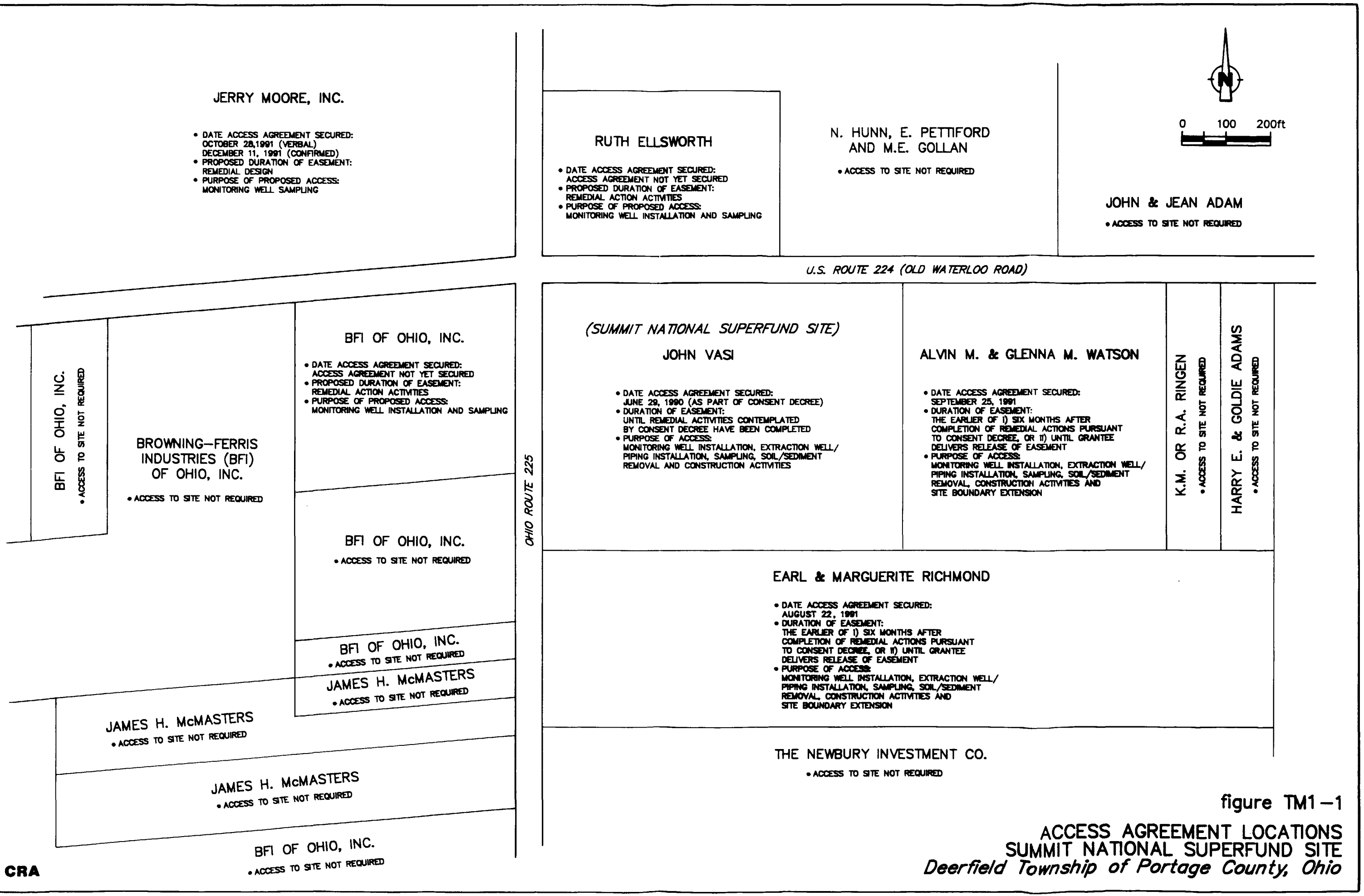

figure TM1–1

ACCESS AGREEMENT LOCATIONS
SUMMIT NATIONAL SUPERFUND SITE
Deerfield Township of Portage County, Ohio

2372(L)–DEC.13/91–REV.0

ATTACHMENT TM1-1

ACCESS AGREEMENTS

REMEDIAL DESIGN/REMEDIAL ACTION

SUMMIT NATIONAL SUPERFUND SITE

DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

- ALVIN M. & GLENNA M. WATSON
- EARL & MARGUERITE RICHMOND
- JERRY MOORE, INC.

ACCESS EASEMENT

THIS ACCESS EASEMENT is made and entered into this 25th day of September, 1991, by and between Alvin M. and Glenna M. Watson (hereinafter called "Grantor"), and the Summit National Facility Trust Fund (hereinafter called "Grantee").

W I T N E S S E T H:

WHEREAS, Grantee has obtained access rights to certain real property located in Deerfield Township, Portage County, Ohio known as the Summit National Facility and legally described on Exhibit A attached hereto (the "Site"); and

WHEREAS, pursuant to the terms and conditions of a certain Consent Decree entered on June 11, 1991 with the United States District Court for the Northern District of Ohio in United States of America v. Vasi and State of Ohio v. Georgeoff, Civil Action No. C81-1961 (the "Consent Decree"), the Settling Defendants (as defined in the Consent Decree) agreed to undertake certain remedial response actions at the Site; and

WHEREAS, Grantor is the owner of certain real property contiguous to the Site outlined in yellow on Exhibit B attached hereto and legally described on Exhibit C attached hereto (the "Property"); and

WHEREAS, Grantor will benefit from the remedial response actions to be undertaken at the Site on behalf of Settling Defendants and therefore desires to grant Grantee an easement in the Property upon terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the following grants, agreements, covenants and restrictions are made:

1. Grant of Easement. For and in consideration of Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by Grantor, Grantor hereby grants to Grantee, the Settling Defendants, the Ohio Environmental Protection Agency, the United States of America, including the United States Environmental Protection Agency, and the successors, agents, employees and contractors of each of the foregoing, an easement in, through, over, under, upon and across the Property for the purposes of uninterrupted access at all times to the Property for effectuating, conducting and overseeing any and all maintenance activities or response actions required pursuant to the aforementioned Consent Decree, including remedial design or remedial action work described in the Scope of Work attached thereto, and for purposes of determining compliance with any provisions of such Consent Decree and any attachments thereto. Without limitation, the Grantor agrees that all of the aforementioned persons may enter upon and shall have access to the Property for the purpose of conducting activities related to the Consent Decree and Statement of Work, including, but not limited to:

a. Monitoring the work or any other activities taking place at the Site or on the Property pursuant to the Consent Decree or any attachments thereto, including work performed by or on behalf of Settling Defendants;

b. Verifying any data or information submitted to the United States or the State of Ohio pursuant to the Consent Decree or any attachments thereto, including information submitted by other Settling Defendants;

c. Conducting investigations relating to contamination at or near the Site;

d. Conducting environmental tests and studies, including, without limitation, drilling test wells, monitoring wells and taking core samples;

e. Obtaining samples;

f. Assessing the need for, planning, or implementing additional response actions at or near the Site;

g. Removing the residence located on the western boundary of the Property and debris therefrom;

h. Excavating certain surface soils;

i. Implementing any other remedial action necessary or desirable under the terms of the Consent Decree

j. Assessing Settling Defendants' compliance with the terms and provisions of the Consent Decree.

2. Property Damage. With the exception of the removal of the house (and improvements attached thereto) from the Property, any and all other physical damage to improvements or other property of Grantor caused by Grantee, its employees, agents, contractors, licensees and invitees shall be repaired at the sole expense of Grantee, its successors and assigns.

3. Indemnity. Grantee, by its execution hereof, covenants and agrees to save and keep harmless and indemnify Grantor from and against any and all liabilities, losses, damages, demands, costs and expenses arising out of or in connection with any accident, injury, damage, or death, which arises directly out of the use of the Property by Grantee, its successors and assigns, or anyone claiming a right to use the Property by or through Grantee.

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4. **Duration of Easement**. This easement granted hereby shall continue in full force and effect until the earlier of (a) six (6) months after the final completion of all remedial actions required to be undertaken pursuant to the Consent Decree, as amended from time to time, or any subsequent order or ruling affecting the remedial actions undertaken by the Settling Defendants at the Site, or (b) Grantee delivers to Grantor a written release of the easement granted hereunder.

5. **Effect of Easement**. All covenants herein contained shall run with the land and shall inure to the benefit of, and be binding upon, the successors and assigns of the parties hereto.

6. **Recording**. This Access Easement shall be executed in recordable form and either party shall have the right to record, at its expense, this Access Easement with the Recorder of Portage County, Ohio.

7. **Modification**. Any modification of this Access Easement shall be binding only if evidenced in writing signed by each party or an authorized representative of each party.

8. **Entire Agreement**. This Access Easement shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Access Easement shall not be binding upon either party except to the extent specifically incorporated into this Access Easement.

9. **Governing Law**. It is agreed that this Access Easement shall be governed by, construed, and enforced in accordance with the laws of the State of Ohio.

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IN WITNESS WHEREOF, the parties hereto have caused this Access Easement to be executed on the day and year first written above.

Signed and acknowledged
in the presence of:

David W. Watson
(As to both)

Martin D. Carrigan
(As to both)

GRANTOR:

Alvin M. Watson
Alvin M. Watson

Glenna M. Watson
Glenna M. Watson

Signed and acknowledged
in the presence of:

Douglas G. Hayman

J. C. Wyant
(As to Gary W. Gifford)

Douglas G. Hayman

J. C. Wyant
(As to Patrick S. Steerman)

GRANTEE:

SUMMIT NATIONAL FACILITY TRUST FUND

By: Gary W. Gifford
Trustee - Gary W. Gifford

By: Patrick S. Steerman
Trustee - Patrick S. Steerman

STATE OF OHIO)
) SS:
COUNTY OF PORTAGE)

BEFORE ME, a Notary Public in and for said County, personally appeared Alvin M. Watson and Glenna M. Watson, who acknowledged that they did sign said instrument and that said instrument is their voluntary act and deed for the uses and purposes therein expressed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal as of this 25th day of September 1991.

11337
RECEIVED FOR RECORD
Oct 9 1991
At 10:08 O'clock am
Recorded Oct 10, 1991
In Portage County Records
Of Deeds
Vol. 1116 Page 456-463
HELEN M. FREDERICK
PORTAGE COUNTY RECORDER
Fee 22.00

INDEXED

Martin D. Carrigan
Notary Public

MARTIN D. CARRIGAN
ATTORNEY-AT-LAW
NOTARY PUBLIC - STATE OF OHIO
MY COMMISSION HAS NO EXPIRATION DATE

VOL 1116 PAGE 459

STATE OF ILLINOIS)
) SS:
COUNTY OF Cook)

BEFORE ME, a Notary Public in and for said County, personally appeared Gary W. Gifford, Trustee of the Summit National Facility Trust Fund, who acknowledged that he did sign said instrument as such Trustee of said Trust on behalf of said Trust; and that said instrument is the voluntary act and deed of said Gary W. Gifford as such Trustee, and the voluntary act and deed of said Trust for the uses and purposes therein expressed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal as of this 7th day of October 1991.

" OFFICIAL SEAL "
Noma J. O'Brien
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 5/21/94

Noma J. O'Brien
Notary Public

STATE OF ILLINOIS)
) SS:
COUNTY OF Cook)

BEFORE ME, a Notary Public in and for said County, personally appeared Patrick S. Steerman, Trustee of the Summit National Facility Trust Fund, who acknowledged that he did sign said instrument as such Trustee of said Trust on behalf of said Trust; and that said instrument is the voluntary act and deed of said Patrick S. Steerman as such Trustee, and the voluntary act and deed of said Trust for the uses and purposes therein expressed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal as of this 7th day of October 1991.

Noma J. O'Brien
Notary Public

" OFFICIAL SEAL "
Noma J. O'Brien
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 5/21/94

This Instrument Prepared By:
David R. Bainbridge, Esq.
Fuller & Henry
One SeaGate, 17th Floor
P. O. Box 2088
Toledo, Ohio 43603-2088
After recording, please return to above.
summit:watson.ess:8/12/91

VOL 1116 PAGE 460

EXHIBIT A

METES AND BOUNDS OF VASI PROPERTY

Known as being part of Lot #56 in Deerfield Township and bounded and described as follows: Beginning at the northwest corner of Lot #56; thence S. 89 deg. 25' East along the north line of said lot #56, a distance of 811.85 feet, and along the center line of U.S. 224; thence south 0 deg. 52" West 600 feet to an iron pipe and passing over an iron pipe set at 30 feet at the side of the highway; thence N. 89 deg. 25'West 811.85 feet to the west line of Lot #56, and the center line of S.R. 225, and passing over an iron pipe set at 30 feet at the side of highway; thence N 52' East along the west line of said Lot 56, 600 feet to the place o beginning and containing 11.18 acres of land, more or less.

VOL 1110 PAGE 401

EXHIBIT B

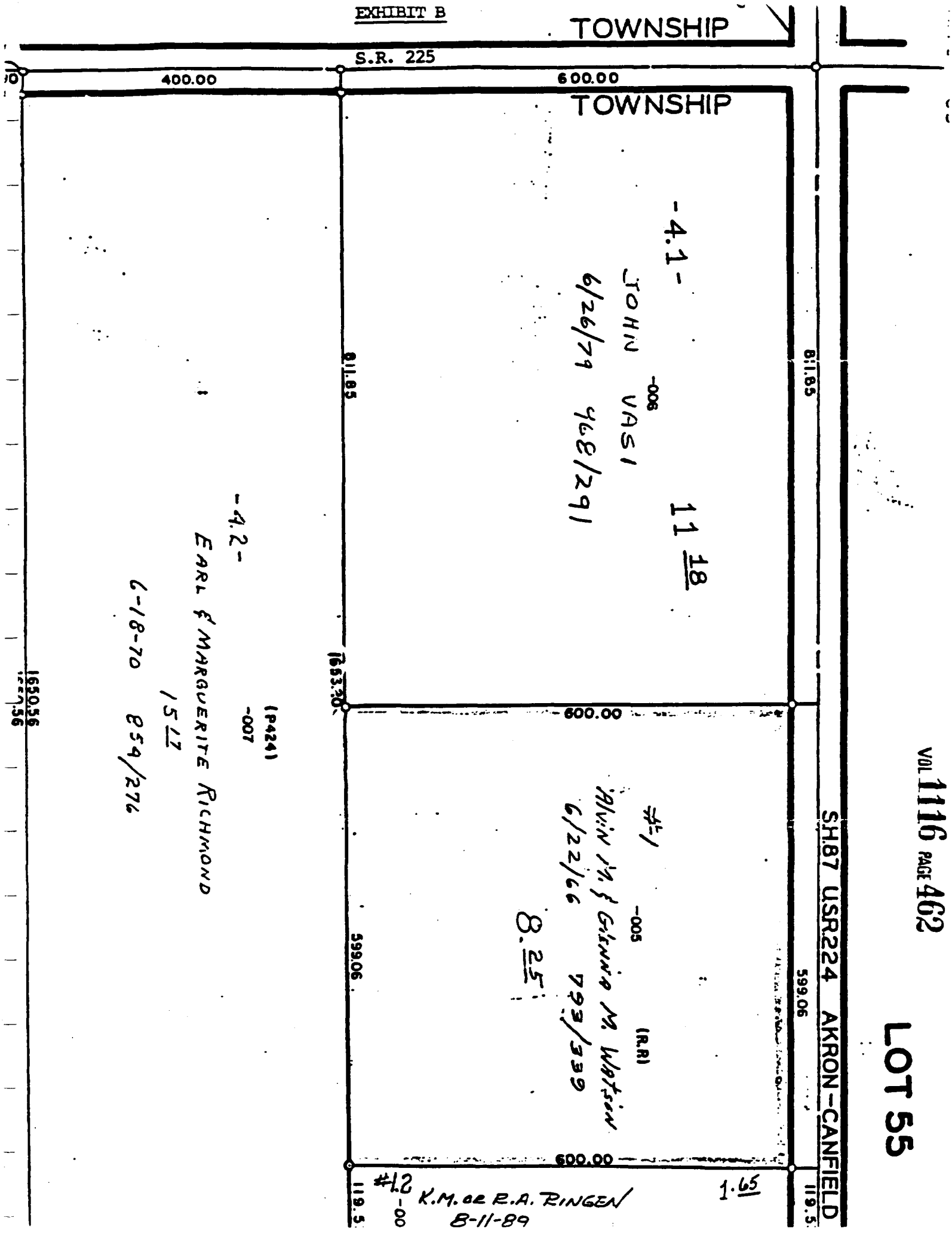

TOWNSHIP
S.R. 225
400.00
600.00
TOWNSHIP
-4.1-
JOHN VASI
-006
6/26/79 468/291
11 18
811.85
811.85
-4.2-
EARL & MARGUERITE RICHMOND
15 17
6-18-70 854/276
(P424)
-007
1650.56
1653.30
600.00
#1
Alvin M. & Glenna M. Watson
-005
6/22/66 793/339
8.25
(R.R)
599.06
599.06
600.00
#1.2
K.M. or R.A. RINGEN
8-11-89
1.65
119.5
119.5
S.H.87 U.S.R.224 AKRON-CANFIELD
LOT 55
VOL 1116 PAGE 462

EXHIBIT C

Situated in the Township of Deerfield, County of Portage and State of Ohio, and known as and being a part of Lot No. 56 in said Township described as follows:

> Beginning at a point on the North line of Lot No. 56, 811.85 feet South 89° 25' East from an iron bolt at the Northwest corner of said lot; thence South 89° 25' East 599.06 feet along lot line and center line of Highway to a point; thence South 0° 52' West 600 feet to an iron pipe and passing over an iron pipe set 30 feet at side of Highway; thence North 89° 25' West 599.06 feet to an iron pipe; thence North 0° 52' East 600 feet to the place of beginning and passing over an iron pipe set 30 feet at side of Highway and containing 8.251 acres of land, as surveyed May, 1966, by Terrence R. Hohnhorst, Registered Surveyor No. 5065.

ACCESS EASEMENT

THIS ACCESS EASEMENT is made and entered into this 22nd day of August, 1991, by and between Earl Richmond and Marguerite Richmond of 3764 Kibler Toot Road, Warren, Ohio 44481 (hereinafter called "Grantor"), and the Summit National Facility Trust Fund (hereinafter called "Grantee").

W I T N E S S E T H:

WHEREAS, Grantee has obtained access rights to certain real property located in Deerfield Township, Portage County, Ohio known as the Summit National Facility and legally described on Exhibit A attached hereto (the "Site"); and

WHEREAS, pursuant to the terms and conditions of a certain Consent Decree entered on June 11, 1991 with the United States District Court for the Northern District of Ohio in United States of America v. Vasi and State of Ohio v. Georgeoff, Civil Action No. C81-1961 (the "Consent Decree"), the Settling Defendants (as defined in the Consent Decree) agreed to undertake certain remedial response actions at the Site; and

WHEREAS, Grantor is the owner of certain real property contiguous to the Site outlined in yellow on Exhibit B attached hereto and legally described on Exhibit C attached hereto (the "Property"); and

WHEREAS, Grantor will benefit from the remedial response actions to be undertaken at the Site on behalf of the Settling Defendants and therefore desires to grant Grantee an easement in the Property upon the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the following grants, agreements, covenants and restrictions are made:

1. Grant of Easement. For and in consideration of Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by Grantor, Grantor hereby grants to Grantee, the Settling Defendants, the Ohio Environmental Protection Agency, the United States of America, including the United States Environmental Protection Agency, and the successors, agents, employees and contractors of each of the foregoing, an easement in, through, over, under, upon and across the Property for the purposes of uninterrupted access at all times to the Property for effectuating, conducting and overseeing any and all maintenance activities or response actions required pursuant to the aforementioned Consent Decree, including remedial design or remedial action work described in the Scope of Work attached thereto, and for purposes of determining compliance with any provisions of such Consent Decree and any attachments thereto. Without limitation, the Grantor agrees that all of the aforementioned persons may enter upon and shall have access to the Property for the purpose of conducting activities related to the Consent Decree and Statement of Work, including, but not limited to:

a. Monitoring the work or any other activities taking place at the Site or on the Property pursuant to the Consent Decree or any attachments thereto, including work performed by or on behalf of Settling Defendants;

b. Verifying any data or information submitted to the United States or the State of Ohio pursuant to the Consent Decree or any attachments thereto, including information submitted by other Settling Defendants;

c. Conducting investigations relating to contamination at or near the Site;

d. Conducting environmental tests and studies, including, without limitation, drilling test wells, monitoring wells and taking core samples;

e. Obtaining samples;

f. Assessing the need for, planning, or implementing additional response actions at or near the Site;

g. Removing the sediment from the base of the ditch and stream bed as shown on Exhibit D attached hereto;

h. Excavating certain surface soils;

i. Implementing any other remedial action necessary or desirable under the terms of the Consent Decree; or

j. Assessing Settling Defendants' compliance with the terms and provisions of the Consent Decree.

2. Property Damage. Any and all other physical damage to improvements or other property of Grantor caused directly by Grantee, its employees, agents, contractors, licensees and invitees shall be repaired at the sole expense of Grantee, its successors and assigns.

3. Indemnity. Grantee, by its execution hereof, covenants and agrees to save and keep harmless and indemnify Grantor from and against any and all liabilities, losses, damages, demands, costs and expenses arising out of or in connection with any accident, injury, damage, or death, which arises directly out of the use of the Property by Grantee, its successors and assigns, or anyone claiming a right to use the Property by or through Grantee.

4. **Duration of Easement**. This easement granted hereby shall continue in full force and effect until the earlier of (a) six (6) months after the final completion of all remedial actions required to be undertaken pursuant to the Consent Decree, as amended from time to time, or any subsequent order or ruling affecting the remedial actions undertaken by the Settling Defendants at the Site, or (b) Grantee delivers to Grantor a written release of the easement granted hereunder.

5. **Effect of Easement**. All covenants herein contained shall run with the land and shall inure to the benefit of, and be binding upon, the successors and assigns of the parties hereto.

6. **Recording**. This Access Easement shall be executed in recordable form and either party shall have the right to record, at its expense, this Access Easement with the Recorder of Portage County, Ohio.

7. **Modification**. Any modification of this Access Easement shall be binding only if evidenced in writing signed by each party or an authorized representative of each party.

8. **Entire Agreement**. This Access Easement shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Access Easement shall not be binding upon either party except to the extent specifically incorporated into this Access Easement.

9. **Governing Law**. It is agreed that this Access Easement shall be governed by, construed, and enforced in accordance with the laws of the State of Ohio.

IN WITNESS WHEREOF, the parties hereto have caused this Access Easement to be executed on the day and year first written above.

Signed and acknowledged
in the presence of:

(As to both)

(As to both)

GRANTOR:

Earl Richmond

Marguerite Richmond

Signed and acknowledged
in the presence of:

As to Gifford

As to Steerman

GRANTEE:

SUMMIT NATIONAL FACILITY TRUST FUND

By: Gary W. Gifford, Trustee

By: Patrick S. Steerman, Trustee

STATE OF OHIO)
) SS:
COUNTY OF TRUMBULL)

BEFORE ME, a Notary Public in and for said County, personally appeared Earl Richmond and Marguerite Richmond, who acknowledged that they did sign said instrument and that said instrument is their voluntary act and deed for the uses and purposes therein expressed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal as of this 22 day of August 1991.

Notary Public

NOTARIAL SEAL STATE OF OHIO

JOYCE A. CALVERT
Notary Public State of Ohio
My Commission Expires May 28, 2006

STATE OF OHIO)
) SS:
COUNTY OF SUMMIT)

BEFORE ME, a Notary Public in and for said County, personally appeared Gary W. Gifford, Trustee of the Summit National Facility Trust Fund, who acknowledged that he did sign said instrument as such Trustee of said Trust on behalf of said Trust; and that said instrument is the voluntary act and deed of said Gary W. Gifford as such Trustee, and the voluntary act and deed of said Trust for the uses and purposes therein expressed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal as of this 4th day of ~~August~~ September 1991.

Notary Public

LINDA A. FLEMING, Notary Public
Residence - Summit County
State Wide Jurisdiction, Ohio
My Commission Expires March

STATE OF TEXAS)
) SS:
COUNTY OF HARRIS)

BEFORE ME, a Notary Public in and for said County, personally appeared Patrick S. Steerman, Trustee of the Summit National Facility Trust Fund, who acknowledged that he did sign said instrument as such Trustee of said Trust on behalf of said Trust; and that said instrument is the voluntary act and deed of said Patrick S. Steerman as such Trustee, and the voluntary act and deed of said Trust for the uses and purposes therein expressed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal as of this 3rd day of ~~August 1991.~~ September, 1991

Notary Public

KATHLEEN POLOSKEY
Notary Public, State of Texas
My Commission Expires Dec. 21, 1991

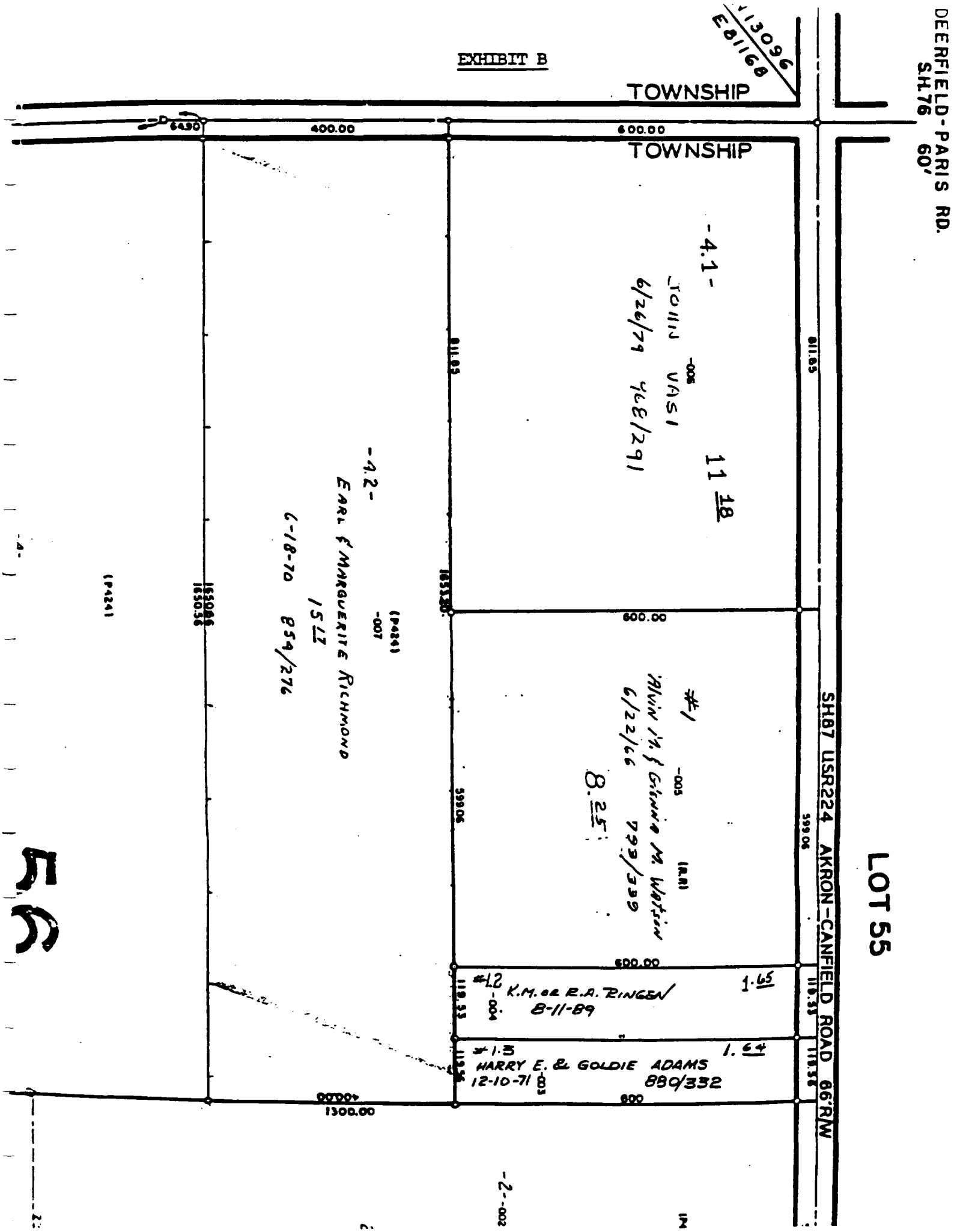
This Instrument Prepared By:
David R. Bainbridge, Esq.
Fuller & Henry
One SeaGate, 17th Floor
P. O. Box 2088
Toledo, Ohio 43603-2088
After recording, please return to above.

summit:richmond.ouc:8/21/91

METES AND BOUNDS OF VASI PROPERTY

Known as being part of Lot #56 in Deerfield Township and bounde and described as follows: Beginning at the northwest corner f Lot #56; thence S. 89 deg. 25' East along the north line of s lot #56, a distance of 811.85 feet, and along the center line o U.S. 224; thence south 0 deg. 52" West 600 feet to an iron pi and passing over an iron pipe set at 30 feet at the side of t highway; thence N. 89 deg. 25'West 811.85 feet to the west line of Lot #56, and the center line of S.R. 225, and passing over a iron pipe set at 30 feet at the side of highway; thence N 52' East along the west line of said Lot 56, 600 feet to the place beginning and containing 11.18 acres of land, more or less.

EXHIBIT B



DEERFIELD-PARIS RD.
S.H.76 60'
TOWNSHIP
TOWNSHIP
113096
E81168
64.90
400.00
600.00
-4.1-
JOHN VASI
6/26/79 968/291
11 18
-4.2-
EARL & MARGUERITE RICHMOND
15 17
6-18-70 859/276
(P424)
-007
(P424)
1650.56
1650.56
811.85
811.85
600.00
#1
Alvin M. & Glenna M. Watson
6/22/66 793/339
8.25
-005
(R.R)
599.06
599.06
600.00
#1.2
K.M. or R.A. RINGEN
8-11-89
-004
1.65
119.53
119.53
#1.3
HARRY E. & GOLDIE ADAMS
12-10-71
-003
880/332
1.64
119.56
119.56
1300.00
600
SH.87 USR224 AKRON-CANFIELD ROAD 66'R/W
LOT 55
-2-

EXHIBIT C

LEGAL DESCRIPTION

Located in Lot 56, Deerfield Township, Portage County, Ohio, and being further described as follows:

Beginning at an iron spike at the S. W. corner of Lot 56 on the centerline of S.R. 225 (Alliance-Yale Road) at Station 107 + 76.10 on the latest Ohio Dept. of Highways Plans:

Thence North, a distance of 1688.80 feet along said centerline, which is also the west line of Lot 56 and the west line of Deerfield Township, to an iron spike which is the true place of beginning;

Thence continuing North, a distance of 400.00 feet along said centerline to an iron spike at the S.W. corner of a parcel owned by the Ohio and Penn. Fuels, Inc;

Thence N 89° 57' E, a distance of 1653.20 feet along the south line of said parcel mentioned above as well as the south line of A & G Watson and the A & B Land Dev Co lands to an iron pipe found on the west line of T & I Hohnhorst, 704/301;

Thence S 0° 22' 40" W, a distance of 400.00 feet along said west line to an iron pipe;

Thence S 89° 57' W, a distance of 1650.56 feet to an iron spike on the centerline of S.R. 225 which is the true place of beginning and containing 15.168 Acres as surveyed by Terrence R. Hohnhorst, Registered Surveyor, Number 5065 in May of 1970.

Being a part of the premises found in Vol. 365 at page 481 of the Portage County Records.

EXHIBIT D

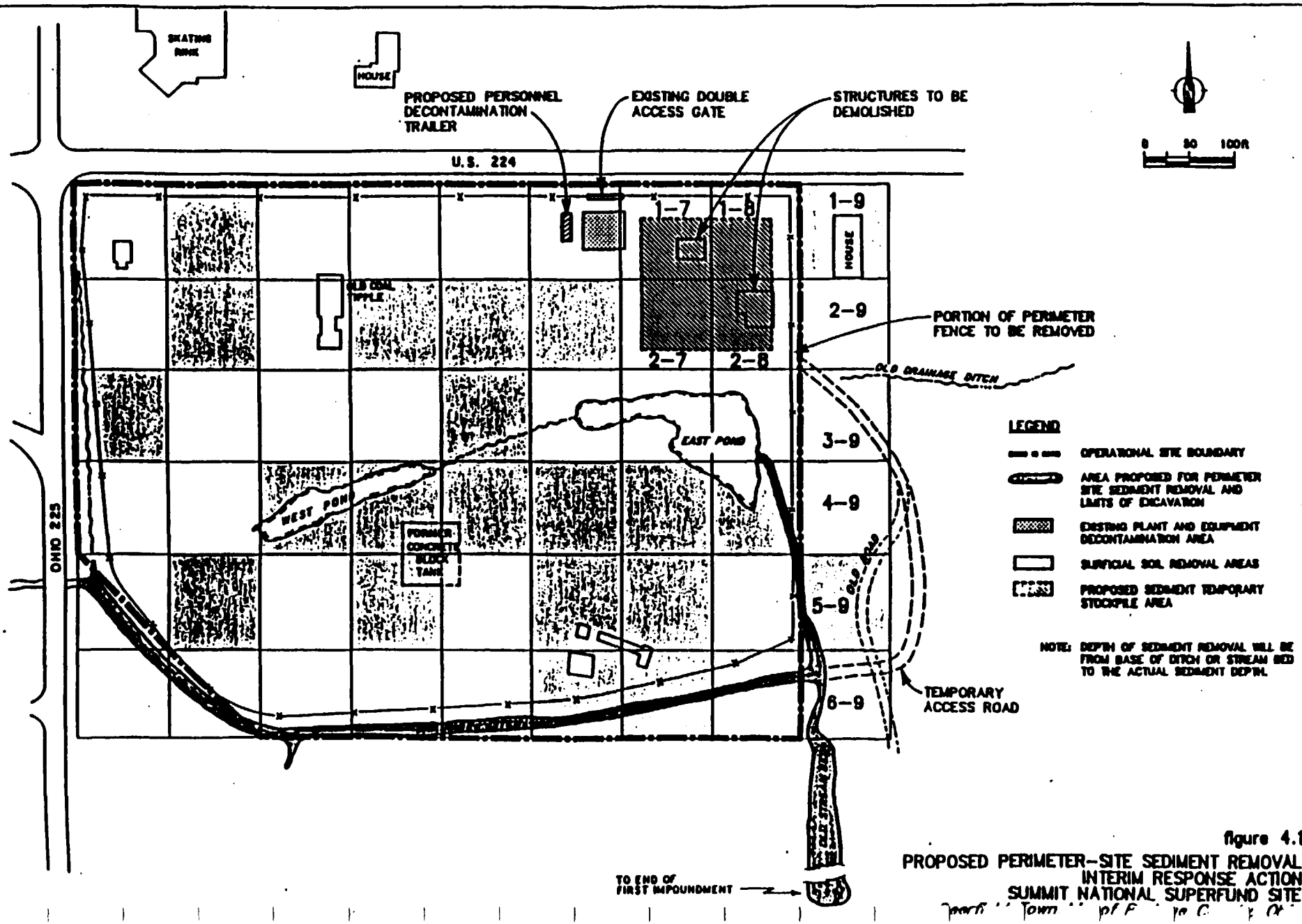


figure 4.1

PROPOSED PERIMETER-SITE SEDIMENT REMOVAL
INTERIM RESPONSE ACTION
SUMMIT NATIONAL SUPERFUND SITE

FULLER & HENRY

ATTORNEYS AT LAW

DONALD M. HAWKINS
THOMAS L. DALRYMPLE
JOHN F. McCARTHY
CHARLES R. LEECH, JR.
ALAN C. BOYD
RAYMOND G. ESCH
JAMES M. MORTON, JR.
JOHN W. HILBERT, II
LOUIS E. TOSI
STEPHEN J. STANFORD
RAY A. FARRIS
THOMAS M. GEORGE

FRED E. FULLER (1901-1981)
LESLIE HENRY (1904-1976)

*ALSO ADMITTED IN MICHIGAN

CRAIG J. VAN HORSTEN
STEPHEN B. MOSIER
THOMAS S. ZAREMBA
JAMES W. BAEHREN
WILLIAM L. PATBERG
JOHN J. SICILIANO
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NICHOLAS A. IAROCCI
SUSAN A. SLAVIERO
MICHELLE M. MORGAN

JAMES S. DETLING
MICHAEL J. O'CALLAGHAN
JOSEPH S. SIMPSON
SCOTT G. DELLER
JAMES B. YATES
TRAVIS W. BRANT
KURT J. LINDOWER
BARBARA KAYE MILLER
PATRICK J. SACCOGNA
JEFFREY A. DEHNER
M. CHERIE VERRELL
EDWARD P. BENCHIK
TRACY L. TAYLOR
NIRAV D. PARIKH

WRITER'S DIRECT DIAL NUMBER

(419) 247-2532

October 29, 1991

Jerry Moore, Inc.
1010 Sunnyside Street
Hartville, Ohio 44632
Attn: Mr. Dick Shultz

Re: Access Easement

Dear Mr. Shultz:

As we discussed, the Summit National Facility Trust Fund ("Trust Fund") has begun the remediation work to be undertaken at the Summit National Facility Site located at the intersection of U.S. 224 and S.R. 225 in Deerfield Township, Ohio. As part of the work to be undertaken, certain groundwater testing will be required.

By letter dated October 16, 1991, I wrote Jerry Moore, Inc. (the "Company") and requested that the Company grant an access easement with respect to the property described on Exhibit A attached hereto (the "Property") to the Trust Fund for purposes of implementing the remediation work required by the Consent Decree. Our engineers have advised me that no remediation work is currently contemplated to be required on the Property, with the exception of taking groundwater samples from the current monitoring wells already located on the Property.

In our telephone conference, you indicated that the Company would allow the Trust Fund access to the Property for the purposes of taking groundwater samples from the existing monitoring wells. Therefore, to confirm our telephone conference, we request you acknowledge the Company's agreement to grant the Trust Fund, its engineers and agents access to the Property for the limited purpose of taking the necessary groundwater samples from the existing wells. No other work will be undertaken on the Property without the prior consent of the Company.

If this letter accurately characterizes our conference, please sign the enclosed copy of this letter and return it directly to the undersigned.

Should you have any questions, please do not hesitate to call me. Thank you for your cooperation in this matter.

Very truly yours,

David R. Bainbridge

David R. Bainbridge

DRB:ahb
Encl.
6296-1

Agreed to this 11 day
of ~~November~~ December, 1991.

JERRY MOORE, INC.

By: Richard J. Schultz VP

EXHIBIT A

LEGAL DESCRIPTION

Situated in the Township of Atwater, County of Portage and State of Ohio:

And known as and being located in Lot No. 5 said Township and being further described as follows:

Beginning at a railroad spike at the intersection of the North line of U. S. Route 224 (Akron-Canfield Road) and the East line of Lot No. 5 which is the center line of State Route 225 and the East line of Atwater Township, said point bears North 0° 01' 40" East a distance of 487.97 feet from the Southeast corner of Lot 5, and is the true place of beginning; thence South 83° 58' West a distance of 1483.05 feet along the North line of U. S. Route 224 to an iron pipe on the West line of Lot 5; thence North 0° 4' 45" East a distance of 1300.00 feet along the West line of Lot 5 to an iron pipe; thence North 87° 50' East a distance of 1475.04 feet to an iron pipe on the center line of State Route 225, passing over an iron pipe 30.02 feet from said center line; thence South 0° 01' 40" West a distance of 1200.00 feet along the center line of State Route 225 and East line of Lot 5 to the true place of beginning and containing 42.307 acres of land as surveyed by Terrance R. Hohnhorst, Registered Surveyor No. 5065 in September 1965. Be the same more or less but subject to all easements and legal highways.

SECTION 2

TECHNICAL MEMORANDUM NO. 2

BOUNDARY AND TOPOGRAPHICAL SURVEY

Tech. & Boundary Report

SDMS US EPA REGION V
FORMAT- OVERSIZED - 5
IMAGERY INSERT FORM

The item(s) listed below are not available in SDMS. In order to view original document or document pages, contact the Superfund Records Center.

SITE NAME	SUMMIT NATIONAL		
DOC ID #	128682		
DESCRIPTION OF ITEM(S)	MAP		
REASON WHY UNSCANNABLE	__X_ OVERSIZED	OR	___ FORMAT
DATE OF ITEM(S)	12-01-1991		
NO. OF ITEMS	1		
PHASE	REMEDIATION		
PRP			
PHASE (AR DOCUMENTS ONLY)	___ Remedial ___ Removal ___ Deletion Docket ___ AR ___ Original ___ Update # ___ Volume ___ of ___		
O.U.			
LOCATION	Box # _3_ Folder # _6_ Subsection ___		
COMMENT(S)			

SECTION 3

TECHNICAL MEMORANDUM NO. 3

INVESTIGATION OF MAGNETIC ANOMALIES, BURIED TANKS AND SEDIMENTS

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 3

INVESTIGATION OF MAGNETIC ANOMALIES, BURIED TANKS AND SEDIMENTS SUMMIT NATIONAL SUPERFUND SITE DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

A. INVESTIGATION OF MAGNETIC ANOMALIES

Investigation of magnetic anomalies at the Summit National Superfund Site (Site) was performed during the period of October 16 to 23, 1991, in accordance with the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Design Work Plan (RD Work Plan) for the Site. Exploratory trenches were excavated in areas of magnetic anomalies that were identified by USEPA during the Remedial Investigation (RI).

Prior to excavation of the exploratory trenches, the exploratory trench alignments were staked at 15-foot centres by the project surveyor. Exploratory trenches then were excavated along the staked alignments to locate buried containerized materials, if any.

The exploratory trenches were excavated the width of the backhoe bucket (48 inches) to a minimum depth of eight feet below ground surface, or shallower if buried containerized material or visually contaminated soils were encountered. The maximum depth of excavation was to the water table if deeper than eight feet below ground surface or the extent of the backhoe reach (approximately 12 feet below ground surface) if buried containerized material or visually contaminated soils were not encountered. All excavated soils were placed on polyethylene sheeting adjacent to the exploratory trenches during the trench excavation, and the excavated soils then were used to backfill the trenches.

The areal extent of buried containerized materials, as determined from the exploratory trench excavations, is presented on the attached Plan TM3-1. Also presented on Plan TM3-1 is the areal extent of visually contaminated soils encountered during the exploratory trench excavations. However, these visually contaminated soils generally occurred at the depth of the soil/groundwater interface and were not associated with "leaking buried containers". Based on observations during the test trench excavations, only one "leaking buried container" was identified, and therefore the quantity of soils associated with "leaking buried containers" that would require treatment is anticipated to be minimal.

Buried containerized material encountered during the exploratory trench excavations included 55-gallon drums, 30-gallon and 5-gallon containers and a plastic container. Drum lids and metal objects also were encountered throughout the magnetic anomaly areas. Cross-sections through each test trench showing depth and length of excavation and material encountered in the excavation are provided in Attachment TM3-1. Based on the number of containers encountered during the exploratory trench excavations, it is estimated there could be approximately 600 containers buried within the magnetic anomaly areas.

Air monitoring, as required by the Health and Safety Plan (HSP), was conducted on a daily basis as trench excavations progressed. The results of the air monitoring, presented in Attachment TM3-2, indicated that isolated organic vapor readings in the breathing zone peaked at 15 parts per million (ppm) for periods of less than one second during active trenching operations. Organic vapor readings recorded within one inch of excavated soils ranged from 0 to 400 ppm.

B. INVESTIGATION OF UNDERGROUND TANKS

Investigation of underground tanks at the Site was undertaken during the period October 23 to 25, 1991, in accordance with the USEPA and OEPA approved RD Work Plan for the Site. A backhoe was used to locate the underground tanks by excavating shallow trenches across the anticipated location of the underground tanks, until the tanks were located. Three underground tanks were located in Grid 1-1 and one underground tank was located in Grid 1-2 as shown on the attached Plan TM3-1. The sizes of the tanks and materials of construction are presented in Table TM3-1.

For the three underground tanks located in Grid 1-1, the backhoe was used to expose the full length of the top of each tank, and an attempt was made to excavate the soil from one end of each tank to determine the tank diameter, groundwater level and presence of visually contaminated soils, if any. However, the tanks appeared to be in poor condition with rust holes apparent on the exposed surfaces of each tank and it was not considered safe or prudent to excavate the soils adjacent to the tanks. Fill/inspection/breathing port covers, where found, were rusted such that it was not possible to remove them without causing damage to the tanks. An attempt was made to visually characterize the contents of the tanks through the rust holes on the top surface of each tank. All three tanks were observed to be full of a clear liquid, which appeared to be water, and there appeared to be some sediment at the

bottom of Tanks #1 and #2. It was not determined if there is sediment in Tank #3. On completion of the characterization of each of the three underground tanks in Grid 1-1, the excavations to expose the tanks were backfilled with the soil that was removed to expose the tanks. Prior to backfill of the tank excavations, the exposed rust holes were covered with polyethylene sheeting. Visually contaminated soils were not observed during the excavations.

Trenches were excavated at 10-foot centres to a depth of 4.5 feet across Grid 1-2, from the Site fence to the coal tipple ramp, to locate the underground tank in Grid 1-2. An underground septic tank was located as shown on the attached Plan TM3-1. The septic tank was not opened.

Air monitoring, as required by the HSP, was conducted on a daily basis during the locating, exposing, characterization and backfilling of the underground storage tanks. The results of the air monitoring, presented in Attachment TM3-2, indicated that organic vapor readings occasionally reached 2 ppm above background readings in the breathing zone. Organic vapor readings recorded within one inch of the exposed soils adjacent to the underground buried tanks reached levels of 21 ppm above background readings.

C. SEDIMENTS

Investigation of the sediments in the perimeter Site drainage ditches and impoundment, as required by the RD Work Plan, was not conducted as these sediments were removed from the perimeter Site drainage ditches and impoundment and stockpiled on Site during an interim response action conducted at the Site by the Summit National Facility Trust during the period of September 30 to October 29, 1991. This interim response action has been summarized in a report entitled "Construction Report, Sediment Removal Interim Response Action, Summit National Superfund Site, Deerfield Township of Portage County, Ohio" dated December 1991, and submitted to USEPA and OEPA on December 19, 1991.

D. PROJECT MANAGEMENT/OVERSIGHT

Enroserv Midwest, Inc. of Dayton, Ohio was selected by SNFT as the remedial investigation contractor for the above activities.

Project Management was provided by Conestoga-Rovers & Associates (CRA) with a full-time resident engineer observing and directing all activities at the Site.

Oversight for the above activities was provided by Black & Veatch Waste Science Technology on behalf of USEPA, and by OEPA personnel on an intermittent basis. As recorded in the Site's sign in/sign out log, representatives for USEPA and OEPA were on Site on the following days:

Date	*USEPA Representative*	*OEPA Representative*
10/1/91		X
10/3/91	X	
10/4/91	X	
10/7/91	X	
10/8/91	X	X
10/17/91	X	
10/18/91	X	X
10/22/91		X
10/23/91	X	
10/24/91	X	X
10/29/91		X

During the above operations, USEPA and OEPA representatives expressed concurrence with all activities conducted at the Site as required by the RD Work Plan.

TABLE TM3-1

UNDERGROUND STORAGE TANK DESCRIPTIONS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

UST #	*Grid No.*	*Length*	*Diameter*	*Material of Construction*
1	1-1	12 feet	64 inches	steel
2	1-1	12 feet	64 inches	steel
3	1-1	24 feet	72 inches	steel
4	1-2	NM	NM	concrete (septic tank)

Notes:

UST # = Underground Storage Tank Number
NM = Not Measured

ATTACHMENT TM3-1

CROSS-SECTIONS

EXPLORATORY TRENCH EXCAVATIONS

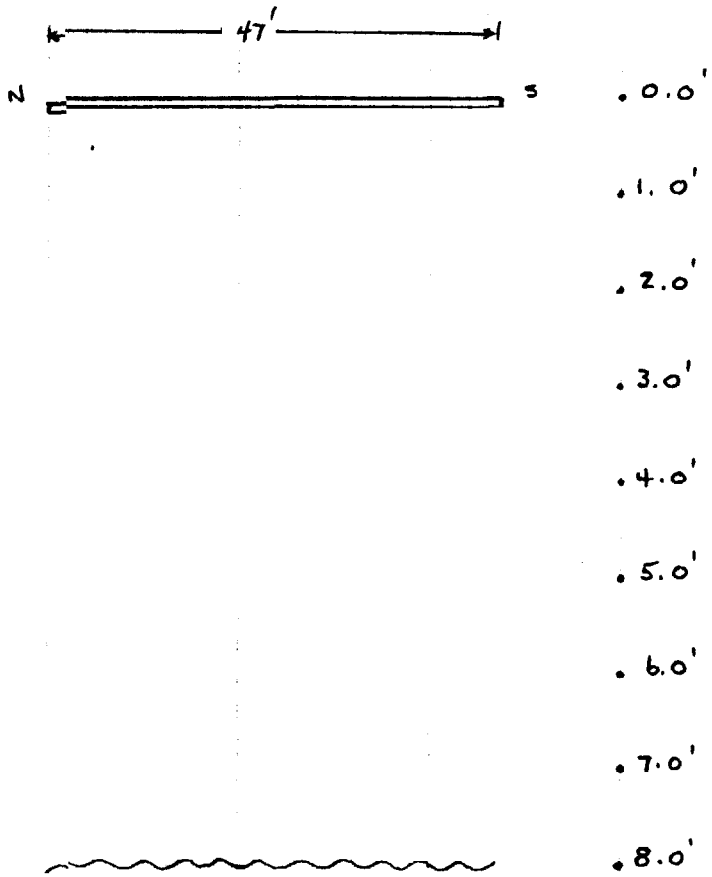
INVESTIGATION OF MAGNETIC ANOMALIES

SUMMIT NATIONAL SUPERFUND SITE

DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

A1 N-S

2372



SOIL: 0'-2' DARK BROWN CLAY BACKFILL
2'-8' LIGHT BROWN STIFF CLAY.

GROUNDWATER: 5'

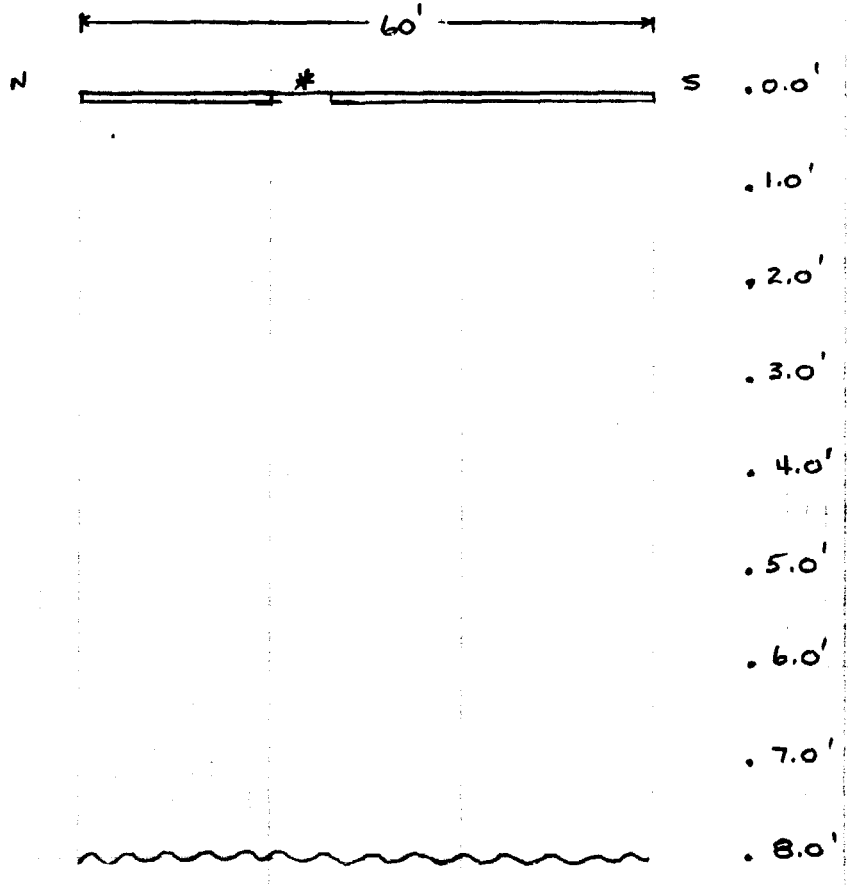
NOTE: SOUTH END OF TRENCH INFRINGES ON EAST POND.

LEGEND:
TRENCHED AREA
BOT. OF EXCAV.

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

A 2 N - S

2372



SOIL: 0'-2' DARK BROWN CLAY FILL
2'-8' LIGHT BROWN STIFF CLAY.

GROUNDWATER: 5'-6'

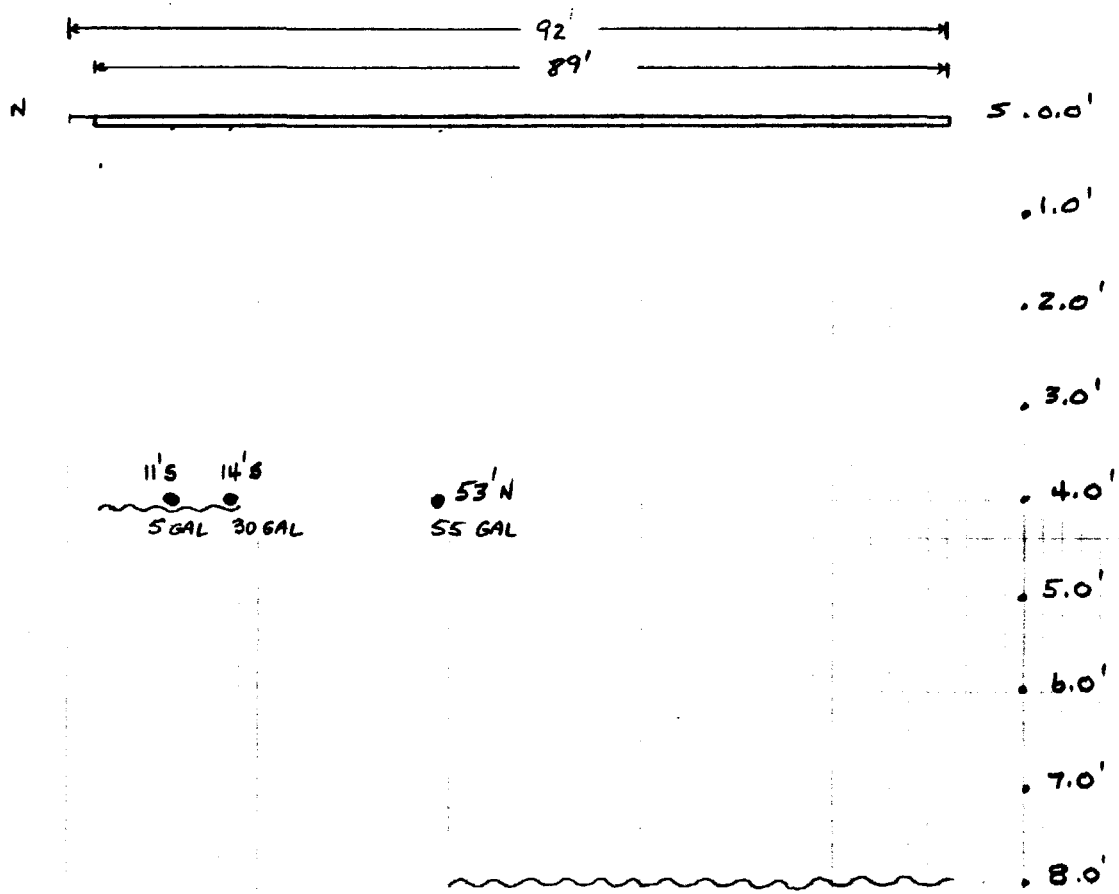
NOTE: SOUTHEND OF TRENCH INFRINGES OF EAST POND.

LEGEND
BOT. OF EXCAV.
TRENCHED AREA.
PIEZOMETER

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

A 3 N-S

2372



SOIL: 0'-2' LOOSE FILL CLAYS
2'-8' MEDIUM COMPACTED CLAYS WITH TRACES OF COAL

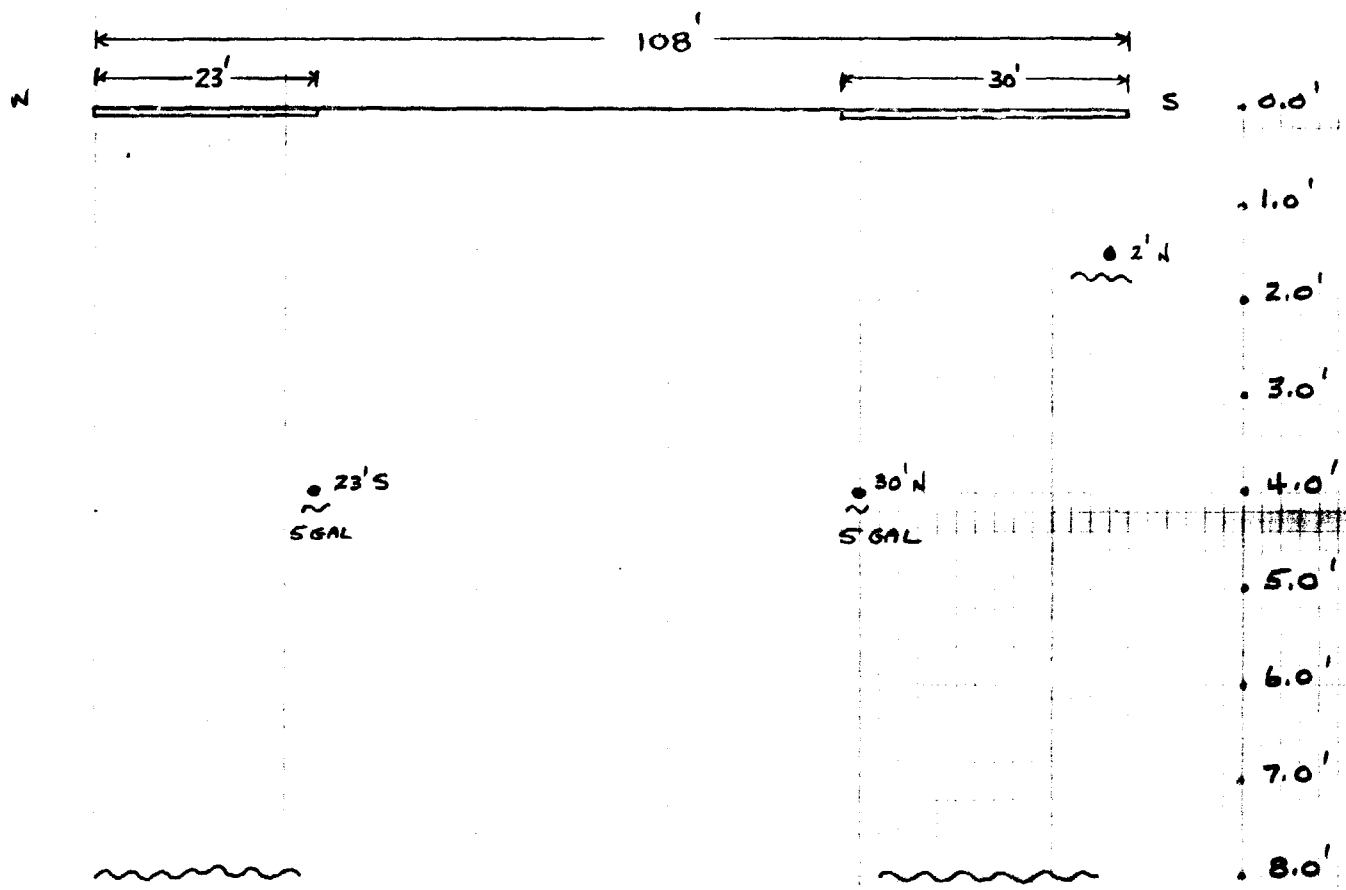
GROUNDWATER: 5'-6'

NOTE: NORTHEND OF TRENCH IN EAST POND, STARTED TRENCH 3'S.

LEGEND:
~ BOT OF EXCAV.
▭ TRENCHED AREA
● DRUMS/CONTAINERS.

A 4 S-N

2372



SOIL: 0'-2' SOFT BACKFILL CLAYS
2'-8' COMPACTED FILL CLAYS, TRACES OF COAL.

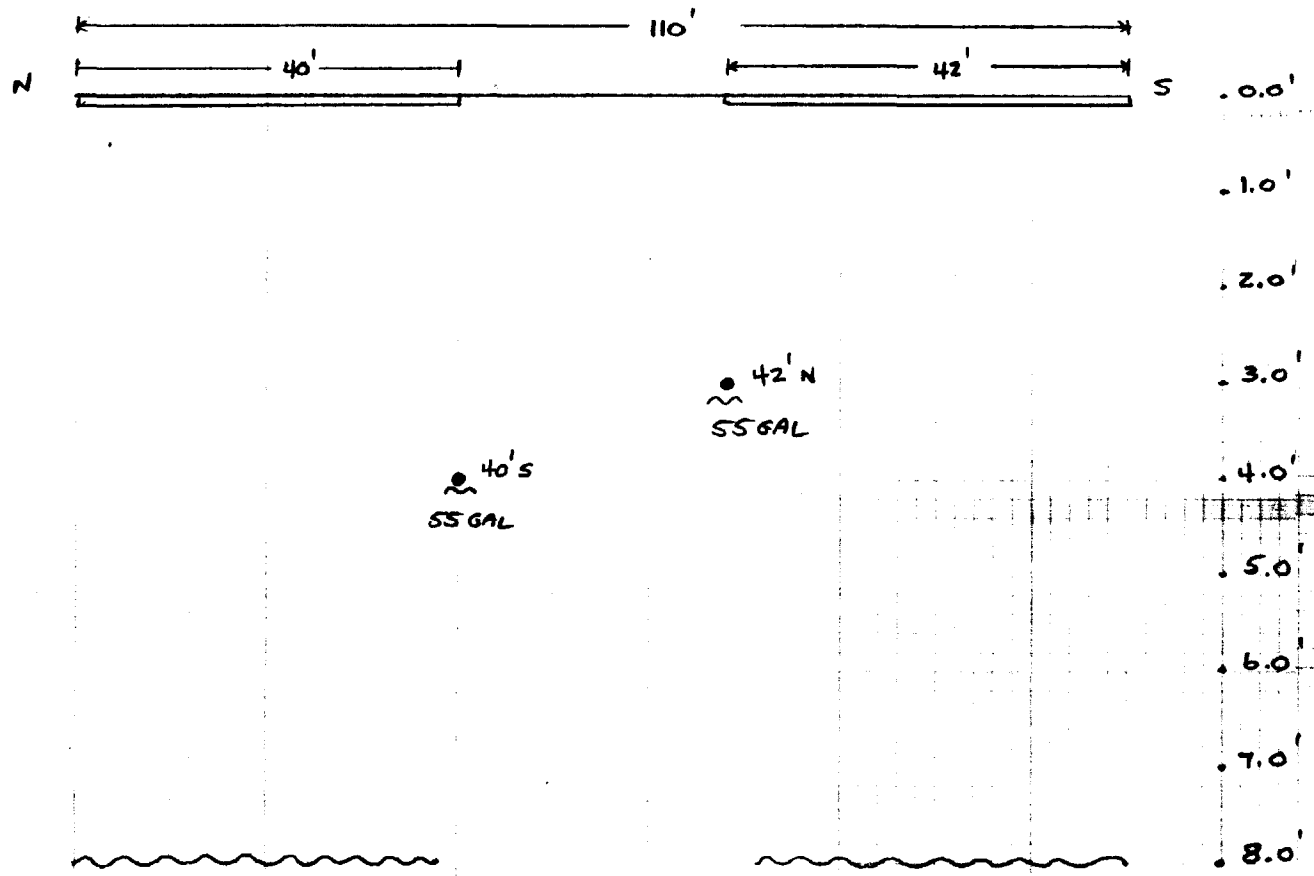
GROUNDWATER: 7.5'

LEGEND:
~ BOTTOM OF EXCAV.
= TRENCHED AREA.
● DRUM/CONTAINERS.

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

A 5 N - S

2372



SOIL: 0'-2' LOOSE FILL CLAYS
2'-8' BROWN/BLACK CLAYS, TRACES OF COAL

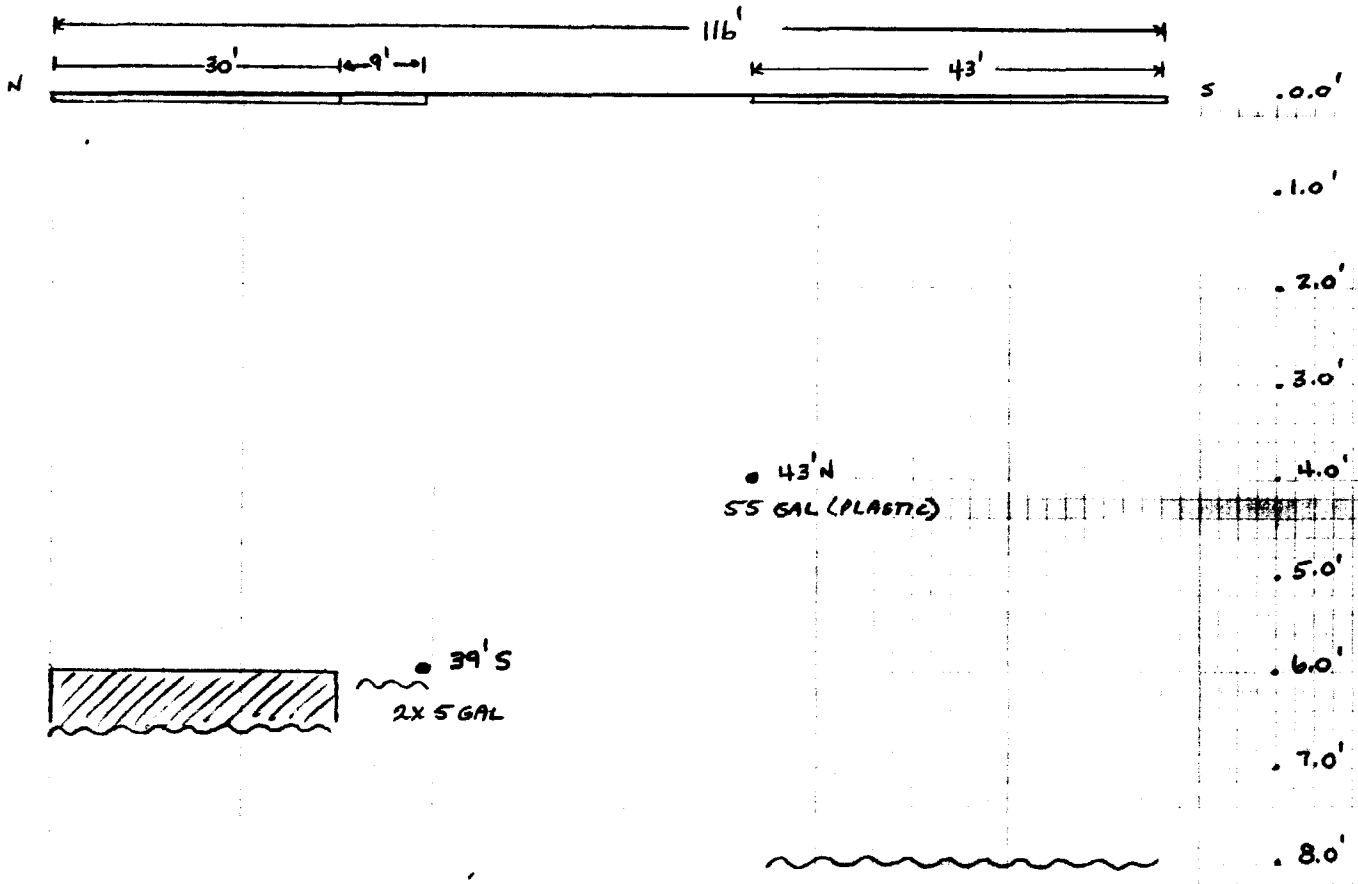
GROUNDWATER: 7' TO 8'

LEGEND:
BOT OF EXCAV.
TRENCHED AREA
DRUM/CONTAINER

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

A 6 S-N

2372



SOIL: 0'-2' BACKFILL CLAY, DEBRIS
2'-8' MOIST CLAY DARK BROWN TO BLACK

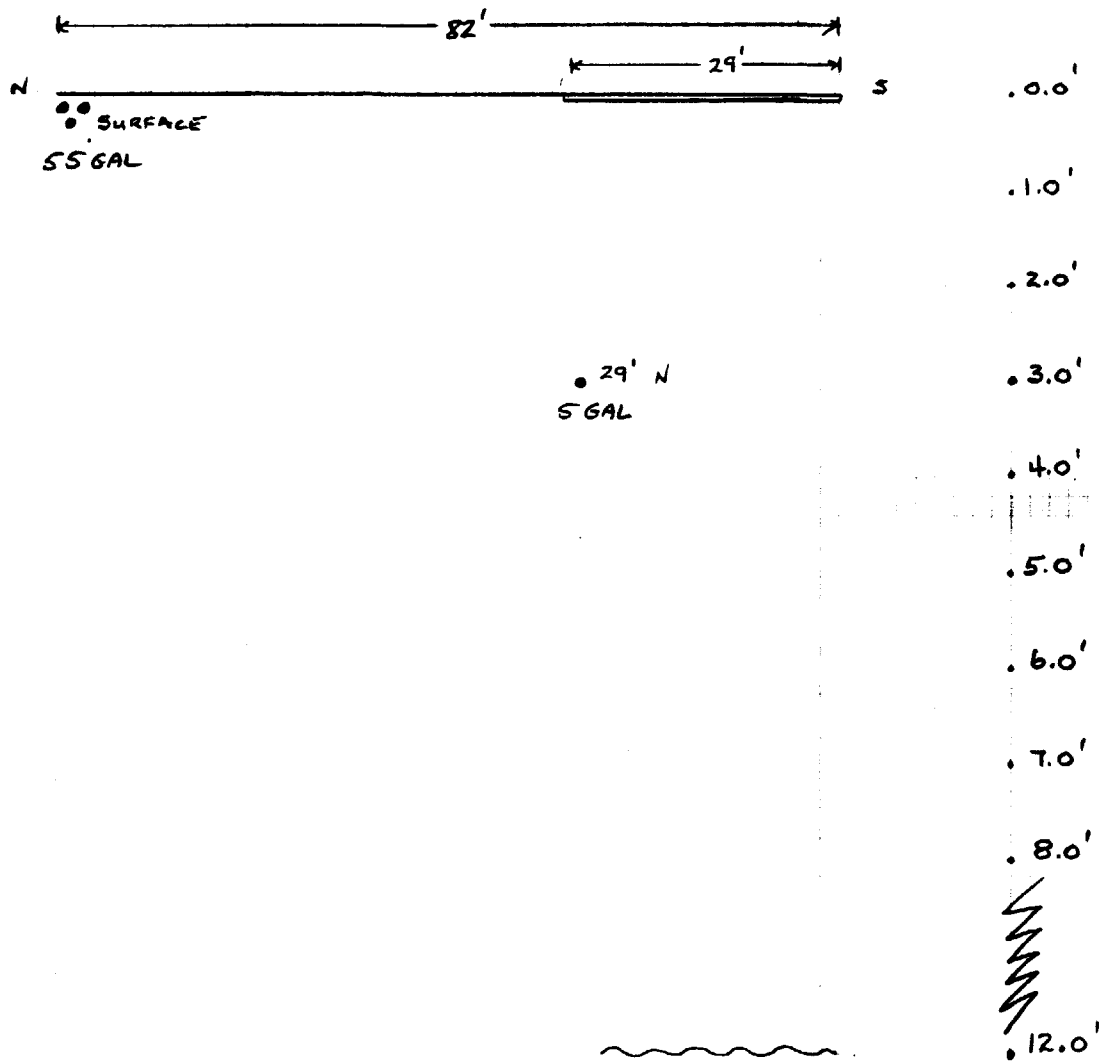
GROUNDWATER: 7'-8'

LEGEND:
BOT OF EXCAV.
TRENCHED AREA
DRUM/CONTAINER.
VISUAL CONTAMINATION

SCALE:
HORZ: 1" TO 20'
VERT: 1" TO 2'

A7 S-N

2372



LEGEND:
BOT OF EXCAV.
TRENCHED AREA
DRUM/CONTAINER

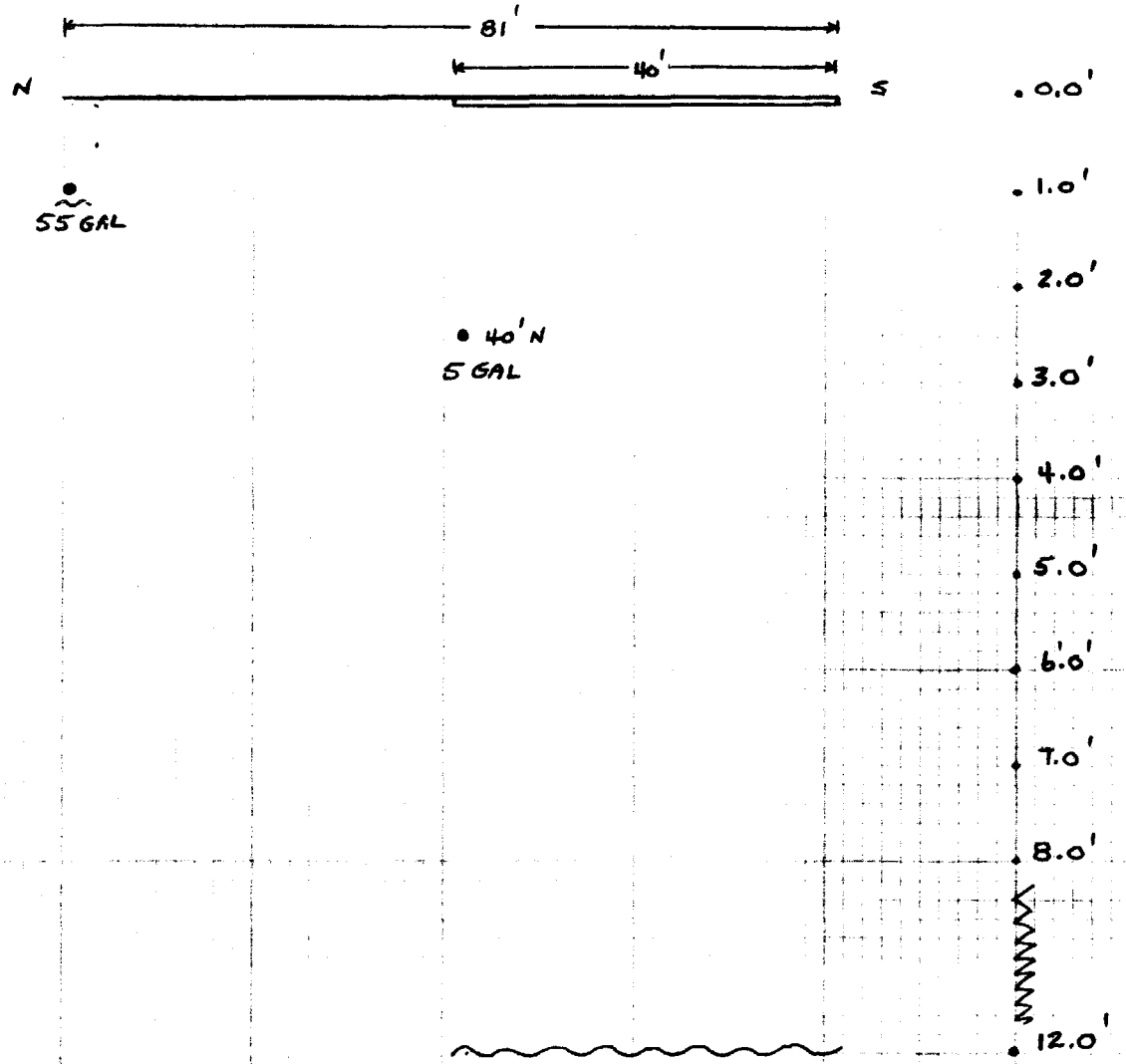
SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

SOIL: 0'-3' BROWN DARK CLAY FILL
3'-7' LIGHT BROWN CLAY
7'-12' LIGHT BROWN CLAY, TRACES OF COAL.

GROUNDWATER: 8'

NOTE: EXCAVATED TO 12' DEPTH AT SOUTHEND

A 8 5-N 2372



LEGEND:
[illegible] OF EXCAV.
TRENCHED AREA
[illegible]/CONTAINER

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

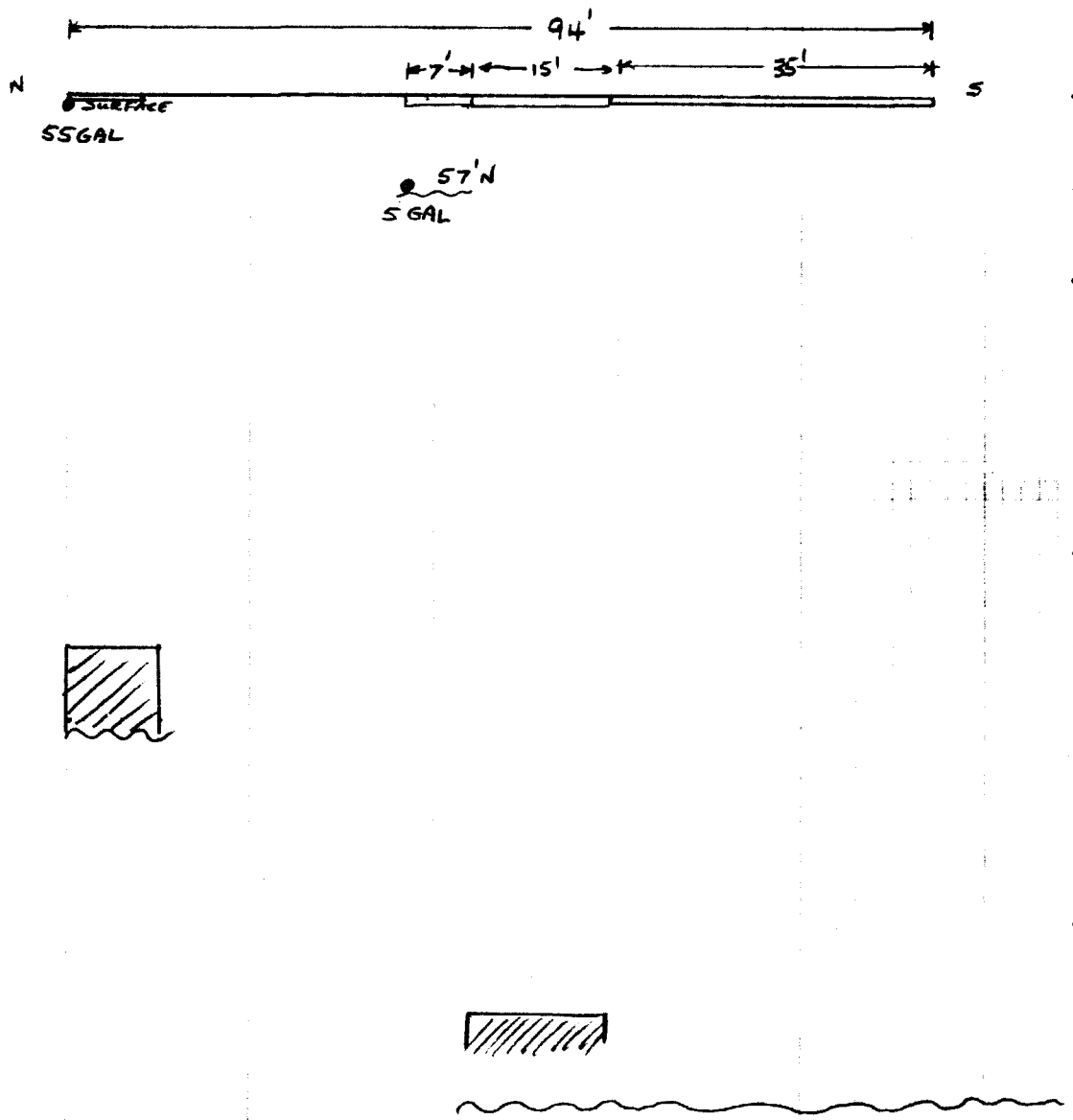
SOIL: 0'-3' DARK BROWN LOOSE FILL CLAY
3'-9 BROWN CLAY TRACES OF COAL
9'-12' MOIST BLUE CLAY

GROUNDWATER: 8'

NOTE: EXCAVATED TRENCH TO 12' DEPTH.

A 9 S-N

2372



SOIL: 0-3' LOOSE BACKFILL CLAY
3'-11' BROWN MOIST DARK CLAY

GROUNDWATER: 4' TO 5'

NOTE: MISC DEBRIS, RINGS, LIDS 0'-2'

LEGEND:

BOT OF EXCAVATION

TRENCHED AREA

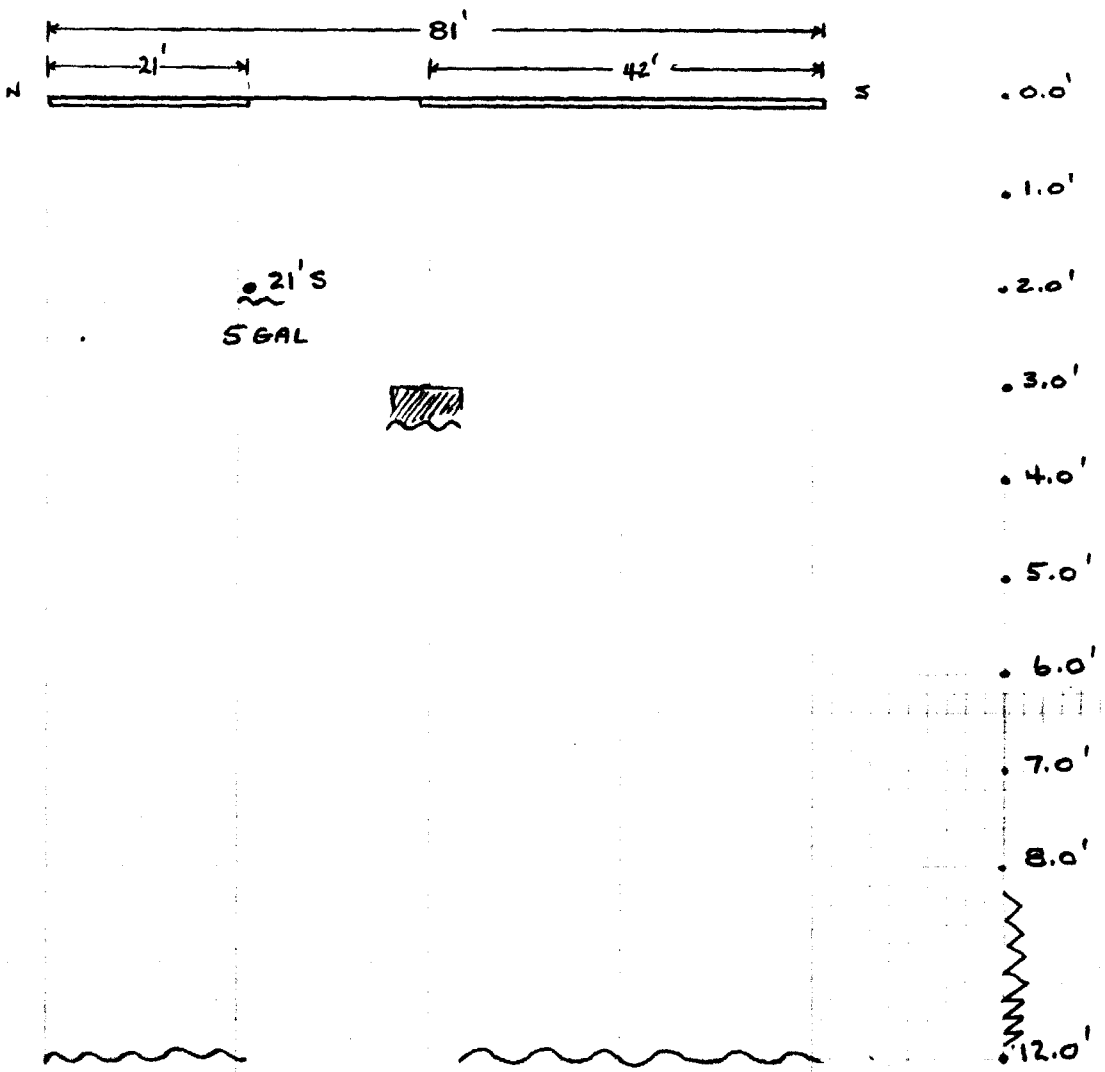
DRUM/CONTAINER.

VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

A 10 N-S

2372



SOIL: 0'-3' BACKFILL CLAY, DEBRIS
3'-8' BROWN CLAY, TRACES OF COAL
8'-12' LIGHT BROWN CLAY TRACES OF COAL SLATE

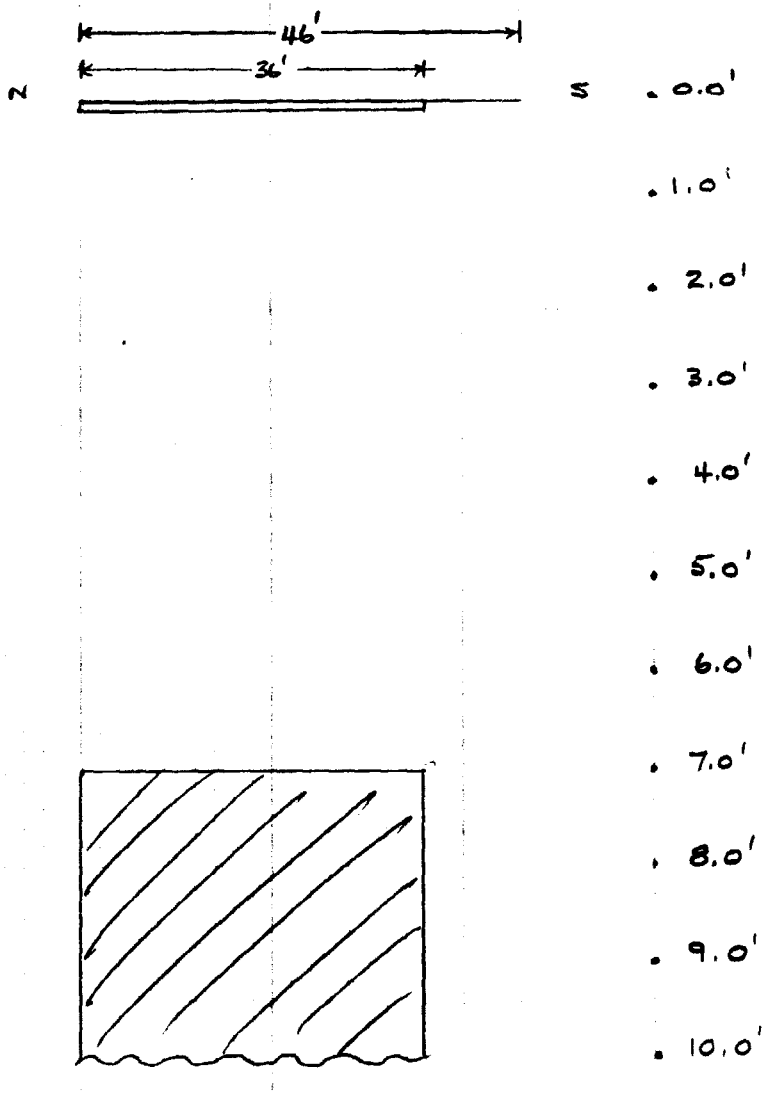
GROUNDWATER: 7'

LEGEND:
BOT OF EXCAV.
TRENCHED AREA
DRUM/CONTAINERS.
VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

A 12 N - S

2372



SOIL: 0'-3' BROWN LOOSE CLAY, DEBRIS
3'-10' DARK BROWN CLAY, MOIST.

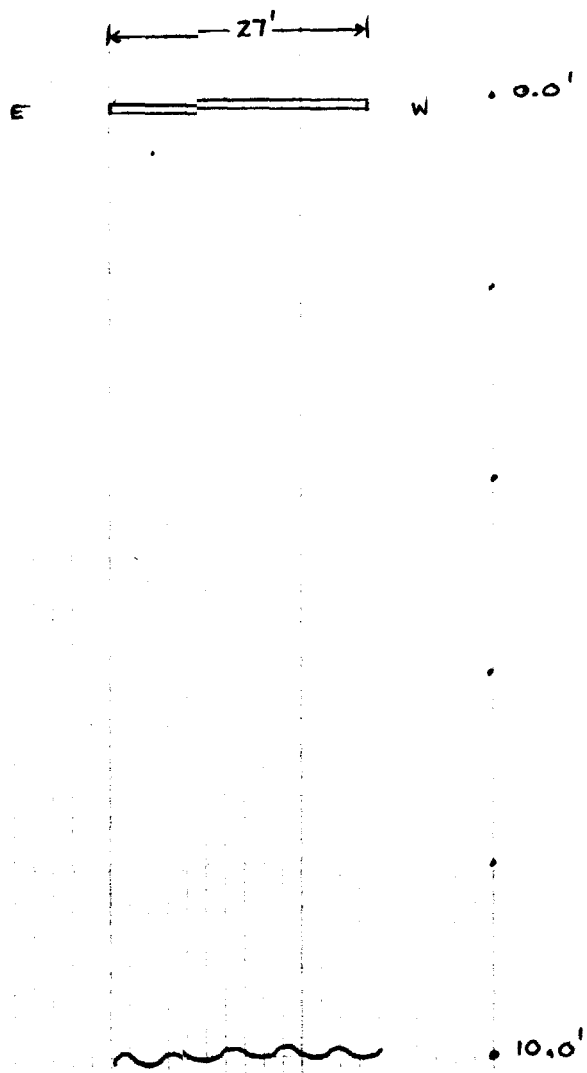
GROUNDWATER: 8'

LEGEND:
BOT OF EXCAV.
TRENCHED AREA.
VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

B 2 E-W

2372



SOIL: 0'-3' STIFF BROWN CLAY
3'-10' STIFF BROWN CLAY TRACES OF COAL

GROUNDWATER DID NOT ENCOUNTER

• NOTE: • COULD NOT EXCAVATE FULL TRENCH LENGTH DUE TO FENCE LINE.
• FRENCH DRAIN RUNNING E-W 18" WIDE, EXTENDED DEPTH OF TRENCH.

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA.

SCALE:
HORZ: 1" TO 20'
VERT: 1" TO 2'

B1

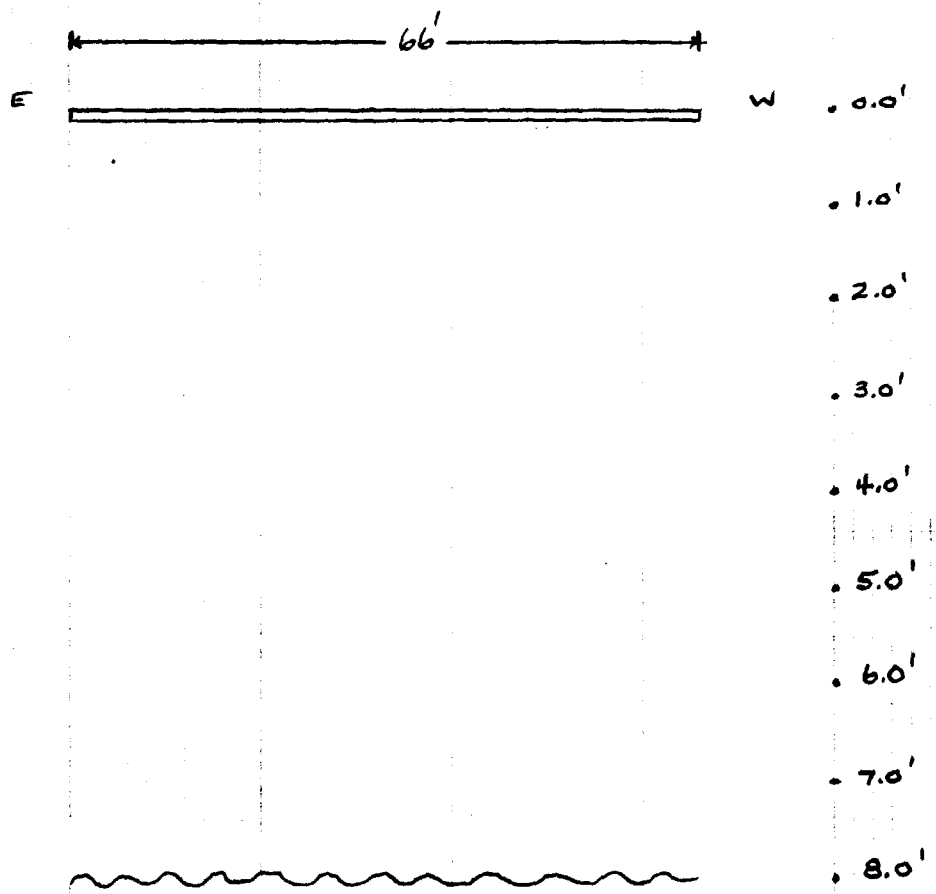
2372

TRENCH 50'

NOTE: DUE TO TRENCH LINE FALLING OUTSIDE OF FENCE, UNABLE TO PERFORM TRENCHING.

B 4 E-W

2372



SOIL: 0'-2' LOOSE BACKFILL CLAY
2'-8' STIFF LIGHT BROWN CLAY TRACES OF COAL.

GROUNDWATER: NOT ENCOUNTERED

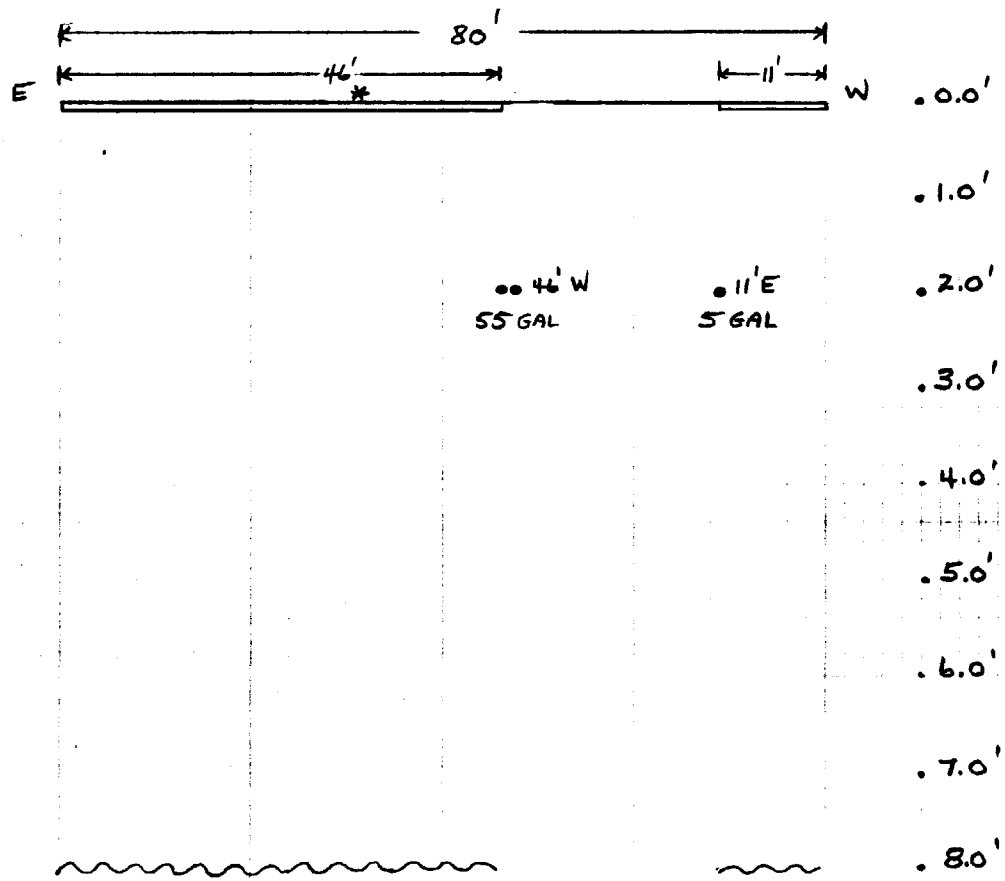
NOTE: MISC SCRAP METAL 0'-2'

LEGEND:
~ BOT OF EXCAV.
═ TRENCHED AREA.

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

B 3 E-W

2372



LEGEND:
- Bot of Excav.
- Trencher Area
- Piezometer
- Drum/Container

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

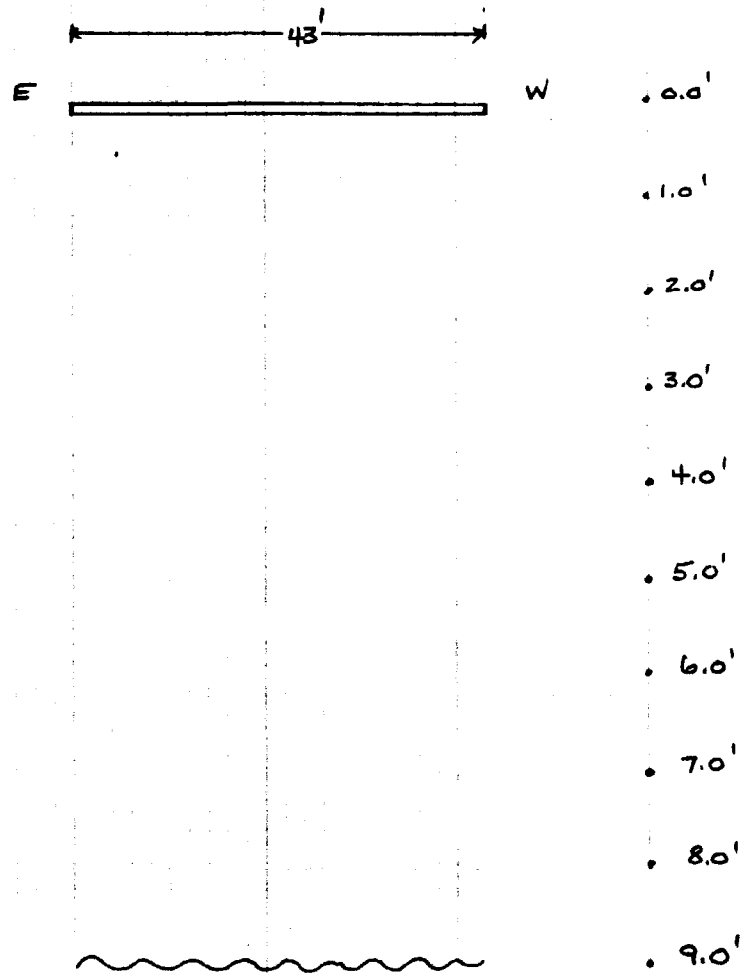
SOIL: 0'-8' STIFF BROWN CLAY.

GROUNDWATER: NOT ENCOUNTERED.

NOTE:
- MISC DEBRIS, LIDS, RINGS
- FRENCH DRAIN, 18" WASHED STONE RUNNING E-W DEPTH OF EXCAVATION.
- PIEZOMETER LOCATED 31.5' W, 1.5' SOUTH.

C 1 E-W

2372



SOIL: 0'-2' LOOSE CLAY BACKFILL
2'-9' BROWN MIXED CLAYS.

GROUNDWATER: NOT ENCOUNTERED

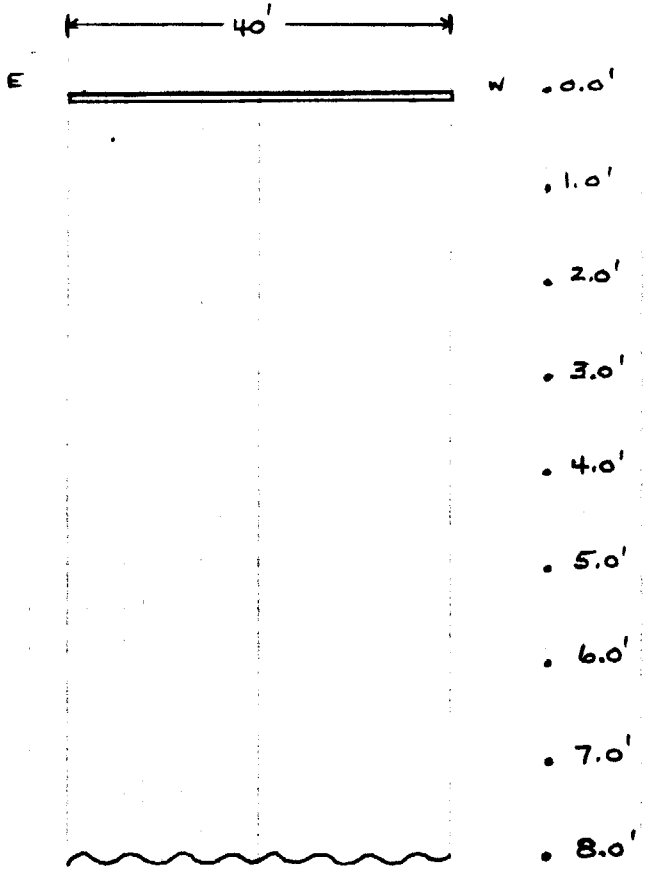
NOTE:
- FRENCH DRAIN RUNNING E-W DEPTH OF TRENCH.
- OFF-SET TRENCH 2' NORTH DUE TO FENCE LINE.
- MISC METAL 0'-2'

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA.

SCALE:
HORZ: 1" TO 20'
VERT: 1" TO 2'

B 5 E-W

2372



SOIL: 0'-2' BACKFILL CLAY
2'-8' STIFF BROWN CLAY WITH TRACES OF COAL.

GROUNDWATER: NOT ENCOUNTERED

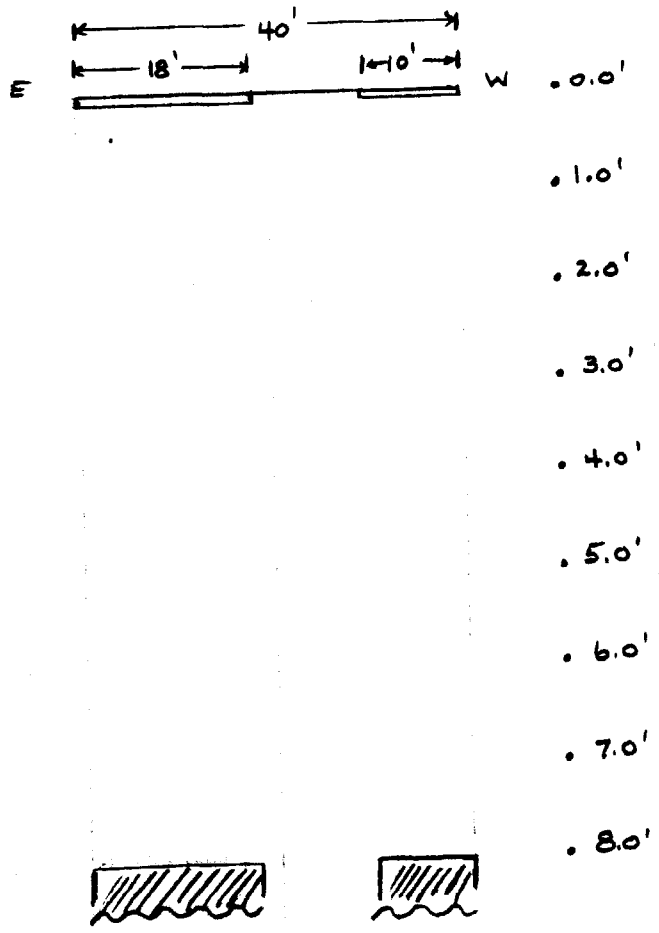
NOTE: • DUE TO OBSTRUCTIONS IN WAY OF EXCAVATOR OFF-SET TRENCH 4' NORTH.
• WEST-END OF TRENCH 5 GAL CONTAINER ON SURFACE

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA.

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

C 3 E-W

2372



SOIL: 0'-2' DEBRIS AND FILL CLAY
2'-8' LOOSE BACKFILL CLAY.

GROUNDWATER: NOT ENCOUNTERED.

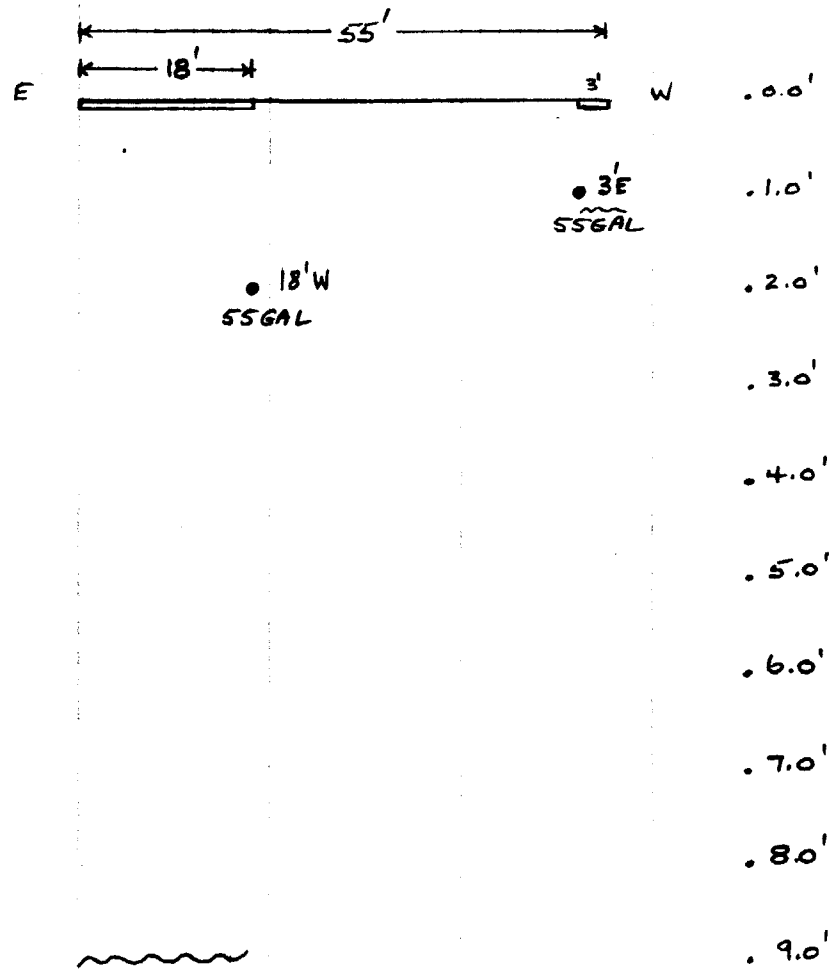
NOTE: MISC METAL AND TRASH 0'-2'

LEGEND:
BOT OF ELEV.
TRENCHED AREA
VISUAL CONTAMINATION.

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

C2 E-W

2372



LEGEND:
BOT OF ELEV.
TRENCHED AREA

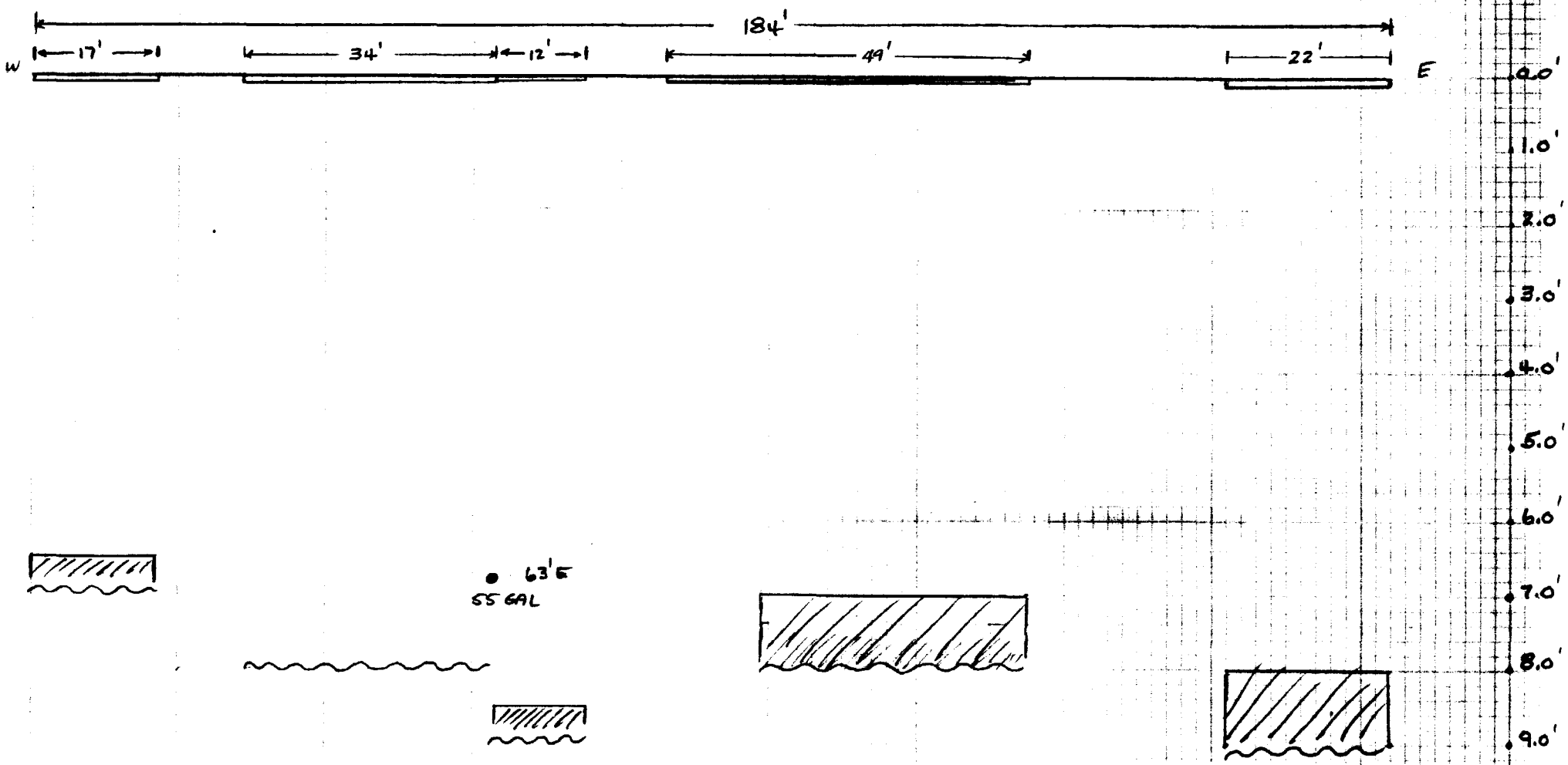
SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

SOIL: 0'-2' CLAY FILL MATERIAL WITH METAL DEBRIS.
2'-9' BROWN CLAY WITH TRACES OF COAL.

GROUNDWATER: NOT ENCOUNTERED.

D 2 W-E

2372



SOIL: 0'-2' CLAY BACKFILL, DEBRIS.
2'-3' CLAY BACKFILL, TRACES OF COAL
3'-9' LIGHT/DARK CLAY BACKFILL, SOME ROCK.

GROUNDWATER: 8'

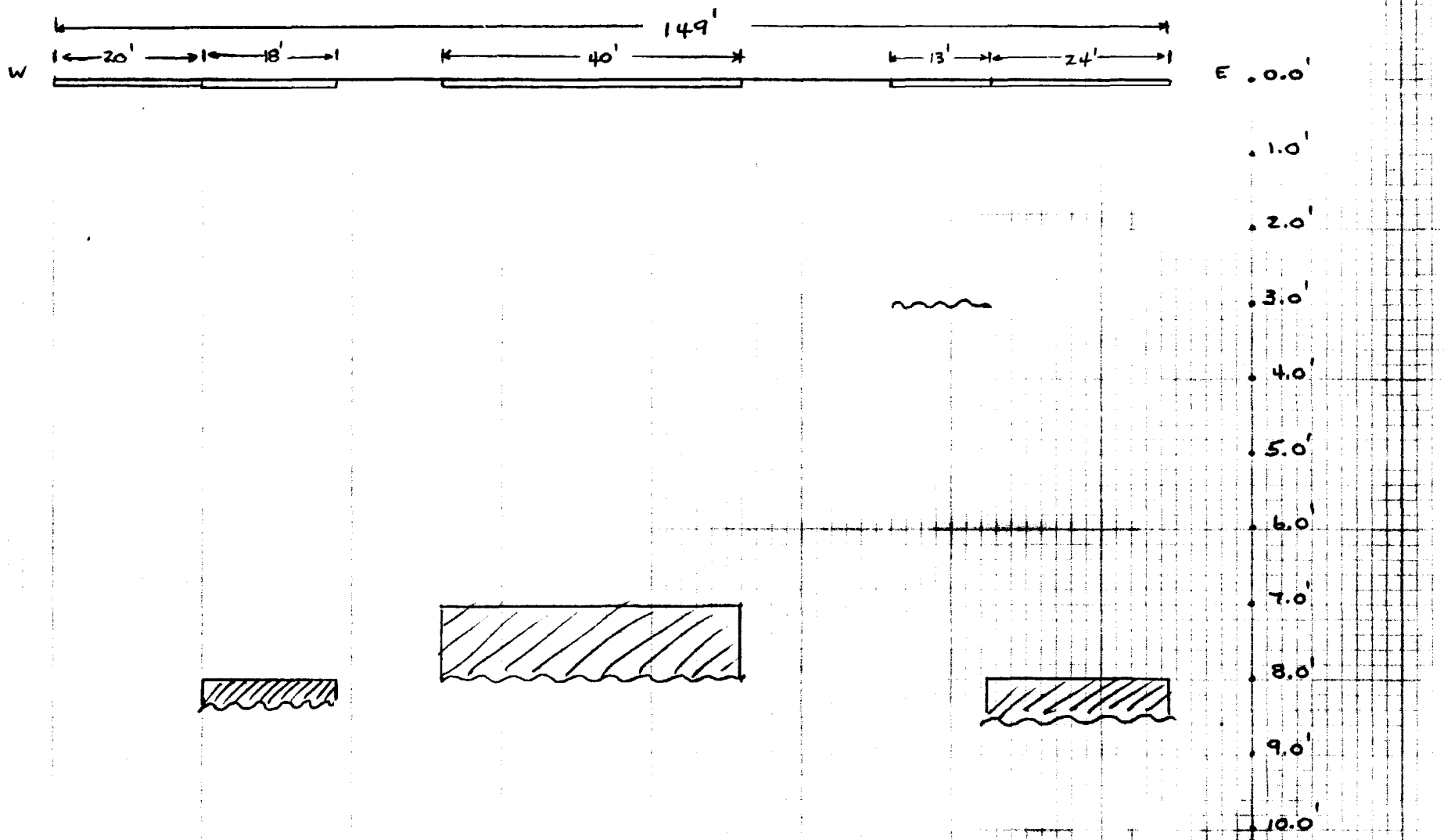
NOTE: MISC DEBRIS, LIDS, RINGS 0'-2'

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA
DRUMS/CONTAINERS
VISUAL CONTAMINATION

SCALE:
HORZ: 1" TO 20'
VERT 1" TO 2'

D 1 W-E

2372



SOIL: 0'-2' BROWN CLAY FILL, DEBRIS
2'-3' CLAY FILL, SOME ROCK
3'-4' CLAY AND COAL FILL
4'-8' LIGHT/DARK CLAY BACKFILL, SOME ROCK

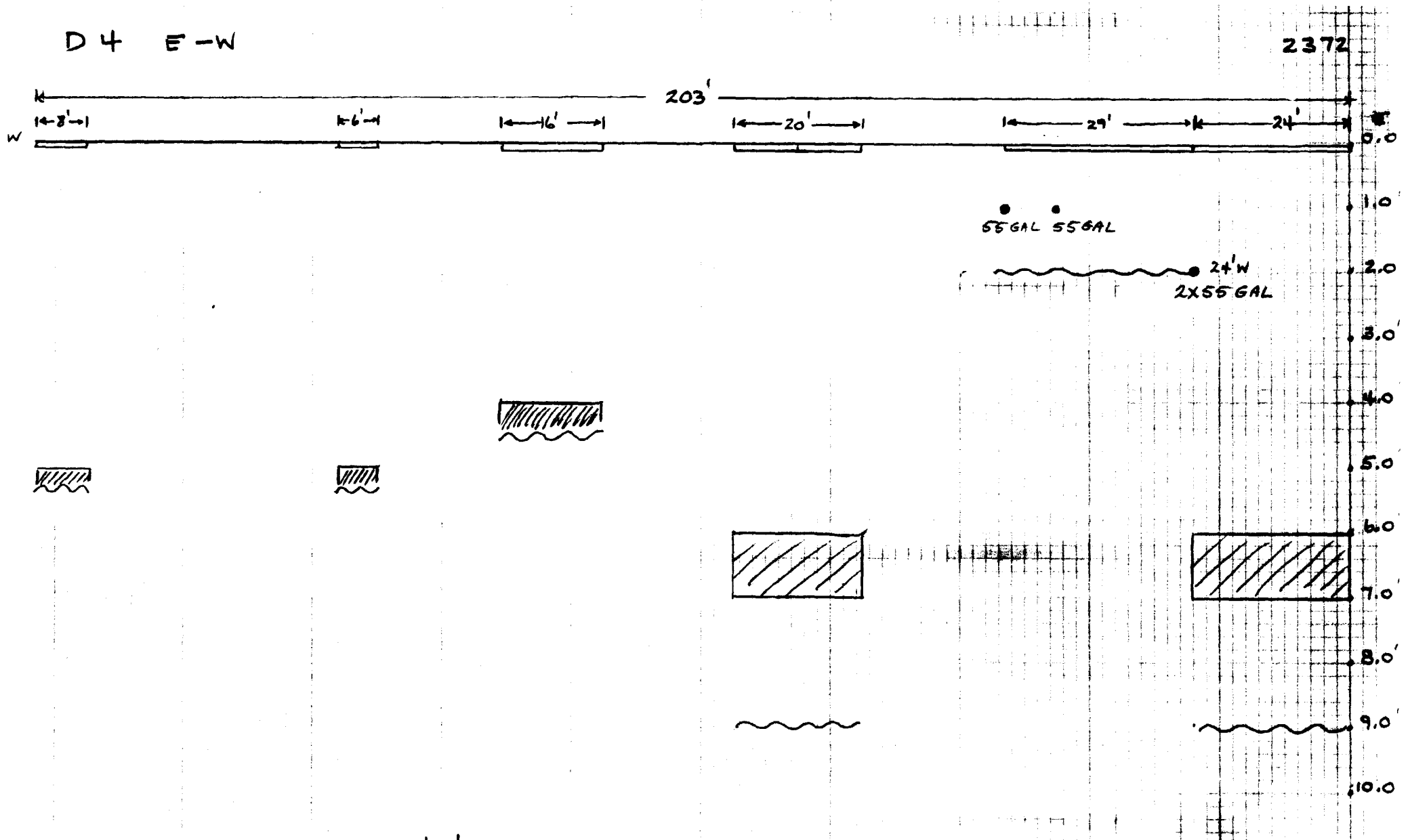
GROUNDWATER: 8' OILY SHEEN

NOTE: MISC DEBRIS, ROCKS, LIDS AND RINGS 0'-2'

LEGAND:
BOT. OF EXCAV.
TRENCHED AREA
DRUMS/CONTAINERS
VISUAL CONTAMINATION.

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

D4 E-W



SOIL: 0'-2' BACKFILL CLAYS, DEBRIS.
2'-9' LIGHT/DARK BROWN LOOSE CLAY, TRACES OF COAL.

GROUNWATER: 5' TO 9'

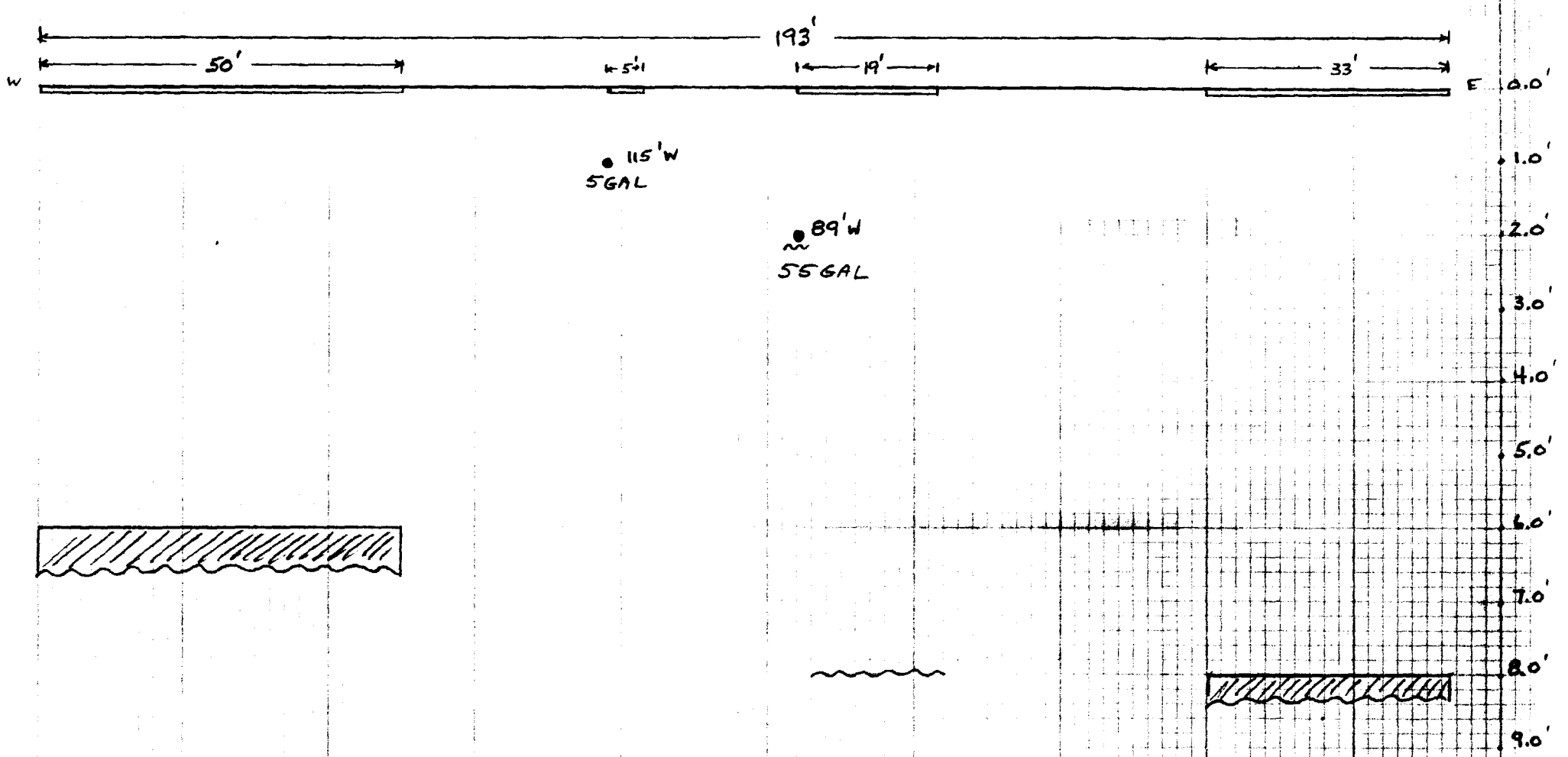
NOTE: MISC CONCRETE DEBRIS AND METAL LIDS, RINGS 0'-2'

LEGEND:
BOT. OF TRENCH
AREA TRENCHED
DRUM/CONTAINER
VISUAL CONTAMINATION

SCALE:
HORZ: 1" TO 20'
VERT: 1" TO 2'

D 3 E-W

2372



SOIL: 0'-1' CLAY BACKFILL, DEBRIS.
1'-2' COAL AND CLAY BACKFILL
2'-8' LIGHT/DARK CLAY FILL, SOME ROCK.

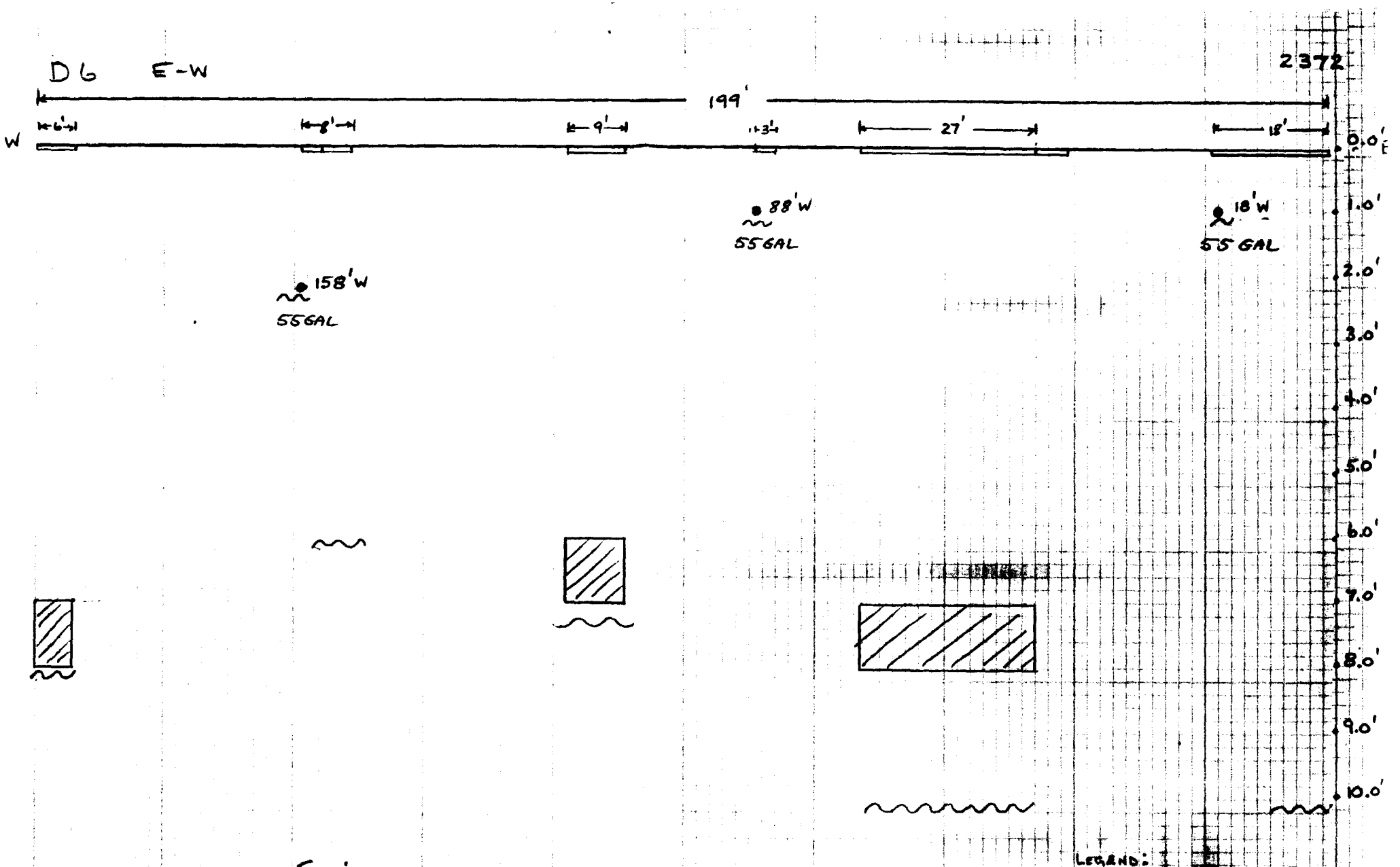
GROUNDWATER: 8'

NOTE: MISC DEBRIS LIDS, RINGS 0'-2'

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA
DRUMS/CONTAINERS.
VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

D6 E-W



SOIL: 0'-3' BACKFILL CLAY
3'-10' LIGHT/DARK BROWN LOOSE BACKFILL CLAY.

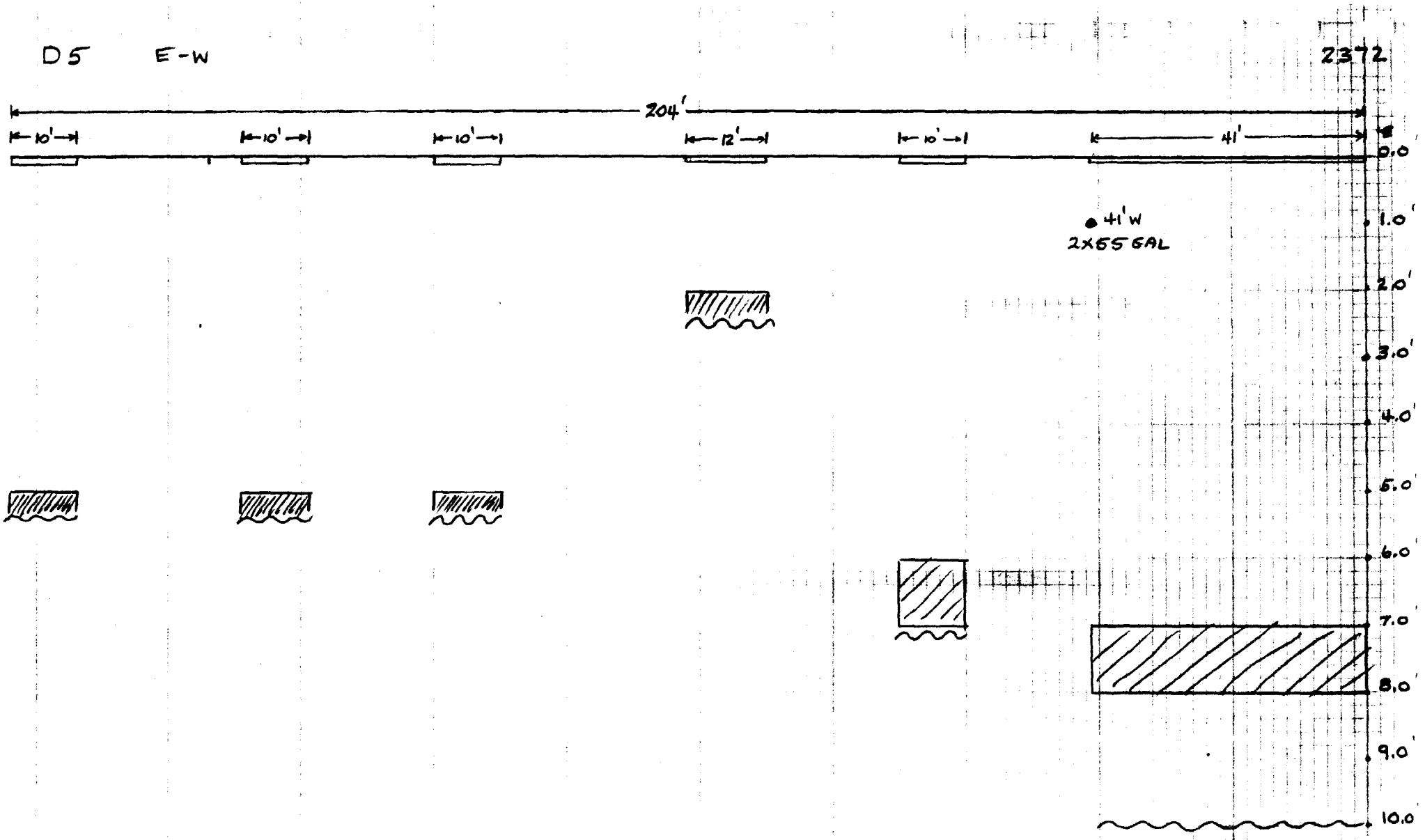
GROUNDWATER: 9.5'

NOTE: METAL OBJECTS, LIDS, RINGS ENCOUNTERED 0'-2'

LEGEND:
- BOT. OF EXCAV.
- AREA TRENCHED
- DRUM / CONTAINER
- VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

D5 E-W



Soil: 0'-3' BACK FILL CLAYS, DEBRIS
3'-10' LIGHT/DARK BROWN CLAY, TRACES OF COAL

GROUNDWATER: 10' SLIGHT OIL SHEEN.

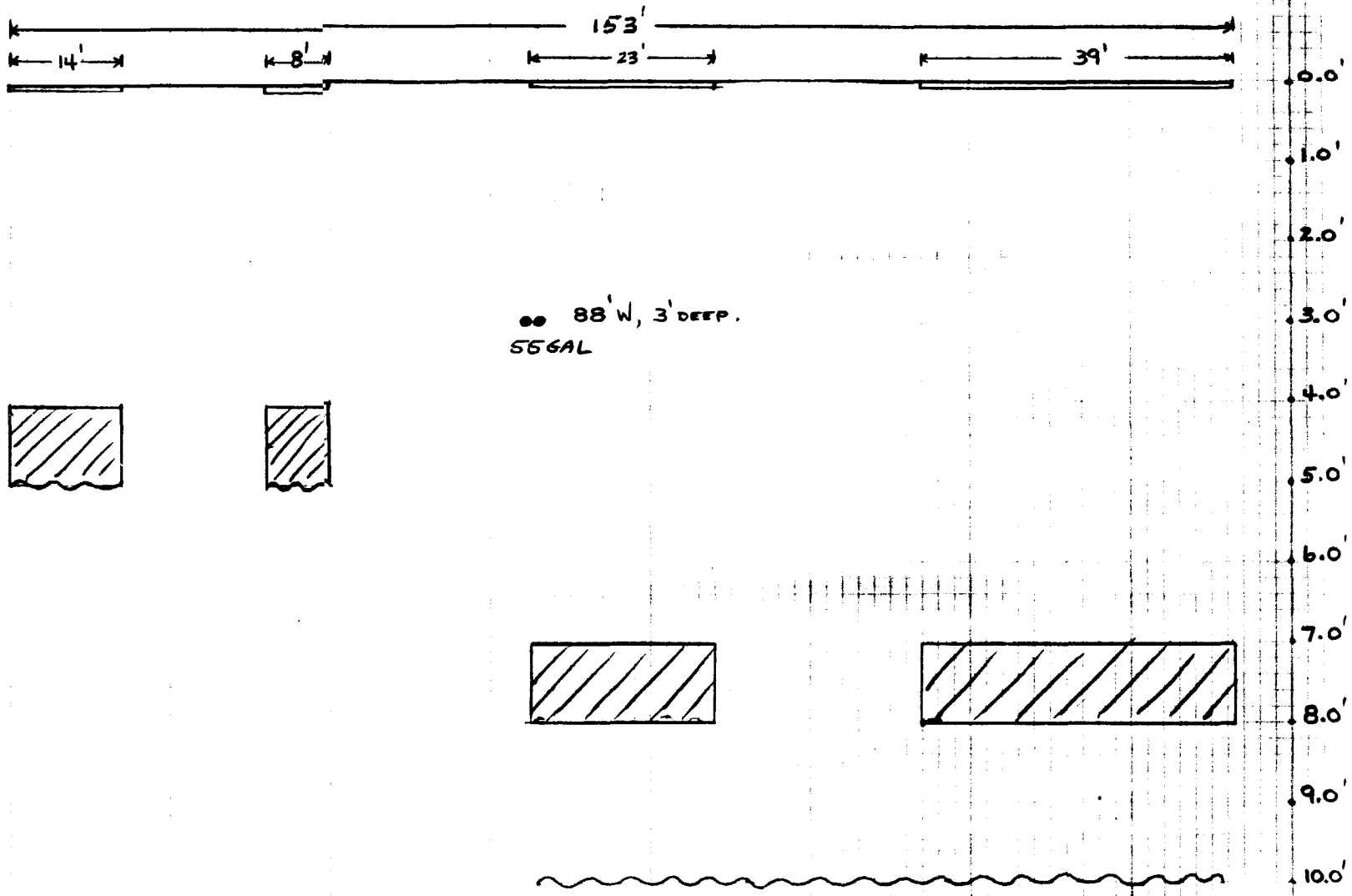
NOTE: CONCRETE DEBRIS AND METAL RINGS, LIDS ENCOUNTERED 0'-3'

LEGEND:
- BOT OF TRENCH
- AREA TRENCHED
- DRUM/CONTAINER
- VISUAL CONTAMINATION

SCALE:
HORZ: 1" TO 20'
VERT: 1" TO 2'

D 8 E-W

2372



LEGEND:

- BOTT. OF EXCAV.
- TRENCHED AREA
- DRUM/CONTAINER
- VISUAL CONTAMINATION

SOIL: 0'-2' DARK LOOSE CLAY BACKFILL
2'-10' MIXED LIGHT/DARK BROWN CLAY, TRACES OF CLAY.

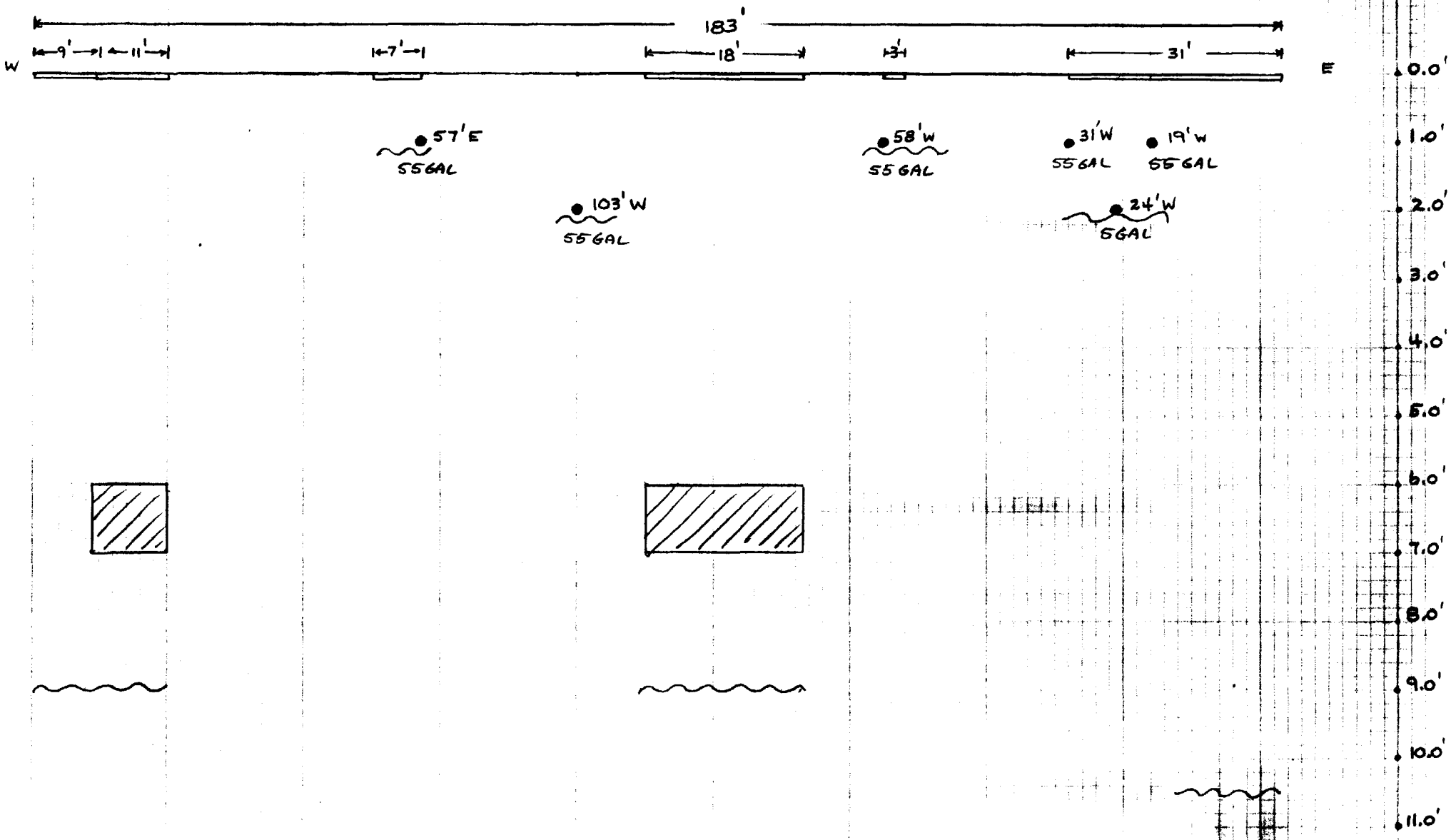
GROUND WATER: 10'

NOTE: MISC METAL LIDS, RINGS ENCOUNTERED FROM 0'-2'

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

D7 E-W

2372



SOIL: 0'-2' BLUE/BLACK BACKFILL CLAY
2'-10' LIGHT/DARK BROWN LOOSE CLAY

GROUNDWATER: 9' TO 10'

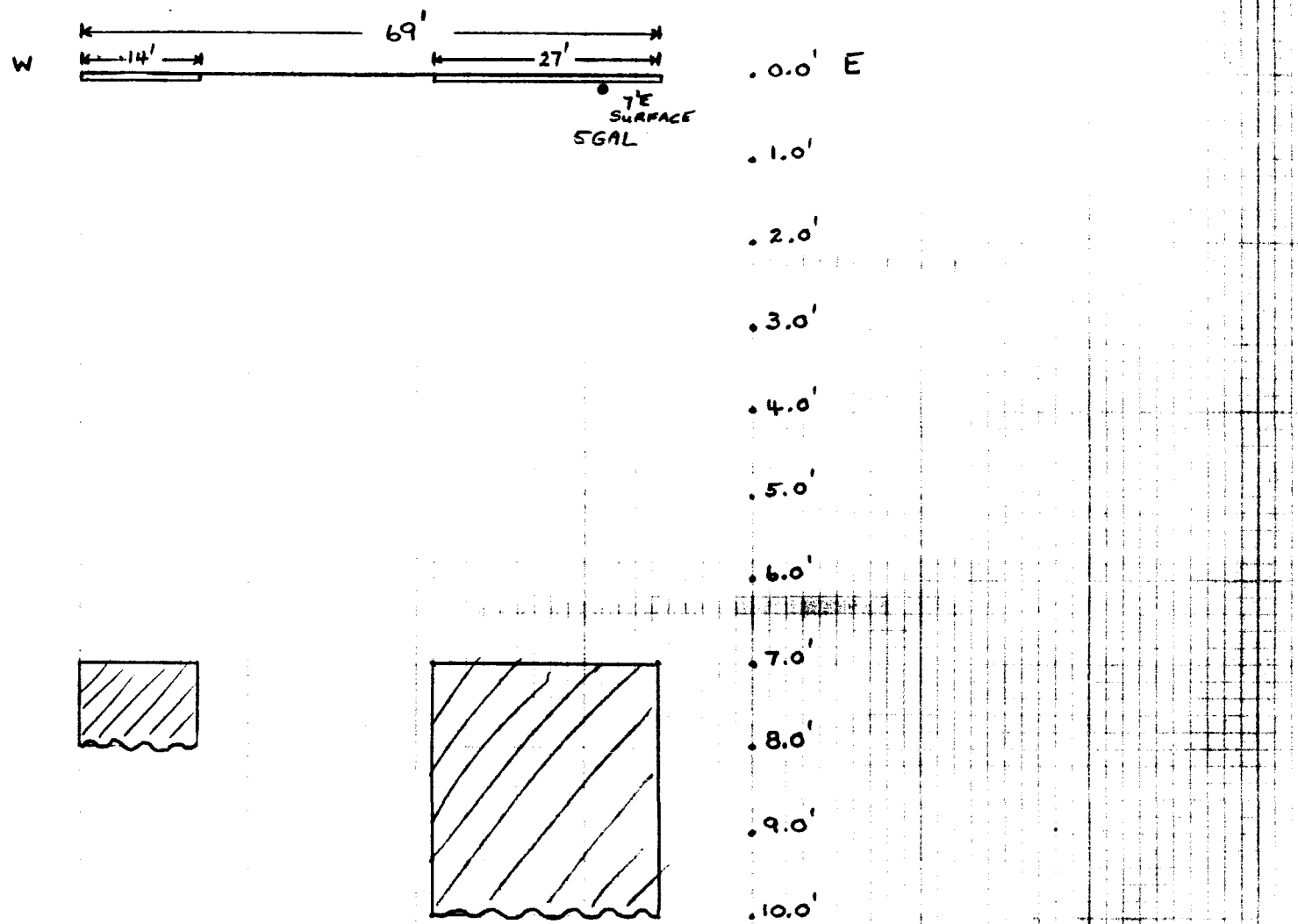
NOTE: MISC LIDS, RINGS ENCOUNTERED 0'-2'

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA
DRUM/CONTAINER
VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

D 10 E-W

2372



SOIL: 0'-2' BACKFILL CLAYS
2'-10' MIXED LOOSE BROWN CLAYS, TRACES OF COAL.

GROUNDWATER: ENCOUNTERED 7' TO 8'

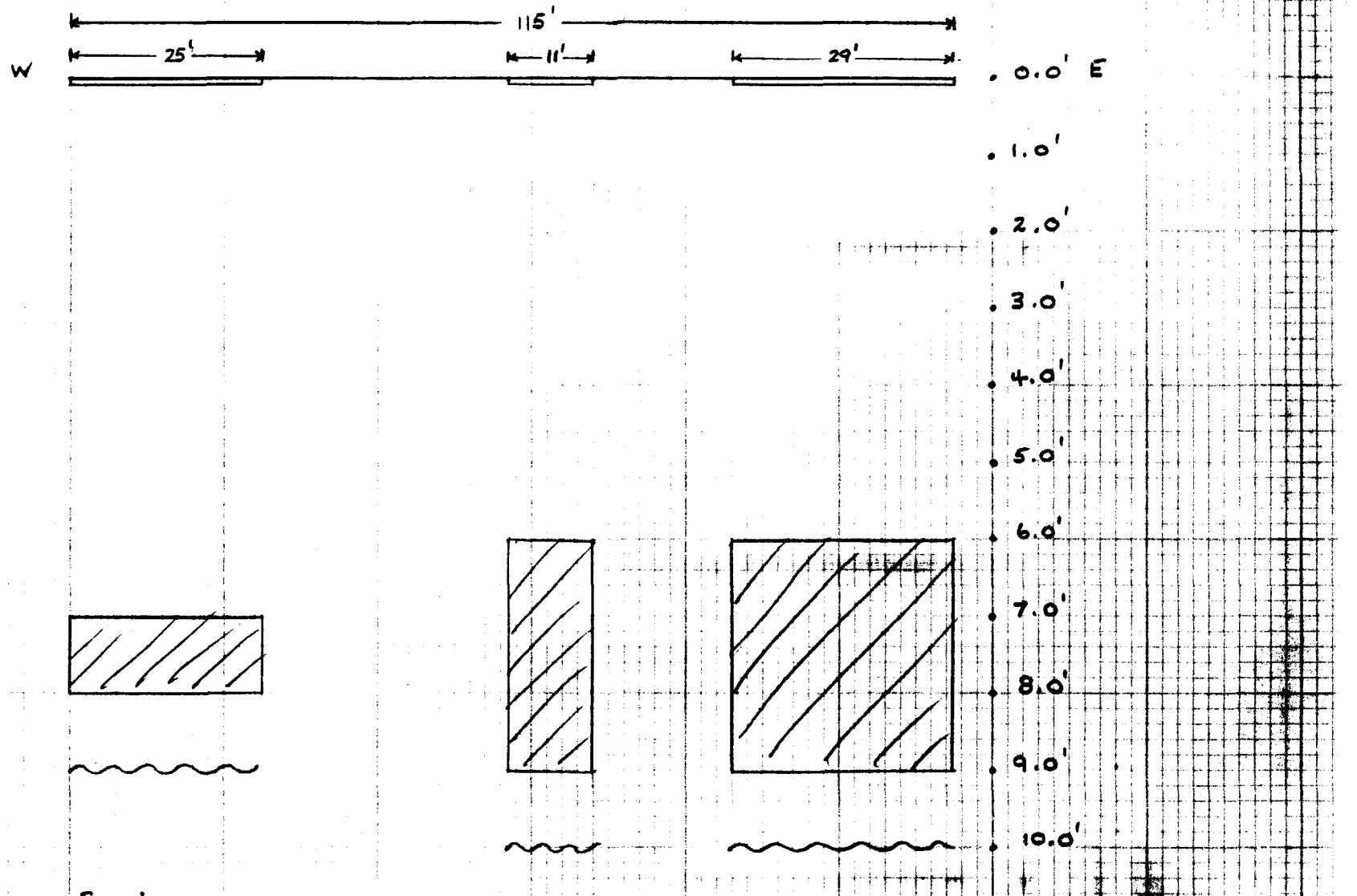
NOTE: MISC METAL OBJECTS, LIDS, RINGS ENCOUNTERED 0'-2'

LEGEND: BOT OF EXCAV. TRENCHED AREA
DRUM/CONTAINER
VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VE 1" 2'

D9 E-W

2372



SOIL: 0'-2' BACKFILL CLAYS.
2'-10' LIGHT/DARK BROWN CLAYS, TRACES OF COAL.

GROUNDWATER: 9' TO 10'

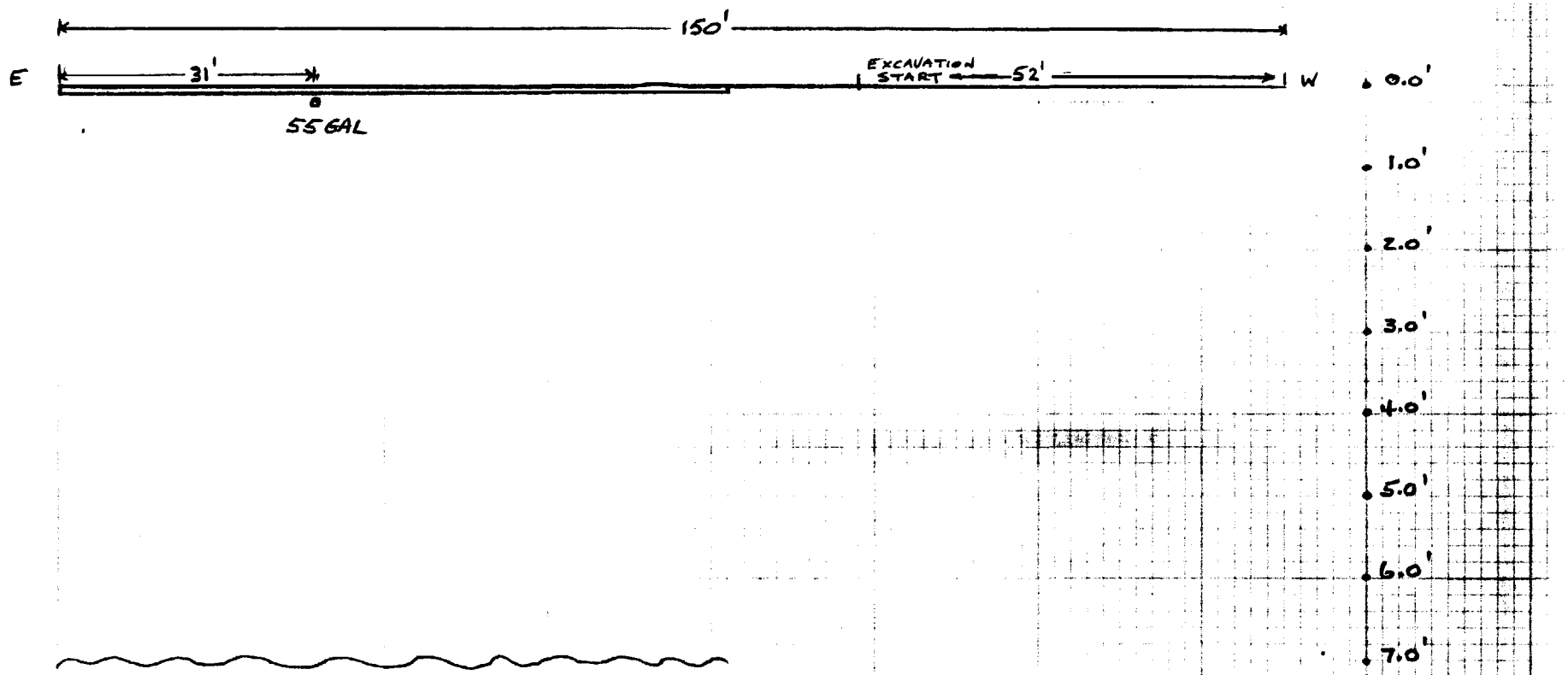
NOTE: MISC METAL OBJECTS, LIDS, RINGS ENCOUNTERED 0'-2'

LEGEND: BOT. OF EXCAV.
TRENCHED AREA
DRUM/CONTAINER
VISUAL CONTAMINATION

SCALE: HORZ: 1" TO 20'
VERT: 1" TO 2'

E 2 E-W

2372



SOIL: 0'-2' CLAY FILL, SOME DEBRIS
2'-7' LOOSE CLAY FILL.

GROUNDWATER: VARIED FROM 1.5' TO 7.5' DUE TO TERRAIN AND EAST AND WEST PONDS.

LEGEND:
- ROT OF TRENCH
- TRENCHED AREA
- DRUM

SCALE: HORZ: 1" TO 20'
VERT: 1' TO 2'

NOTE:
- TRENCH WAS NOT EXCAVATED TO TOTAL LENGTH DUE TO EMBANKEMENTS AND EAST AND WEST PONDS.
- MISC DEBRIS, METAL LIDS AND RINGS 0'-2'
- 1 [illegible] GAL [illegible] UM [illegible] SU [illegible] W [illegible] WEE [illegible] 2 [illegible] D C [illegible] TRE [illegible] 1.

E1

2372

DUE TO EMBANKMENT AND EAST POND. UNABLE TO TRENCH.

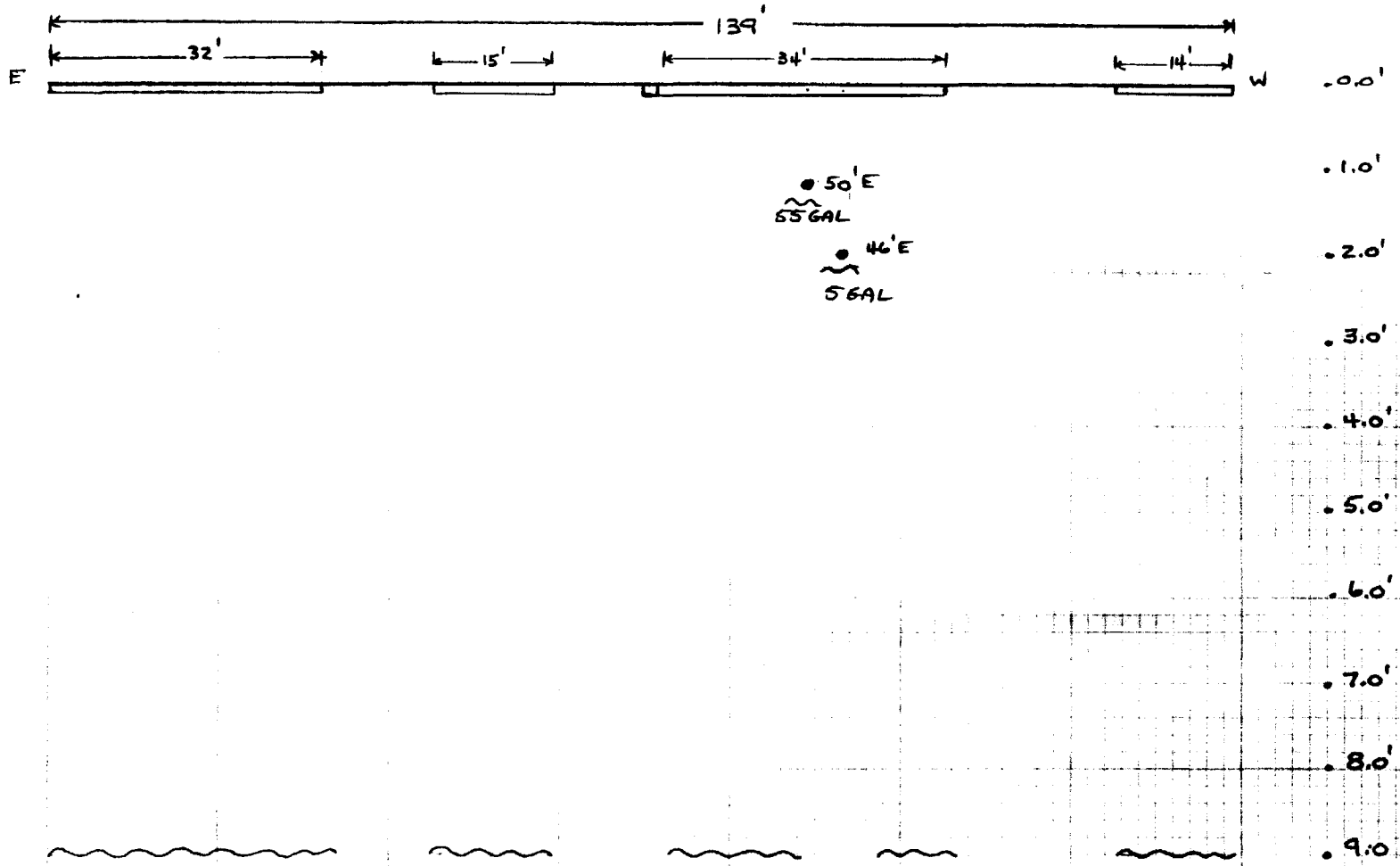
A TEST PIT WAS EXCAVATED AT THE WEST END OF TRENCH LINE 5' SOUTH OFF-SET

SOIL: 0'-7' CLAY AND ROCK FILL MATERIAL.

GROUNDWATER: 7'

E 3 E-W

2372



SOIL: 0'-2' CLAY FILL, DEBRIS, VEGATATION, SOME ROCK.
2'-6' CLAY FILL, SOME ROCK
6'-9' CLAY FILL, ROCK, GRAY CLAY.

GROUNDWATER, WESTEND 8'
EASTEND 6'

NOTE: • DUE TO TRENCH INFRINGING OF EAST AND WEST PONDS, HAD TO OFF-SET TRENCH AT CERTAIN LOCATIONS.
• MISC METAL DEBRIS, LIDS, RINGS 0'-2'

LEGEND:
BOT. OF EXCAV.
TRENCHED AREA.
DRUMS

SCALE:
HORZ: 1" - 20'
VERT: 1" - 2'

ATTACHMENT TM3-2

RESULTS OF AIR MONITORING
INVESTIGATION OF MAGNETIC ANOMALIES
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

QSOURCE
ENVIRONMENTAL SERVICES, INC.

Industrial Hygiene Project Notes

10-22-91

Project #: 69/424	Client: Exxon Serv	Page 3 Of 4
Date: 10/16/91	Notes By: [illegible] / Qsource	CC:

HNu Readings

Location	Time	Background	Site	Net (ppm)
A-1 trench from south to north = Bz	920 to 950	0.4	0.4 to 0.6	0 to 0.2
A-1 trench = Bz	950 to 1017	0.4	0.4	0
A-2 trench = Bz	1030 to 1110	0.4	0.4 to 1.2	0 to 0.8
A-3 trench = Bz	1117 to 1140	0.6	0.6 to 2.6	0 to 2.0
A-3 trench: in trench = 1 to 3 inches from drums	1140	0.6	50	49.4
A-3 trench = Bz	1336 to 1405	0.6 to 1.0	2.6 to 5.4 (1)	2.0 to 4.4
" " = 1 to 3 inches above trench soil pile	1400	1.0	15 to 20	14 to 19
A-3 trench = Bz using ORA's photoionizer	1410	0	0	0
A-4 trench = Bz	1446 to 1515	0.4	0.4 to 1.2	0 to 0.8
" " = 1 to 3 inches above trench soil pile	1446 to 1515	0.4	50 to 60	49.6 to 59.6
" " = Bz	1520 to 1543	0.6	0.6	0
" " = 1 to 3 inches above trench soil	1520 to 1543	0.6	10 to 300	9.4 to 299.4
A-5 trench = Bz	1615 to 1629	0.4 to 0.6	0.4 to 0.6	0
A-5 trench south to north = Bz	1700 to 1730	0.4	0.4 to 1.4	0 to 1.0
A-6 trench south to north = Bz	1805 to 1820	0.4	0.4 to 1.0	0 to 0.6

(1) At some times there were significant HNu reading peaks of 10 to 15 ppm in the Bz but the duration was less than one second.

F# DANIS005

QSOURCE
ENVIRONMENTAL SERVICES, INC.

Industrial Hygiene Project Notes

received 10-22-91

Project #: C91424	Client: Enro Serv	Page 4 of 5
Date: 10/17/91	Notes By: JR / Q[illegible]	CC:

HNu Readings

Location	Time	Background	Site	Net Gain
A-6 trench from south to North. ≈ 6"	905	0.6	0.6	—
" " north to south ≈ 6"	910 to 920	0.6	0.6 to 1.4	0 to 0.8
" " " ≈ 6"	930	0.6	0.6 to 5.2	0 to 4.6
" " " ≈ 1 inch	930	0.6	20 to 60	19.4 to 59.4
from trench soil (black colored)				
A-6 trench north to south ≈ 0"	945	0.6	up to 6.0	5.4
A-6 trench from 1 inch above trench soil	945	0.6	50 to 60	49.4 to 59.4
A-7 trench opened ≈ 6"	1317	0.6	0.6	—
A-8 A-7 trench opened ≈ 6"	1320 to 1324	0.6	0.6 to 5.0	0 to 4.4
A-8 A-7 trench downwind ≈ 1 inch from trench soil pile	1320 to 1324	0.6	2.4 to 130.0	1.8 to 129.4
A-9 trench opened ≈ 6"	1455 to 1517	0.4	0.4 to 3.0	0 to 2.6
A-9 trench downwind ≈ 1 inch from trench soil pile	1455 to 1517	0.4	50 to 240	49.6 to 239.6
A-9 trench black layer of soil	1610	0.4	up to 60	0 to 59.6
A-9 trench opened ≈ 6"	1600 to 1612	0.4	0.4 to 4.0	0 to 3.6
A-10 trench (north to south) opened ≈ 6"	1635 to 1647	0.6	0.6 to 5.2	0 to 4.6
* Note: Had some peak readings of 10 to 15 ppm but lasted < 1 second				
A-10 trench downwind ≈ 1 inch from trench soil	1635 to 1647	0.6	90 to 100	89.4 to 99.4
A-10 trench (south to south) opened ≈ 6"	1701 to 1745	0.4	0.4 to 1.0	0 to 0.6
A-10 trench downwind ≈ 1 inch from trench soil	1701 to 1745	0.4	50.0	49.6
from 4-6 feet in depth.				

QUOURCE
ENVIRONMENTAL SERVICES, INC.

received 10-22-91

Industrial Hygiene Project Notes

Project # 69/424	Client: Envosource	Page 3 Of 4
Date: 10/18/91	Notes By: JR/Quource	CC:

HNu Readings

Location	Time	Background	Site	Net (ppm)
A-11 trench north to south ≈ 6ft upwind	850 to 935	0.4	0.4 to 1.4	0 to 1.0
" " ≈ 6ft downwind	850 to 935	0.4	0.4 to 200	0 to 199.6
" " ≈ 1 inch above soil pile	930	0.4	200 to 300	199.6 to 299.6
" " ≈ 6ft downwind about 12ft from pile	930	0.4	50	49.6
" " ≈ 6ft downwind w/CRA's	940	0	223 max reading	
" " ≈ 6ft upwind	935 to to 15	0.4	0.4 to 1.4	0 to 1.0
" " ≈ 6ft downwind	935 to 1015	0.4	up to 220	up to 219.6
" " ≈ 1 inch above soil pile	950	0.4	400	399.6
" " ≈ 6ft upwind	1015 to 1045	0.4	0.4 to 1.0	0 to 0.6
B-2 trench ≈ 6ft	1450 to 1537	0.4	0.4	0
" " ≈ 1 inch above soil pile	1450 to 1537	0.4	0.4	0
B-3 trench ≈ 6ft (east to west)	1605 to 1640	0.8	0.8 to 1.8	0 to 1.0
B-3 trench (west to east) ≈ 6ft	1645 to 1658	0.6	0.6 to 0.8	0 to 0.2

ENVIRONMENTAL SERVICES, INC

received 10-22-91

Industrial Hygiene Project Notes

Project # 691424	Client: EnroServ	Page 2 Of 3
Date: 10 / 19 / 91	Notes By: [illegible] / [illegible]	CC:

HNu Readings

Location	Time	Background	Site	Net (ppm)
No HNu Readings between 830 to 1000 due to rain.				
B-5 Trench ≈ Bz	1020	0.8	0.8 to 1.0	0 to 0.2
No HNu Readings between 1247 to 1335 due to rain.				
C-2 trench ≈ Bz	1340	2.8	2.8	0
C-3 trench ≈ Bz	1345 to 1400	3.0	3.0 to 3.2	0 to 0.2
C-3 trench ≈ Bz	1400 to 1412	3.0	3.0 to 5.0	0 to 2.0
C-3 trench ≈ 1 inch above black soil from trench	1420	3.0	50	47.0

QSOURCE ENVIRONMENTAL SERVICES, INC.

Industrial Hygiene Project Notes

received 10-27-91

Project # 691424	Client: EnroServ	Page 4	Of 5
Date: 10/21/91	Notes By: JR/Qsource	CC:	

HNu Readings

Location	Time	Background	Site	Net (ppm)
D-10 trench (east to west) ≈ Bz upwind	843 to 900	0.6	0.8 to 3.0	0.2 to 2.4
" " ≈ 1 inch from black oily soil	856	0.6	94.0	93.4
" " ≈ Bz downwind	843 to 900	0.6	15 to 20	14.4 to 19.4
" " ≈ 1 inch from black oily soil	900	0.6	100	99.4
D-10 trench (west to east) ≈ Bz upwind	900 to 1000	0.8	1 to 3	0.2 to 2.2
" " ≈ Bz downwind	900 to 1000	0.8	20.0	19.2
" " ≈ 1 inch above black soil	1000	0.8	200.0	199.2
D-9 trench (east to west) ≈ Bz upwind	1000 to 1037	0.8	1.0 to 2.0	0.2 to 1.2
" " at trench/ground level	1033	0.8	50.0	49.2
" " ≈ 1 inch above soil pile	1040	0.8	250.0	249.2
" " ≈ Bz downwind 20 feet from pile	1045	0.8	up to 10.0	up to 9.2
D-8 trench (east to west) ≈ Bz upwind	1110	0.8	1.0 to 2.0	0.2 to 1.2
" " ≈ 1 inch above soil pile	1115	0.8	400.0	399.2
" " ≈ Bz downwind 8 feet from pile	1120	0.8	up to 200.0	up to 199.2
" " ≈ Bz downwind 20 feet from pile	1120	0.8	10.0	9.2
D-8 trench ≈ Bz upwind	1338 to 1415	0.8	1.8	1.0
" " ≈ 1 inch above soil pile	1338 to 1415	0.8	50.0	49.2
D-7 trench ≈ Bz upwind	1430 to 1530	0.8	1.8	1.0
" " ≈ Bz downwind 8 feet from pile	1430 to 1530	0.8	50.8	50.0
" " ≈ at trench level	1515	0.8	15.0	14.2
D-7 trench ≈ Bz upwind	1530 to 1605	0.8	0.8 to 1.8	0 to 1.0
D-6 trench ≈ Bz upwind	1625 to 1650	0.6	0.6	0
" " ≈ Bz upwind	1650 to 1720	0.6	0.6 to 1.4	0 to 0.8
" " ≈ Bz downwind	1650 to 1720	0.6	15 to 20	14.4 to 19.4
" " ≈ 1 inch above soil pile	1650 to 1720	0.6	200 to 300	199.4 to 299

QSOURCE
ENVIRONMENTAL SERVICES, INC.

Industrial Hygiene Project Notes

received 10-24-91 QPB

Project # G91424	Client: Enroserv	Page Of
Date: 10/22/91	Notes By: JE / Qsource	CC:

HNu Readings

Location	Time	Background	Site	Net (ppm)
D-5 trench ≈ Bz upwind	850	0.6	2.6	2.0
" " ≈ 1 inch above soil pile	855	0.6	+200.0	+199.4
D-5 trench ≈ Bz upwind	850 to 925	0.6	1 to 5	0.4 to 4.4
" " ≈ Bz upwind peaks < 1 second in duration		0.6	20.0	19.4
" " ≈ 1 inch above soil pile	850 to 925	0.6	400.0	399.4
" " ≈ at side of trench	850 to 925	0.6	200.0	199.4
" " ≈ Bz upwind	930 to 1000	0.4	1.4	1.0
" " ≈ 1 inch above soil pile	955	0.4	150.0	149.6
" " ≈ Bz upwind	1010	0.4	1.4	1.0
D-4 trench ≈ Bz upwind	1025 to 1037	0.4	0.8	0.4
" " ≈ 1 inch above soil pile	1040 to 1112	0.4	50.0	49.6
" " ≈ Bz upwind	1040 to 1112	0.4	1.8	1.0
D-3 trench (east to west) ≈ Bz upwind	1325 to 1355	0	0 to 3.0	up to 3.0
" " peaked < 1 second duration	1325 to 1355	0	4.3	4.3
" " ≈ Bz downwind	1325 to 1355	0	15 to 20	15 to 20
" " ≈ 1 inch above soil pile	1325 to 1355	0	263.0	263.0
" " ≈ Bz of operator	1325 to 1355	0	3 to 4.5	3.0 to 4.5
↳ peaked to 10 ppm but last less than 1 second				
D-3 trench ≈ Bz upwind	1356 to 1415	0.8	3.0	2.2
↳ peaked to 5.0 ppm, lasted less than 1 second				
" ≈ Bz downwind	1356 to 1415	0.8	200	199.2
" " ≈ Bz operator	1356 to 1415	0.8	up to 4.0	3.2
↳ peaked up to 8.0 ppm but duration is less than 1 second				
" " ≈ Bz upwind	1415 to 1445	0.8	1.0	0.2
" " ≈ Bz operator	1415 to 1445	0.8	1.6	0.8
D-2 trench ≈ Bz upwind	1500 to 1545	0	0 to 2.0	up to 2.0
↳ peaked to 4.2 ppm but duration of exposure < 1 second				
" " ≈ 1 inch above soil pile downwind	1500 to 1545	0	268.0	268.0
" " ≈ Bz operator	1500 to 1545	0	up to 2.0	up to 2.0

F# DANIS005

QSOURCE
ENVIRONMENTAL SERVICES, INC.

Industrial Hygiene Project Notes

received 10-24-91

Project # 691424	Client: Enroser V	Page 10-24-91 Of
Date: 10/22/91	Notes By: JR / Qsource	CC:

HNu Readings (con't)

Location	Time	Background	Site	Net (ppm)
D-2 trench ≈ Bz upwind	1545 to 1620	0	up to 2.0	up to 2.0
" " ≈ 1 inch above soil pile downwind	1545 to 1620	0	268.0	268.0
" " ≈ Bz of operator	1545 to 1620	0	up to 2.0	up to 2.0
" " ≈ Bz upwind	1657	0.4	1.2	0.8
" " ≈ downwind 5 feet from pile	1657	0.4	100.0	99.6
" " ≈ 1 inch above soil pile	1657	0.4	200 to 225	199.6 to 224.
D-1 trench ≈ Bz upwind	1730 to 1753	0	up to 3.6	up to 3.6
" " ≈ Bz of operator	1730 to 1753	0	up to 4.0	up to 4.0

F# DANIS005

QSOURCE
ENVIRONMENTAL SERVICES, INC.

Industrial Hygiene Project Notes

received 10-24-91

Project # G91424	Client: Emcoserv	Page 10-24-91 Of
Date: 10/23/91	Notes By: JE/Qsource	CC:

HNu Readings

Location	Time	Background	Site	Net (ppm)
D-1 trench ≈ Bz upwind	840 to 910	2.0	2.0 to 5.0	up to 3.0
" " ≈ Bz operator	840 to 910	2.0	2.0 to 5.0	up to 3.0
" " ≈ Bz downwind of soil pile	840 to 910	2.0	10 to 15	8 to 13
" " ≈ 1 inch from soil pile	840 to 910	2.0	20 to 50	18 to 48
E-3 trench ≈ Bz upwind	1110 to 1147	0.8	0.8	0
" " ≈ 1 inch above pile (soil)	1110 to 1147	0.8	1.0	0.2
E-2 trench ≈ Bz upwind	1330 to 1420	0.6	0.6 to 2.0	0 to 1.4
E-2 trench ≈ downwind of soil pile	1330 to 1420	0.6	up to 2.6	up to 2.0
" " Bz upwind	1430 to 1442	0.6	up to 1.2	up to 0.6
" " 1 inch above soil pile	1430 to 1442	0.6	up to 1.2	up to 0.6
E-2 trench ≈ Bz upwind	1555 to 1630	1.0	up to 1.6	0.6
≈ 1 inch above soil pile	1555 to 1630	1.0	up to 1.6	0.6
E-1 trench ≈ Bz upwind	1637 to 1700	1.0	up to 2.0	1.0
↳ peaks to 22 ppm but duration of exposure is ≈ 1 second				
Grid 1-1 locating UST #1 ≈ Bz upwind	1715-1750	1.0	up to 3.0	2.0
" " ≈ Trench level	1715-1750	1.0	up to 22.0	21.0
↳ these levels were peaks				

F# DANIS005

Industrial Hygiene Project Notes

Project # G91424	Client: EnroSeev	Page 2 Of 3
Date: 10/24/91	Notes By: [illegible]	CC:

HNu Readings

Location		Time	Background	Site	Net (ppm)
S. impoundment - sediment removal	3 Bz	915 to 1000	3.8	3.8 to 4.2	0 to 0.4
"	" 3 Bz	1040 to 1115	1.2	1.4	0.2
"	" 1 inch @ soil	1100	1.2	1.2	0
"	" 3 Bz	1320 to 1642	1.2 to 1.4	1.2 to 1.6	0 to 0.2
In CRZ	3 Bz	1815	1.2	1.2	0

Note: No trenching activities today on-site.

F# DAH8005

TOTAL P.04

Industrial Hygiene Project Notes

Project # G91424	Client: Enro Serv	Page 3 Of 4
Date: 10 / 25 / 91	Notes By: [illegible]	CC:

HNu Readings

Location		Time	Background	Site	Net (ppm)
In south impoundment	sediment removed ≈ Bz before work	756	2.4	3.0	0.6
During search of UST #2	≈ Bz upwind	845 to 850	2.6	3.0	0.4
"	" ≈ in trench	815 - 850	2.6	3.6	1.0
At fill hole of UST		845	2.6	100 to 300	1974 to 297
During search of UST #3	≈ Bz upwind	930 to 955	2.6	3.0	0.4
	≈ in trench	930 to 955	2.6	5.0	2.4
UST #3 search	≈ Bz upwind	1000 to 1030	2.6	3.0	0.4
During search of UST #4	≈ Bz	1000 to 1035	2.8	3.0	0.2
	≈ in trench	1032 to 1035	2.8	3.0	0.2
"	" ≈ Bz	1101 to 1125	1.8	2.2	0.4
"	" ≈ Bz	1250 to 1422	1.8 to 2.0	1.8 to 2.0	0
In south impoundment (sediment removed)	≈ Bz	1635 to 1715	2.4	2.6	0.2
During clean up with Hitchin 270LE		1745	2.2	2.2	0
During decon		1800	2.0	2.0	0

F# DANI3005

Industrial Hygiene Project Notes

Project # 69424	Client: Enco Sav	Page 2 Of 3
Date: 10/26/91	Notes By: [illegible]	CC:

HNu Readings

Location	Time	Background	Site	Net (ppm)
Decon procedures ≈ Bz	850 to 950	1.8	0.8	0
On-site leveling trench piles + rows ≈ Bz	1020 to 1110	0.8	1.0	0.2
Decon procedures ≈ Bz	1320 to 1515	0.6	0.6	0
Clean-up activities	1860	0.6	0.6	0

Note: No other activities but decon and clean-up today.

SDMS US EPA REGION V
FORMAT- OVERSIZED - 5
IMAGERY INSERT FORM

The item(s) listed below are not available in SDMS. In order to view original document or document pages, contact the Superfund Records Center.

SITE NAME	SUMMIT NATIONAL		
DOC ID #	128682		
DESCRIPTION OF ITEM(S)	MAP		
REASON WHY UNSCANNABLE	_X_ OVERSIZED	OR	___ FORMAT
DATE OF ITEM(S)	12-01-1991		
NO. OF ITEMS	1		
PHASE	REMEDIATION		
PRP			
PHASE (AR DOCUMENTS ONLY)	___ Remedial ___ Removal ___ Deletion Docket ___ AR ___ Original ___ Update # ___ Volume ___ of ___		
O.U.			
LOCATION	Box # _3_ Folder # _6_ Subsection ___		
COMMENT(S)			

TECHNICAL MEMORANDUM NO. 4

GROUNDWATER AND SURFACE WATER CHARACTERIZATION

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 4

GROUNDWATER AND SURFACE WATER CHARACTERIZATION
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Characterization of groundwater and surface water at the Summit National Superfund Site (Site) was performed during the period of October 28, 1991 to December 11, 1991, in accordance with the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Design Work Plan (RD Work Plan) for the Site.

Groundwater levels in the on- and off-Site monitoring wells were measured on October 28, 1991. Sampling of the monitoring wells and the surface waters of the east and west on-Site ponds then commenced on October 29, 1991 and was completed on November 4, 1991. All samples collected were delivered to Wadsworth/Alert Laboratories in North Canton, Ohio for analyses as required by the RD Work Plan. A second round of groundwater level measurements was conducted during the period of December 10 to 11, 1991.

The results of the groundwater level measurements are presented in Table TM4-1, and the analytical results of the groundwater and surface water samples are presented in Attachments TM4-1 and TM4-2, respectively. Table TM4-1 identifies several specific discrepancies concerning monitoring well/piezometer identifications which need to be resolved with USEPA and OEPA.

Based on the results of the groundwater characterization, there does not appear to be any significant changes in the groundwater chemistry in the Water Table Unit or the Intermediate Unit, from the USEPA Remedial Investigation sampling events in 1988 to the Summit National Facility Trust (SNFT) 1991 pre-design sampling event. Therefore, the location of the pipe and media drain and Intermediate Unit extraction wells as proposed in the Statement of Work are acceptable for hydraulic containment of Site-related contaminated groundwater.

Based on the results of the step-drawdown tests conducted at the Site prior to commencement of the groundwater treatability study (see Technical Memorandum No. 8), the maximum flow rates that can be expected from MW-10 and MW-24 are less than 0.5 gallons per minute (gpm). These low flow rates, which are less than the 1 gpm anticipated in the Statement of Work, were not sustainable and therefore conversion of these two monitoring wells to temporary extraction wells during the Remedial Action will not be conducted.

TABLE TM 4-1

WATER LEVEL MEASUREMENTS
MONITORING WELLS AND PIEZOMETERS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Well/ Piezometer Number	PVC Elevation	Casing Elevation	Remedial Investigation: December 1985 Water Level (1) Depth	December 1985 Water Level (1) Elevation	January 1984 Water Level (2) Depth	January 1984 Water Level (2) Elevation	June 1986 Water Level (3) Depth	June 1986 Water Level (3) Elevation	September 1986 Elevation (4)	September 1984 Water Level (2) Depth	September 1984 Water Level (2) Elevation	Remedial Design: Casing Elevation	October 1991 Water Level Depth	October 1991 Water Level Elevation	December 1991 Water Level Depth	December 1991 Water Level Elevation	Casing Elevation Difference
MW-2	1,100.92	1,101.06	7.87	1,093.19	7.20	1,093.86	6.45	1,094.47	1,101.02	8.05	1,092.97	1,101.19	8.19	1,093.00	8.11	1,093.08	0.13
MW-3	1,099.61	1,099.61	12.09	1,087.52	12.40	1,087.21	11.55	1,088.06	1,099.52	14.20	1,085.32	1,099.83	13.70	1,086.13	13.27	1,086.56	0.22
MW-4	1,088.87	1,089.02	8.06	1,080.96	8.90	1,080.12	7.30	1,081.57	1,089.12	9.39	1,079.73	1,089.28	8.72	1,080.56	8.42	1,080.86	0.26
MW-5	1,087.48	1,087.58	20.34	1,067.24	20.70	1,066.88	20.35	1,067.13	1,087.78	21.30	1,066.48	1,087.92	21.25	1,066.67	17.26	1,070.66	0.34
MW-6	1,101.71	1,101.81	30.25	1,071.56	37.60	1,064.21	36.85	1,064.86	1,101.70	35.70	1,066.00	1,101.96	29.21	1,072.75	18.50	1,083.46	0.15
MW-7	1,106.66	1,106.86	7.58	1,099.28	7.25	1,099.61	6.25	1,100.41	1,106.74	8.55	1,098.19	1,106.86	9.05	1,097.81	8.83	1,098.03	0.00
MW-8	1,106.56	1,106.74	32.32*	1,074.24	32.95	1,073.79	31.95	1,074.61	1,106.62	33.00	1,073.62	1,106.79	33.55	1,073.24	33.24	1,073.55	0.05
MW-9	1,097.03	1,097.28	9.36*	1,087.67	9.50	1,087.78	8.00	1,089.03	1,097.31	10.20	1,087.11	1,097.37	9.61 (5)	1,087.76	8.84	1,088.53	0.09
MW-10	1,095.40	1,097.07	23.78	1,073.29	9.30	1,087.77	6.65	1,088.75	1,097.13	10.20	1,086.93	1,095.74	8.00 (5)	1,087.74	7.88	1,087.86	-1.33
MW-11	1,095.81	1,096.16	9.87	1,086.29	10.40	1,085.76	9.20	1,086.61	1,096.14	14.20	1,081.94	1,096.08	12.10 (5)	1,083.98	10.80	1,085.28	-0.08
MW-12	1,096.49	1,096.77	68.75	1,028.02	31.30	1,065.47	26.50	1,069.99	1,096.73	32.85	1,063.88	1,096.77	32.61	1,064.16	28.88	1,067.89	0.00
MW-13	1,096.20	1,096.43	29.79	1,066.64	26.90	1,069.53	26.75	1,069.45	1,096.41	28.60	1,067.81	1,096.49	28.85	1,067.64	35.43	1,061.06	0.06
MW-14	1,098.84	1,099.34	42.19	1,057.15	34.90	1,064.44	33.55	1,065.29	1,099.27	32.25	1,067.02	1,099.12	36.48	1,062.64	37.02	1,062.10	-0.22
MW-15	1,097.69	1,098.04	11.73	1,086.31	11.60	1,086.44	9.95	1,087.74	1,098.00	13.20	1,084.80	1,098.09	29.25 (5)	1,068.84	11.34	1,086.75	0.05
MW-16	1,097.78	1,097.12	32.92	1,064.20	28.30	1,068.82	25.75	1,072.03	1,097.95	29.60	1,068.35	1,097.93	12.21 (5)	1,085.72	28.75	1,069.18	0.81
MW-17	1,083.83	1,084.25	1.81	1,082.44	NA	NA	2.15	1,081.68	1,084.40	3.40	1,081.00	1,084.23	2.49	1,081.74	2.20	1,082.03	-0.02
MW-18	NA	NA	–	–	–	–	–	–	1,098.70	30.56	1,068.14	1,098.83	32.25	1,066.58	32.11	1,066.72	-
MW-19	NA	NA	–	–	–	–	–	–	1,099.21	37.20	1,062.01	1,099.44	28.09	1,071.35	26.89	1,072.55	-
MW-20	1,089.54	1,089.55	–	–	21.55	1,068.00	20.00	1,069.54	1,089.75	23.20	1,066.55	1,089.83	24.05	1,065.78	23.03	1,066.80	0.28
MW-21	NA	NA	–	–	–	–	–	–	1,089.51	40.10	1,049.41	1,089.06	19.95	1,069.11	57.45	1,031.61	-
MW-22	1,102.00	1,102.40	–	–	32.65	1,069.75	28.75	1,073.25	1,102.28	37.40	1,064.88	1,102.42	39.86	1,062.56	33.85	1,068.57	0.02
MW-23	NA	NA	–	–	–	–	–	–	1,101.13	36.05	1,065.08	1,100.49	NM (6)	-	NM (6)	-	-
MW-24	NA	NA	–	–	–	–	–	–	1,096.38	31.70	1,064.68	1,096.42	30.50	1,065.92	27.16	1,069.26	-
MW-25	NA	NA	–	–	–	–	–	–	1,095.87	19.80	1,076.07	1,095.65	20.73	1,074.92	19.10	1,076.55	-
MW-26	1,096.53	1,096.72	–	–	36.50	1,060.22	32.85	1,063.68	1,096.74	33.60	1,063.14	1,096.86	3.81	1,093.05	33.02	1,063.84	0.14
MX-1	NA	NA	–	–	–	–	–	–	–	–	–	1,092.40	NM	–	2.77	1,089.63	-
2BB5	NA	NA	–	–	–	–	–	–	1,093.91	6.61	1,087.30	1,095.58	8.76	1,086.82	6.52	1,089.06	-
2BB6	NA	NA	–	–	–	–	–	–	1,095.06	7.30	1,087.76	1,096.04	9.66	1,086.38	8.70	1,087.34	-
2BB7	NA	NA	–	–	–	–	–	–	1,095.62	9.80	1,085.82	1,096.07	7.16	1,088.91	8.87	1,087.20	-
2BB8	NA	NA	–	–	–	–	–	–	1,093.23	7.20	1,086.03	1,093.73	7.52	1,086.21	6.27	1,087.46	-
Tipple	NA	NA	–	–	–	–	–	–	1,101.44	11.30	1,090.14	1,101.84	9.20	1,092.64	NM	-	-

TABLE TM 4-1

WATER LEVEL MEASUREMENTS
MONITORING WELLS AND PIEZOMETERS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

			Remedial Investigation									Remedial Design					
			December 1985 Water Level (1)		January 1984 Water Level (2)		June 1986 Water Level (3)		September 1986	September 1984 Water Level (2)			October 1991 Water Level		December 1991 Water Level		
Well/Piezometer Number	PVC Elevation	Casing Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Elevation (4)	Depth	Elevation	Casing Elevation	Depth	Elevation	Depth	Elevation	Casing Elevation Difference
P1-2	1,102.78	NA	--	--	7.40	1,095.38	6.75	1,096.03	1,102.78	8.20	1,094.58	1,103.12	NM	-	9.87	1,093.25	0.34
P1-6	1,096.87	NA	--	--	10.60	1,086.27	5.55	1,091.32	1,096.82	7.42	1,089.40	1,097.20	NM	-	7.68	1,089.52	0.33
P2-1	1,101.14	NA	--	--	6.30	1,094.84	5.25	1,095.89	1,101.26	7.48	1,093.78	1,101.57	NM	-	7.49	1,094.08	0.43
P3-2	1,101.85	NA	--	--	12.60	1,089.25	11.75	1,090.10	1,101.89	13.78	1,088.11	1,102.28	NM	-	12.40	1,089.88	0.43
P3-4	1,098.16	NA	--	--	10.10	1,088.06	8.70	1,089.46	1,098.11	10.54	1,087.57	1,098.51	NM	-	8.83	1,089.68	0.35
P4-1	1,098.01	NA	--	--	8.90	1,089.11	8.00	1,090.01	1,098.03	9.87	1,088.16	1,098.49	NM	-	8.61	1,089.88	0.48
P4-5	1,096.79	NA	--	--	8.90	1,087.89	7.70	1,089.09	1,095.70	8.21	1,087.49	--	NM	-	N.M. (7)	-	-
P5-2	1,096.20	NA	--	--	7.60	1,088.60	5.50	1,090.70	1,096.18	8.60	1,087.58	1,096.85	NM	-	7.40	1,089.45	0.65
P5-4	1,094.50	NA	--	--	6.50	1,088.00	5.65	1,088.85	1,094.49	7.73	1,086.76	1,095.07	NM	-	7.16	1,087.91	0.57
P5-7	1,094.88	NA	--	--	8.10	1,086.78	7.50	1,087.38	1,094.91	9.34	1,085.57	1,095.35	NM	-	8.28	1,087.07	0.47
P6-5	1,094.66	NA	--	--	8.00	1,086.66	8.25	1,086.41	1,094.57	12.22	1,082.35	1,095.15	NM	-	9.97	1,085.18	0.49
P6-7	1,097.28	NA	--	--	11.80	1,085.48	11.20	1,086.08	1,097.30	14.64	1,082.66	1,097.63	NM	-	12.54	1,085.09	0.35
PX-1												1,102.61	NM	-	2.40	1,100.21	-

Notes:

(1) Depths are from top of casing, except where noted by * (top of PVC)
(2) Depths are from top of casing for wells and top of PVC for Piezometers
(3) All depths are from top of PVC
(4) Casing elevation used for wells and PVC elevation for Piezometers
(5) Level measured after sampling
(6) Unable to remove well cap
(7) Piezometers not found
-- Well/Piezometer not installed on that date
NA - Not available
NM - Not measured
MW-23 - Well could not be opened.
MX-1 - Well located on Site but not identified in RI.
P4-5 - Piezometer not located, believed to be destroyed.
PX-1 - Piezometer located on Site but not identified in RI.

ATTACHMENT TM4-1

GROUNDWATER ANALYTICAL DATA

SUMMIT NATIONAL SUPERFUND SITE

DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Notes:

B	Analyte has been found in the laboratory blank as well as the sample. Indicates possible/probable contamination.
+	Correlation coefficient for method of standard addition is less than 0.955.
E	Value is estimated due to presence of interference.
J	An estimated value.
R	Spike sample recovery is not within control limits.
S	Value is determined by standard addition.
[ ]	Positive values less than required detection limit by contract.
NA	Not analyzed.
ND	Not detected. Value in parenthesis following ND is detection limit.
NR	No reading.
NS	Not sampled.

MW-2
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-2	MW-2	MW-2	MW-2
Sample Number:	GW002001	GW026001	AVERAGE	1091-002
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	09/10/86		11/02/91
OTR Number:	E9855	EC305		
ITR Number:	ME4428	MEG747		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		8 J, B	4.0	10
benzene	5 J, B		2.5	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		20 B	10.0	9 J
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				ND (10)
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		ND (10)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				2 J
2-hexanone				6 J
methylene chloride		1 J	0.5	ND (10)
4-methyl-2-pentanone				5 J
styrene				ND (10)
1,1,2,2-tetrachloroethane				2 J
tetrachloroethene				ND (10)
toluene		2 J	1.0	4 J
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				11
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-2
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-2	MW-2	MW-2	MW-2
Sample Number:	GW002001	GW026001	AVERAGE	1091-002
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	09/10/86		11/02/91
OTR Number:	E9855	EC305		
ITR Number:	ME4428	MEG747		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate		8 J, B	4.0	20
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate				ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-2
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-2	MW-2	MW-2	MW-2
Sample Number:	GW002001	GW026001	AVERAGE	1091-002
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	09/10/86		11/02/91
OTR Number:	E9855	EC305		
ITR Number:	ME4428	MEG747		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-2
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-2	MW-2	MW-2	MW-2
Sample Number:	GW002001	GW026001	AVERAGE	1091-002
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	09/10/86		11/02/91
OTR Number:	E9855	EC305		
ITR Number:	ME4428	MEG747		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	82 [ ]	419	250.5	ND (200)
Antimony				ND (60)
Arsenic				ND (5)
Barium				56
Beryllium				ND (5)
Cadmium	12		6.0	ND (5)
Calcium	376,300 R	384,000	380,150	300,000
Chromium		5 [ ]	2.5	ND (10)
Cobalt	23 [ ], R	36 [ ]	29.5	ND (50)
Copper				12
Cyanide				NA
Iron	189,100 R, E	183,000	186,050	140,000
Lead				ND (5)
Magnesium	168,200 R, E	173,000	170,600	130,000
Manganese	8,920	10,600	9,760	7,700
Mercury				ND (0.2)
Nickel	54 R	67	60.5	60
Potassium	8,737	12,300	10,519	9,900
Selenium				ND (5)
Silver				ND (10)
Sodium	37,300 E	50,600	43,950	64,000
Thallium				ND (10)
Tin				NA
Vanadium	41 [ ]		20.5	ND (50)
Zinc	118	292	205	850
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	12,300		1,600
Antimony	NA	69		ND (60)
Arsenic	NA			ND (5)
Barium	NA	80 [ ]		61
Beryllium	NA			ND (5)
Cadmium	NA	7.5		ND (5)
Calcium	NA	365,000		320,000
Chromium	NA	25		13
Cobalt	NA	66		ND (50)
Copper	NA	40		24
Cyanide	NA			NA
Iron	NA	280,000		190,000
Lead	NA			6
Magnesium	NA	169,000		140,000
Manganese	NA	11,000		8,700
Mercury	NA	0.3		ND (0.2)
Nickel	NA	137		64

MW-2
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-2	MW-2	MW-2	MW-2
Sample Number:	GW002001	GW026001	AVERAGE	1091-002
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	09/10/86		11/02/91
OTR Number:	E9855	EC305		
ITR Number:	ME4428	MEG747		
Potassium	NA	14,500 E		11,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	41,900		41,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	18 [ ]		ND (50)
Zinc	NA	631		680
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	4.0		64
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	3.6		1.9
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		33
Chloride	NA	31		48
Cyanide	NA	NA		ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.26
Phosphate (PO4)	NA	NA		0.1
Sulfate	NA	1,870		1,900
Total Dissolved Solids	NA	3,210		2,700
Total Suspended Solids	NA	1,310		92
Field Parameters				
pH (standard units)	6.6	5.1	5.9	> 10
Specific Conductance (µmhos/cm)	2,700	1,700	2,200	2,000
Temperature (degrees F)	NA	56		51

MW-3
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-3	MW-3	MW-3	MW-3
Sample Number:	GW003001	GW042001	AVERAGE	1091-003
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/11/86		11/03/91
OTR Number:	E9860	EC323		
ITR Number:	ME4433	MEG765		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		7 J, B	3.5	ND (10)
benzene	8 B		4.0	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		15 B	7.5	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane	17	14	15.5	32
1,2-dichloroethane		13	6.5	40
1,1-dichloroethene		1 J	0.5	2 J
1,2-dichloroethene	NA	NA		120
trans-1,2-dichloroethene	25	32	28.5	NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride		2 J, B	1.0	ND (10)
4-methyl-2-pentanone				ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene		3 J	1.5	ND (10)
1,1,1-trichloroethane	22	23	22.5	30
1,1,2-trichloroethane				ND (10)
trichloroethene	2 J	4 J	3.0	9 J
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				ND (10)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-3
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-3	MW-3	MW-3	MW-3
Sample Number:	GW003001	GW042001	AVERAGE	1091-003
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/11/86		11/03/91
OTR Number:	E9860	EC323		
ITR Number:	ME4433	MEG765		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate		4 J, B	2.0	ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				2 J
dimethylphthalate				ND (10)
di-n-butylphthalate		2 J, B	1.0	ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone	17	4 J	10.5	ND (10)
2-methylnaphthalene				3 J
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-3
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-3	MW-3	MW-3	MW-3
Sample Number:	GW003001	GW042001	AVERAGE	1091-003
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/11/86		11/03/91
OTR Number:	E9860	EC323		
ITR Number:	ME4433	MEG765		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol		6 J	3.0	ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin	0.05			ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-3
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-3	MW-3	MW-3	MW-3
Sample Number:	GW003001	GW042001	AVERAGE	1091-003
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/11/86		11/03/91
OTR Number:	E9860	EC323		
ITR Number:	ME4433	MEG765		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	156 [ ]	785	471	ND (200)
Antimony		67	33.5	ND (60)
Arsenic				ND (5)
Barium				10
Beryllium				ND (5)
Cadmium	20		10.0	ND (5)
Calcium	473,100 R	551,000	512,050	580,000
Chromium	1,079 E	6.8 [ ]	543	18
Cobalt		11 [ ]	5.5	ND (50)
Copper	28		14.0	ND (10)
Cyanide				NA
Iron	244,100 R, E	296,000	270,050	150,000
Lead	5 R		2.5	ND (5)
Magnesium	158,900 R, E	176,000	167,450	190,000
Manganese	9,635	11,200	10,418	9,800
Mercury				ND (0.2)
Nickel	570 R	14 [ ]	292	ND (40)
Potassium	14,686	11,500	13,093	11,000
Selenium				ND (5)
Silver				ND (10)
Sodium	184,700 E	242,000	213,350	170,000
Thallium				ND (10)
Tin				NA
Vanadium	54		27.0	ND (50)
Zinc	45	142	93.5	700
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	649		5,600
Antimony	NA	55 [ ]		76
Arsenic	NA			ND (5)
Barium	NA			43
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	532,000		480,000
Chromium	NA			16
Cobalt	NA	7.6 [ ]		ND (50)
Copper	NA			27
Cyanide				NA
Iron	NA	286,000		270,000
Lead	NA			ND (5)
Magnesium	NA	172,000		170,000
Manganese	NA	11,000		10,000
Mercury	NA	0.7		ND (0.2)
Nickel	NA	11 [ ]		ND (40)

MW-3
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-3	MW-3	MW-3	MW-3
Sample Number:	GW003001	GW042001	AVERAGE	1091-003
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/11/86		11/03/91
OTR Number:	E9860	EC323		
ITR Number:	ME4433	MEG765		
Potassium	NA	11,100 E		13,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	232,000		160,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA			ND (50)
Zinc	NA	132		160
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	150		110
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	3.0		4.6
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		57
Chloride	NA	316		240
Cyanide	NA	NA		ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		ND (0.01)
Phosphate (PO4)	NA	NA		0.1
Sulfate	NA	2100		2,700
Total Dissolved Solids	NA	4290		4,100
Total Suspended Solids	NA	46		260
Field Parameters				
pH (standard units)	6.2	NA		8.27
Specific Conductance (µmhos/cm)	3,500	4,000	3,750	2,250
Temperature (degrees F)	NA	60		53

MW-4
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-4	MW-4	MW-4	MW-4
Sample Number:	GW004001	GW019001	AVERAGE	1091-004
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/05/84	9/09/86		10/31/91
OTR Number:	E9861	EB197		
ITR Number:	ME4434	MEB397		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		3 J, B	1.5	ND (10)
benzene	3 J, B		1.5	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		16 B	8.0	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				ND (10)
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		ND (10)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride	1,672	5	838.5	ND (10)
4-methyl-2-pentanone				ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene				6
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				2
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-4
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-4	MW-4	MW-4	MW-4
Sample Number:	GW004001	GW019001	AVERAGE	1091-004
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/05/84	9/09/86		10/31/91
OTR Number:	E9861	EB197		
ITR Number:	ME4434	MEB397		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate		8 J, B	4.0	ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate		3 J, B	1.5	ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-4
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-4	MW-4	MW-4	MW-4
Sample Number:	GW004001	GW019001	AVERAGE	1091-004
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/05/84	9/09/86		10/31/91
OTR Number:	E9861	EB197		
ITR Number:	ME4434	MEB397		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-4
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-4	MW-4	MW-4	MW-4
Sample Number:	GW004001	GW019001	AVERAGE	1091-004
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/05/84	9/09/86		10/31/91
OTR Number:	E9861	EB197		
ITR Number:	ME4434	MEB397		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum		47 [ ]	23.5	ND (200)
Antimony				ND (60)
Arsenic				ND (5)
Barium				ND (10)
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	358,100 R	505,000	431,550	410,000
Chromium				ND (10)
Cobalt				ND (50)
Copper				ND (10)
Cyanide				NA
Iron	8,731 R, E	19,800	14,266	5,700
Lead				ND (5)
Magnesium	197,600 R, E	228,000	212,800	200,000
Manganese	734	1,530	1,132	820
Mercury				ND (0.2)
Nickel				ND (40)
Potassium	15,535	18,300	16,918	16,000
Selenium				ND (5)
Silver				ND (10)
Sodium	45,110 E	94,800	69,955	67,000
Thallium				ND (10)
Tin				NA
Vanadium				ND (50)
Zinc		34	17.0	55
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	994		860
Antimony	NA			ND (60)
Arsenic	NA			ND (5)
Barium	NA	154 [ ]		43
Beryllium	NA			ND (5)
Cadmium	NA	5.4		ND (5)
Calcium	NA	448,000		360,000
Chromium	NA	6.3 [ ]		ND (10)
Cobalt	NA			ND (50)
Copper	NA	12 [ ]		ND (10)
Cyanide				NA
Iron	NA	25,900		11,000
Lead	NA			ND (5)
Magnesium	NA	203,000		180,000
Manganese	NA	1,380		740
Mercury	NA			ND (0.2)
Nickel	NA	7.5 [ ]		ND (40)

MW-4
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-4	MW-4	MW-4	MW-4
Sample Number:	GW004001	GW019001	AVERAGE	1091-004
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/05/84	9/09/86		10/31/91
OTR Number:	E9861	EB197		
ITR Number:	ME4434	MEB397		
Potassium	NA	16,500 E		14,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	81,600		64,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	5.4 [ ]		ND (50)
Zinc	NA	46		81
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	245		220
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	2.8		5
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		40
Chloride	NA	109		10
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		ND (0.01)
Phosphate (PO4)	NA	NA		ND (0.1)
Sulfate	NA	1,650		1,900
Total Dissolved Solids	NA	3,060		2,700
Total Suspended Solids	NA	119		40
Field Parameters				
pH (standard units)	8.5	6.9	7.7	7.57
Specific Conductance (µmhos/cm)	3,000	3,000	3,000	210
Temperature (degrees F)	NA	58		49

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Organic Compounds (units - µg/L)					
Volatiles					
acetone		3 J, B	4 J, B	2.3	5 J
benzene	4 J, B			1.3	ND (10)
bromodichloromethane	NA	NA	NA		ND (10)
bromoform	NA	NA	NA		ND (10)
bromomethane	NA	NA	NA		ND (10)
2-butanone		15 B	16 B	10.3	8 J
carbon disulfide					ND (10)
carbon tetrachloride	NA	NA	NA		ND (10)
chlorobenzene					ND (10)
chloroethane	NA	NA	NA		ND (10)
chloroform					ND (10)
chloromethane					ND (10)
dibromochloromethane	NA	NA	NA		ND (10)
1,1-dichloroethane					ND (10)
1,2-dichloroethane					ND (10)
1,1-dichloroethene					ND (10)
1,2-dichloroethene	NA	NA	NA		ND (10)
trans-1,2-dichloroethene					NA
1,2-dichloropropane	NA	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA	NA		ND (10)
ethylbenzene					ND (10)
2-hexanone					5 J
methylene chloride	957	3 J	3 J	321	ND (10)
4-methyl-2-pentanone					4 J
styrene					ND (10)
1,1,2,2-tetrachloroethane					ND (10)
tetrachloroethene					ND (10)
toluene		4 J	3 J	2.3	3 J
1,1,1-trichloroethane					ND (10)
1,1,2-trichloroethane					ND (10)
trichloroethene					ND (10)
vinyl acetate	NA	NA	NA		ND (10)
vinyl chloride					ND (10)
xylenes (total)					5 J
Base/Neutral Compounds					
acenaphthene					ND (10)
acenaphthylene					ND (10)
aniline					ND (10)
anthracene					ND (10)
benzo(a)anthracene					ND (10)
benzo(a)pyrene					ND (10)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
benzo(b)fluoranthene					ND (10)
benzo(g,h,i)perylene					ND (10)
benzo(k)fluoranthene					ND (10)
benzoic acid					ND (10)
benzyl alcohol					ND (10)
bis(2-chloroethoxy)methane	NA	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA	NA		ND (10)
bis(2-chloroisopropyl)ether					ND (10)
bis(2-ethylhexyl)phthalate		6 J, B	5 J, B	3.7	24
butyl benzyl phthalate					ND (10)
4-bromophenyl phenyl ether	NA	NA	NA		ND (10)
carbazole	NA	NA	NA		ND (10)
4-chloroaniline	NA	NA	NA		ND (10)
2-chloronaphthalene	NA	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA			ND (10)
chrysene					ND (10)
dibenz(a,h)anthracene					ND (10)
dibenzofuran					ND (10)
1,2-dichlorobenzene					ND (10)
1,3-dichlorobenzene					ND (10)
1,4-dichlorobenzene					ND (10)
3-3'-dichlorobenzidine	NA	NA	NA		ND (10)
diethylphthalate					ND (10)
dimethylphthalate					ND (10)
di-n-butylphthalate		2 J, B	3 J, B	1.7	ND (10)
di-n-octylphthalate					ND (10)
2,4-dinitrotoluene	NA	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA	NA		ND (10)
fluoranthene					ND (10)
fluorene					ND (10)
hexachlorobenzene					ND (10)
hexachlorobutadiene	NA	NA	NA		ND (10)
hexachlorocyclopentadiene					ND (10)
hexachloroethane					ND (10)
indeno(1,2,3-cd)pyrene					ND (10)
isophorone					ND (10)
2-methylnaphthalene					ND (10)
naphthalene					ND (10)
2-nitroaniline	NA	NA	NA		ND (50)
3-nitroaniline	NA	NA	NA		ND (50)
4-nitroaniline	NA	NA	NA		ND (50)
nitrobenzene	NA	NA	NA		ND (10)
N-nitroso-dimethylamine					ND (10)
N-nitroso-di-n-propylamine	NA	NA	NA		ND (10)
N-nitroso-diphenylamine(1)					ND (10)
phenanthrene					ND (10)
pyrene					ND (10)
1,2,4-trichlorobenzene					ND (10)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Acid Compounds					
4-chloro-3-methylphenol					ND (10)
2-chlorophenol	NA	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA	NA		ND (10)
2,4-dimethylphenol					ND (10)
2,4-dinitrophenol	NA	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA	NA		ND (50)
2-methylphenol					ND (10)
4-methylphenol					ND (10)
2-nitrophenol					ND (10)
4-nitrophenol					ND (50)
pentachlorophenol					ND (50)
phenol					ND (10)
2,4,5-trichlorophenol	NA	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA	NA		ND (10)
Pesticides					
Aldrin					ND (0.05)
alpha-BHC					ND (0.05)
beta-BHC					ND (0.05)
delta-BHC					ND (0.05)
gamma-BHC (Lindane)					ND (0.05)
alpha-Chlordane	NA	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA	NA		ND (0.5)
4,4'-DDD	NA	NA	NA		ND (0.1)
4,4'-DDE					ND (0.1)
4,4'-DDT					ND (0.1)
Dieldrin					ND (0.1)
Endosulfan I					ND (0.05)
Endosulfan II	NA	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA	NA		ND (0.1)
Endrin					ND (0.1)
Endrin ketone	NA	NA	NA		ND (0.1)
Heptachlor					ND (0.05)
Heptachlor epoxide					ND (0.05)
Methoxychlor	NA	NA	NA		ND (0.5)
Toxaphene					ND (1.0)
PCBs					
Arochlor-1016	NA	NA	NA		ND (0.5)
Arochlor-1221	NA	NA	NA		ND (0.5)
Arochlor-1232					ND (0.5)
Arochlor-1242					ND (0.5)
Arochlor-1248					ND (0.5)
Arochlor-1254					ND (1.0)
Arochlor-1260	NA	NA	NA		ND (1.0)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	572		170 [ ]	247	5,600
Antimony					ND (60)
Arsenic					5
Barium	52 [ ], R	59 [ ]	64 [ ]	58.3	150
Beryllium					ND (5)
Cadmium					ND (5)
Calcium	2,180 [ ], R	1,560 [ ]	1,780 [ ]	1,840	6,200
Chromium					11
Cobalt					ND (50)
Copper					19
Cyanide					NA
Iron	454 R, E	97 [ ]	86 [ ]	212	4,900
Lead					ND (5)
Magnesium	635 [ ],R,E	504 [ ]	604 [ ]	581	ND (5000)
Manganese	16		7.8 [ ]	7.9	73
Mercury					ND (0.2)
Nickel					ND (40)
Potassium	5,720	3,680 [ ]	3,740 [ ]	4,380	ND (5000)
Selenium					ND (5)
Silver		10		3.3	ND (10)
Sodium	256,400 E	434,000	435,000	375,133	370,000
Thallium					ND (10)
Tin					NA
Vanadium					ND (50)
Zinc		3.8 [ ]	6.4 [ ]	3.4	133
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	NA	3,350	3,920	3,635	14,000
Antimony	NA				ND (60)
Arsenic	NA				5
Barium	NA	137 [ ]	149 [ ]	143	290
Beryllium	NA				ND (5)
Cadmium	NA				ND (5)
Calcium	NA	11,200	11,800	11,500	24,000
Chromium	NA	6.1 [ ]	5.6 [ ]	5.9	21
Cobalt	NA				ND (50)
Copper	NA	20 [ ]	23 [ ]	21.5	27
Cyanide					NA
Iron	NA	5,660	5,750	5,705	14,000
Lead	NA				11
Magnesium	NA	1,580 [ ]	1,590 [ ]	1,585	ND (5000)
Manganese	NA	101	104	103	230
Mercury	NA				ND (0.2)
Nickel	NA	8.3 [ ]		4.2	ND (40)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Potassium	NA	3,700 [ ], E	4,030 [ ], E	3,865	7,200
Selenium	NA				ND (5)
Silver	NA				ND (10)
Sodium	NA	353,000	376,000	364,500	360,000
Thallium	NA				ND (10)
Tin	NA				NA
Vanadium	NA	9.2 [ ]	7.3 [ ]	8.3	ND (50)
Zinc	NA	32	33	32.5	170
General Chemistry (units - mg/L)					
Acidity	NA	NR	NR		NA
Alkalinity-Total as CaCO3	NA	842	830	836	910
Alkalinity-pheno	NA	NA	NA		68
Ammonia, as N	NA	0.8	0.85	0.8	1.8
Biological Oxygen Demand	NA	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA	NA		20
Chloride	NA	12	13	12.5	20
Cyanide	NA	NA	NA		0.006
Nitrate (NO3)	NA	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA	NA		0.18
Phenols	NA	NA	NA		0.05
Phosphate (PO4)	NA	NA	NA		0.3
Sulfate	NA	8.8	10	9.4	29
Total Dissolved Solids	NA	938	926	932	1,100
Total Suspended Solids	NA	126	87	107	290
Field Parameters					
pH (standard units)	8.1	7.2	7.2	7.5	> 10
Specific Conductance (µmhos/cm)	1,950	1,500	1,500	1,650	5,100
Temperature (degrees F)	NA	58	52	55	54

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Organic Compounds (units - µg/L)				
Volatiles				
acetone	9	7 J, B	8.0	4 J
benzene	40 B		20.0	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone	30	16 B, J	23.0	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				2 J
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		6 J
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride		2 J, B	1.0	ND (10)
4-methyl-2-pentanone		2 J, B	1.0	ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene		5 J	2.5	ND (10)
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				ND (10)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate				ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether		NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate				ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene	14		7.0	ND (10)
naphthalene	6 J		3.0	ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol		3 J	1.5	ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT	0.11		0.06	ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	1,310	816	1,063	ND (200)
Antimony				ND (60)
Arsenic	15		7.5	ND (5)
Barium	52 [ ], R	22 [ ]	37.0	59
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	3,604 [ ], R	2,060 [ ]	2,832	400,000
Chromium	33 E		16.5	ND (10)
Cobalt				ND (50)
Copper	12 [ ]		6.0	ND (10)
Cyanide				NA
Iron	1,168 R, E	130	649	78
Lead				ND (5)
Magnesium	1,279 [ ],R,E	255 [ ]	767	15,000
Manganese	35		17.5	120
Mercury				ND (0.2)
Nickel	22 [ ],R		11.0	ND (40)
Potassium	5,027	5,470	5,249	10,000
Selenium	6		3.0	ND (5)
Silver				ND (10)
Sodium	284,800 E	355,000	319,900	270,000
Thallium				ND (10)
Tin				NA
Vanadium				ND (50)
Zinc		11 [ ]	5.5	98
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	14,000		710
Antimony	NA			ND (60)
Arsenic	NA	10 R		ND (5)
Barium	NA	248		69
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	11,200		360,000
Chromium	NA	19		ND (10)
Cobalt	NA	16 [ ]		ND (50)
Copper	NA	42		ND (10)
Cyanide				NA
Iron	NA	29,000		1,300
Lead	NA	18		ND (5)
Magnesium	NA	4,800 [ ]		15,000
Manganese	NA	529		140
Mercury	NA			ND (0.2)
Nickel	NA	36 [ ]		ND (40)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Potassium	NA	8,000		9,400
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	331,000		240,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	26 [ ]		ND (50)
Zinc	NA	106		ND (20)
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	678		26
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	4.4		4.1
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		37
Chloride	NA	94		130
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.01
Phosphate (PO4)	NA	NA		ND (0.1)
Sulfate	NA	49		950
Total Dissolved Solids	NA	1,100		2,200
Total Suspended Solids	NA	510		31
Field Parameters				
pH (standard units)	10.4	NA		8.23
Specific Conductance (µmhos/cm)	2,500	1,625	2,063	1,500
Temperature (degrees F)	NA	58		NA

MW-7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-7	MW-7	MW-7	MW-7
Sample Number:	GW007001	GW018001	AVERAGE	1091-007
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/03/91
OTR Number:	E9864	EB196		
ITR Number:	ME4437	MEB396		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		4 J, B	2.0	ND (10)
benzene	8 B			ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		14 B	7.0	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				ND (10)
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		ND (10)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride		2 J	1.0	ND (10)
4-methyl-2-pentanone				ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene		16	8.0	ND (10)
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				ND (10)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-7	MW-7	MW-7	MW-7
Sample Number:	GW007001	GW018001	AVERAGE	1091-007
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/03/91
OTR Number:	E9864	EB196		
ITR Number:	ME4437	MEB396		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate		5 J, B	2.5	ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate				ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-7	MW-7	MW-7	MW-7
Sample Number:	GW007001	GW018001	AVERAGE	1091-007
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/03/91
OTR Number:	E9864	EB196		
ITR Number:	ME4437	MEB396		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-7	MW-7	MW-7	MW-7
Sample Number:	GW007001	GW018001	AVERAGE	1091-007
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/03/91
OTR Number:	E9864	EB196		
ITR Number:	ME4437	MEB396		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	129 [ ]	801	465	ND (200)
Antimony				ND (60)
Arsenic				ND (5)
Barium				38
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	393,200 R	430,000	411,600	390,000
Chromium	10,590 E		5,295	ND (10)
Cobalt	114 R	24 [ ]	69	ND (50)
Copper	162		81	13
Cyanide				NA
Iron	99,410 R, E	77,900	88,655	32,000
Lead				ND (5)
Magnesium	122,000 R,E	117,000	119,500	98,000
Manganese	6,785	5,290	6,038	4,800
Mercury				ND (0.2)
Nickel	5,610 R	31 [ ]	2,821	ND (40)
Potassium	2,146 [ ]	4,840 [ ]	3,493	ND (5000)
Selenium				ND (5)
Silver				ND (10)
Sodium	24,480 E	21,700	23,090	16,000
Thallium				ND (10)
Tin				NA
Vanadium	60		30	ND (50)
Zinc	130	133	132	650
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	4,850		5,300
Antimony	NA			ND (60)
Arsenic	NA			6
Barium	NA	14 [ ]		70
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	407,000		360,000
Chromium	NA	5.3 [ ]		15
Cobalt	NA	27 [ ]		ND (50)
Copper	NA	12 [ ]		48
Cyanide				NA
Iron	NA	80,400		42,000
Lead	NA			6
Magnesium	NA	109,000		92,000
Manganese	NA	5,030		4,600
Mercury	NA			ND (0.2)
Nickel	NA	37 [ ]		ND (40)

MW-7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-7	MW-7	MW-7	MW-7
Sample Number:	GW007001	GW018001	AVERAGE	1091-007
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/03/91
OTR Number:	E9864	EB196		
ITR Number:	ME4437	MEB396		
Potassium	NA	4,790 [ ], E		ND (5000)
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	20,100		17,000
Thallium	NA			ND (10)
Tin	NA	27 [ ]		NA
Vanadium	NA	4 [ ]		ND (50)
Zinc	NA	139		600
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	143		170
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	0.7		0.7
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		20
Chloride	NA	15		14
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.06
Phosphate (PO4)	NA	NA		0.1
Sulfate	NA	1,500		1,300
Total Dissolved Solids	NA	2,400		150
Total Suspended Solids	NA	139		44
Field Parameters				
pH (standard units)	6.4	NA		7.83
Specific Conductance (µmhos/cm)	2,700	1,150	1,925	2,300
Temperature (degrees F)	NA	57		49

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		13 B, J	6.5	ND (10)
benzene	8 B		4.0	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		13 B	6.5	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				ND (10)
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		ND (10)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride		1 J	0.5	ND (10)
4-methyl-2-pentanone				ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene		1 J	0.5	ND (10)
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				ND (10)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate		6 J, B	3.0	ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate		4 J, B	2.0	ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene	13.40		6.7	ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	302	200	251	460
Antimony				ND (60)
Arsenic	6 [ ]		3.0	ND (5)
Barium	50 [ ],R	30 [ ]	40	96
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	14,080 R	3,080 [ ]	8,580	ND (5000)
Chromium				ND (10)
Cobalt				ND (50)
Copper		3.3 [ ]	1.7	18
Cyanide				NA
Iron	2,889 R, E	90 [ ]	1,490	740
Lead				ND (5)
Magnesium	4,874 [ ],R,E	1,050 [ ]	2,962	ND (5000)
Manganese	145	27	86	120
Mercury				ND (0.2)
Nickel				ND (40)
Potassium	15,197	19,200	17,199	ND (5000)
Selenium				ND (5)
Silver				ND (10)
Sodium	341,900 E	570,000	455,950	430,000
Thallium				ND (10)
Tin				NA
Vanadium				ND (50)
Zinc		8.6 [ ]	4.3	570
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	736		1,100
Antimony	NA			ND (60)
Arsenic	NA			ND (5)
Barium	NA	45 [ ]		110
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	5,610		7,400
Chromium	NA			ND (10)
Cobalt	NA			ND (50)
Copper	NA	16 [ ]		18
Cyanide				NA
Iron	NA	1,180		950
Lead	NA			ND (5)
Magnesium	NA	1,230 [ ]		ND (5000)
Manganese	NA	63		180
Mercury	NA	0.3		ND (0.2)
Nickel	NA			ND (40)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Potassium	NA	17,700 E		ND (5000)
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	513,000		470,000
Thallium	NA			ND (10)
Tin	NA	29 [ ]		NA
Vanadium	NA			ND (50)
Zinc	NA	37		530
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	1,080		1,400
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	1.2		1.6
Biological Oxygen Demand	NA	NA		65
Chemical Oxygen Demand	NA	NA		7
Chloride	NA	42		53
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.01
Phosphate (PO4)	NA	NA		0.2
Sulfate	NA	1,020		16
Total Dissolved Solids	NA	1,350		460
Total Suspended Solids	NA	47		10
Field Parameters				
pH (standard units)	9.3	6.0	7.7	8.12
Specific Conductance (µmhos/cm)	3,000	2,000	2,500	1,600
Temperature (degrees F)	NA	64		50

MW-9
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-9	MW-9	MW-9	MW-9
Sample Number:	GW009001	GW036001	AVERAGE	1091-009
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		10/30/91
OTR Number:	E9854	EC316		
ITR Number:	ME4427	MEG758		
Organic Compounds (units - µg/L)				
Volatiles				
acetone	109,800	890,000 B, J	499,900	1,300,000
benzene	340 B		170	ND (100,000)
bromodichloromethane	NA	NA		ND (100,000)
bromoform	NA	NA		ND (100,000)
bromomethane	NA	NA		ND (100,000)
2-butanone	152,540	430,000 B, J	291,270	450,000
carbon disulfide				ND (100,000)
carbon tetrachloride	NA	NA		ND (100,000)
chlorobenzene				ND (100,000)
chloroethane	NA	NA		ND (100,000)
chloroform				ND (100,000)
chloromethane				ND (100,000)
dibromochloromethane	NA	NA		ND (100,000)
1,1-dichloroethane				ND (100,000)
1,2-dichloroethane	31,616	110,000 J	70,808	38,000 J
1,1-dichloroethene				ND (100,000)
1,2-dichloroethene	NA	NA		ND (100,000)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (100,000)
cis-1,3-dichloropropene	NA	NA		ND (100,000)
trans-1,3-dichloropropene	NA	NA		ND (100,000)
ethylbenzene				ND (100,000)
2-hexanone				ND (100,000)
methylene chloride	13,160	10,000 J, B	11,580	ND (100,000)
4-methyl-2-pentanone	8,320		4,160	ND (100,000)
styrene				ND (100,000)
1,1,2,2-tetrachloroethane				ND (100,000)
tetrachloroethene	22,320	20,000 J	21,160	ND (100,000)
toluene	1,120		560	ND (100,000)
1,1,1-trichloroethane	3,400		1,700	ND (100,000)
1,1,2-trichloroethane				ND (100,000)
trichloroethene	2,600	6,200 J	4,400	ND (100,000)
vinyl acetate	NA	NA		ND (100,000)
vinyl chloride				ND (100,000)
xylenes (total)	196		98	ND (100,000)
Base/Neutral Compounds				
acenaphthene				ND (500)
acenaphthylene				ND (500)
aniline				ND (500)
anthracene				ND (500)
benzo(a)anthracene				ND (500)
benzo(a)pyrene				ND (500)

MW-9
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-9	MW-9	MW-9	MW-9
Sample Number:	GW009001	GW036001	AVERAGE	1091-009
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		10/30/91
OTR Number:	E9854	EC316		
ITR Number:	ME4427	MEG758		
benzo(b)fluoranthene				ND (500)
benzo(g,h,i)perylene				ND (500)
benzo(k)fluoranthene				ND (500)
benzoic acid				14,000
benzyl alcohol				ND (500)
bis(2-chloroethoxy)methane	NA	NA		ND (500)
bis(2-chloroethyl)ether	NA	NA		ND (500)
bis(2-chloroisopropyl)ether				ND (500)
bis(2-ethylhexyl)phthalate		170 B, J	85	ND (500)
butyl benzyl phthalate				ND (500)
4-bromophenyl phenyl ether	NA	NA		ND (500)
carbazole	NA	NA		ND (500)
4-chloroaniline	NA	NA		ND (500)
2-chloronaphthalene	NA	NA		ND (500)
4-chlorophenyl phenyl ether	NA	NA		ND (500)
chrysene				ND (500)
dibenz(a,h)anthracene				ND (500)
dibenzofuran				ND (500)
1,2-dichlorobenzene				ND (500)
1,3-dichlorobenzene				ND (500)
1,4-dichlorobenzene				ND (500)
3-3'-dichlorobenzidine	NA	NA		ND (500)
diethylphthalate				ND (500)
dimethylphthalate				ND (500)
di-n-butylphthalate				ND (500)
di-n-octylphthalate				ND (500)
2,4-dinitrotoluene	NA	NA		ND (500)
2,6-dinitrotoluene	NA	NA		ND (500)
fluoranthene				ND (500)
fluorene				ND (500)
hexachlorobenzene				ND (500)
hexachlorobutadiene	NA	NA		ND (500)
hexachlorocyclopentadiene				ND (500)
hexachloroethane				ND (500)
indeno(1,2,3-cd)pyrene				ND (500)
isophorone	366	2,600 J	1,483	1,400
2-methylnaphthalene				ND (500)
naphthalene				ND (500)
2-nitroaniline	NA	NA		ND (2,500)
3-nitroaniline	NA	NA		ND (2,500)
4-nitroaniline	NA	NA		ND (2,500)
nitrobenzene	NA	NA		ND (500)
N-nitroso-dimethylamine				ND (500)
N-nitroso-di-n-propylamine	NA	NA		ND (500)
N-nitroso-diphenylamine(1)				ND (500)
phenanthrene				ND (500)
pyrene				ND (500)
1,2,4-trichlorobenzene				ND (500)

MW-9
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-9	MW-9	MW-9	MW-9
Sample Number:	GW009001	GW036001	AVERAGE	1091-009
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		10/30/91
OTR Number:	E9854	EC316		
ITR Number:	ME4427	MEG758		
Acid Compounds				
4-chloro-3-methylphenol				ND (500)
2-chlorophenol	NA	NA		ND (500)
2,4-dichlorophenol	NA	NA		ND (500)
2,4-dimethylphenol				ND (500)
2,4-dinitrophenol	NA	NA		ND (2,500)
4,6-dinitro-2-methylphenol	NA	NA		ND (2,500)
2-methylphenol				ND (500)
4-methylphenol		310 J	155	500
2-nitrophenol				ND (500)
4-nitrophenol				ND (2,500)
pentachlorophenol				ND (2,500)
phenol		1,800 J	900	3,900
2,4,5-trichlorophenol	NA	NA		ND (2,500)
2,4,6-trichlorophenol	NA	NA		ND (500)
Pesticides				
Aldrin				ND (0.12)
alpha-BHC				ND (0.12)
beta-BHC				ND (0.12)
delta-BHC	17.4		8.7	ND (0.12)
gamma-BHC (Lindane)	2.2		1.1	ND (0.12)
alpha-Chlordane	NA	NA		ND (1.2)
gamma-Chlordane	NA	NA		ND (1.2)
4,4'-DDD	NA	NA		ND (0.24)
4,4'-DDE				ND (0.24)
4,4'-DDT				ND (0.24)
Dieldrin				ND (0.24)
Endosulfan I				ND (0.12)
Endosulfan II	NA	NA		ND (0.24)
Endosulfan sulfate	NA	NA		ND (0.24)
Endrin	0.20		0.1	ND (0.24)
Endrin ketone	NA	NA		ND (0.24)
Heptachlor	6.50		3.3	ND (0.12)
Heptachlor epoxide				ND (0.12)
Methoxychlor	NA	NA		ND (1.2)
Toxaphene				ND (6)
PCBs				
Arochlor-1016	NA	NA		ND (1.2)
Arochlor-1221	NA	NA		ND (1.2)
Arochlor-1232				ND (1.2)
Arochlor-1242				ND (1.2)
Arochlor-1248				ND (1.2)
Arochlor-1254				ND (6)
Arochlor-1260	NA	NA		ND (6)

MW-9
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-9	MW-9	MW-9	MW-9
Sample Number:	GW009001	GW036001	AVERAGE	1091-009
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		10/30/91
OTR Number:	E9854	EC316		
ITR Number:	ME4427	MEG758		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	746	1,100	923	510
Antimony				ND (60)
Arsenic	12	19 S	15.5	57
Barium	77 [ ], R	284 [ ]	181	3,200
Beryllium				ND (5)
Cadmium	19		9.5	ND (5)
Calcium	858,600 R	775,000	816,800	490,000
Chromium	709 E	55	382	18
Cobalt	56 R	40 [ ]	48	ND (50)
Copper	27	6.1 [ ]	16.6	ND (10)
Cyanide				NA
Iron	128,800 R, E	68,800	98,800	27,000
Lead				7
Magnesium	259,300 R, E	282,000	270,650	220,000
Manganese	25,540	14,200	19,870	6,900
Mercury				ND (0.2)
Nickel	497 R	161	329	95
Potassium	23,350	18,800	21,075	16,000
Selenium				ND (5)
Silver				ND (10)
Sodium	785,500 E	1,560,000	1,172,750	1,400,000
Thallium				ND (10)
Tin		122	61	NA
Vanadium	95	47 [ ]	71	ND (50)
Zinc	50	41	45.5	170
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	1,330		670
Antimony	NA			ND (60)
Arsenic	NA	35 S, R		50
Barium	NA	320 [ ]		3,600
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	750,000		540,000
Chromium	NA	52		23
Cobalt	NA	37 [ ]		ND (50)
Copper	NA	6.8 [ ]		11
Cyanide				NA
Iron	NA	69,100		26,000
Lead	NA			ND (3)
Magnesium	NA	303,000		240,000
Manganese	NA	13,800		7,700
Mercury	NA			ND (0.2)
Nickel	NA	156		100

MW-9
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-9	MW-9	MW-9	MW-9
Sample Number:	GW009001	GW036001	AVERAGE	1091-009
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		10/30/91
OTR Number:	E9854	EC316		
ITR Number:	ME4427	MEG758		
Potassium	NA	20,700		17,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	1,600,000		1,600,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	52 [ ]		ND (50)
Zinc	NA	50		200
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	2,330		2,700
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	11		19
Biological Oxygen Demand	NA	NA		2,000
Chemical Oxygen Demand	NA	NA		13,000
Chloride	NA	918		900
Cyanide				0.14
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		0.05
Phenols	NA	NA		5.8
Phosphate (PO4)	NA	NA		ND (0.1)
Sulfate	NA	650		160
Total Dissolved Solids	NA	10,800		7,400
Total Suspended Solids	NA	90		89
Field Parameters				
pH (standard units)	5.5	NA		6.87
Specific Conductance (µmhos/cm)	7,500	11,000	9,250	50,000
Temperature (degrees F)	NA	64		NA

MW-10
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-10	MW-10	MW-10	MW-10
Sample Number:	GW010001	GW037001	AVERAGE	1091-010
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	9/12/86		10/31/91
OTR Number:	E9853	EC317		
ITR Number:	ME4426	MEG759		
Organic Compounds (units - µg/L)				
Volatiles				
acetone	11,700	1,300,000 B, J	655,850	130,000
benzene	760 B		380	ND (50,000)
bromodichloromethane	NA	NA		ND (50,000)
bromoform	NA	NA		ND (50,000)
bromomethane	NA	NA		ND (50,000)
2-butanone		650,000 B, J	325,000	180,000
carbon disulfide				ND (50,000)
carbon tetrachloride	NA	NA		ND (50,000)
chlorobenzene				ND (50,000)
chloroethane	NA	NA		ND (50,000)
chloroform				ND (50,000)
chloromethane				ND (50,000)
dibromochloromethane	NA	NA		ND (50,000)
1,1-dichloroethane				ND (50,000)
1,2-dichloroethane	14,800		7,400	ND (50,000)
1,1-dichloroethene				ND (50,000)
1,2-dichloroethene	NA	NA		ND (50,000)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (50,000)
cis-1,3-dichloropropene	NA	NA		ND (50,000)
trans-1,3-dichloropropene	NA	NA		ND (50,000)
ethylbenzene				ND (50,000)
2-hexanone	3,840		1,920	ND (50,000)
methylene chloride	5,300	24,000 J, B	14,650	ND (50,000)
4-methyl-2-pentanone				ND (50,000)
styrene				ND (50,000)
1,1,2,2-tetrachloroethane				ND (50,000)
tetrachloroethene				ND (50,000)
toluene				ND (50,000)
1,1,1-trichloroethane	900		450	ND (50,000)
1,1,2-trichloroethane				ND (50,000)
trichloroethene				ND (50,000)
vinyl acetate	NA	NA		ND (50,000)
vinyl chloride				ND (50,000)
xylenes (total)				ND (50,000)
Base/Neutral Compounds				
acenaphthene				ND (50)
acenaphthylene				ND (50)
aniline				ND (50)
anthracene				ND (50)
benzo(a)anthracene				ND (50)
benzo(a)pyrene				ND (50)

MW-10
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-10	MW-10	MW-10	MW-10
Sample Number:	GW010001	GW037001	AVERAGE	1091-010
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	9/12/86		10/31/91
OTR Number:	E9853	EC317		
ITR Number:	ME4426	MEG759		
benzo(b)fluoranthene				ND (50)
benzo(g,h,i)perylene				ND (50)
benzo(k)fluoranthene				ND (50)
benzoic acid	1,425		713	2,100
benzyl alcohol				ND (50)
bis(2-chloroethoxy)methane	NA	NA		ND (50)
bis(2-chloroethyl)ether	NA	NA		ND (50)
bis(2-chloroisopropyl)ether				ND (50)
bis(2-ethylhexyl)phthalate		28 B, J	14	ND (50)
butyl benzyl phthalate				ND (50)
4-bromophenyl phenyl ether	NA	NA		ND (50)
carbazole	NA	NA		ND (50)
4-chloroaniline	NA	NA		ND (50)
2-chloronaphthalene	NA	NA		ND (50)
4-chlorophenyl phenyl ether	NA	NA		ND (50)
chrysene				ND (50)
dibenz(a,h)anthracene				ND (50)
dibenzofuran				ND (50)
1,2-dichlorobenzene				ND (50)
1,3-dichlorobenzene				ND (50)
1,4-dichlorobenzene				ND (50)
3-3'-dichlorobenzidine	NA	NA		ND (50)
diethylphthalate				ND (50)
dimethylphthalate				ND (50)
di-n-butylphthalate				ND (50)
di-n-octylphthalate				ND (50)
2,4-dinitrotoluene	NA	NA		ND (50)
2,6-dinitrotoluene	NA	NA		ND (50)
fluoranthene				ND (50)
fluorene				ND (50)
hexachlorobenzene				ND (50)
hexachlorobutadiene	NA	NA		ND (50)
hexachlorocyclopentadiene				ND (50)
hexachloroethane				ND (50)
indeno(1,2,3-cd)pyrene				ND (50)
isophorone	900	1,600	1,250	260
2-methylnaphthalene				ND (50)
naphthalene				ND (50)
2-nitroaniline	NA	NA		ND (250)
3-nitroaniline	NA	NA		ND (250)
4-nitroaniline	NA	NA		ND (250)
nitrobenzene	NA	NA		ND (50)
N-nitroso-dimethylamine				ND (50)
N-nitroso-di-n-propylamine	NA	NA		ND (50)
N-nitroso-diphenylamine(1)				ND (50)
phenanthrene				ND (50)
pyrene				ND (50)
1,2,4-trichlorobenzene				ND (50)

MW-10
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-10	MW-10	MW-10	MW-10
Sample Number:	GW010001	GW037001	AVERAGE	1091-010
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	9/12/86		10/31/91
OTR Number:	E9853	EC317		
ITR Number:	ME4426	MEG759		
Acid Compounds				
4-chloro-3-methylphenol				ND (50)
2-chlorophenol	NA	NA		ND (50)
2,4-dichlorophenol	NA	NA		ND (50)
2,4-dimethylphenol		32 J	16	ND (50)
2,4-dinitrophenol	NA	NA		ND (250)
4,6-dinitro-2-methylphenol	NA	NA		ND (250)
2-methylphenol				11 J
4-methylphenol		12 J	6	120
2-nitrophenol		140	70	ND (50)
4-nitrophenol				ND (250)
pentachlorophenol				ND (250)
phenol	535	910	723	200
2,4,5-trichlorophenol	NA	NA		ND (250)
2,4,6-trichlorophenol	NA	NA		ND (50)
Pesticides				
Aldrin				ND (0.12)
alpha-BHC	0.10		0.1	ND (0.12)
beta-BHC				ND (0.12)
delta-BHC	2.10		1.1	ND (0.12)
gamma-BHC (Lindane)				ND (0.12)
alpha-Chlordane	NA	NA		ND (0.36)
gamma-Chlordane	NA	NA		ND (0.36)
4,4'-DDD	NA	NA		ND (0.24)
4,4'-DDE				ND (0.24)
4,4'-DDT				ND (0.24)
Dieldrin				ND (0.24)
Endosulfan I				ND (0.12)
Endosulfan II	NA	NA		ND (0.24)
Endosulfan sulfate	NA	NA		ND (0.24)
Endrin				ND (0.24)
Endrin ketone	NA	NA		ND (0.24)
Heptachlor	0.60		0.3	ND (0.12)
Heptachlor epoxide				ND (0.12)
Methoxychlor	NA	NA		ND (0.36)
Toxaphene				ND (6)
PCBs				
Arochlor-1016	NA	NA		ND (0.3)
Arochlor-1221	NA	NA		ND (0.3)
Arochlor-1232				ND (0.3)
Arochlor-1242				ND (0.3)
Arochlor-1248				ND (0.3)
Arochlor-1254				ND (6)
Arochlor-1260	NA	NA		ND (6)

MW-10
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-10	MW-10	MW-10	MW-10
Sample Number:	GW010001	GW037001	AVERAGE	1091-010
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	9/12/86		10/31/91
OTR Number:	E9853	EC317		
ITR Number:	ME4426	MEG759		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum				ND (200)
Antimony				ND (60)
Arsenic	9 [ ]	14	11.5	22
Barium		1,550	775	3,200
Beryllium				ND (5)
Cadmium	18		9.0	ND (5)
Calcium	918,000 R	782,000	850,000	360,000
Chromium	170 E	20	95	ND (10)
Cobalt	38 [ ] R	26 [ ]	32	ND (50)
Copper	18 [ ]		9.0	ND (10)
Cyanide				NA
Iron	97,690 R, E	806	49,248	6,600
Lead	19 R		9.5	ND (5)
Magnesium	245,900 R, E	254,000	249,950	190,000
Manganese	20,090	15,700	17,895	1,200
Mercury				ND (0.2)
Nickel	162 R	120	141	50
Potassium	38,210	37,600	37,905	23,000
Selenium				ND (5)
Silver				ND (10)
Sodium	715,600 E	1,210,000	962,800	710,000
Thallium				ND (10)
Tin		113	56.5	NA
Vanadium	65	16 [ ]	40.5	ND (50)
Zinc	74	6.3 [ ]	40.2	120
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	4,140		210
Antimony	NA			ND (60)
Arsenic	NA	22 R		33
Barium	NA	2,230		3,700
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	665,000		360,000
Chromium	NA	30		ND (10)
Cobalt	NA	38 [ ]		ND (50)
Copper	NA	38 [ ]		ND (10)
Cyanide				NA
Iron	NA	325,000		72,000
Lead	NA	64		ND (5)
Magnesium	NA	252,000		180,000
Manganese	NA	10,800		1,300
Mercury	NA			ND (0.2)
Nickel	NA	138		45

MW-10
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-10	MW-10	MW-10	MW-10
Sample Number:	GW010001	GW037001	AVERAGE	1091-010
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	9/12/86		10/31/91
OTR Number:	E9853	EC317		
ITR Number:	ME4426	MEG759		
Potassium	NA	40,000		21,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	1,140,000		650,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	19 [ ]		ND (50)
Zinc	NA	319		80
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	2,490		880
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	4.6		9
Biological Oxygen Demand	NA	NA		230
Chemical Oxygen Demand	NA	NA		4,900
Chloride	NA	799		550
Cyanide				0.04
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		0.11
Phenols	NA	NA		1.6
Phosphate (PO4)	NA	NA		ND (0.1)
Sulfate	NA	33		100
Total Dissolved Solids	NA	9,230		4,800
Total Suspended Solids	NA	462		170
Field Parameters				
pH (standard units)	6.3	NA		8.09
Specific Conductance (µmhos/cm)	4,000	8,000	6,000	3,800
Temperature (degrees F)	NA	60		51

MW-11
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-11	MW-11	MW-11	MW-11
Sample Number:	GW011001	GW034001	AVERAGE	1091-011
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/11/86		10/30/91
OTR Number:	E9852	EC314		
ITR Number:	ME4425	MEG756		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		51 B	25.5	ND (50)
benzene	3 J, B		1.5	ND (50)
bromodichloromethane	NA	NA		ND (50)
bromoform	NA	NA		ND (50)
bromomethane	NA	NA		ND (50)
2-butanone		100 B	50.0	ND (50)
carbon disulfide				ND (50)
carbon tetrachloride	NA	NA		ND (50)
chlorobenzene				ND (50)
chloroethane	NA	NA		ND (50)
chloroform				ND (50)
chloromethane				ND (50)
dibromochloromethane	NA	NA		ND (50)
1,1-dichloroethane	194	140	167.0	250
1,2-dichloroethane				ND (50)
1,1-dichloroethene		16 J	8.0	14 J
1,2-dichloroethene	NA	NA		39 J
trans-1,2-dichloroethene	51	12 J	31.5	NA
1,2-dichloropropane	NA	NA		ND (50)
cis-1,3-dichloropropene	NA	NA		ND (50)
trans-1,3-dichloropropene	NA	NA		ND (50)
ethylbenzene				ND (50)
2-hexanone				ND (50)
methylene chloride		6 J, B	3.0	ND (50)
4-methyl-2-pentanone				ND (50)
styrene				ND (50)
1,1,2,2-tetrachloroethane				ND (50)
tetrachloroethene				ND (50)
toluene				ND (50)
1,1,1-trichloroethane	354	650	502.0	620
1,1,2-trichloroethane				ND (50)
trichloroethene	33		16.5	ND (50)
vinyl acetate	NA	NA		ND (50)
vinyl chloride				ND (50)
xylenes (total)				ND (50)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-11
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-11	MW-11	MW-11	MW-11
Sample Number:	GW011001	GW034001	AVERAGE	1091-011
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/11/86		10/30/91
OTR Number:	E9852	EC314		
ITR Number:	ME4425	MEG756		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate	13	3 J		ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate				ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone	50	18 J	34.0	14
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-11
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-11	MW-11	MW-11	MW-11
Sample Number:	GW011001	GW034001	AVERAGE	1091-011
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/11/86		10/30/91
OTR Number:	E9852	EC314		
ITR Number:	ME4425	MEG756		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				2 J
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin	0.60		0.3	ND (0.05)
alpha-BHC	1.00		0.5	ND (0.05)
beta-BHC	0.30		0.2	ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)	0.20		0.1	ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor	0.40		0.2	ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-11
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-11	MW-11	MW-11	MW-11
Sample Number:	GW011001	GW034001	AVERAGE	1091-011
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/11/86		10/30/91
OTR Number:	E9852	EC314		
ITR Number:	ME4425	MEG756		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum		83 [ ]	41.5	ND (200)
Antimony				ND (60)
Arsenic				6
Barium				11
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	469,000 R	627,000	548,000	470,000
Chromium		4.2 [ ]	2.1	ND (10)
Cobalt				ND (50)
Copper				ND (10)
Cyanide				NA
Iron	17,300 R, E	38,300	27,800	26,000
Lead				ND (3)
Magnesium	144,200 R, E	216,000	180,100	180,000
Manganese	3,581	2,710	3,146	2,000
Mercury				ND (0.2)
Nickel	21 [ ], R	11 [ ]	16.0	ND (40)
Potassium	11,421	10,800	11,111	9,200
Selenium				ND (5)
Silver				ND (10)
Sodium	172,300 E	295,000	233,650	300,000
Thallium				ND (10)
Tin				NA
Vanadium	26 [ ]		13.0	ND (50)
Zinc	32	30	31.0	21
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	126 [ ]		7,300
Antimony	NA			ND (60)
Arsenic	NA			15
Barium	NA			55
Beryllium	NA			ND (5)
Cadmium	NA	5.1		10
Calcium	NA	570,000		480,000
Chromium	NA			19
Cobalt	NA			ND (50)
Copper	NA	11 [ ]		63
Cyanide				NA
Iron	NA	37,100		58,000
Lead	NA			13
Magnesium	NA	202,000		180,000
Manganese	NA	2,520		2,300
Mercury	NA			ND (0.2)
Nickel	NA	24 [ ]		48

MW-11
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-11	MW-11	MW-11	MW-11
Sample Number:	GW011001	GW034001	AVERAGE	1091-011
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/11/86		10/30/91
OTR Number:	E9852	EC314		
ITR Number:	ME4425	MEG756		
Potassium	NA	9,940 E		10,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	273,000		300,000
Thallium	NA			ND (10)
Tin	NA	36 [ ]		NA
Vanadium	NA	5.2 [ ]		ND (50)
Zinc	NA	34		200
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	713		840
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	3.0		3.9
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		140
Chloride	NA	311		311
Cyanide				0.02
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.06
Phosphate (PO4)	NA	NA		0.4
Sulfate	NA	1,530		1,600
Total Dissolved Solids	NA	3,900		3,600
Total Suspended Solids	NA	49		460
Field Parameters				
pH (standard units)	6.5	NA		8.21
Specific Conductance (µmhos/cm)	1,950	4,000	2,975	3,100
Temperature (degrees F)	NA	64		51

MW-12
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-12	MW-12	MW-12	MW-12
Sample Number:	GW012001	GW045001	AVERAGE	1091-012
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		11/02/91
OTR Number:	E9851	EC326		
ITR Number:	ME4424	MEG768		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		15 B	7.5	26
benzene	2 J, B		1.0	2 J
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		14 B	7.0	13 J
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				5 J
1,2-dichloroethane				64
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		ND (10)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				11
2-hexanone				5 J
methylene chloride		1 J	0.5	ND (10)
4-methyl-2-pentanone				4 J
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene				23
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				47
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-12
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-12	MW-12	MW-12	MW-12
Sample Number:	GW012001	GW045001	AVERAGE	1091-012
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		11/02/91
OTR Number:	E9851	EC326		
ITR Number:	ME4424	MEG768		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				12 J
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate				ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate				ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-12
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-12	MW-12	MW-12	MW-12
Sample Number:	GW012001	GW045001	AVERAGE	1091-012
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		11/02/91
OTR Number:	E9851	EC326		
ITR Number:	ME4424	MEG768		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				8 J
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				43
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-12
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-12	MW-12	MW-12	MW-12
Sample Number:	GW012001	GW045001	AVERAGE	1091-012
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		11/02/91
OTR Number:	E9851	EC326		
ITR Number:	ME4424	MEG768		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	153 [ ]	57 [ ]	105	ND (200)
Antimony				ND (60)
Arsenic	5 [ ]		2.5	ND (5)
Barium		36 [ ]	18.0	16
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	51,590 R	12,000	31,795	ND (5000)
Chromium				ND (10)
Cobalt				ND (50)
Copper	15 [ ]		7.5	ND (10)
Cyanide				NA
Iron	58 [ ],R,E	159	109	110
Lead				ND (5)
Magnesium	20,190 R, E	4,510 [ ]	12,350	ND (5000)
Manganese	293	157	225	ND (10)
Mercury				ND (0.2)
Nickel				ND (40)
Potassium	19,381	9,010	14,196	8,300
Selenium				ND (5)
Silver	12 R		6.0	ND (10)
Sodium	460,500 E	690,000	575,250	430,000
Thallium				ND (10)
Tin				NA
Vanadium	26 [ ]		13.0	ND (50)
Zinc	15 [ ]	9.9 [ ]	12.5	108
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	2,950		17,000
Antimony	NA			ND (60)
Arsenic	NA			7
Barium	NA	230		440
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	14,300		65,000
Chromium	NA	5.1 [ ]		32
Cobalt	NA			ND (50)
Copper	NA	25		25
Cyanide				NA
Iron	NA	5,540		13,000
Lead	NA			10
Magnesium	NA	5,270		6,500
Manganese	NA	300		560
Mercury	NA			ND (0.2)
Nickel	NA			ND (40)

MW-12
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-12	MW-12	MW-12	MW-12
Sample Number:	GW012001	GW045001	AVERAGE	1091-012
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	09/12/86		11/02/91
OTR Number:	E9851	EC326		
ITR Number:	ME4424	MEG768		
Potassium	NA	9,170		13,000
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	684,000		510,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	9.2 [ ]		ND (50)
Zinc	NA	56		179
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	457		490
Alkalinity-pheno	NA	NA		400
Ammonia, as N	NA	1.3		4.4
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		7
Chloride	NA	27		42
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.06
Phosphate (PO4)	NA	NA		0.2
Sulfate	NA	1,040		1,000
Total Dissolved Solids	NA	2,180		980
Total Suspended Solids	NA	144		640
Field Parameters				
pH (standard units)	8.9	NA		> 10
Specific Conductance (µmhos/cm)	4,250	4,100	4,175	1,900
Temperature (degrees F)	NA	60		50

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Organic Compounds (units - µg/L)					
Volatiles					
acetone			11 B	3.7	
benzene	4 J, B	4 J, B	1 J	3.0	
bromodichloromethane	NA	NA	NA		
bromoform	NA	NA	NA		
bromomethane	NA	NA	NA		
2-butanone			13 B	4.3	
carbon disulfide					
carbon tetrachloride	NA	NA	NA		
chlorobenzene					
chloroethane	NA	NA	NA		
chloroform					
chloromethane					
dibromochloromethane	NA	NA	NA		
1,1-dichloroethane					
1,2-dichloroethane					
1,1-dichloroethene			7	2.3	
1,2-dichloroethene	NA	NA	NA		
trans-1,2-dichloroethene	46	35	32	37.7	
1,2-dichloropropane	NA	NA	NA		
cis-1,3-dichloropropene	NA	NA	NA		
trans-1,3-dichloropropene	NA	NA	NA		
ethylbenzene					
2-hexanone					
methylene chloride			1 J	0.3	
4-methyl-2-pentanone					
styrene					
1,1,2,2-tetrachloroethane					
tetrachloroethene					
toluene					
1,1,1-trichloroethane			3 J	1.0	
1,1,2-trichloroethane					
trichloroethene	15	12	46	24.3	
vinyl acetate	NA	NA	NA		
vinyl chloride					
xylenes (total)					
Base/Neutral Compounds					
acenaphthene					
acenaphthylene					
aniline					
anthracene					
benzo(a)anthracene					
benzo(a)pyrene					

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
benzo(b)fluoranthene					
benzo(g,h,i)perylene					
benzo(k)fluoranthene					
benzoic acid					
benzyl alcohol					
bis(2-chloroethoxy)methane	NA	NA	NA		
bis(2-chloroethyl)ether	NA	NA	NA		
bis(2-chloroisopropyl)ether					
bis(2-ethylhexyl)phthalate					
butyl benzyl phthalate					
4-bromophenyl phenyl ether	NA	NA	NA		
carbazole	NA	NA	NA		
4-chloroaniline	NA	NA	NA		
2-chloronaphthalene	NA	NA	NA		
4-chlorophenyl phenyl ether	NA	NA	NA		
chrysene					
dibenz(a,h)anthracene					
dibenzofuran					
1,2-dichlorobenzene					
1,3-dichlorobenzene					
1,4-dichlorobenzene					
3-3'-dichlorobenzidine	NA	NA	NA		
diethylphthalate					
dimethylphthalate					
di-n-butylphthalate					
di-n-octylphthalate					
2,4-dinitrotoluene	NA	NA	NA		
2,6-dinitrotoluene	NA	NA	NA		
fluoranthene					
fluorene					
hexachlorobenzene					
hexachlorobutadiene	NA	NA	NA		
hexachlorocyclopentadiene					
hexachloroethane					
indeno(1,2,3-cd)pyrene					
isophorone	13	8 J		7.00	
2-methylnaphthalene					
naphthalene					
2-nitroaniline	NA	NA	NA		
3-nitroaniline	NA	NA	NA		
4-nitroaniline	NA	NA	NA		
nitrobenzene	NA	NA	NA		
N-nitroso-dimethylamine					
N-nitroso-di-n-propylamine	NA	NA	NA		
N-nitroso-diphenylamine(1)					
phenanthrene					
pyrene					
1,2,4-trichlorobenzene					

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Acid Compounds					
4-chloro-3-methylphenol					
2-chlorophenol	NA	NA	NA		
2,4-dichlorophenol	NA	NA	NA		
2,4-dimethylphenol					
2,4-dinitrophenol					
4,6-dinitro-2-methylphenol					
2-methylphenol					
4-methylphenol					
2-nitrophenol					
4-nitrophenol	NA	NA	NA		
pentachlorophenol	NA	NA	NA		
phenol					
2,4,5-trichlorophenol	NA	NA	NA		
2,4,6-trichlorophenol	NA	NA	NA		
Pesticides					
Aldrin					
alpha-BHC		0.07		0.02	
beta-BHC					
delta-BHC					
gamma-BHC (Lindane)					
alpha-Chlordane	NA	NA	NA		
gamma-Chlordane	NA	NA	NA		
4,4'-DDD	NA	NA	NA		
4,4'-DDE					
4,4'-DDT	0.20	0.16		0.12	
Dieldrin					
Endosulfan I					
Endosulfan II	NA	NA	NA		
Endosulfan sulfate	NA	NA	NA		
Endrin					
Endrin ketone	NA	NA	NA		
Heptachlor					
Heptachlor epoxide					
Methoxychlor	NA	NA	NA		
Toxaphene					
PCBs					
Arochlor-1016	NA	NA	NA		
Arochlor-1221	NA	NA	NA		
Arochlor-1232					
Arochlor-1242					
Arochlor-1248					
Arochlor-1254					
Arochlor-1260	NA	NA	NA		

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	NA	NA			
Antimony	NA	NA			
Arsenic	NA	NA			
Barium	NA	NA	24 [ ]		
Beryllium	NA	NA			
Cadmium	NA	NA			
Calcium	NA	NA	268,000		
Chromium	NA	NA			
Cobalt	NA	NA			
Copper	NA	NA			
Cyanide	NA	NA			
Iron	NA	NA	402		
Lead	NA	NA			
Magnesium	NA	NA	127,000		
Manganese	NA	NA	3,690		
Mercury	NA	NA			
Nickel	NA	NA			
Potassium	NA	NA	15,600		
Selenium	NA	NA			
Silver	NA	NA			
Sodium	NA	NA	369,000 E		
Thallium	NA	NA			
Tin	NA	NA			
Vanadium	NA	NA			
Zinc	NA	NA	6.1 [ ]		
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	51 [ ]	76 [ ]	356	161	
Antimony					
Arsenic		8 [ ]		2.7	
Barium			33 [ ]	11.0	
Beryllium					
Cadmium					
Calcium	111,200 R	117,100 R	270,000	166,100	
Chromium	487 E			162	
Cobalt					
Copper			13 [ ]	4.3	
Cyanide		109	35	48.0	
Iron	1,746 R, E	176 R, E	2,790	1,571	
Lead					
Magnesium	37,450 R, E	40,490 R, E	129,000	68,980	
Manganese	898	878	3,680	1,819	
Mercury					
Nickel	254 R			84.7	

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Potassium	13,504	14,125	16,400	14,676	
Selenium					
Silver					
Sodium	429,700 E	425,600 E	377,000	410,767	
Thallium					
Tin					
Vanadium	23 [ ]	20 [ ]		14.3	
Zinc			22	7.3	
General Chemistry (units - mg/L)					
Acidity	NA	NA	NR		
Alkalinity-Total as CaCO3	NA	NA	646		
Alkalinity-pheno	NA	NA	NA		
Ammonia, as N	NA	NA	1.4		
Biological Oxygen Demand	NA	NA	NA		
Chemical Oxygen Demand	NA	NA	NA		
Chloride	NA	NA	122		
Cyanide	NA	NA	NA		
Nitrate (NO3)	NA	NA			
Nitrite (NO2)	NA	NA			
Phenols	NA	NA	NA		
Phosphate (PO4)	NA	NA	NA		
Sulfate	NA	NA	950		
Total Dissolved Solids	NA	NA	2,690		
Total Suspended Solids	NA	NA	27		
Field Parameters					
pH (standard units)	8.2	8.1	NA	8.15	
Specific Conductance (µmhos/cm)	4,000	4,200	4,300	4,167	
Temperature (degrees F)	NA	NA	58		

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Organic Compounds (units - µg/L)					
Volatiles					
acetone	638	14 B, J	19 B, J	224	ND (10)
benzene	3 J, B			1.0	ND (10)
bromodichloromethane	NA	NA	NA		ND (10)
bromoform	NA	NA	NA		ND (10)
bromomethane	NA	NA	NA		ND (10)
2-butanone	206	19 B, J	19 B, J	81.3	ND (10)
carbon disulfide					ND (10)
carbon tetrachloride	NA	NA	NA		ND (10)
chlorobenzene					ND (10)
chloroethane	NA	NA	NA		ND (10)
chloroform					ND (10)
chloromethane					ND (10)
dibromochloromethane	NA	NA	NA		ND (10)
1,1-dichloroethane					ND (10)
1,2-dichloroethane					ND (10)
1,1-dichloroethene					ND (10)
1,2-dichloroethene	NA	NA	NA		ND (10)
trans-1,2-dichloroethene					NA
1,2-dichloropropane	NA	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA	NA		ND (10)
ethylbenzene					ND (10)
2-hexanone		6 J, B		2.0	ND (10)
methylene chloride		5 B, J	2 J, B	2.3	ND (10)
4-methyl-2-pentanone		2 J, B		0.7	ND (10)
styrene					ND (10)
1,1,2,2-tetrachloroethane					ND (10)
tetrachloroethene					ND (10)
toluene		5 J	4 J	3.0	ND (10)
1,1,1-trichloroethane					ND (10)
1,1,2-trichloroethane					ND (10)
trichloroethene					ND (10)
vinyl acetate	NA	NA	NA		ND (10)
vinyl chloride					ND (10)
xylenes (total)		1 J		0.3	ND (10)
Base/Neutral Compounds					
acenaphthene					ND (10)
acenaphthylene					ND (10)
aniline					ND (10)
anthracene					ND (10)
benzo(a)anthracene					ND (10)
benzo(a)pyrene					ND (10)

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
benzo(b)fluoranthene					ND (10)
benzo(g,h,i)perylene					ND (10)
benzo(k)fluoranthene					ND (10)
benzoic acid					ND (10)
benzyl alcohol					ND (10)
bis(2-chloroethoxy)methane	NA	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA	NA		ND (10)
bis(2-chloroisopropyl)ether					ND (10)
bis(2-ethylhexyl)phthalate					5 J
butyl benzyl phthalate					ND (10)
4-bromophenyl phenyl ether	NA	NA	NA		ND (10)
carbazole	NA	NA	NA		ND (10)
4-chloroaniline	NA	NA	NA		ND (10)
2-chloronaphthalene	NA	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA	NA		ND (10)
chrysene					ND (10)
dibenz(a,h)anthracene					ND (10)
dibenzofuran					ND (10)
1,2-dichlorobenzene					ND (10)
1,3-dichlorobenzene					ND (10)
1,4-dichlorobenzene					ND (10)
3-3'-dichlorobenzidine	NA	NA	NA		ND (10)
diethylphthalate					ND (10)
dimethylphthalate					ND (10)
di-n-butylphthalate					ND (10)
di-n-octylphthalate					ND (10)
2,4-dinitrotoluene	NA	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA	NA		ND (10)
fluoranthene					ND (10)
fluorene					ND (10)
hexachlorobenzene					ND (10)
hexachlorobutadiene	NA	NA	NA		ND (10)
hexachlorocyclopentadiene					ND (10)
hexachloroethane					ND (10)
indeno(1,2,3-cd)pyrene					ND (10)
isophorone					ND (10)
2-methylnaphthalene					ND (10)
naphthalene					ND (10)
2-nitroaniline	NA	NA	NA		ND (50)
3-nitroaniline	NA	NA	NA		ND (50)
4-nitroaniline	NA	NA	NA		ND (50)
nitrobenzene	NA	NA	NA		ND (10)
N-nitroso-dimethylamine					ND (10)
N-nitroso-di-n-propylamine	NA	NA	NA		ND (10)
N-nitroso-diphenylamine(1)					ND (10)
phenanthrene					ND (10)
pyrene					ND (10)
1,2,4-trichlorobenzene					ND (10)

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Acid Compounds					
4-chloro-3-methylphenol					ND (10)
2-chlorophenol	NA	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA	NA		ND (10)
2,4-dimethylphenol					ND (10)
2,4-dinitrophenol	NA	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA	NA		ND (50)
2-methylphenol					ND (10)
4-methylphenol					ND (10)
2-nitrophenol					ND (10)
4-nitrophenol					ND (50)
pentachlorophenol					ND (50)
phenol		3 J	3 J	2.0	ND (10)
2,4,5-trichlorophenol	NA	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA	NA		ND (10)
Pesticides					
Aldrin					ND (0.05)
alpha-BHC					ND (0.05)
beta-BHC					ND (0.05)
delta-BHC					ND (0.05)
gamma-BHC (Lindane)					ND (0.05)
alpha-Chlordane	NA	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA	NA		ND (0.5)
4,4'-DDD	NA	NA	NA		ND (0.1)
4,4'-DDE					ND (0.1)
4,4'-DDT	0.14				ND (0.1)
Dieldrin					ND (0.1)
Endosulfan I					ND (0.05)
Endosulfan II	NA	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA	NA		ND (0.1)
Endrin					ND (0.1)
Endrin ketone	NA	NA	NA		ND (0.1)
Heptachlor					ND (0.05)
Heptachlor epoxide					ND (0.05)
Methoxychlor	NA	NA	NA		ND (0.5)
Toxaphene					ND (1.0)
PCBs					
Arochlor-1016	NA	NA	NA		ND (0.5)
Arochlor-1221	NA	NA	NA		ND (0.5)
Arochlor-1232					ND (0.5)
Arochlor-1242					ND (0.5)
Arochlor-1248					ND (0.5)
Arochlor-1254					ND (1.0)
Arochlor-1260	NA	NA	NA		ND (1.0)

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	161 [ ]	1,410	257	609	18,000
Antimony					ND (60)
Arsenic	9 [ ]			3.0	6
Barium		84 [ ]	80 [ ]	55	330
Beryllium					ND (5)
Cadmium					ND (5)
Calcium	5,829 R	3,850 [ ]	3,310 [ ]	4,330	10,000
Chromium					27
Cobalt					ND (50)
Copper					22
Cyanide					NA
Iron	198 R, E	371	72 [ ]	214	9,100
Lead					6
Magnesium	4,477 [ ],R,E	1,810 [ ]	1,620 [ ]	2,636	ND (5000)
Manganese	11 [ ]	50	39	33	460
Mercury					ND (0.2)
Nickel					ND (40)
Potassium	45,580	10,400	10,200	22,060	10,000
Selenium					ND (5)
Silver					ND (10)
Sodium	415,100 E	609,000	615,000	546,367	580,000
Thallium					ND (10)
Tin					NA
Vanadium					ND (50)
Zinc		40	21	20	710
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	NA	44,800	37,500	41,150	35,000
Antimony	NA				ND (60)
Arsenic	NA	18 R	17 R	18	8
Barium	NA	1,720	1,610	1,665	520
Beryllium	NA	3.1 [ ]	2.9 [ ]	3.0	ND (5)
Cadmium	NA				5
Calcium	NA	17,800	17,100	17,450	20,000
Chromium	NA	68	60	64	52
Cobalt	NA	52	50 [ ]	51	ND (50)
Copper	NA	91	90	91	56
Cyanide					NA
Iron	NA	101,000	90,800	95,900	56,000
Lead	NA	37	32	34.5	22
Magnesium	NA	19,300	17,400	18,350	12,000
Manganese	NA	2,860	2,630	2,745	2,700
Mercury	NA				ND (0.2)
Nickel	NA	98	93	96	56

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Potassium	NA	16,400	15,000	15,700	14,000
Selenium	NA				ND (5)
Silver	NA				ND (10)
Sodium	NA	565,000	550,000	557,500	570,000
Thallium	NA				ND (10)
Tin	NA				NA
Vanadium	NA	75	64	70	56
Zinc	NA	292	264	278	570
General Chemistry (units - mg/L)					
Acidity	NA	NR	NR		NA
Alkalinity-Total as CaCO3	NA	1,220	1,220	1,220	1,600
Alkalinity-pheno	NA	NA	NA		50
Ammonia, as N	NA	1.3	1.3	1.3	2.6
Biological Oxygen Demand	NA	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA	NA		20
Chloride	NA	179	166	173	150
Cyanide					ND (0.005)
Nitrate (NO3)	NA	NA	NA		0.3
Nitrite (NO2)	NA	NA	NA		0.44
Phenols	NA	NA	NA		ND (0.01)
Phosphate (PO4)	NA	NA	NA		0.2
Sulfate	NA	39	42	40.5	440
Total Dissolved Solids	NA	1,820	1,630	1,725	1,900
Total Suspended Solids	NA	2,810	3,340	3,075	1,200
Field Parameters					
pH (standard units)	9.4	NA	NA		8.51
Specific Conductance (µmhos/cm)	2,500	2,500	2,500	2,500	1,100
Temperature (degrees F)	NA	58	58		49

MW-15
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Number:	GW015001	GW015002	GW031001	AVERAGE	1091-015
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	12/05/84	09/11/86		10/30/91
OTR Number:	E9848	E9850	EC311		
ITR Number:	ME4421	ME4423	MEG753		
Organic Compounds (units - µg/L)					
Volatiles					
acetone			16 B	5.3	7 J
benzene	2 J, B	2 J, B		1.3	ND (10)
bromodichloromethane	NA	NA	NA		ND (10)
bromoform	NA	NA	NA		ND (10)
bromomethane	NA	NA	NA		ND (10)
2-butanone			16 B	5.3	ND (10)
carbon disulfide					ND (10)
carbon tetrachloride	NA	NA	NA		ND (10)
chlorobenzene					ND (10)
chloroethane	NA	NA	NA		ND (10)
chloroform					ND (10)
chloromethane					ND (10)
dibromochloromethane	NA	NA	NA		ND (10)
1,1-dichloroethane			3 J	1.0	ND (10)
1,2-dichloroethane			4 J	1.3	4 J
1,1-dichloroethene					ND (10)
1,2-dichloroethene	NA	NA	NA		ND (10)
trans-1,2-dichloroethene					NA
1,2-dichloropropane	NA	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA	NA		ND (10)
ethylbenzene					9 J
2-hexanone					ND (10)
methylene chloride			1 J, B	0.3	ND (10)
4-methyl-2-pentanone					ND (10)
styrene					ND (10)
1,1,2,2-tetrachloroethane					ND (10)
tetrachloroethene					ND (10)
toluene			1 J	0.3	8 J
1,1,1-trichloroethane			19	6.3	ND (10)
1,1,2-trichloroethane					ND (10)
trichloroethene					ND (10)
vinyl acetate	NA	NA	NA		ND (10)
vinyl chloride					ND (10)
xylenes (total)					50
Base/Neutral Compounds					
acenaphthene					ND (10)
acenaphthylene					ND (10)
aniline					ND (10)
anthracene					ND (10)
benzo(a)anthracene					ND (10)
benzo(a)pyrene					ND (10)

MW-15
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Number:	GW015001	GW015002	GW031001	AVERAGE	1091-015
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	12/05/84	09/11/86		10/30/91
OTR Number:	E9848	E9850	EC311		
ITR Number:	ME4421	ME4423	MEG753		
benzo(b)fluoranthene					ND (10)
benzo(g,h,i)perylene					ND (10)
benzo(k)fluoranthene					ND (10)
benzoic acid			4 J	1.3	ND (10)
benzyl alcohol					ND (10)
bis(2-chloroethoxy)methane	NA	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA	NA		ND (10)
bis(2-chloroisopropyl)ether					ND (10)
bis(2-ethylhexyl)phthalate			16 B, J	5.3	ND (10)
butyl benzyl phthalate					ND (10)
4-bromophenyl phenyl ether	NA	NA	NA		ND (10)
carbazole	NA	NA	NA		ND (10)
4-chloroaniline	NA	NA	NA		ND (10)
2-chloronaphthalene	NA	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA	NA		ND (10)
chrysene					ND (10)
dibenz(a,h)anthracene					ND (10)
dibenzofuran					ND (10)
1,2-dichlorobenzene					ND (10)
1,3-dichlorobenzene					ND (10)
1,4-dichlorobenzene					ND (10)
3-3'-dichlorobenzidine	NA	NA	NA		ND (10)
diethylphthalate					ND (10)
dimethylphthalate					ND (10)
di-n-butylphthalate			2 J, B	0.7	ND (10)
di-n-octylphthalate					ND (10)
2,4-dinitrotoluene	NA	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA	NA		ND (10)
fluoranthene					ND (10)
fluorene					ND (10)
hexachlorobenzene					ND (10)
hexachlorobutadiene	NA	NA	NA		ND (10)
hexachlorocyclopentadiene					ND (10)
hexachloroethane					ND (10)
indeno(1,2,3-cd)pyrene					ND (10)
isophorone					4 J
2-methylnaphthalene					2 J
naphthalene					4 J
2-nitroaniline	NA	NA	NA		ND (50)
3-nitroaniline	NA	NA	NA		ND (50)
4-nitroaniline	NA	NA	NA		ND (50)
nitrobenzene	NA	NA	NA		ND (10)
N-nitroso-dimethylamine					ND (10)
N-nitroso-di-n-propylamine	NA	NA	NA		ND (10)
N-nitroso-diphenylamine(1)					ND (10)
phenanthrene					ND (10)
pyrene					ND (10)
1,2,4-trichlorobenzene					ND (10)

MW-15
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Number:	GW015001	GW015002	GW031001	AVERAGE	1091-015
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	12/05/84	09/11/86		10/30/91
OTR Number:	E9848	E9850	EC311		
ITR Number:	ME4421	ME4423	MEG753		
Acid Compounds					
4-chloro-3-methylphenol					ND (10)
2-chlorophenol	NA	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA	NA		ND (10)
2,4-dimethylphenol					ND (10)
2,4-dinitrophenol	NA	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA	NA		ND (50)
2-methylphenol					ND (10)
4-methylphenol					ND (10)
2-nitrophenol					ND (10)
4-nitrophenol					ND (50)
pentachlorophenol			7 J	2.3	ND (50)
phenol					ND (10)
2,4,5-trichlorophenol	NA	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA	NA		ND (10)
Pesticides					
Aldrin					ND (0.05)
alpha-BHC					ND (0.05)
beta-BHC					ND (0.05)
delta-BHC					ND (0.05)
gamma-BHC (Lindane)		0.25		0.1	ND (0.05)
alpha-Chlordane	NA	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA	NA		ND (0.5)
4,4'-DDD	NA	NA	NA		ND (0.1)
4,4'-DDE					ND (0.1)
4,4'-DDT					ND (0.1)
Dieldrin					ND (0.1)
Endosulfan I					ND (0.05)
Endosulfan II	NA	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA	NA		ND (0.1)
Endrin					ND (0.1)
Endrin ketone	NA	NA	NA		ND (0.1)
Heptachlor					ND (0.05)
Heptachlor epoxide					ND (0.05)
Methoxychlor	NA	NA	NA		ND (0.5)
Toxaphene					ND (1.0)
PCBs					
Arochlor-1016	NA	NA	NA		ND (0.5)
Arochlor-1221	NA	NA	NA		ND (0.5)
Arochlor-1232					ND (0.5)
Arochlor-1242					ND (0.5)
Arochlor-1248					ND (0.5)
Arochlor-1254					ND (1.0)
Arochlor-1260	NA	NA	NA		ND (1.0)

12/13/91

MW-15
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Number:	GW015001	GW015002	GW031001	AVERAGE	1091-015
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	12/05/84	09/11/86		10/30/91
OTR Number:	E9848	E9850	EC311		
ITR Number:	ME4421	ME4423	MEG753		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	103 [ ]	58 [ ]		53.7	1,000
Antimony					ND (60)
Arsenic	5 [ ]	6 [ ]		3.7	6
Barium					21
Beryllium					ND (5)
Cadmium					ND (5)
Calcium	394,900 R	357,200 R	493,000	415,033	440,000
Chromium	16 E	42 E		19.3	ND (10)
Cobalt			7.5 [ ]	2.5	ND (50)
Copper	12 [ ]			4.0	ND (10)
Cyanide					NA
Iron	14,000 R, E	13,480 R, E	13,100	13,527	29,000
Lead					ND (3)
Magnesium	166,600 R, E	151,000 R, E	176,000	164,533	180,000
Manganese	9,551	8,489	10,100	9,380	9,000
Mercury					ND (0.2)
Nickel	46 R	133 R	12 [ ]	63.7	ND (40)
Potassium	12,985	12,165	9,630	11,593	9,300
Selenium					ND (5)
Silver					ND (10)
Sodium	373,100 E	341,700 E	514,000	409,600	480,000
Thallium					ND (10)
Tin					NA
Vanadium	37 [ ]	33 [ ]		23.3	ND (50)
Zinc	24		17 [ ]	13.7	37
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	NA	NA	221		3,600
Antimony	NA	NA			ND (60)
Arsenic	NA	NA			18
Barium	NA	NA			510
Beryllium	NA	NA			ND (5)
Cadmium	NA	NA			ND (5)
Calcium	NA	NA	442,000		430,000
Chromium	NA	NA	6.4 [ ]		17
Cobalt	NA	NA			ND (50)
Copper	NA	NA	16 [ ]		160
Cyanide	NA	NA			NA
Iron	NA	NA	31,500		48,000
Lead	NA	NA			21
Magnesium	NA	NA	158,000		170,000
Manganese	NA	NA	9,080		8,800
Mercury	NA	NA			0.2
Nickel	NA	NA	15 [ ]		ND (40)

MW-15
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Number:	GW015001	GW015002	GW031001	AVERAGE	1091-015
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/05/84	12/05/84	09/11/86		10/30/91
OTR Number:	E9848	E9850	EC311		
ITR Number:	ME4421	ME4423	MEG753		
Potassium	NA	NA	8,630		9,700
Selenium	NA	NA			ND (5)
Silver	NA	NA			ND (10)
Sodium	NA	NA	472,000		460,000
Thallium	NA	NA			ND (10)
Tin	NA	NA			NA
Vanadium	NA	NA			ND (50)
Zinc	NA	NA	63		74
General Chemistry (units - mg/L)					
Acidity	NA	NA	NR		NA
Alkalinity-Total as CaCO3	NA	NA	778		370
Alkalinity-pheno	NA	NA	NA		ND (20)
Ammonia, as N	NA	NA	27		26
Biological Oxygen Demand	NA	NA	NA		23
Chemical Oxygen Demand	NA	NA	NA		100
Chloride	NA	NA	189		190
Cyanide					0.005
Nitrate (NO3)	NA	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA	NA		ND (0.04)
Phenols	NA	NA	NA		0.05
Phosphate (PO4)	NA	NA	NA		0.7
Sulfate	NA	NA	2,040		2,000
Total Dissolved Solids	NA	NA	3,920		4,000
Total Suspended Solids	NA	NA	85		260
Field Parameters					
pH (standard units)	6.5	6.4	NA		7.55
Specific Conductance (µmhos/cm)	4,500	4,600	3,500		3,100
Temperature (degrees F)	NA	NA	62		55

MW-16
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-16	MW-16
Sample Number:	GW046001	1091-016
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/16/86	10/30/91
OTR Number:	EC327	
ITR Number:	MEG769	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	9 J, B	ND (10)
benzene		ND (10)
bromodichloromethane	NA	ND (10)
bromoform	NA	ND (10)
bromomethane	NA	ND (10)
2-butanone	12 B	ND (10)
carbon disulfide		ND (10)
carbon tetrachloride	NA	ND (10)
chlorobenzene		ND (10)
chloroethane	NA	ND (10)
chloroform		ND (10)
chloromethane		ND (10)
dibromochloromethane	NA	ND (10)
1,1-dichloroethane	2 J	ND (10)
1,2-dichloroethane	5	ND (10)
1,1-dichloroethene		ND (10)
1,2-dichloroethene	NA	ND (10)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (10)
cis-1,3-dichloropropene	NA	ND (10)
trans-1,3-dichloropropene	NA	ND (10)
ethylbenzene		ND (10)
2-hexanone		ND (10)
methylene chloride	2 J, B	ND (10)
4-methyl-2-pentanone		ND (10)
styrene		ND (10)
1,1,2,2-tetrachloroethane		ND (10)
tetrachloroethene		ND (10)
toluene		ND (10)
1,1,1-trichloroethane		ND (10)
1,1,2-trichloroethane		ND (10)
trichloroethene		ND (10)
vinyl acetate	NA	ND (10)
vinyl chloride		ND (10)
xylenes (total)		ND (10)
Base/Neutral Compounds		
acenaphthene		ND (10)
acenaphthylene		ND (10)
aniline		ND (10)
anthracene		ND (10)
benzo(a)anthracene		ND (10)
benzo(a)pyrene		ND (10)
benzo(b)fluoranthene		ND (10)

MW-16
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-16	MW-16
Sample Number:	GW046001	1091-016
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/16/86	10/30/91
OTR Number:	EC327	
ITR Number:	MEG769	
benzo(g,h,i)perylene		ND (10)
benzo(k)fluoranthene		ND (10)
benzoic acid		ND (10)
benzyl alcohol		ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)
bis(2-chloroisopropyl)ether		ND (10)
bis(2-ethylhexyl)phthalate		ND (10)
butyl benzyl phthalate		ND (10)
4-bromophenyl phenyl ether	NA	ND (10)
carbazole	NA	ND (10)
4-chloroaniline	NA	ND (10)
2-chloronaphthalene	NA	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)
chrysene		ND (10)
dibenz(a,h)anthracene		ND (10)
dibenzofuran		ND (10)
1,2-dichlorobenzene		ND (10)
1,3-dichlorobenzene		ND (10)
1,4-dichlorobenzene		ND (10)
3-3'-dichlorobenzidine	NA	ND (10)
diethylphthalate		ND (10)
dimethylphthalate		ND (10)
di-n-butylphthalate		ND (10)
di-n-octylphthalate		ND (10)
2,4-dinitrotoluene	NA	ND (10)
2,6-dinitrotoluene	NA	ND (10)
fluoranthene		ND (10)
fluorene		ND (10)
hexachlorobenzene		ND (10)
hexachlorobutadiene	NA	ND (10)
hexachlorocyclopentadiene		ND (10)
hexachloroethane		ND (10)
indeno(1,2,3-cd)pyrene		ND (10)
isophorone		ND (10)
2-methylnaphthalene		ND (10)
naphthalene		ND (10)
2-nitroaniline	NA	ND (50)
3-nitroaniline	NA	ND (50)
4-nitroaniline	NA	ND (50)
nitrobenzene	NA	ND (10)
N-nitroso-dimethylamine		ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)
N-nitroso-diphenylamine(1)		ND (10)
phenanthrene		ND (10)
pyrene		ND (10)
1,2,4-trichlorobenzene		ND (10)

MW-16
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-16	MW-16
Sample Number:	GW046001	1091-016
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/16/86	10/30/91
OTR Number:	EC327	
ITR Number:	MEG769	
Acid Compounds		
4-chloro-3-methylphenol		ND (10)
2-chlorophenol	NA	ND (10)
2,4-dichlorophenol	NA	ND (10)
2,4-dimethylphenol		ND (10)
2,4-dinitrophenol	NA	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)
2-methylphenol		ND (10)
4-methylphenol		ND (10)
2-nitrophenol		ND (10)
4-nitrophenol		ND (50)
pentachlorophenol		ND (50)
phenol		ND (10)
2,4,5-trichlorophenol	NA	ND (50)
2,4,6-trichlorophenol	NA	ND (10)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-16
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-16	MW-16
Sample Number:	GW046001	1091-016
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/16/86	10/30/91
OTR Number:	EC327	
ITR Number:	MEG769	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum		ND (200)
Antimony		ND (60)
Arsenic		ND (5)
Barium	6.8 [ ]	11
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	54,500	28,000
Chromium		ND (10)
Cobalt		ND (50)
Copper		ND (10)
Cyanide	NA	NA
Iron		710
Lead		ND (5)
Magnesium	19,300	9,400
Manganese	124	41
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	11,800	6,800
Selenium		ND (5)
Silver		ND (10)
Sodium	534,000	420,000
Thallium		ND (10)
Tin	28 [ ]	NA
Vanadium		ND (50)
Zinc	19 [ ]	90
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	1,240	3,200
Antimony		ND (60)
Arsenic		ND (5)
Barium	21 [ ]	31
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	49,500 E	37,000
Chromium	4.1 [ ]	11
Cobalt		ND (50)
Copper	28	10
Cyanide	NA	NA
Iron	6,510	6,400
Lead	16 S, +	ND (5)
Magnesium	16,900	13,000
Manganese	586	200
Mercury		ND (0.2)
Nickel	10 [ ]	ND (40)

MW-16
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-16	MW-16
Sample Number:	GW046001	1091-016
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/16/86	10/30/91
OTR Number:	EC327	
ITR Number:	MEG769	
Potassium	11,400	8,500
Selenium		ND (5)
Silver		ND (10)
Sodium	477,000	430,000
Thallium		ND (10)
Tin	28 [ ]	NA
Vanadium		ND (50)
Zinc	54	150
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	480	730
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	2.4	33
Biological Oxygen Demand	NA	190
Chemical Oxygen Demand	NA	99
Chloride	46	25
Cyanide	NA	ND (0.005)
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	0.02
Phosphate (PO4)	NA	ND (0.1)
Sulfate	716	580
Total Dissolved Solids	1,700	1,400
Total Suspended Solids	172	45
Field Parameters		
pH (standard units)	NA	7.87
Specific Conductance (µmhos/cm)	1,500	1,100
Temperature (degrees F)	55	NA

MW-17
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-17	MW-17	MW-17	MW-17	MW-17
Sample Number:	GW017001	GW017002	GW021001	AVERAGE	1091-017
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	12/06/84	09/09/86		10/31/91
OTR Number:	E9857	E9858	EB200		
ITR Number:	ME4430	ME4431	MEB400		
Organic Compounds (units - µg/L)					
Volatiles					
acetone	245	150	6 J, B	133.7	6 J
benzene	2 J, B	2 J, B		1.3	ND (10)
bromodichloromethane	NA	NA	NA		ND (10)
bromoform	NA	NA	NA		ND (10)
bromomethane	NA	NA	NA		ND (10)
2-butanone	124	72	15 B	70.3	ND (10)
carbon disulfide					ND (10)
carbon tetrachloride	NA	NA	NA		ND (10)
chlorobenzene					ND (10)
chloroethane	NA	NA	NA		ND (10)
chloroform					ND (10)
chloromethane					ND (10)
dibromochloromethane	NA	NA	NA		ND (10)
1,1-dichloroethane					ND (10)
1,2-dichloroethane	8			2.7	6 J
1,1-dichloroethene					ND (10)
1,2-dichloroethene	NA	NA	NA		ND (10)
trans-1,2-dichloroethene					NA
1,2-dichloropropane	NA	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA	NA		ND (10)
ethylbenzene					ND (10)
2-hexanone					ND (10)
methylene chloride			1 J	0.3	ND (10)
4-methyl-2-pentanone					ND (10)
styrene					ND (10)
1,1,2,2-tetrachloroethane					ND (10)
tetrachloroethene					ND (10)
toluene					4 J
1,1,1-trichloroethane					ND (10)
1,1,2-trichloroethane					ND (10)
trichloroethene					ND (10)
vinyl acetate	NA	NA	NA		ND (10)
vinyl chloride					ND (10)
xylenes (total)					3 J
Base/Neutral Compounds					
acenaphthene					ND (10)
acenaphthylene					ND (10)
aniline					ND (10)
anthracene					ND (10)
benzo(a)anthracene					ND (10)
benzo(a)pyrene					ND (10)
benzo(b)fluoranthene					ND (10)

12/13/91

MW-17
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-17	MW-17	MW-17	MW-17 AVERAGE	MW-17
Sample Number:	GW017001	GW017002	GW021001		1091-017
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	12/06/84	09/09/86		10/31/91
OTR Number:	E9857	E9858	EB200		
ITR Number:	ME4430	ME4431	MEB400		
benzo(g,h,i)perylene					ND (10)
benzo(k)fluoranthene					ND (10)
benzoic acid					4 J
benzyl alcohol					ND (10)
bis(2-chloroethoxy)methane	NA	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA	NA		ND (10)
bis(2-chloroisopropyl)ether					ND (10)
bis(2-ethylhexyl)phthalate			3 J, B	1.0	ND (10)
butyl benzyl phthalate					ND (10)
4-bromophenyl phenyl ether	NA	NA	NA		ND (10)
carbazole	NA	NA	NA		ND (10)
4-chloroaniline	NA	NA	NA		ND (10)
2-chloronaphthalene	NA	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA	NA		ND (10)
chrysene					ND (10)
dibenz(a,h)anthracene					ND (10)
dibenzofuran					ND (10)
1,2-dichlorobenzene					ND (10)
1,3-dichlorobenzene					ND (10)
1,4-dichlorobenzene					ND (10)
3-3'-dichlorobenzidine	NA	NA	NA		ND (10)
diethylphthalate					ND (10)
dimethylphthalate					ND (10)
di-n-butylphthalate					ND (10)
di-n-octylphthalate					ND (10)
2,4-dinitrotoluene	NA	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA	NA		ND (10)
fluoranthene					ND (10)
fluorene					ND (10)
hexachlorobenzene					ND (10)
hexachlorobutadiene	NA	NA	NA		ND (10)
hexachlorocyclopentadiene					ND (10)
hexachloroethane					ND (10)
indeno(1,2,3-cd)pyrene					ND (10)
isophorone					ND (10)
2-methylnaphthalene					ND (10)
naphthalene					ND (50)
2-nitroaniline	NA	NA	NA		ND (50)
3-nitroaniline	NA	NA	NA		ND (50)
4-nitroaniline	NA	NA	NA		ND (10)
nitrobenzene	NA	NA	NA		ND (10)
N-nitroso-dimethylamine					ND (10)
N-nitroso-di-n-propylamine	NA	NA	NA		ND (10)
N-nitroso-diphenylamine(1)					ND (10)
phenanthrene					ND (10)
pyrene					ND (10)
1,2,4-trichlorobenzene					ND (10)

MW-17
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-17	MW-17	MW-17	MW-17	MW-17
Sample Number:	GW017001	GW017002	GW021001	AVERAGE	1091-017
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	12/06/84	09/09/86		10/31/91
OTR Number:	E9857	E9858	EB200		
ITR Number:	ME4430	ME4431	MEB400		
Acid Compounds					
4-chloro-3-methylphenol					ND (10)
2-chlorophenol	NA	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA	NA		ND (10)
2,4-dimethylphenol					ND (10)
2,4-dinitrophenol	NA	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA	NA		ND (50)
2-methylphenol					ND (10)
4-methylphenol					ND (10)
2-nitrophenol					ND (10)
4-nitrophenol					ND (50)
pentachlorophenol					ND (50)
phenol					ND (10)
2,4,5-trichlorophenol	NA	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA	NA		ND (10)
Pesticides					
Aldrin					ND (0.05)
alpha-BHC					ND (0.05)
beta-BHC					ND (0.05)
delta-BHC					ND (0.05)
gamma-BHC (Lindane)					ND (0.05)
alpha-Chlordane	NA	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA	NA		ND (0.5)
4,4'-DDD	NA	NA	NA		ND (0.1)
4,4'-DDE					ND (0.1)
4,4'-DDT					ND (0.1)
Dieldrin					ND (0.1)
Endosulfan I					ND (0.05)
Endosulfan II	NA	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA	NA		ND (0.1)
Endrin					ND (0.1)
Endrin ketone	NA	NA	NA		ND (0.1)
Heptachlor					ND (0.05)
Heptachlor epoxide					ND (0.05)
Methoxychlor	NA	NA	NA		ND (0.5)
Toxaphene					ND (1.0)
PCBs					
Arochlor-1016	NA	NA	NA		ND (0.5)
Arochlor-1221	NA	NA	NA		ND (0.5)
Arochlor-1232					ND (0.5)
Arochlor-1242					ND (0.5)
Arochlor-1248					ND (0.5)
Arochlor-1254					ND (1.0)
Arochlor-1260	NA	NA	NA		ND (1.0)

12/13/91

MW-17
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-17	MW-17	MW-17	MW-17 AVERAGE	MW-17
Sample Number:	GW017001	GW017002	GW021001		1091-017
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	12/06/84	09/09/86		10/31/91
OTR Number:	E9857	E9858	EB200		
ITR Number:	ME4430	ME4431	MEB400		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	105 [ ]	100 [ ]	304	170	ND (200)
Antimony					ND (60)
Arsenic					ND (5)
Barium	62 [ ], R	60 [ ], R	17 [ ]	46.3	14
Beryllium					ND (5)
Cadmium	5.3	7.2		4.2	ND (5)
Calcium	296,200 R	310,200 R	373,000	326,467	280,000
Chromium			8.2 [ ]	2.7	11
Cobalt	87 R	92 R	325	168	380
Copper					ND (10)
Cyanide					NA
Iron	32,970 R, E	34,800 R, E	80,600	49,457	74,000
Lead					ND (5)
Magnesium	210,000 R, E	213,900 R, E	295,000	239,633	210,000
Manganese	26,100	27,420	40,100	31,207	33,000
Mercury					ND (0.2)
Nickel	61 R	62 R	169	97.3	220
Potassium	8,665	9,039	8,750	8,818	7,500
Selenium					ND (5)
Silver					ND (10)
Sodium	37,060 E	28,980 E	43,000	36,347	44,000
Thallium					ND (10)
Tin					NA
Vanadium	23 [ ]	25 [ ]		16.0	ND (50)
Zinc	119	129	248	165	420
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	NA	NA	19,400		100,000
Antimony	NA	NA			ND (60)
Arsenic	NA	NA	13		24
Barium	NA	NA	180 [ ]		990
Beryllium	NA	NA	2.9 [ ]		13
Cadmium	NA	NA			11
Calcium	NA	NA	312,000		320,000
Chromium	NA	NA	38		180
Cobalt	NA	NA	356		1,000
Copper	NA	NA	40		160
Cyanide					NA
Iron	NA	NA	148,000		320,000
Lead	NA	NA			130
Magnesium	NA	NA	270,000		250,000
Manganese	NA	NA	37,300		38,000
Mercury	NA	NA	0.9		0.7
Nickel	NA	NA	255		990

MW-17
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-17	MW-17	MW-17	MW-17	MW-17
Sample Number:	GW017001	GW017002	GW021001	AVERAGE	1091-017
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	12/06/84	09/09/86		10/31/91
OTR Number:	E9857	E9858	EB200		
ITR Number:	ME4430	ME4431	MEB400		
Potassium	NA	NA	10,200 E		20,000
Selenium	NA	NA			ND (5)
Silver	NA	NA			ND (10)
Sodium	NA	NA	38,900		48,000
Thallium	NA	NA			ND (10)
Tin	NA	NA			NA
Vanadium	NA	NA	38 [ ]		180
Zinc	NA	NA	609		9,700
General Chemistry (units - mg/L)					
Acidity	NA	NA	NR		NA
Alkalinity-Total as CaCO3	NA	NA	100		24
Alkalinity-pheno	NA	NA	NA		ND (20)
Ammonia, as N	NA	NA	0.50		1.7
Biological Oxygen Demand	NA	NA	NA		15
Chemical Oxygen Demand	NA	NA	NA		46
Chloride	NA	NA	39		62
Cyanide					ND (0.005)
Nitrate (NO3)	NA	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA	NA		ND (0.04)
Phenols	NA	NA	NA		0.01
Phosphate (PO4)	NA	NA	NA		0.2
Sulfate	NA	NA	1,920		1,600
Total Dissolved Solids	NA	NA	3,150		2,600
Total Suspended Solids	NA	NA	28,400		2,200
Field Parameters					
pH (standard units)	6.6	6.5	NA	6.55	7.92
Specific Conductance (µmhos/cm)	2,500	2,500	3,100	2,700	210
Temperature (degrees F)	NA	NA	68		59

MW-18
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-18	MW-18
Sample Number:	GW024001	1091-018
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	10/31/91
OTR Number:	EC303	
ITR Number:	MEG745	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	5 J, B	22
benzene		ND (10)
bromodichloromethane	NA	ND (10)
bromoform	NA	ND (10)
bromomethane	NA	ND (10)
2-butanone	14 B	ND (10)
carbon disulfide		ND (10)
carbon tetrachloride	NA	ND (10)
chlorobenzene		ND (10)
chloroethane	NA	ND (10)
chloroform		ND (10)
chloromethane		ND (10)
dibromochloromethane	NA	ND (10)
1,1-dichloroethane		ND (10)
1,2-dichloroethane	2 J	5 J
1,1-dichloroethene		ND (10)
1,2-dichloroethene	NA	ND (10)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (10)
cis-1,3-dichloropropene	NA	ND (10)
trans-1,3-dichloropropene	NA	ND (10)
ethylbenzene		ND (10)
2-hexanone		ND (10)
methylene chloride	1 J	ND (10)
4-methyl-2-pentanone		ND (10)
styrene		ND (10)
1,1,2,2-tetrachloroethane		ND (10)
tetrachloroethene		ND (10)
toluene		ND (10)
1,1,1-trichloroethane		ND (10)
1,1,2-trichloroethane		ND (10)
trichloroethene		ND (10)
vinyl acetate	NA	ND (10)
vinyl chloride		ND (10)
xylenes (total)		ND (10)
Base/Neutral Compounds		
acenaphthene		ND (11)
acenaphthylene		ND (11)
aniline		ND (11)
anthracene		ND (11)
benzo(a)anthracene		ND (11)
benzo(a)pyrene		ND (11)
benzo(b)fluoranthene		ND (11)

MW-18
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-18	MW-18
Sample Number:	GW024001	1091-018
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	10/31/91
OTR Number:	EC303	
ITR Number:	MEG745	
benzo(g,h,i)perylene		ND (11)
benzo(k)fluoranthene		ND (11)
benzoic acid		4 J
benzyl alcohol		ND (11)
bis(2-chloroethoxy)methane	NA	ND (11)
bis(2-chloroethyl)ether	NA	ND (11)
bis(2-chloroisopropyl)ether		ND (11)
bis(2-ethylhexyl)phthalate	3 J, B	ND (11)
butyl benzyl phthalate		ND (11)
4-bromophenyl phenyl ether	NA	ND (11)
carbazole	NA	ND (11)
4-chloroaniline	NA	ND (11)
2-chloronaphthalene	NA	ND (11)
4-chlorophenyl phenyl ether	NA	ND (11)
chrysene		ND (11)
dibenz(a,h)anthracene		ND (11)
dibenzofuran		ND (11)
1,2-dichlorobenzene		ND (11)
1,3-dichlorobenzene		ND (11)
1,4-dichlorobenzene		ND (11)
3-3'-dichlorobenzidine	NA	ND (11)
diethylphthalate		ND (11)
dimethylphthalate		ND (11)
di-n-butylphthalate	2 J	ND (11)
di-n-octylphthalate		ND (11)
2,4-dinitrotoluene	NA	ND (11)
2,6-dinitrotoluene	NA	ND (11)
fluoranthene		ND (11)
fluorene		ND (11)
hexachlorobenzene		ND (11)
hexachlorobutadiene	NA	ND (11)
hexachlorocyclopentadiene		ND (11)
hexachloroethane		ND (11)
indeno(1,2,3-cd)pyrene		ND (11)
isophorone		2 J
2-methylnaphthalene		5 J
naphthalene		3 J
2-nitroaniline	NA	ND (55)
3-nitroaniline	NA	ND (55)
4-nitroaniline	NA	ND (55)
nitrobenzene	NA	ND (11)
N-nitroso-dimethylamine		ND (11)
N-nitroso-di-n-propylamine	NA	ND (11)
N-nitroso-diphenylamine(1)		ND (11)
phenanthrene		2 J
pyrene		ND (11)
1,2,4-trichlorobenzene		ND (11)

MW-18
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-18	MW-18
Sample Number:	GW024001	1091-018
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	10/31/91
OTR Number:	EC303	
ITR Number:	MEG745	
Acid Compounds		
4-chloro-3-methylphenol		ND (11)
2-chlorophenol	NA	ND (11)
2,4-dichlorophenol	NA	ND (11)
2,4-dimethylphenol		ND (11)
2,4-dinitrophenol	NA	ND (55)
4,6-dinitro-2-methylphenol	NA	ND (55)
2-methylphenol		ND (11)
4-methylphenol		ND (11)
2-nitrophenol		ND (11)
4-nitrophenol		ND (55)
pentachlorophenol		ND (55)
phenol		ND (11)
2,4,5-trichlorophenol	NA	ND (55)
2,4,6-trichlorophenol	NA	ND (11)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-18
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-18	MW-18
Sample Number:	GW024001	1091-018
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	10/31/91
OTR Number:	EC303	
ITR Number:	MEG745	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum	129 [ ]	ND (200)
Antimony		ND (60)
Arsenic		ND (5)
Barium		16
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	432,000	410,000
Chromium		ND (10)
Cobalt		ND (50)
Copper		ND (10)
Cyanide		NA
Iron	4,990	3,600
Lead		ND (5)
Magnesium	161,000	150,000
Manganese	4,280	4,200
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	9,040	7,800
Selenium		ND (5)
Silver		ND (10)
Sodium	96,400	150,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	88	99
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	25,300	51,000
Antimony		ND (60)
Arsenic	18 S	25
Barium	146 [ ]	410
Beryllium	3.4 [ ]	ND (5)
Cadmium		ND (5)
Calcium	455,000	450,000
Chromium	42	86
Cobalt	45 [ ]	55
Copper	63	98
Cyanide		NA
Iron	88,300	130,000
Lead		76
Magnesium	171,000	170,000
Manganese	6,490	6,300
Mercury	0.7	ND (0.2)
Nickel	87	130

MW-18
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-18	MW-18
Sample Number:	GW024001	1091-018
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	10/31/91
OTR Number:	EC303	
ITR Number:	MEG745	
Potassium	13,300 E	16,000
Selenium		ND (5)
Silver		ND (10)
Sodium	95,100	160,000
Thallium		ND (10)
Tin		NA
Vanadium	48 [ ]	98
Zinc	228	410
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	316	330
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	1.0	1.6
Biological Oxygen Demand	NA	2
Chemical Oxygen Demand	NA	33
Chloride	95	160
Cyanide		ND (0.005)
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	ND (0.01)
Phosphate (PO4)	NA	ND (0.1)
Sulfate	1,380	1,500
Total Dissolved Solids	2,620	2,800
Total Suspended Solids	10,800	1,300
Field Parameters		
pH (standard units)	6.9	7.48
Specific Conductance (µmhos/cm)	1,500	200
Temperature (degrees F)	55	NA

MW-19
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-19	MW-19
Sample Number:	GW025001	1091-019
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC304	WELL DRY
ITR Number:	MEG746	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	2 J, B	
benzene		
bromodichloromethane	NA	
bromoform	NA	
bromomethane	NA	
2-butanone	14 B	
carbon disulfide		
carbon tetrachloride	NA	
chlorobenzene		
chloroethane	NA	
chloroform		
chloromethane		
dibromochloromethane	NA	
1,1-dichloroethane		
1,2-dichloroethane		
1,1-dichloroethene		
1,2-dichloroethene	NA	
trans-1,2-dichloroethene		
1,2-dichloropropane	NA	
cis-1,3-dichloropropene	NA	
trans-1,3-dichloropropene	NA	
ethylbenzene		
2-hexanone		
methylene chloride	2 J	
4-methyl-2-pentanone		
styrene		
1,1,2,2-tetrachloroethane		
tetrachloroethene		
toluene	12	
1,1,1-trichloroethane		
1,1,2-trichloroethane		
trichloroethene		
vinyl acetate	NA	
vinyl chloride		
xylenes (total)		
Base/Neutral Compounds		
acenaphthene		
acenaphthylene		
aniline		
anthracene		
benzo(a)anthracene		
benzo(a)pyrene		
benzo(b)fluoranthene		

MW-19
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-19	MW-19
Sample Number:	GW025001	1091-019
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC304	WELL DRY
ITR Number:	MEG746	
benzo(g,h,i)perylene		
benzo(k)fluoranthene		
benzoic acid		
benzyl alcohol		
bis(2-chloroethoxy)methane	NA	
bis(2-chloroethyl)ether	NA	
bis(2-chloroisopropyl)ether		
bis(2-ethylhexyl)phthalate	3 J,B	
butyl benzyl phthalate		
4-bromophenyl phenyl ether	NA	
carbazole	NA	
4-chloroaniline	NA	
2-chloronaphthalene	NA	
4-chlorophenyl phenyl ether	NA	
chrysene		
dibenz(a,h)anthracene		
dibenzofuran		
1,2-dichlorobenzene		
1,3-dichlorobenzene		
1,4-dichlorobenzene		
3-3'-dichlorobenzidine	NA	
diethylphthalate		
dimethylphthalate		
di-n-butylphthalate	3 J	
di-n-octylphthalate		
2,4-dinitrotoluene	NA	
2,6-dinitrotoluene	NA	
fluoranthene		
fluorene		
hexachlorobenzene		
hexachlorobutadiene	NA	
hexachlorocyclopentadiene		
hexachloroethane		
indeno(1,2,3-cd)pyrene		
isophorone		
2-methylnaphthalene		
naphthalene		
2-nitroaniline	NA	
3-nitroaniline	NA	
4-nitroaniline	NA	
nitrobenzene	NA	
N-nitroso-dimethylamine		
N-nitroso-di-n-propylamine	NA	
N-nitroso-diphenylamine(1)		
phenanthrene		
pyrene		
1,2,4-trichlorobenzene		

MW-19
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-19	MW-19
Sample Number:	GW025001	1091-019
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC304	WELL DRY
ITR Number:	MEG746	
Acid Compounds		
4-chloro-3-methylphenol		
2-chlorophenol	NA	
2,4-dichlorophenol	NA	
2,4-dimethylphenol		
2,4-dinitrophenol	NA	
4,6-dinitro-2-methylphenol	NA	
2-methylphenol		
4-methylphenol		
2-nitrophenol		
4-nitrophenol		
pentachlorophenol		
phenol		
2,4,5-trichlorophenol	NA	
2,4,6-trichlorophenol	NA	
Pesticides		
Aldrin		
alpha-BHC		
beta-BHC		
delta-BHC		
gamma-BHC (Lindane)		
alpha-Chlordane	NA	
gamma-Chlordane	NA	
4,4'-DDD		
4,4'-DDE		
4,4'-DDT		
Dieldrin		
Endosulfan I		
Endosulfan II	NA	
Endosulfan sulfate	NA	
Endrin		
Endrin ketone	NA	
Heptachlor		
Heptachlor epoxide		
Methoxychlor	NA	
Toxaphene		
PCBs		
Arochlor-1016	NA	
Arochlor-1221	NA	
Arochlor-1232		
Arochlor-1242		
Arochlor-1248		
Arochlor-1254		
Arochlor-1260	NA	

MW-19
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-19	MW-19
Sample Number:	GW025001	1091-019
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC304	WELL DRY
ITR Number:	MEG746	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum	725	
Antimony		
Arsenic		
Barium		
Beryllium		
Cadmium		
Calcium	653,000	
Chromium		
Cobalt	36 [ ]	
Copper		
Cyanide		
Iron	222,000	
Lead		
Magnesium	298,000	
Manganese	14,100	
Mercury		
Nickel	58	
Potassium	18,200	
Selenium		
Silver		
Sodium	409,000	
Thallium		
Tin		
Vanadium		
Zinc	350	
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	38,800	
Antimony	64	
Arsenic	30 S	
Barium	139 [ ]	
Beryllium	4.3 [ ]	
Cadmium		
Calcium	62,300	
Chromium	58	
Cobalt	74	
Copper	89	
Cyanide		
Iron	288,000	
Lead		
Magnesium	296,000	
Manganese	14,100	
Mercury	0.5	
Nickel	149	

MW-19
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-19	MW-19
Sample Number:	GW025001	1091-019
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC304	WELL DRY
ITR Number:	MEG746	
Potassium	22,200 E	
Selenium		
Silver		
Sodium	380,000	
Thallium		
Tin		
Vanadium	54	
Zinc	586	
General Chemistry (units - mg/L)		
Acidity	NR	
Alkalinity-Total as CaCO3	174	
Alkalinity-pheno	NA	
Ammonia, as N	3.8	
Biological Oxygen Demand	NA	
Chemical Oxygen Demand	NA	
Chloride	1,420	
Cyanide	NA	
Nitrate (NO3)	NA	
Nitrite (NO2)	NA	
Phenols	NA	
Phosphate (PO4)	NA	
Sulfate	2,230	
Total Dissolved Solids	6,080	
Total Suspended Solids	3,640	
Field Parameters		
pH (standard units)	6.2	
Specific Conductance (µmhos/cm)	2,200	
Temperature (degrees F)	58	

MW-20
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-20	MW-20
Sample Number:	GW023001	1091-020
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/02/91
OTR Number:	EC302	
ITR Number:	MEG744	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	8 J, B	ND (10)
benzene		ND (10)
bromodichloromethane	NA	ND (10)
bromoform	NA	ND (10)
bromomethane	NA	ND (10)
2-butanone	21 B	ND (10)
carbon disulfide		8 J
carbon tetrachloride	NA	ND (10)
chlorobenzene		ND (10)
chloroethane	NA	ND (10)
chloroform		ND (10)
chloromethane		ND (10)
dibromochloromethane	NA	ND (10)
1,1-dichloroethane		ND (10)
1,2-dichloroethane		ND (10)
1,1-dichloroethene		ND (10)
1,2-dichloroethene	NA	ND (10)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (10)
cis-1,3-dichloropropene	NA	ND (10)
trans-1,3-dichloropropene	NA	ND (10)
ethylbenzene		ND (10)
2-hexanone		ND (10)
methylene chloride	4 J	ND (10)
4-methyl-2-pentanone		ND (10)
styrene		ND (10)
1,1,2,2-tetrachloroethane		ND (10)
tetrachloroethene		ND (10)
toluene	2 J	5 J
1,1,1-trichloroethane		ND (10)
1,1,2-trichloroethane		ND (10)
trichloroethene		ND (10)
vinyl acetate	NA	ND (10)
vinyl chloride		ND (10)
xylenes (total)		8 J
Base/Neutral Compounds		
acenaphthene		ND (10)
acenaphthylene		ND (10)
aniline		ND (10)
anthracene		ND (10)
benzo(a)anthracene		ND (10)
benzo(a)pyrene		ND (10)
benzo(b)fluoranthene		ND (10)

MW-20
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-20	MW-20
Sample Number:	GW023001	1091-020
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/02/91
OTR Number:	EC302	
ITR Number:	MEG744	
benzo(g,h,i)perylene		ND (10)
benzo(k)fluoranthene		ND (10)
benzoic acid		ND (10)
benzyl alcohol		ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)
bis(2-chloroisopropyl)ether		ND (10)
bis(2-ethylhexyl)phthalate	12 B	32
butyl benzyl phthalate		ND (10)
4-bromophenyl phenyl ether	NA	ND (10)
carbazole	NA	ND (10)
4-chloroaniline	NA	ND (10)
2-chloronaphthalene	NA	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)
chrysene		ND (10)
dibenz(a,h)anthracene		ND (10)
dibenzofuran		ND (10)
1,2-dichlorobenzene		ND (10)
1,3-dichlorobenzene		ND (10)
1,4-dichlorobenzene		ND (10)
3-3'-dichlorobenzidine	NA	ND (10)
diethylphthalate		ND (10)
dimethylphthalate		ND (10)
di-n-butylphthalate	2 J	ND (10)
di-n-octylphthalate		ND (10)
2,4-dinitrotoluene	NA	ND (10)
2,6-dinitrotoluene	NA	ND (10)
fluoranthene		ND (10)
fluorene		ND (10)
hexachlorobenzene		ND (10)
hexachlorobutadiene	NA	ND (10)
hexachlorocyclopentadiene		ND (10)
hexachloroethane		ND (10)
indeno(1,2,3-cd)pyrene		ND (10)
isophorone		ND (10)
2-methylnaphthalene		ND (10)
naphthalene		ND (10)
2-nitroaniline	NA	ND (50)
3-nitroaniline	NA	ND (50)
4-nitroaniline	NA	ND (50)
nitrobenzene	NA	ND (10)
N-nitroso-dimethylamine		ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)
N-nitroso-diphenylamine(1)		ND (10)
phenanthrene		ND (10)
pyrene		ND (10)
1,2,4-trichlorobenzene		ND (10)

MW-20
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-20	MW-20
Sample Number:	GW023001	1091-020
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/02/91
OTR Number:	EC302	
ITR Number:	MEG744	
Acid Compounds		
4-chloro-3-methylphenol		ND (10)
2-chlorophenol	NA	ND (10)
2,4-dichlorophenol	NA	ND (10)
2,4-dimethylphenol		ND (10)
2,4-dinitrophenol	NA	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)
2-methylphenol		ND (10)
4-methylphenol		ND (10)
2-nitrophenol		ND (10)
4-nitrophenol		ND (50)
pentachlorophenol		ND (50)
phenol		3 J
2,4,5-trichlorophenol	NA	ND (50)
2,4,6-trichlorophenol	NA	ND (10)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-20
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-20	MW-20
Sample Number:	GW023001	1091-020
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/02/91
OTR Number:	EC302	
ITR Number:	MEG744	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum	130 [ ]	1,500
Antimony		ND (60)
Arsenic		ND (5)
Barium	14 [ ]	290
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	1,860 [ ]	110,000
Chromium		ND (10)
Cobalt		ND (50)
Copper	20 [ ]	ND (10)
Cyanide		NA
Iron	650	500
Lead		ND (5)
Magnesium	245 [ ]	ND (5,000)
Manganese		ND (10)
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	3,560 [ ]	6,600
Selenium		ND (5)
Silver		ND (10)
Sodium	465,000	230,000
Thallium		ND (10)
Tin	3,120	NA
Vanadium	7.1 [ ]	ND (50)
Zinc	76	430
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	3,110	2,200
Antimony		ND (60)
Arsenic		ND (5)
Barium	118 [ ]	340
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	50,400	140,000
Chromium	4.9 [ ]	ND (10)
Cobalt		ND (50)
Copper	23 [ ]	ND (10)
Cyanide		NA
Iron	3,320	650
Lead		ND (5)
Magnesium	1,510 [ ]	ND (5,000)
Manganese	125	ND (10)
Mercury	0.5	ND (0.2)
Nickel	8.8 [ ]	ND (40)

MW-20
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-20	MW-20
Sample Number:	GW023001	1091-020
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/02/91
OTR Number:	EC302	
ITR Number:	MEG744	
Potassium	4,850 [ ], E	6,300
Selenium		ND (5)
Silver		ND (10)
Sodium	428,000	230,000
Thallium		ND (10)
Tin		NA
Vanadium	15 [ ]	ND (50)
Zinc	33	440
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	938	910
Alkalinity-pheno	NA	690
Ammonia, as N	1.1	2.3
Biological Oxygen Demand	NA	ND (2)
Chemical Oxygen Demand	NA	99
Chloride	107	112
Cyanide		ND (0.005)
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	0.2
Phenols	NA	0.02
Phosphate (PO4)	NA	ND (0.1)
Sulfate	34	53
Total Dissolved Solids	1,100	850
Total Suspended Solids	201	270
Field Parameters		
pH (standard units)	NA	> 10
Specific Conductance (µmhos/cm)	2,500	5,000
Temperature (degrees F)	59	53

MW-21
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-21	MW-21
Sample Number:	GW047001	1091-021
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/17/86	11/02/91
OTR Number:	EC328	
ITR Number:	MEG770	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	8 J, B	3 J
benzene		ND (10)
bromodichloromethane	NA	ND (10)
bromoform	NA	ND (10)
bromomethane	NA	ND (10)
2-butanone	17 B	4 J
carbon disulfide		ND (10)
carbon tetrachloride	NA	ND (10)
chlorobenzene		ND (10)
chloroethane	NA	ND (10)
chloroform		ND (10)
chloromethane		ND (10)
dibromochloromethane	NA	ND (10)
1,1-dichloroethane		ND (10)
1,2-dichloroethane		ND (10)
1,1-dichloroethene		ND (10)
1,2-dichloroethene	NA	ND (10)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (10)
cis-1,3-dichloropropene	NA	ND (10)
trans-1,3-dichloropropene	NA	ND (10)
ethylbenzene		2 J
2-hexanone		ND (10)
methylene chloride	5	ND (10)
4-methyl-2-pentanone		ND (10)
styrene		ND (10)
1,1,2,2-tetrachloroethane		ND (10)
tetrachloroethene		ND (10)
toluene		6 J
1,1,1-trichloroethane		ND (10)
1,1,2-trichloroethane		ND (10)
trichloroethene		ND (10)
vinyl acetate	NA	ND (10)
vinyl chloride		ND (10)
xylenes (total)		15
Base/Neutral Compounds		
acenaphthene		ND (11)
acenaphthylene		ND (11)
aniline		ND (11)
anthracene		ND (11)
benzo(a)anthracene		ND (11)
benzo(a)pyrene		ND (11)
benzo(b)fluoranthene		ND (11)

MW-21
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-21	MW-21
Sample Number:	GW047001	1091-021
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/17/86	11/02/91
OTR Number:	EC328	
ITR Number:	MEG770	
benzo(g,h,i)perylene		ND (11)
benzo(k)fluoranthene		ND (11)
benzoic acid		ND (11)
benzyl alcohol		ND (11)
bis(2-chloroethoxy)methane	NA	ND (11)
bis(2-chloroethyl)ether	NA	ND (11)
bis(2-chloroisopropyl)ether		ND (11)
bis(2-ethylhexyl)phthalate		ND (11)
butyl benzyl phthalate		ND (11)
4-bromophenyl phenyl ether	NA	ND (11)
carbazole	NA	ND (11)
4-chloroaniline	NA	ND (11)
2-chloronaphthalene	NA	ND (11)
4-chlorophenyl phenyl ether	NA	ND (11)
chrysene		ND (11)
dibenz(a,h)anthracene		ND (11)
dibenzofuran		ND (11)
1,2-dichlorobenzene		ND (11)
1,3-dichlorobenzene		ND (11)
1,4-dichlorobenzene		ND (11)
3-3'-dichlorobenzidine	NA	ND (11)
diethylphthalate		ND (11)
dimethylphthalate		ND (11)
di-n-butylphthalate		ND (11)
di-n-octylphthalate		ND (11)
2,4-dinitrotoluene	NA	ND (11)
2,6-dinitrotoluene	NA	ND (11)
fluoranthene		ND (11)
fluorene		ND (11)
hexachlorobenzene		ND (11)
hexachlorobutadiene	NA	ND (11)
hexachlorocyclopentadiene		ND (11)
hexachloroethane		ND (11)
indeno(1,2,3-cd)pyrene		ND (11)
isophorone		ND (11)
2-methylnaphthalene		ND (11)
naphthalene		ND (11)
2-nitroaniline	NA	ND (55)
3-nitroaniline	NA	ND (55)
4-nitroaniline	NA	ND (55)
nitrobenzene	NA	ND (11)
N-nitroso-dimethylamine		ND (11)
N-nitroso-di-n-propylamine	NA	ND (11)
N-nitroso-diphenylamine(1)		ND (11)
phenanthrene		ND (11)
pyrene		ND (11)
1,2,4-trichlorobenzene		ND (11)

MW-21
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-21	MW-21
Sample Number:	GW047001	1091-021
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/17/86	11/02/91
OTR Number:	EC328	
ITR Number:	MEG770	
Acid Compounds		
4-chloro-3-methylphenol		ND (11)
2-chlorophenol	NA	ND (11)
2,4-dichlorophenol	NA	ND (11)
2,4-dimethylphenol		ND (11)
2,4-dinitrophenol	NA	ND (55)
4,6-dinitro-2-methylphenol	NA	ND (55)
2-methylphenol		ND (11)
4-methylphenol		ND (11)
2-nitrophenol		ND (11)
4-nitrophenol		ND (55)
pentachlorophenol		ND (55)
phenol		ND (11)
2,4,5-trichlorophenol	NA	ND (55)
2,4,6-trichlorophenol	NA	ND (11)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-21
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-21	MW-21
Sample Number:	GW047001	1091-021
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/17/86	11/02/91
OTR Number:	EC328	
ITR Number:	MEG770	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum		10,000
Antimony		75
Arsenic		10
Barium		260
Beryllium		ND (5)
Cadmium		ND (5)
Calcium		10,000
Chromium		24
Cobalt		ND (50)
Copper		47
Cyanide		NA
Iron		10,000
Lead		24
Magnesium		ND (5,000)
Manganese		190
Mercury		ND (0.2)
Nickel		ND (40)
Potassium		6,900
Selenium		5
Silver		ND (10)
Sodium		400,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc		770
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	212,000	NA
Antimony	114 [ ]	NA
Arsenic	39	NA
Barium	3,520	NA
Beryllium	22	NA
Cadmium		NA
Calcium	135,000 E	NA
Chromium	318	NA
Cobalt	343	NA
Copper	502	NA
Cyanide		NA
Iron	608,000	NA
Lead	220	NA
Magnesium	98,000	NA
Manganese	10,700	NA
Mercury	0.4	NA
Nickel	678	NA

MW-21
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-21	MW-21
Sample Number:	GW047001	1091-021
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/17/86	11/02/91
OTR Number:	EC328	
ITR Number:	MEG770	
Potassium	34,000	NA
Selenium		NA
Silver		NA
Sodium	320,000	NA
Thallium		NA
Tin		NA
Vanadium	321	NA
Zinc	2,000	NA
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	460	910
Alkalinity-pheno	NA	0.2
Ammonia, as N	2.0	ND (0.2)
Biological Oxygen Demand	NA	ND (2)
Chemical Oxygen Demand	NA	33
Chloride	149	22
Cyanide		NA
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	ND (0.01)
Phosphate (PO4)	NA	0.2
Sulfate	395	460
Total Dissolved Solids	1,280	NA
Total Suspended Solids	37,000	NA
Field Parameters		
pH (standard units)	NA	8.71
Specific Conductance (µmhos/cm)	1,625	1,700
Temperature (degrees F)	56	52

MW-22
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-22	MW-22
Sample Number:	GW035001	1091-022
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC315	
ITR Number:	MEG757	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	9 J, B	3 J
benzene		ND (10)
bromodichloromethane	NA	ND (10)
bromoform	NA	ND (10)
bromomethane	NA	ND (10)
2-butanone	15 B	ND (10)
carbon disulfide		ND (10)
carbon tetrachloride	NA	ND (10)
chlorobenzene		ND (10)
chloroethane	NA	ND (10)
chloroform		ND (10)
chloromethane		ND (10)
dibromochloromethane	NA	ND (10)
1,1-dichloroethane		ND (10)
1,2-dichloroethane		ND (10)
1,1-dichloroethene		ND (10)
1,2-dichloroethene	NA	ND (10)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (10)
cis-1,3-dichloropropene	NA	ND (10)
trans-1,3-dichloropropene	NA	ND (10)
ethylbenzene		ND (10)
2-hexanone		ND (10)
methylene chloride	1 J	ND (10)
4-methyl-2-pentanone		ND (10)
styrene		ND (10)
1,1,2,2-tetrachloroethane		ND (10)
tetrachloroethene		ND (10)
toluene		ND (10)
1,1,1-trichloroethane		ND (10)
1,1,2-trichloroethane		ND (10)
trichloroethene		ND (10)
vinyl acetate	NA	ND (10)
vinyl chloride		ND (10)
xylenes (total)		ND (10)
Base/Neutral Compounds		
acenaphthene		ND (10)
acenaphthylene		ND (10)
aniline		ND (10)
anthracene		ND (10)
benzo(a)anthracene		ND (10)
benzo(a)pyrene		ND (10)
benzo(b)fluoranthene		ND (10)

MW-22
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-22	MW-22
Sample Number:	GW035001	1091-022
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC315	
ITR Number:	MEG757	
benzo(g,h,i)perylene		ND (10)
benzo(k)fluoranthene		ND (10)
benzoic acid		ND (10)
benzyl alcohol		ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)
bis(2-chloroisopropyl)ether		ND (10)
bis(2-ethylhexyl)phthalate	6 J, B	3 J
butyl benzyl phthalate		ND (10)
4-bromophenyl phenyl ether	NA	ND (10)
carbazole	NA	ND (10)
4-chloroaniline	NA	ND (10)
2-chloronaphthalene	NA	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)
chrysene		ND (10)
dibenz(a,h)anthracene		ND (10)
dibenzofuran		ND (10)
1,2-dichlorobenzene		ND (10)
1,3-dichlorobenzene		ND (10)
1,4-dichlorobenzene		ND (10)
3-3'-dichlorobenzidine	NA	ND (10)
diethylphthalate		ND (10)
dimethylphthalate		ND (10)
di-n-butylphthalate	3 J	ND (10)
di-n-octylphthalate		ND (10)
2,4-dinitrotoluene	NA	ND (10)
2,6-dinitrotoluene	NA	ND (10)
fluoranthene		ND (10)
fluorene		ND (10)
hexachlorobenzene		ND (10)
hexachlorobutadiene	NA	ND (10)
hexachlorocyclopentadiene		ND (10)
hexachloroethane		ND (10)
indeno(1,2,3-cd)pyrene		ND (10)
isophorone		ND (10)
2-methylnaphthalene	3 J	ND (10)
naphthalene	3 J	ND (10)
2-nitroaniline	NA	ND (50)
3-nitroaniline	NA	ND (50)
4-nitroaniline	NA	ND (50)
nitrobenzene	NA	ND (10)
N-nitroso-dimethylamine		ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)
N-nitroso-diphenylamine(1)		ND (10)
phenanthrene		ND (10)
pyrene		ND (10)
1,2,4-trichlorobenzene		ND (10)

MW-22
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-22	MW-22
Sample Number:	GW035001	1091-022
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC315	
ITR Number:	MEG757	
Acid Compounds		
4-chloro-3-methylphenol		ND (10)
2-chlorophenol	NA	ND (10)
2,4-dichlorophenol	NA	ND (10)
2,4-dimethylphenol		ND (10)
2,4-dinitrophenol	NA	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)
2-methylphenol		ND (10)
4-methylphenol		ND (10)
2-nitrophenol		ND (10)
4-nitrophenol		ND (50)
pentachlorophenol		ND (50)
phenol		ND (10)
2,4,5-trichlorophenol	NA	ND (50)
2,4,6-trichlorophenol	NA	ND (10)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-22
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-22	MW-22
Sample Number:	GW035001	1091-022
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC315	
ITR Number:	MEG757	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum	46 [ ]	470
Antimony		ND (60)
Arsenic		ND (5)
Barium	27 [ ]	51
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	40,300	17,000
Chromium		10
Cobalt		ND (50)
Copper		18
Cyanide		NA
Iron	42 [ ]	330
Lead		ND (5)
Magnesium	11,200	5,000
Manganese	90	110
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	12,400	ND (5,000)
Selenium		ND (5)
Silver		ND (10)
Sodium	551,000	460,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	6.3 [ ]	130
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	11,000	1,800
Antimony		ND (60)
Arsenic		ND (5)
Barium	242	59
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	49,400	18,000
Chromium	16	15
Cobalt	15 [ ]	ND (50)
Copper	37	17
Cyanide		NA
Iron	26,200	2,100
Lead	21 S, R	ND (5)
Magnesium	15,100	5,400
Manganese	616	140
Mercury		ND (0.2)
Nickel	35 [ ]	ND (40)

MW-22
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-22	MW-22
Sample Number:	GW035001	1091-022
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/10/86	11/04/91
OTR Number:	EC315	
ITR Number:	MEG757	
Potassium	13,300 E	5,000
Selenium		ND (5)
Silver		ND (10)
Sodium	539,000	460,000
Thallium		ND (10)
Tin		NA
Vanadium	22 [ ]	ND (50)
Zinc	142	110
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	380	620
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	1.5	1.9
Biological Oxygen Demand	NA	ND (2)
Chemical Oxygen Demand	NA	37
Chloride	17	14
Cyanide		ND (0.005)
Nitrate (NO3)	NA	0.1
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	ND (0.01)
Phosphate (PO4)	NA	0.2
Sulfate	670	720
Total Dissolved Solids	1,840	1,700
Total Suspended Solids	932	480
Field Parameters		
pH (standard units)	NA	8.07
Specific Conductance (µmhos/cm)	3,250	1,300
Temperature (degrees F)	66	52

MW-23
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-23	MW-23
Sample Number:	GW041001	1091-023
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/12/86	
OTR Number:	EC322	
ITR Number:	MEG764	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	11 B	NS
benzene		NS
bromodichloromethane	NA	NS
bromoform	NA	NS
bromomethane	NA	NS
2-butanone	11 B	NS
carbon disulfide		NS
carbon tetrachloride	NA	NS
chlorobenzene		NS
chloroethane	NA	NS
chloroform		NS
chloromethane		NS
dibromochloromethane	NA	NS
1,1-dichloroethane		NS
1,2-dichloroethane		NS
1,1-dichloroethene		NS
1,2-dichloroethene	NA	NS
trans-1,2-dichloroethene		NS
1,2-dichloropropane	NA	NS
cis-1,3-dichloropropene	NA	NS
trans-1,3-dichloropropene	NA	NS
ethylbenzene		NS
2-hexanone		NS
methylene chloride	2 J	NS
4-methyl-2-pentanone		NS
styrene		NS
1,1,2,2-tetrachloroethane		NS
tetrachloroethene		NS
toluene		NS
1,1,1-trichloroethane		NS
1,1,2-trichloroethane		NS
trichloroethene		NS
vinyl acetate	NA	NS
vinyl chloride		NS
xylenes (total)		NS
Base/Neutral Compounds		
acenaphthene		NS
acenaphthylene		NS
aniline		NS
anthracene		NS
benzo(a)anthracene		NS
benzo(a)pyrene		NS
benzo(b)fluoranthene		NS

MW-23
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-23	MW-23
Sample Number:	GW041001	1091-023
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/12/86	
OTR Number:	EC322	
ITR Number:	MEG764	
benzo(g,h,i)perylene		NS
benzo(k)fluoranthene		NS
benzoic acid		NS
benzyl alcohol		NS
bis(2-chloroethoxy)methane	NA	NS
bis(2-chloroethyl)ether	NA	NS
bis(2-chloroisopropyl)ether		NS
bis(2-ethylhexyl)phthalate	4 J	NS
butyl benzyl phthalate		NS
4-bromophenyl phenyl ether	NA	NS
carbazole	NA	NS
4-chloroaniline	NA	NS
2-chloronaphthalene	NA	NS
4-chlorophenyl phenyl ether	NA	NS
chrysene		NS
dibenz(a,h)anthracene		NS
dibenzofuran		NS
1,2-dichlorobenzene		NS
1,3-dichlorobenzene		NS
1,4-dichlorobenzene		NS
3-3'-dichlorobenzidine	NA	NS
diethylphthalate		NS
dimethylphthalate		NS
di-n-butylphthalate		NS
di-n-octylphthalate		NS
2,4-dinitrotoluene	NA	NS
2,6-dinitrotoluene	NA	NS
fluoranthene		NS
fluorene		NS
hexachlorobenzene		NS
hexachlorobutadiene	NA	NS
hexachlorocyclopentadiene		NS
hexachloroethane		NS
indeno(1,2,3-cd)pyrene		NS
isophorone		NS
2-methylnaphthalene		NS
naphthalene		NS
2-nitroaniline	NA	NS
3-nitroaniline	NA	NS
4-nitroaniline	NA	NS
nitrobenzene	NA	NS
N-nitroso-dimethylamine		NS
N-nitroso-di-n-propylamine	NA	NS
N-nitroso-diphenylamine(1)		NS
phenanthrene		NS
pyrene		NS
1,2,4-trichlorobenzene		NS

MW-23
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-23	MW-23
Sample Number:	GW041001	1091-023
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/12/86	
OTR Number:	EC322	
ITR Number:	MEG764	
Acid Compounds		
4-chloro-3-methylphenol		NS
2-chlorophenol	NA	NS
2,4-dichlorophenol	NA	NS
2,4-dimethylphenol		NS
2,4-dinitrophenol	NA	NS
4,6-dinitro-2-methylphenol	NA	NS
2-methylphenol		NS
4-methylphenol		NS
2-nitrophenol		NS
4-nitrophenol		NS
pentachlorophenol		NS
phenol		NS
2,4,5-trichlorophenol	NA	NS
2,4,6-trichlorophenol	NA	NS
Pesticides		
Aldrin		NS
alpha-BHC		NS
beta-BHC		NS
delta-BHC		NS
gamma-BHC (Lindane)		NS
alpha-Chlordane	NA	NS
gamma-Chlordane	NA	NS
4,4'-DDD		NS
4,4'-DDE		NS
4,4'-DDT		NS
Dieldrin		NS
Endosulfan I		NS
Endosulfan II	NA	NS
Endosulfan sulfate	NA	NS
Endrin		NS
Endrin ketone	NA	NS
Heptachlor		NS
Heptachlor epoxide		NS
Methoxychlor	NA	NS
Toxaphene		NS
PCBs		
Arochlor-1016	NA	NS
Arochlor-1221	NA	NS
Arochlor-1232		NS
Arochlor-1242		NS
Arochlor-1248		NS
Arochlor-1254		NS
Arochlor-1260	NA	NS

MW-23
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-23	MW-23
Sample Number:	GW041001	1091-023
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/12/86	
OTR Number:	EC322	
ITR Number:	MEG764	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum	37 [ ]	NS
Antimony		NS
Arsenic		NS
Barium	27 [ ]	NS
Beryllium		NS
Cadmium		NS
Calcium	14,000	NS
Chromium		NS
Cobalt		NS
Copper		NS
Cyanide		NS
Iron	24 [ ]	NS
Lead		NS
Magnesium	5,180	NS
Manganese	14 [ ]	NS
Mercury		NS
Nickel		NS
Potassium	6,410	NS
Selenium		NS
Silver		NS
Sodium	640,000	NS
Thallium		NS
Tin		NS
Vanadium		NS
Zinc	5.5 [ ]	NS
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	4,200	NS
Antimony		NS
Arsenic		NS
Barium	52 [ ]	NS
Beryllium		NS
Cadmium		NS
Calcium	16,200	NS
Chromium	6 [ ]	NS
Cobalt		NS
Copper	18 [ ]	NS
Cyanide		NS
Iron	2,450	NS
Lead		NS
Magnesium	5,580	NS
Manganese	53	NS
Mercury		NS
Nickel	8.4 [ ]	NS

MW-23
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-23	MW-23
Sample Number:	GW041001	1091-023
Sample Type:	OFFSITE	OFFSITE
Date Sampled:	09/12/86	
OTR Number:	EC322	
ITR Number:	MEG764	
Potassium	6,660	NS
Selenium		NS
Silver		NS
Sodium	634,000	NS
Thallium		NS
Tin		NS
Vanadium	6 [ ]	NS
Zinc	28	NS
General Chemistry (units - mg/L)		
Acidity	NR	NS
Alkalinity-Total as CaCO3	433	NS
Alkalinity-pheno	NA	NS
Ammonia, as N	1.2	NS
Biological Oxygen Demand	NA	NS
Chemical Oxygen Demand	NA	NS
Chloride	79	NS
Cyanide	NA	NS
Nitrate (NO3)	NA	NS
Nitrite (NO2)	NA	NS
Phenols	NA	NS
Phosphate (PO4)	NA	NS
Sulfate	800	NS
Total Dissolved Solids	2,030	NS
Total Suspended Solids	172	NS
Field Parameters		
pH (standard units)	NA	NS
Specific Conductance (µmhos/cm)	3,250	NS
Temperature (degrees F)	64	NS

MW-24
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-24	MW-24
Sample Number:	GW033001	1091-024
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC313	
ITR Number:	MEG755	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	2,700 B, J	193
benzene		ND (50)
bromodichloromethane	NA	ND (50)
bromoform	NA	ND (50)
bromomethane	NA	ND (50)
2-butanone	1,800 B, J	140
carbon disulfide		ND (50)
carbon tetrachloride	NA	ND (50)
chlorobenzene		ND (50)
chloroethane	NA	ND (50)
chloroform		ND (50)
chloromethane		ND (50)
dibromochloromethane	NA	ND (50)
1,1-dichloroethane	820 J	98
1,2-dichloroethane	5,800 J	600
1,1-dichloroethene		ND (50)
1,2-dichloroethene	NA	ND (50)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (50)
cis-1,3-dichloropropene	NA	ND (50)
trans-1,3-dichloropropene	NA	ND (50)
ethylbenzene	590 J	200
2-hexanone	96 J	ND (50)
methylene chloride	180 J, B	23 J
4-methyl-2-pentanone	250 J	41 J
styrene		ND (50)
1,1,2,2-tetrachloroethane		ND (50)
tetrachloroethene		ND (50)
toluene	3,200 J	660
1,1,1-trichloroethane	360 J	ND (50)
1,1,2-trichloroethane		ND (50)
trichloroethene	55 J	12 J
vinyl acetate	NA	ND (50)
vinyl chloride		30 J
xylenes (total)	2,100 J	890
Base/Neutral Compounds		
acenaphthene		ND (10)
acenaphthylene		ND (10)
aniline		ND (10)
anthracene		ND (10)
benzo(a)anthracene		ND (10)
benzo(a)pyrene		ND (10)
benzo(b)fluoranthene		ND (10)

MW-24
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-24	MW-24
Sample Number:	GW033001	1091-024
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC313	
ITR Number:	MEG755	
benzo(g,h,i)perylene		ND (10)
benzo(k)fluoranthene		ND (10)
benzoic acid	110	5 J
benzyl alcohol	90	ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)
bis(2-chloroisopropyl)ether		ND (10)
bis(2-ethylhexyl)phthalate	4 B, J	ND (10)
butyl benzyl phthalate		ND (10)
4-bromophenyl phenyl ether	NA	ND (10)
carbazole	NA	ND (10)
4-chloroaniline	NA	ND (10)
2-chloronaphthalene	NA	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)
chrysene		ND (10)
dibenz(a,h)anthracene		ND (10)
dibenzofuran		ND (10)
1,2-dichlorobenzene		ND (10)
1,3-dichlorobenzene		ND (10)
1,4-dichlorobenzene		ND (10)
3-3'-dichlorobenzidine	NA	ND (10)
diethylphthalate		ND (10)
dimethylphthalate		ND (10)
di-n-butylphthalate		ND (10)
di-n-octylphthalate		ND (10)
2,4-dinitrotoluene	NA	ND (10)
2,6-dinitrotoluene	NA	ND (10)
fluoranthene		ND (10)
fluorene		ND (10)
hexachlorobenzene		ND (10)
hexachlorobutadiene	NA	ND (10)
hexachlorocyclopentadiene		ND (10)
hexachloroethane		ND (10)
indeno(1,2,3-cd)pyrene		ND (10)
isophorone	41	3 J
2-methylnaphthalene	5 J	ND (10)
naphthalene	11	3 J
2-nitroaniline	NA	ND (50)
3-nitroaniline	NA	ND (50)
4-nitroaniline	NA	ND (50)
nitrobenzene	NA	ND (10)
N-nitroso-dimethylamine		ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)
N-nitroso-diphenylamine(1)		ND (10)
phenanthrene		ND (10)
pyrene		ND (10)
1,2,4-trichlorobenzene		ND (10)

MW-24
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-24	MW-24
Sample Number:	GW033001	1091-024
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC313	
ITR Number:	MEG755	
Acid Compounds		
4-chloro-3-methylphenol	14	ND (10)
2-chlorophenol		ND (10)
2,4-dichlorophenol		ND (10)
2,4-dimethylphenol	16	ND (10)
2,4-dinitrophenol		ND (50)
4,6-dinitro-2-methylphenol		ND (50)
2-methylphenol	16	3 J
4-methylphenol	140	24
2-nitrophenol		ND (10)
4-nitrophenol		ND (50)
pentachlorophenol		ND (50)
phenol	260	38
2,4,5-trichlorophenol		ND (50)
2,4,6-trichlorophenol		ND (10)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-24
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-24	MW-24
Sample Number:	GW033001	1091-024
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC313	
ITR Number:	MEG755	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum		830
Antimony		ND (60)
Arsenic		ND (5)
Barium	48 [ ]	38
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	23,400	7,000
Chromium		ND (10)
Cobalt		ND (50)
Copper		23
Cyanide		NA
Iron	62 [ ]	880
Lead		ND (5)
Magnesium	408 [ ]	ND (5,000)
Manganese		20
Mercury		ND (0.2)
Nickel	12 [ ]	ND (40)
Potassium	158,000	22,000
Selenium		ND (5)
Silver		ND (10)
Sodium	483,000	500,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	7.6 [ ]	810
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	255	200,000
Antimony		ND (60)
Arsenic		79
Barium	209	2,600
Beryllium		19
Cadmium		ND (5)
Calcium	31,100	180,000
Chromium		410
Cobalt		260
Copper	23 [ ]	380
Cyanide		NA
Iron	497	500,000
Lead		230
Magnesium	646 [ ]	130,000
Manganese	21	8,800
Mercury		0.6
Nickel	12 [ ]	620

MW-24
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-24	MW-24
Sample Number:	GW033001	1091-024
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC313	
ITR Number:	MEG755	
Potassium	144,000	58,000
Selenium		ND (5)
Silver		ND (10)
Sodium	446,000	520,000
Thallium		ND (10)
Tin		NA
Vanadium		380
Zinc	43	1,700
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	231	730
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	5.0	3.1
Biological Oxygen Demand	NA	ND (2)
Chemical Oxygen Demand	NA	20
Chloride	48	28
Cyanide		0.005
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	0.06
Phenols	NA	0.59
Phosphate (PO4)	NA	0.4
Sulfate	800	1,200
Total Dissolved Solids	1,840	1,900
Total Suspended Solids	30	35,000
Field Parameters		
pH (standard units)	NA	> 10
Specific Conductance (µmhos/cm)	3,800	1,800
Temperature (degrees F)	60	53

MW-25
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-25	MW-25
Sample Number:	GW039001	1091-025
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC319	
ITR Number:	MEG761	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	13 B	84
benzene		ND (17)
bromodichloromethane	NA	ND (17)
bromoform	NA	ND (17)
bromomethane	NA	ND (17)
2-butanone	15 B	22
carbon disulfide		ND (17)
carbon tetrachloride	NA	ND (17)
chlorobenzene		ND (17)
chloroethane	NA	ND (17)
chloroform		ND (17)
chloromethane		ND (17)
dibromochloromethane	NA	ND (17)
1,1-dichloroethane	5	12
1,2-dichloroethane	100	190
1,1-dichloroethene		ND (17)
1,2-dichloroethene	NA	ND (17)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (17)
cis-1,3-dichloropropene	NA	ND (17)
trans-1,3-dichloropropene	NA	ND (17)
ethylbenzene		26
2-hexanone		ND (17)
methylene chloride	3 J	ND (17)
4-methyl-2-pentanone		4 J
styrene		ND (17)
1,1,2,2-tetrachloroethane		3 J
tetrachloroethene		ND (17)
toluene	9	38
1,1,1-trichloroethane	3 J	ND (17)
1,1,2-trichloroethane		ND (17)
trichloroethene		ND (17)
vinyl acetate	NA	ND (17)
vinyl chloride		6 J
xylenes (total)		100
Base/Neutral Compounds		
acenaphthene		ND (10)
acenaphthylene		ND (10)
aniline		ND (10)
anthracene		ND (10)
benzo(a)anthracene		ND (10)
benzo(a)pyrene		ND (10)
benzo(b)fluoranthene		ND (10)

MW-25
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-25	MW-25
Sample Number:	GW039001	1091-025
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC319	
ITR Number:	MEG761	
benzo(g,h,i)perylene		ND (10)
benzo(k)fluoranthene		ND (10)
benzoic acid		10 J
benzyl alcohol		ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)
bis(2-chloroisopropyl)ether		ND (10)
bis(2-ethylhexyl)phthalate	2 B, J	ND (10)
butyl benzyl phthalate		ND (10)
4-bromophenyl phenyl ether	NA	ND (10)
carbazole	NA	ND (10)
4-chloroaniline	NA	ND (10)
2-chloronaphthalene	NA	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)
chrysene		ND (10)
dibenz(a,h)anthracene		ND (10)
dibenzofuran		ND (10)
1,2-dichlorobenzene		ND (10)
1,3-dichlorobenzene		ND (10)
1,4-dichlorobenzene		ND (10)
3-3'-dichlorobenzidine	NA	ND (10)
diethylphthalate		ND (10)
dimethylphthalate		ND (10)
di-n-butylphthalate		ND (10)
di-n-octylphthalate		ND (10)
2,4-dinitrotoluene	NA	ND (10)
2,6-dinitrotoluene	NA	ND (10)
fluoranthene		ND (10)
fluorene		ND (10)
hexachlorobenzene		ND (10)
hexachlorobutadiene	NA	ND (10)
hexachlorocyclopentadiene		ND (10)
hexachloroethane		ND (10)
indeno(1,2,3-cd)pyrene		ND (10)
isophorone		2 J
2-methylnaphthalene		ND (10)
naphthalene		ND (10)
2-nitroaniline	NA	ND (50)
3-nitroaniline	NA	ND (50)
4-nitroaniline	NA	ND (50)
nitrobenzene	NA	ND (10)
N-nitroso-dimethylamine		ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)
N-nitroso-diphenylamine(1)		ND (10)
phenanthrene		ND (10)
pyrene		ND (10)
1,2,4-trichlorobenzene		ND (10)

MW-25
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-25	MW-25
Sample Number:	GW039001	1091-025
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC319	
ITR Number:	MEG761	
Acid Compounds		
4-chloro-3-methylphenol		2 J
2-chlorophenol	NA	ND (10)
2,4-dichlorophenol	NA	ND (10)
2,4-dimethylphenol		3 J
2,4-dinitrophenol	NA	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)
2-methylphenol		6 J
4-methylphenol		28
2-nitrophenol		ND (10)
4-nitrophenol		ND (50)
pentachlorophenol		ND (50)
phenol		180
2,4,5-trichlorophenol	NA	ND (50)
2,4,6-trichlorophenol	NA	ND (10)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

MW-25
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-25	MW-25
Sample Number:	GW039001	1091-025
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC319	
ITR Number:	MEG761	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum		1,100
Antimony		ND (60)
Arsenic		ND (5)
Barium	22 [ ]	30
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	46,500	12,000
Chromium		ND (10)
Cobalt		ND (50)
Copper		ND (10)
Cyanide		NA
Iron		580
Lead		ND (5)
Magnesium	22,300	8,300
Manganese	78	ND (10)
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	11,200	12,000
Selenium		ND (5)
Silver		ND (10)
Sodium	701,000	510,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	7 [ ]	530
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	926	2,500
Antimony		ND (60)
Arsenic		ND (5)
Barium	36 [ ]	120
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	51,500	25,000
Chromium		ND (10)
Cobalt		ND (50)
Copper	16 [ ]	18
Cyanide		NA
Iron	1,800	4,400
Lead		ND (5)
Magnesium	22,900	6,100
Manganese	122	77
Mercury		ND (0.2)
Nickel		43

MW-25
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	MW-25	MW-25
Sample Number:	GW039001	1091-025
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/12/86	11/02/91
OTR Number:	EC319	
ITR Number:	MEG761	
Potassium	10,100	13,000
Selenium		ND (5)
Silver		ND (10)
Sodium	703,000	460,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	24	480
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	466	170
Alkalinity-pheno	NA	110
Ammonia, as N	2.4	3.9
Biological Oxygen Demand	NA	ND (2)
Chemical Oxygen Demand	NA	13
Chloride	24	63
Cyanide		0.006
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	0.09
Phosphate (PO4)	NA	0.3
Sulfate	1,060	960
Total Dissolved Solids	2,400	1,700
Total Suspended Solids	51	200
Field Parameters		
pH (standard units)	NA	> 10
Specific Conductance (µmhos/cm)	4,600	2,000
Temperature (degrees F)	59	52

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

		Preliminary		
	REMEDIAL INV.	PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Organic Compounds (units - µg/L)				
Volatiles				
acetone	18 B, J	14	14	14
benzene		ND (10)	ND (10)	ND (10)
bromodichloromethane	NA	ND (10)	ND (10)	ND (10)
bromoform	NA	ND (10)	ND (10)	ND (10)
bromomethane	NA	ND (10)	ND (10)	ND (10)
2-butanone	15 B, J	3 J	3 J	3 J
carbon disulfide		ND (10)	ND (10)	ND (10)
carbon tetrachloride	NA	ND (10)	ND (10)	ND (10)
chlorobenzene		ND (10)	ND (10)	ND (10)
chloroethane	NA	ND (10)	ND (10)	ND (10)
chloroform		ND (10)	ND (10)	ND (10)
chloromethane		ND (10)	ND (10)	ND (10)
dibromochloromethane	NA	ND (10)	ND (10)	ND (10)
1,1-dichloroethane		3 J	ND (10)	1.5 J
1,2-dichloroethane		91	15	53
1,1-dichloroethene		ND (10)	ND (10)	ND (10)
1,2-dichloroethene	NA	ND (10)	ND (10)	ND (10)
trans-1,2-dichloroethene		NA	NA	NA
1,2-dichloropropane	NA	ND (10)	ND (10)	ND (10)
cis-1,3-dichloropropene	NA	ND (10)	ND (10)	ND (10)
trans-1,3-dichloropropene	NA	ND (10)	ND (10)	ND (10)
ethylbenzene		ND (10)	ND (10)	ND (10)
2-hexanone		ND (10)	ND (10)	ND (10)
methylene chloride	1 J, B	ND (10)	ND (10)	ND (10)
4-methyl-2-pentanone		ND (10)	ND (10)	ND (10)
styrene		ND (10)	ND (10)	ND (10)
1,1,2,2-tetrachloroethane		ND (10)	ND (10)	ND (10)
tetrachloroethene		ND (10)	ND (10)	ND (10)
toluene	1 J	ND (10)	ND (10)	ND (10)
1,1,1-trichloroethane		ND (10)	ND (10)	ND (10)
1,1,2-trichloroethane		ND (10)	ND (10)	ND (10)
trichloroethene		ND (10)	ND (10)	ND (10)
vinyl acetate	NA	ND (10)	ND (10)	ND (10)
vinyl chloride		ND (10)	ND (10)	ND (10)
xylenes (total)		3 J	3 J	3 J
Base/Neutral Compounds				
acenaphthene		ND (10)	ND (10)	ND (10)
acenaphthylene		ND (10)	ND (10)	ND (10)
aniline		ND (10)	ND (10)	ND (10)
anthracene		ND (10)	ND (10)	ND (10)
benzo(a)anthracene		ND (10)	ND (10)	ND (10)
benzo(a)pyrene		ND (10)	ND (10)	ND (10)
benzo(b)fluoranthene		ND (10)	ND (10)	ND (10)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

		Preliminary		
	REMEDIAL INV.	PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
benzo(g,h,i)perylene		ND (10)	ND (10)	ND (10)
benzo(k)fluoranthene		ND (10)	ND (10)	ND (10)
benzoic acid		ND (10)	ND (10)	ND (10)
benzyl alcohol		ND (10)	ND (10)	ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)	ND (10)	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)	ND (10)	ND (10)
bis(2-chloroisopropyl)ether		ND (10)	ND (10)	ND (10)
bis(2-ethylhexyl)phthalate	4 J	ND (10)	ND (10)	ND (10)
butyl benzyl phthalate		ND (10)	ND (10)	ND (10)
4-bromophenyl phenyl ether	NA	ND (10)	ND (10)	ND (10)
carbazole	NA	ND (10)	ND (10)	ND (10)
4-chloroaniline	NA	ND (10)	ND (10)	ND (10)
2-chloronaphthalene	NA	ND (10)	ND (10)	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)	ND (10)	ND (10)
chrysene		ND (10)	ND (10)	ND (10)
dibenz(a,h)anthracene		ND (10)	ND (10)	ND (10)
dibenzofuran		ND (10)	ND (10)	ND (10)
1,2-dichlorobenzene		ND (10)	ND (10)	ND (10)
1,3-dichlorobenzene		ND (10)	ND (10)	ND (10)
1,4-dichlorobenzene		ND (10)	ND (10)	ND (10)
3-3'-dichlorobenzidine	NA	ND (10)	ND (10)	ND (10)
diethylphthalate		ND (10)	ND (10)	ND (10)
dimethylphthalate		ND (10)	ND (10)	ND (10)
di-n-butylphthalate		ND (10)	ND (10)	ND (10)
di-n-octylphthalate		ND (10)	ND (10)	ND (10)
2,4-dinitrotoluene	NA	ND (10)	ND (10)	ND (10)
2,6-dinitrotoluene	NA	ND (10)	ND (10)	ND (10)
fluoranthene		ND (10)	ND (10)	ND (10)
fluorene		ND (10)	ND (10)	ND (10)
hexachlorobenzene		ND (10)	ND (10)	ND (10)
hexachlorobutadiene	NA	ND (10)	ND (10)	ND (10)
hexachlorocyclopentadiene		ND (10)	ND (10)	ND (10)
hexachloroethane		ND (10)	ND (10)	ND (10)
indeno(1,2,3-cd)pyrene		ND (10)	ND (10)	ND (10)
isophorone		ND (10)	ND (10)	ND (10)
2-methylnaphthalene		ND (10)	ND (10)	ND (10)
naphthalene		ND (10)	ND (10)	ND (10)
2-nitroaniline	NA	ND (50)	ND (50)	ND (50)
3-nitroaniline	NA	ND (50)	ND (50)	ND (50)
4-nitroaniline	NA	ND (50)	ND (50)	ND (50)
nitrobenzene	NA	ND (10)	ND (10)	ND (10)
N-nitroso-dimethylamine		ND (10)	ND (10)	ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)	ND (10)	ND (10)
N-nitroso-diphenylamine(1)		ND (10)	ND (10)	ND (10)
phenanthrene		ND (10)	ND (10)	ND (10)
pyrene		ND (10)	ND (10)	ND (10)
1,2,4-trichlorobenzene		ND (10)	ND (10)	ND (10)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Acid Compounds				
4-chloro-3-methylphenol		ND (10)	ND (10)	ND (10)
2-chlorophenol	NA	ND (10)	ND (10)	ND (10)
2,4-dichlorophenol	NA	ND (10)	ND (10)	ND (10)
2,4-dimethylphenol		ND (10)	ND (10)	ND (10)
2,4-dinitrophenol	NA	ND (50)	ND (50)	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)	ND (50)	ND (50)
2-methylphenol		ND (10)	ND (10)	ND (10)
4-methylphenol		ND (10)	ND (10)	ND (10)
2-nitrophenol		ND (10)	ND (10)	ND (10)
4-nitrophenol		ND (50)	ND (50)	ND (50)
pentachlorophenol		ND (50)	ND (50)	ND (50)
phenol	6 J	ND (10)	ND (10)	ND (10)
2,4,5-trichlorophenol	NA	ND (50)	ND (50)	ND (50)
2,4,6-trichlorophenol	NA	ND (10)	ND (10)	ND (10)
Pesticides				
Aldrin		ND (0.05)	ND (0.05)	ND (0.05)
alpha-BHC		ND (0.05)	ND (0.05)	ND (0.05)
beta-BHC		ND (0.05)	ND (0.05)	ND (0.05)
delta-BHC		ND (0.05)	ND (0.05)	ND (0.05)
gamma-BHC (Lindane)		ND (0.05)	ND (0.05)	ND (0.05)
alpha-Chlordane	NA	ND (0.5)	ND (0.5)	ND (0.5)
gamma-Chlordane	NA	ND (0.5)	ND (0.5)	ND (0.5)
4,4'-DDD	NA	ND (0.1)	ND (0.1)	ND (0.1)
4,4'-DDE		ND (0.1)	ND (0.1)	ND (0.1)
4,4'-DDT		ND (0.1)	ND (0.1)	ND (0.1)
Dieldrin		ND (0.1)	ND (0.1)	ND (0.1)
Endosulfan I		ND (0.05)	ND (0.05)	ND (0.05)
Endosulfan II	NA	ND (0.1)	ND (0.1)	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)	ND (0.1)	ND (0.1)
Endrin		ND (0.1)	ND (0.1)	ND (0.1)
Endrin ketone	NA	ND (0.1)	ND (0.1)	ND (0.1)
Heptachlor		ND (0.05)	ND (0.05)	ND (0.05)
Heptachlor epoxide		ND (0.05)	ND (0.05)	ND (0.05)
Methoxychlor	NA	ND (0.5)	ND (0.5)	ND (0.5)
Toxaphene		ND (1.0)	ND (1.0)	ND (1.0)
PCBs				
Arochlor-1016	NA	ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1221	NA	ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1232		ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1242		ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1248		ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1254		ND (1.0)	ND (1.0)	ND (1.0)
Arochlor-1260	NA	ND (1.0)	ND (1.0)	ND (1.0)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	2,580	2,600	2,500	2,550
Antimony		ND (60)	ND (60)	ND (60)
Arsenic		13	13	13
Barium	4.8 [ ]	47	56	51.5
Beryllium		ND (5)	ND (5)	ND (5)
Cadmium		ND (5)	ND (5)	ND (5)
Calcium	845 [ ]	13,000	16,000	14,500
Chromium		ND (10)	ND (10)	ND (10)
Cobalt		ND (50)	ND (50)	ND (50)
Copper		ND (10)	ND (10)	ND (10)
Cyanide		NA	NA	NA
Iron	48 [ ]	1,800	1,800	1,800
Lead		ND (5)	ND (5)	ND (5)
Magnesium	102 [ ]	ND (5,000)	ND (5,000)	ND (5,000)
Manganese		24	43	33.5
Mercury		ND (0.2)	ND (0.2)	ND (0.2)
Nickel		ND (40)	ND (40)	ND (40)
Potassium	5,870	ND (5,000)	ND (5,000)	ND (5,000)
Selenium		ND (5)	ND (5)	ND (5)
Silver		ND (10)	ND (10)	ND (10)
Sodium	462,000	460,000	440,000	450,000
Thallium		ND (10)	ND (10)	ND (10)
Tin		NA	NA	NA
Vanadium	13 [ ]	ND (50)	ND (50)	ND (50)
Zinc	13 [ ]	92	90	91
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	2,600	2,800	2,300	2,550
Antimony		ND (60)	ND (60)	ND (60)
Arsenic		13	11	12
Barium	12 [ ]	50	49	49.5
Beryllium		ND (5)	ND (5)	ND (5)
Cadmium		ND (5)	ND (5)	ND (5)
Calcium	7,700	20,000	21,000	20,500
Chromium		ND (10)	ND (10)	ND (10)
Cobalt		ND (50)	ND (50)	ND (50)
Copper	20 [ ]	ND (10)	ND (10)	ND (10)
Cyanide		NA	NA	NA
Iron	160	2,400	1,700	2,050
Lead		ND (5)	ND (5)	ND (5)
Magnesium	94 [ ]	ND (5,000)	ND (5,000)	ND (5,000)
Manganese		39	28	33.5
Mercury		ND (0.2)	ND (0.2)	ND (0.2)
Nickel		ND (40)	ND (40)	ND (40)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Potassium	5,850	ND (5,000)	ND (5,000)	ND (5,000)
Selenium		ND (5)	ND (5)	ND (5)
Silver		ND (10)	ND (10)	ND (10)
Sodium	462,000	420,000	410,000	415,000
Thallium		ND (10)	ND (10)	ND (10)
Tin		NA	NA	NA
Vanadium	14 [ ]	ND (50)	ND (50)	ND (50)
Zinc	24	ND (20)	120	60
General Chemistry (units - mg/L)				
Acidity	NR	NA	NA	NA
Alkalinity-Total as CaCO3	991	840	850	845
Alkalinity-pheno	NA	210	280	245
Ammonia, as N	2.5	6.4	2.9	4.7
Biological Oxygen Demand	NA	170	130	150
Chemical Oxygen Demand	NA	ND (5)	13	6.5
Chloride	61	71	68	69.5
Cyanide		ND (0.005)	ND (0.005)	ND (0.005)
Nitrate (NO3)	NA	0.1	ND (0.1)	0.05
Nitrite (NO2)	NA	ND (0.04)	ND (0.04)	ND (0.04)
Phenols	NA	0.02	0.02	0.02
Phosphate (PO4)	NA	1.1	0.1	0.6
Sulfate	75	110	43	76.5
Total Dissolved Solids	1,150	1,200	1,200	1,200
Total Suspended Solids	31	78	120	99
Field Parameters				
pH (standard units)	NA	> 10	NA	
Specific Conductance (µmhos/cm)	4,600	1,300	NA	
Temperature (degrees F)	60	52	NA	

2BB5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	2BB5	2BB5	2BB5	2BB5
Sample Number:	GW030001	GW030002	AVERAGE	1091-0B5
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	09/11/86	09/11/86		10/31/91
OTR Number:	EC309	EC310		
ITR Number:	MEG751	MEG752		
Organic Compounds (units - µg/L)				
Volatiles				
acetone	85,000 B	76,000 B	80,500	17,000
benzene				ND (1,100)
bromodichloromethane	NA	NA		ND (1,100)
bromoform	NA	NA		ND (1,100)
bromomethane	NA	NA		ND (1,100)
2-butanone	67,000	56,000 B	61,500	13,000
carbon disulfide				ND (1,100)
carbon tetrachloride	NA	NA		ND (1,100)
chlorobenzene				ND (1,100)
chloroethane	NA	NA		ND (1,100)
chloroform				ND (1,100)
chloromethane				ND (1,100)
dibromochloromethane	NA	NA		ND (1,100)
1,1-dichloroethane	2,400 J	2,100 J	2,250	4,100
1,2-dichloroethane	130,000	100,000	115,000	7,300
1,1-dichloroethene				ND (1,100)
1,2-dichloroethene	NA	NA		1,800
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (1,100)
cis-1,3-dichloropropene	NA	NA		ND (1,100)
trans-1,3-dichloropropene	NA	NA		ND (1,100)
ethylbenzene	11,000	6,100	8,550	5,600
2-hexanone				ND (1,100)
methylene chloride	5,300 B	4,900 J, B	5,100	1,900
4-methyl-2-pentanone	5,300 J	4,500 J	4,900	2,900
styrene				ND (1,100)
1,1,2,2-tetrachloroethane				ND (1,100)
tetrachloroethene				ND (1,100)
toluene	20,000	16,000	18,000	17,000
1,1,1-trichloroethane	9,000	7,100	8,050	6,700
1,1,2-trichloroethane				ND (1,100)
trichloroethene	1,000 J		500	ND (1,100)
vinyl acetate	NA	NA		ND (1,100)
vinyl chloride				ND (1,100)
xylenes (total)	52,000	26,000	39,000	22,000
Base/Neutral Compounds				
acenaphthene	110	78 J	94	ND (100)
acenaphthylene				ND (100)
aniline				ND (100)
anthracene	41 J	24 J	32.5	ND (100)
benzo(a)anthracene				ND (100)
benzo(a)pyrene				ND (100)
benzo(b)fluoranthene				ND (100)

2BB5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	2BB5	2BB5	2BB5	2BB5
Sample Number:	GW030001	GW030002	AVERAGE	1091-0B5
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	09/11/86	09/11/86		10/31/91
OTR Number:	EC309	EC310		
ITR Number:	MEG751	MEG752		
benzo(g,h,i)perylene				ND (100)
benzo(k)fluoranthene				ND (100)
benzoic acid	2,700	2,600	2,650	1,600
benzyl alcohol				ND (100)
bis(2-chloroethoxy)methane	NA	NA		ND (100)
bis(2-chloroethyl)ether	NA	NA		ND (100)
bis(2-chloroisopropyl)ether				ND (100)
bis(2-ethylhexyl)phthalate	8,600 B	5,900 B	7,250	680
butyl benzyl phthalate	950	360	655	ND (100)
4-bromophenyl phenyl ether	NA	NA		ND (100)
carbazole	NA	NA		ND (100)
4-chloroaniline	NA	NA		ND (100)
2-chloronaphthalene	NA	NA		ND (100)
4-chlorophenyl phenyl ether	NA	NA		ND (100)
chrysene				ND (100)
dibenz(a,h)anthracene				ND (100)
dibenzofuran	59 J	48 J	53.5	ND (100)
1,2-dichlorobenzene				ND (100)
1,3-dichlorobenzene				ND (100)
1,4-dichlorobenzene				ND (100)
3-3'-dichlorobenzidine	NA	NA		ND (100)
diethylphthalate		53 J	26.5	ND (100)
dimethylphthalate		22 J	11.0	ND (100)
di-n-butylphthalate	130 B	72 J, B	101	ND (100)
di-n-octylphthalate	1,600	860	1,230	28 J
2,4-dinitrotoluene	NA	NA		ND (100)
2,6-dinitrotoluene	NA	NA		ND (100)
fluoranthene	77 J	41 J	59	ND (100)
fluorene	75 J	57 J	66	ND (100)
hexachlorobenzene	630	430	530	60 J
hexachlorobutadiene				ND (100)
hexachlorocyclopentadiene	2,800	1,100	1,950	ND (100)
hexachloroethane				ND (100)
indeno(1,2,3-cd)pyrene				ND (100)
isophorone	920	1,100	1,010	300
2-methylnaphthalene	370	350	360	20 J
naphthalene	620	510	565	90 J
2-nitroaniline	NA	NA		ND (500)
3-nitroaniline	NA	NA		ND (500)
4-nitroaniline	NA	NA		ND (500)
nitrobenzene	NA	NA		ND (100)
N-nitroso-dimethylamine				ND (100)
N-nitroso-di-n-propylamine	NA	NA		ND (100)
N-nitroso-diphenylamine(1)				ND (100)
phenanthrene	200	120	160	ND (100)
pyrene	79 J		39.5	ND (100)
1,2,4-trichlorobenzene		35 J	17.5	ND (100)

2BB5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	2BB5	2BB5	2BB5	2BB5
Sample Number:	GW030001	GW030002	AVERAGE	1091-0B5
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	09/11/86	09/11/86		10/31/91
OTR Number:	EC309	EC310		
ITR Number:	MEG751	MEG752		
Acid Compounds				
4-chloro-3-methylphenol		130	65	48 J
2-chlorophenol	NA	NA		ND (100)
2,4-dichlorophenol	NA	NA		ND (100)
2,4-dimethylphenol	120	140	130	54 J
2,4-dinitrophenol	NA	NA		ND (500)
4,6-dinitro-2-methylphenol	NA	NA		ND (500)
2-methylphenol		210	105	110
4-methylphenol		510	255	210
2-nitrophenol				ND (100)
4-nitrophenol				ND (500)
pentachlorophenol				ND (500)
phenol		1,100	550	1,000
2,4,5-trichlorophenol	NA	NA		ND (500)
2,4,6-trichlorophenol	NA	NA		ND (100)
Pesticides				
Aldrin				ND (1.5)
alpha-BHC				ND (1.5)
beta-BHC				ND (1.5)
delta-BHC				ND (1.5)
gamma-BHC (Lindane)				ND (1.5)
alpha-Chlordane	NA	NA		ND (15)
gamma-Chlordane	NA	NA		ND (15)
4,4'-DDD	NA	NA		ND (3)
4,4'-DDE				ND (3)
4,4'-DDT				ND (3)
Dieldrin				ND (3)
Endosulfan I				ND (1.5)
Endosulfan II	NA	NA		ND (3)
Endosulfan sulfate	NA	NA		ND (3)
Endrin				ND (3)
Endrin ketone	NA	NA		ND (3)
Heptachlor				ND (1.5)
Heptachlor epoxide				ND (1.5)
Methoxychlor	NA	NA		ND (15)
Toxaphene				ND (75)
PCBs				
Arochlor-1016	NA	NA		ND (15)
Arochlor-1221	NA	NA		ND (15)
Arochlor-1232				ND (15)
Arochlor-1242				ND (15)
Arochlor-1248				ND (15)
Arochlor-1254				ND (75)
Arochlor-1260	NA	NA		ND (75)

2BB5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	2BB5	2BB5	2BB5	2BB5
Sample Number:	GW030001	GW030002	AVERAGE	1091-0B5
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	09/11/86	09/11/86		10/31/91
OTR Number:	EC309	EC310		
ITR Number:	MEG751	MEG752		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	1,630	1,620	1,625	1,300
Antimony	149	134	142	ND (60)
Arsenic	12	18 S	15	15
Barium				16
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	607,000	616,000	611,500	480,000
Chromium	19 [ ]	11 [ ]	15	19
Cobalt	120	116	118	50
Copper				13
Cyanide				NA
Iron	539,000	614,000	576,500	360,000
Lead				ND (5)
Magnesium	184,000	189,000	186,500	170,000
Manganese	25,600	26,100	25,850	18,000
Mercury				ND (0.2)
Nickel	198	182	190	54
Potassium	19,200	20,500	19,850	17,000
Selenium				ND (5)
Silver				ND (10)
Sodium	272,000	289,000	280,500	140,000
Thallium				ND (10)
Tin				NA
Vanadium				ND (50)
Zinc	295	324	310	230
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	14,200	12,200	13,200	12,000
Antimony	110	121	116	95
Arsenic	30 S	28 S	29.0	36
Barium	28 [ ]	23 [ ]	25.5	60
Beryllium	3.2 [ ]	2.5 [ ]	2.9	ND (5)
Cadmium	5.1	8.7	6.9	36
Calcium	515,000	554,000	534,500	470,000
Chromium	44	45	44.5	76
Cobalt	119	127	123	110
Copper	22 [ ]	22 [ ]	22	45
Cyanide				NA
Iron	534,000	555,000	544,500	630,000
Lead				15
Magnesium	165,000	177,000	171,000	160,000
Manganese	22,800	24,100	23,450	19,000
Mercury				ND (0.2)
Nickel	216	224	220	190

2BB5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	2BB5	2BB5	2BB5	2BB5
Sample Number:	GW030001	GW030002	AVERAGE	1091-0B5
Sample Type:	ONSITE	ONSITE		ONSITE
Date Sampled:	09/11/86	09/11/86		10/31/91
OTR Number:	EC309	EC310		
ITR Number:	MEG751	MEG752		
Potassium	18,700 E	19,200 E	18,950	19,000
Selenium				ND (5)
Silver				ND (10)
Sodium	240,000	256,000	248,000	130,000
Thallium				ND (10)
Tin				NA
Vanadium	7.3 [ ]		3.7	ND (50)
Zinc	703	615	659	560
General Chemistry (units - mg/L)				
Acidity	NR	NR		NA
Alkalinity-Total as CaCO3	248	271	260	50
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	22	24	23	30
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		400
Chloride	350	64	207	300
Cyanide				0.008
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		0.05
Phenols	NA	NA		2.1
Phosphate (PO4)	NA	NA		0.2
Sulfate	2,370	2,400	2,385	2,400
Total Dissolved Solids	5,500	5,660	5,580	4,500
Total Suspended Solids	6,080	10,900	8,490	410
Field Parameters				
pH (standard units)	6.0	6.0	6.0	6.52
Specific Conductance (µmhos/cm)	250	250	250	5,500
Temperature (degrees F)	64	64	64	NA

2BB6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB6	2BB6
Sample Number:	GW027001	1091-0B6
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/30/91
OTR Number:	EC306	
ITR Number:	MEG748	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	59,000 B, J	88,000
benzene		ND (25,000)
bromodichloromethane	NA	ND (25,000)
bromoform	NA	ND (25,000)
bromomethane	NA	ND (25,000)
2-butanone	290,000 B, J	290,000
carbon disulfide		ND (25,000)
carbon tetrachloride	NA	ND (25,000)
chlorobenzene		ND (25,000)
chloroethane	NA	ND (25,000)
chloroform		ND (25,000)
chloromethane		ND (25,000)
dibromochloromethane	NA	ND (25,000)
1,1-dichloroethane	12,000 J	15,000 J
1,2-dichloroethane		ND (25,000)
1,1-dichloroethene	2,600 J	ND (25,000)
1,2-dichloroethene	NA	77,000
trans-1,2-dichloroethene	4,600 J	NA
1,2-dichloropropane	NA	ND (25,000)
cis-1,3-dichloropropene	NA	ND (25,000)
trans-1,3-dichloropropene	NA	ND (25,000)
ethylbenzene		ND (25,000)
2-hexanone		ND (25,000)
methylene chloride	8,100 J	7,000 J
4-methyl-2-pentanone	62,000 J	42,000
styrene		ND (25,000)
1,1,2,2-tetrachloroethane		ND (25,000)
tetrachloroethene		5,000 J
toluene	7,100 J	5,500 J
1,1,1-trichloroethane	53,000 J	30,000
1,1,2-trichloroethane		ND (25,000)
trichloroethene	27,000 J	ND (25,000)
vinyl acetate	NA	ND (25,000)
vinyl chloride		ND (25,000)
xylenes (total)		ND (25,000)
Base/Neutral Compounds		
acenaphthene		ND (500)
acenaphthylene		ND (500)
aniline		ND (500)
anthracene		ND (500)
benzo(a)anthracene		ND (500)
benzo(a)pyrene		ND (500)
benzo(b)fluoranthene		ND (500)

2BB6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB6	2BB6
Sample Number:	GW027001	1091-0B6
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/30/91
OTR Number:	EC306	
ITR Number:	MEG748	
benzo(g,h,i)perylene		ND (500)
benzo(k)fluoranthene		ND (500)
benzoic acid		1,100 J
benzyl alcohol		ND (500)
bis(2-chloroethoxy)methane	NA	ND (500)
bis(2-chloroethyl)ether	NA	ND (500)
bis(2-chloroisopropyl)ether		ND (500)
bis(2-ethylhexyl)phthalate	10 B	ND (500)
butyl benzyl phthalate		ND (500)
4-bromophenyl phenyl ether	NA	ND (500)
carbazole	NA	ND (500)
4-chloroaniline	NA	ND (500)
2-chloronaphthalene	NA	ND (500)
4-chlorophenyl phenyl ether	NA	ND (500)
chrysene		ND (500)
dibenz(a,h)anthracene		ND (500)
dibenzofuran		ND (500)
1,2-dichlorobenzene		ND (500)
1,3-dichlorobenzene		ND (500)
1,4-dichlorobenzene		ND (500)
3-3'-dichlorobenzidine	NA	ND (500)
diethylphthalate		ND (500)
dimethylphthalate	10	ND (500)
di-n-butylphthalate	2 J, B	ND (500)
di-n-octylphthalate		ND (500)
2,4-dinitrotoluene	NA	ND (500)
2,6-dinitrotoluene	NA	ND (500)
fluoranthene		ND (500)
fluorene		ND (500)
hexachlorobenzene		ND (500)
hexachlorobutadiene	NA	ND (500)
hexachlorocyclopentadiene		ND (500)
hexachloroethane		ND (500)
indeno(1,2,3-cd)pyrene		ND (500)
isophorone		120 J
2-methylnaphthalene	60	150 J
naphthalene	82	110 J
2-nitroaniline	NA	ND (2,500)
3-nitroaniline	NA	ND (2,500)
4-nitroaniline	NA	ND (2,500)
nitrobenzene	NA	ND (500)
N-nitroso-dimethylamine		ND (500)
N-nitroso-di-n-propylamine	NA	ND (500)
N-nitroso-diphenylamine(1)		ND (500)
phenanthrene		ND (500)
pyrene		ND (500)
1,2,4-trichlorobenzene		ND (500)

2BB6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB6	2BB6
Sample Number:	GW027001	1091-0B6
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/30/91
OTR Number:	EC306	
ITR Number:	MEG748	
Acid Compounds		
4-chloro-3-methylphenol		ND (500)
2-chlorophenol	NA	ND (500)
2,4-dichlorophenol	NA	ND (500)
2,4-dimethylphenol		ND (500)
2,4-dinitrophenol	NA	ND (2,500)
4,6-dinitro-2-methylphenol	NA	ND (2,500)
2-methylphenol		ND (500)
4-methylphenol		150 J
2-nitrophenol		ND (500)
4-nitrophenol		ND (2,500)
pentachlorophenol		ND (2,500)
phenol	7,000	2,500 J
2,4,5-trichlorophenol	NA	ND (2,500)
2,4,6-trichlorophenol	NA	ND (500)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

2BB6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB6	2BB6
Sample Number:	GW027001	1091-0B6
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/30/91
OTR Number:	EC306	
ITR Number:	MEG748	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum	4,840	ND (200)
Antimony		80
Arsenic	16 S	20
Barium		29
Beryllium		ND (5)
Cadmium	58	ND (5)
Calcium	648,000	400,000
Chromium		ND (10)
Cobalt	896	320
Copper		ND (10)
Cyanide		NA
Iron	982,000	2,600,000
Lead		ND (3)
Magnesium	309,000	240,000
Manganese	72,200	46,000
Mercury		ND (0.2)
Nickel	1,120	200
Potassium	20,100 [ ]	62,000
Selenium		ND (5)
Silver		ND (10)
Sodium	350,000	340,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	3,750	26
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	29,000	18,000
Antimony	240	160
Arsenic	62 S, +	95
Barium	86 [ ]	130
Beryllium	6.8 [ ]	23
Cadmium	175	89
Calcium	540,000	400,000
Chromium	32	ND (10)
Cobalt	938	340
Copper	43 [ ]	78
Cyanide		NA
Iron	1,020,000	2,700,000
Lead		60
Magnesium	267,000	230,000
Manganese	69,500	46,000
Mercury		0.0002
Nickel	1,210	270

2BB6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB6	2BB6
Sample Number:	GW027001	1091-0B6
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/30/91
OTR Number:	EC306	
ITR Number:	MEG748	
Potassium	23,600 E	63,000
Selenium		ND (5)
Silver		ND (10)
Sodium	344,000	330,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	4,360	5,100
General Chemistry (units - mg/L)		
Acidity	2,330	NA
Alkalinity-Total as CaCO3	NR	400
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	2.5	4
Biological Oxygen Demand	NA	560
Chemical Oxygen Demand	NA	24,000
Chloride	925	1,100
Cyanide		ND (0.005)
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	9.1
Phosphate (PO4)	NA	0.1
Sulfate	3,320	6,000
Total Dissolved Solids	8,420	11,000
Total Suspended Solids	4,240	820
Field Parameters		
pH (standard units)	5.1	7.13
Specific Conductance (µmhos/cm)	850	1,400
Temperature (degrees F)	68	60

2BB7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB7	2BB7
Sample Number:	GW028001	1091-0B7
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC307	
ITR Number:	MEG749	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	79 B	43 J, B
benzene	38	47
bromodichloromethane	NA	ND (10)
bromoform	NA	ND (10)
bromomethane	NA	ND (10)
2-butanone	74 B	ND (10)
carbon disulfide		ND (10)
carbon tetrachloride	NA	ND (10)
chlorobenzene		ND (10)
chloroethane	NA	ND (10)
chloroform		ND (10)
chloromethane		ND (10)
dibromochloromethane	NA	ND (10)
1,1-dichloroethane	40	68
1,2-dichloroethane	630	810
1,1-dichloroethene		ND (10)
1,2-dichloroethene	NA	ND (10)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (10)
cis-1,3-dichloropropene	NA	ND (10)
trans-1,3-dichloropropene	NA	ND (10)
ethylbenzene	36	ND (10)
2-hexanone		ND (10)
methylene chloride	6 J, B	ND (10)
4-methyl-2-pentanone		ND (10)
styrene		ND (10)
1,1,2,2-tetrachloroethane		ND (10)
tetrachloroethene		ND (10)
toluene	10 J	ND (10)
1,1,1-trichloroethane		ND (10)
1,1,2-trichloroethane		ND (10)
trichloroethene		ND (10)
vinyl acetate	NA	ND (10)
vinyl chloride		ND (10)
xylenes (total)		ND (10)
Base/Neutral Compounds		
acenaphthene		ND (10)
acenaphthylene		ND (10)
aniline		ND (10)
anthracene		ND (10)
benzo(a)anthracene		ND (10)
benzo(a)pyrene		ND (10)
benzo(b)fluoranthene		ND (10)

2BB7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB7	2BB7
Sample Number:	GW028001	1091-0B7
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC307	
ITR Number:	MEG749	
benzo(g,h,i)perylene		ND (10)
benzo(k)fluoranthene		ND (10)
benzoic acid		ND (10)
benzyl alcohol		ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)
bis(2-chloroisopropyl)ether		ND (10)
bis(2-ethylhexyl)phthalate	8 J, B	ND (10)
butyl benzyl phthalate		ND (10)
4-bromophenyl phenyl ether	NA	ND (10)
carbazole	NA	ND (10)
4-chloroaniline	NA	ND (10)
2-chloronaphthalene	NA	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)
chrysene		ND (10)
dibenz(a,h)anthracene		ND (10)
dibenzofuran		ND (10)
1,2-dichlorobenzene		ND (10)
1,3-dichlorobenzene		ND (10)
1,4-dichlorobenzene		ND (10)
3-3'-dichlorobenzidine	NA	ND (10)
diethylphthalate		ND (10)
dimethylphthalate		ND (10)
di-n-butylphthalate		ND (10)
di-n-octylphthalate		ND (10)
2,4-dinitrotoluene	NA	ND (10)
2,6-dinitrotoluene	NA	ND (10)
fluoranthene		ND (10)
fluorene		ND (10)
hexachlorobenzene		ND (10)
hexachlorobutadiene	NA	ND (10)
hexachlorocyclopentadiene		ND (10)
hexachloroethane		ND (10)
indeno(1,2,3-cd)pyrene		ND (10)
isophorone	3 J	ND (10)
2-methylnaphthalene		ND (10)
naphthalene		ND (10)
2-nitroaniline	NA	ND (50)
3-nitroaniline	NA	ND (50)
4-nitroaniline	NA	ND (50)
nitrobenzene	NA	ND (10)
N-nitroso-dimethylamine		ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)
N-nitroso-diphenylamine(1)		ND (10)
phenanthrene		ND (10)
pyrene		ND (10)
1,2,4-trichlorobenzene		ND (10)

2BB7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB7	2BB7
Sample Number:	GW028001	1091-0B7
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC307	
ITR Number:	MEG749	
Acid Compounds		
4-chloro-3-methylphenol		ND (10)
2-chlorophenol	NA	ND (10)
2,4-dichlorophenol	NA	ND (10)
2,4-dimethylphenol		ND (10)
2,4-dinitrophenol	NA	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)
2-methylphenol		ND (10)
4-methylphenol		ND (10)
2-nitrophenol		ND (10)
4-nitrophenol		ND (50)
pentachlorophenol		ND (50)
phenol		ND (10)
2,4,5-trichlorophenol	NA	ND (50)
2,4,6-trichlorophenol	NA	ND (10)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

2BB7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB7	2BB7
Sample Number:	GW028001	1091-0B7
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC307	
ITR Number:	MEG749	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum		360
Antimony		ND (60)
Arsenic		6
Barium	17 [ ]	33
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	194,000	400,000
Chromium		ND (10)
Cobalt		ND (50)
Copper		ND (10)
Cyanide		NA
Iron	2,960	51,000
Lead		ND (5)
Magnesium	45,000	69,000
Manganese	2,340	5,700
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	7,140	9,200
Selenium		ND (5)
Silver		ND (10)
Sodium	384,000	290,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	17 [ ]	62
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	10,100	5,000
Antimony		ND (60)
Arsenic	72 S	11
Barium	65 [ ]	62
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	193,000	400,000
Chromium	13	ND (10)
Cobalt	16 [ ]	ND (50)
Copper	28	20
Cyanide		NA
Iron	36,200	72,000
Lead		6
Magnesium	44,700	71,000
Manganese	2,760	5,900
Mercury	0.3	ND (0.2)
Nickel	33 [ ]	49

2BB7
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB7	2BB7
Sample Number:	GW028001	1091-0B7
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC307	
ITR Number:	MEG749	
Potassium	8,060 E	11,000
Selenium		ND (5)
Silver		ND (10)
Sodium	383,000	290,000
Thallium		ND (10)
Tin		NA
Vanadium	20 [ ]	ND (50)
Zinc	121	340
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	677	420
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	48	41
Biological Oxygen Demand	NA	10
Chemical Oxygen Demand	NA	99
Chloride	121	140
Cyanide		0.01
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	0.03
Phosphate (PO4)	NA	0.6
Sulfate	730	1,780
Total Dissolved Solids	1,960	2,500
Total Suspended Solids	4,710	830
Field Parameters		
pH (standard units)	6.2	6.94
Specific Conductance (µmhos/cm)	300	2,600
Temperature (degrees F)	64	NA

2BB8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB8	2BB8
Sample Number:	GW029001	1091-0B8
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC308	
ITR Number:	MEG750	
Organic Compounds (units - µg/L)		
Volatiles		
acetone	17 B	22
benzene		ND (17)
bromodichloromethane	NA	ND (17)
bromoform	NA	ND (17)
bromomethane	NA	ND (17)
2-butanone	15 B	ND (17)
carbon disulfide		ND (17)
carbon tetrachloride	NA	ND (17)
chlorobenzene		ND (17)
chloroethane	NA	ND (17)
chloroform		ND (17)
chloromethane		ND (17)
dibromochloromethane	NA	ND (17)
1,1-dichloroethane	5	20
1,2-dichloroethane	170	320
1,1-dichloroethene		ND (17)
1,2-dichloroethene	NA	ND (17)
trans-1,2-dichloroethene		NA
1,2-dichloropropane	NA	ND (17)
cis-1,3-dichloropropene	NA	ND (17)
trans-1,3-dichloropropene	NA	ND (17)
ethylbenzene	1 J	ND (17)
2-hexanone		ND (17)
methylene chloride	2 J, B	ND (17)
4-methyl-2-pentanone		ND (17)
styrene		ND (17)
1,1,2,2-tetrachloroethane		ND (17)
tetrachloroethene		ND (17)
toluene	3 J	ND (17)
1,1,1-trichloroethane		ND (17)
1,1,2-trichloroethane		ND (17)
trichloroethene		ND (17)
vinyl acetate	NA	ND (17)
vinyl chloride		ND (17)
xylenes (total)		ND (17)
Base/Neutral Compounds		
acenaphthene		ND (11)
acenaphthylene		ND (11)
aniline		ND (11)
anthracene		ND (11)
benzo(a)anthracene		ND (11)
benzo(a)pyrene		ND (11)
benzo(b)fluoranthene		ND (11)

2BB8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB8	2BB8
Sample Number:	GW029001	1091-0B8
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC308	
ITR Number:	MEG750	
benzo(g,h,i)perylene		ND (11)
benzo(k)fluoranthene		ND (11)
benzoic acid		11 J
benzyl alcohol		ND (11)
bis(2-chloroethoxy)methane	NA	ND (11)
bis(2-chloroethyl)ether	NA	ND (11)
bis(2-chloroisopropyl)ether		ND (11)
bis(2-ethylhexyl)phthalate	8 J, B	5 J
butyl benzyl phthalate		ND (11)
4-bromophenyl phenyl ether	NA	ND (11)
carbazole	NA	ND (11)
4-chloroaniline	NA	ND (11)
2-chloronaphthalene	NA	ND (11)
4-chlorophenyl phenyl ether	NA	ND (11)
chrysene		ND (11)
dibenz(a,h)anthracene		ND (11)
dibenzofuran		ND (11)
1,2-dichlorobenzene		ND (11)
1,3-dichlorobenzene		ND (11)
1,4-dichlorobenzene		ND (11)
3-3'-dichlorobenzidine	NA	ND (11)
diethylphthalate		ND (11)
dimethylphthalate		ND (11)
di-n-butylphthalate		ND (11)
di-n-octylphthalate		ND (11)
2,4-dinitrotoluene	NA	ND (11)
2,6-dinitrotoluene	NA	ND (11)
fluoranthene		ND (11)
fluorene		ND (11)
hexachlorobenzene		7 J
hexachlorobutadiene	NA	ND (11)
hexachlorocyclopentadiene		ND (11)
hexachloroethane		ND (11)
indeno(1,2,3-cd)pyrene		ND (11)
isophorone		ND (11)
2-methylnaphthalene		ND (11)
naphthalene		ND (11)
2-nitroaniline	NA	ND (55)
3-nitroaniline	NA	ND (55)
4-nitroaniline	NA	ND (55)
nitrobenzene	NA	ND (11)
N-nitroso-dimethylamine		ND (11)
N-nitroso-di-n-propylamine	NA	ND (11)
N-nitroso-diphenylamine(1)		ND (11)
phenanthrene		ND (11)
pyrene		ND (11)
1,2,4-trichlorobenzene		ND (11)

2BB8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB8	2BB8
Sample Number:	GW029001	1091-0B8
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC308	
ITR Number:	MEG750	
Acid Compounds		
4-chloro-3-methylphenol		ND (11)
2-chlorophenol	NA	ND (11)
2,4-dichlorophenol	NA	ND (11)
2,4-dimethylphenol		ND (11)
2,4-dinitrophenol	NA	ND (55)
4,6-dinitro-2-methylphenol	NA	ND (55)
2-methylphenol		ND (11)
4-methylphenol		5 J
2-nitrophenol		ND (11)
4-nitrophenol		ND (55)
pentachlorophenol		ND (55)
phenol		ND (11)
2,4,5-trichlorophenol	NA	ND (55)
2,4,6-trichlorophenol	NA	ND (11)
Pesticides		
Aldrin		ND (0.05)
alpha-BHC		ND (0.05)
beta-BHC		ND (0.05)
delta-BHC		ND (0.05)
gamma-BHC (Lindane)		ND (0.05)
alpha-Chlordane	NA	ND (0.5)
gamma-Chlordane	NA	ND (0.5)
4,4'-DDD	NA	ND (0.1)
4,4'-DDE		ND (0.1)
4,4'-DDT		ND (0.1)
Dieldrin		ND (0.1)
Endosulfan I		ND (0.05)
Endosulfan II	NA	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)
Endrin		ND (0.1)
Endrin ketone	NA	ND (0.1)
Heptachlor		ND (0.05)
Heptachlor epoxide		ND (0.05)
Methoxychlor	NA	ND (0.5)
Toxaphene		ND (1.0)
PCBs		
Arochlor-1016	NA	ND (0.5)
Arochlor-1221	NA	ND (0.5)
Arochlor-1232		ND (0.5)
Arochlor-1242		ND (0.5)
Arochlor-1248		ND (0.5)
Arochlor-1254		ND (1.0)
Arochlor-1260	NA	ND (1.0)

2BB8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB8	2BB8
Sample Number:	GW029001	1091-0B8
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC308	
ITR Number:	MEG750	
Inorganic Compounds - Filtered (units - µg/L)		
Aluminum		345
Antimony		ND (60)
Arsenic		7
Barium	12 [ ]	23
Beryllium		ND (5)
Cadmium		ND (5)
Calcium	139,000	440,000
Chromium		ND (10)
Cobalt		ND (50)
Copper		ND (10)
Cyanide		NA
Iron	2,480	20,000
Lead		ND (5)
Magnesium	35,400	85,000
Manganese	1,350	6,300
Mercury		ND (0.2)
Nickel		ND (40)
Potassium	7,720	8,700
Selenium		ND (5)
Silver		ND (10)
Sodium	950,000	210,000
Thallium		ND (10)
Tin		NA
Vanadium		ND (50)
Zinc	17 [ ]	37
Inorganic Compounds - Unfiltered (units - µg/L)		
Aluminum	12,600	200,000
Antimony		ND (60)
Arsenic		40
Barium	80 [ ]	1,100
Beryllium		20
Cadmium		ND (5)
Calcium	141,000	600,000
Chromium	21	390
Cobalt	18 [ ]	250
Copper	33	400
Cyanide		NA
Iron	48,700	710,000
Lead	15 S,R	440
Magnesium	40,800	87,000
Manganese	1,870	17,000
Mercury	0.3	1
Nickel	43	640

2BB8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION	Preliminary PRE-DESIGN
Sample Location:	2BB8	2BB8
Sample Number:	GW029001	1091-0B8
Sample Type:	ONSITE	ONSITE
Date Sampled:	09/11/86	10/29/91
OTR Number:	EC308	
ITR Number:	MEG750	
Potassium	8,800 E	29,000
Selenium		ND (5)
Silver		ND (10)
Sodium	902,000	200,000
Thallium		ND (10)
Tin		NA
Vanadium	25 [ ]	420
Zinc	128	1,500
General Chemistry (units - mg/L)		
Acidity	NR	NA
Alkalinity-Total as CaCO3	947	210
Alkalinity-pheno	NA	ND (20)
Ammonia, as N	45	34
Biological Oxygen Demand	NA	15
Chemical Oxygen Demand	NA	20
Chloride	140	61
Cyanide		0
Nitrate (NO3)	NA	ND (0.1)
Nitrite (NO2)	NA	ND (0.04)
Phenols	NA	0
Phosphate (PO4)	NA	1
Sulfate	1,240	1,800
Total Dissolved Solids	3,320	2,800
Total Suspended Solids	2,400	6
Field Parameters		
pH (standard units)	7.0	7.3
Specific Conductance (µmhos/cm)	500	2,400
Temperature (degrees F)	68	NA

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Organic Compounds (units - µg/L)	
Volatiles	
acetone	ND (10)
benzene	ND (10)
bromodichloromethane	ND (10)
bromoform	ND (10)
bromomethane	ND (10)
2-butanone	ND (10)
carbon disulfide	ND (10)
carbon tetrachloride	ND (10)
chlorobenzene	ND (10)
chloroethane	ND (10)
chloroform	ND (10)
chloromethane	ND (10)
dibromochloromethane	ND (10)
1,1-dichloroethane	ND (10)
1,2-dichloroethane	ND (10)
1,1-dichloroethene	ND (10)
1,2-dichloroethene	ND (10)
trans-1,2-dichloroethene	ND (10)
1,2-dichloropropane	ND (10)
cis-1,3-dichloropropene	ND (10)
trans-1,3-dichloropropene	ND (10)
ethylbenzene	ND (10)
2-hexanone	ND (10)
methylene chloride	ND (10)
4-methyl-2-pentanone	ND (10)
styrene	ND (10)
1,1,2,2-tetrachloroethane	ND (10)
tetrachloroethene	ND (10)
toluene	ND (10)
1,1,1-trichloroethane	ND (10)
1,1,2-trichloroethane	ND (10)
trichloroethene	ND (10)
vinyl acetate	ND (10)
vinyl chloride	ND (10)
xylenes (total)	ND (10)
Base/Neutral Compounds	
acenaphthene	ND (10)
acenaphthylene	ND (10)
aniline	ND (10)
anthracene	ND (10)
benzo(a)anthracene	ND (10)
benzo(a)pyrene	ND (10)
benzo(b)fluoranthene	ND (10)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
benzo(g,h,i)perylene	ND (10)
benzo(k)fluoranthene	ND (10)
benzoic acid	ND (10)
benzyl alcohol	ND (10)
bis(2-chloroethoxy)methane	ND (10)
bis(2-chloroethyl)ether	ND (10)
bis(2-chloroisopropyl)ether	ND (10)
bis(2-ethylhexyl)phthalate	2 J
butyl benzyl phthalate	ND (10)
4-bromophenyl phenyl ether	ND (10)
carbazole	ND (10)
4-chloroaniline	ND (10)
2-chloronaphthalene	ND (10)
4-chlorophenyl phenyl ether	ND (10)
chrysene	ND (10)
dibenz(a,h)anthracene	ND (10)
dibenzofuran	ND (10)
1,2-dichlorobenzene	ND (10)
1,3-dichlorobenzene	ND (10)
1,4-dichlorobenzene	ND (10)
3-3'-dichlorobenzidine	ND (10)
diethylphthalate	ND (10)
dimethylphthalate	ND (10)
di-n-butylphthalate	ND (10)
di-n-octylphthalate	ND (10)
2,4-dinitrotoluene	ND (10)
2,6-dinitrotoluene	ND (10)
fluoranthene	ND (10)
fluorene	ND (10)
hexachlorobenzene	ND (10)
hexachlorobutadiene	ND (10)
hexachlorocyclopentadiene	ND (10)
hexachloroethane	ND (10)
indeno(1,2,3-cd)pyrene	ND (10)
isophorone	ND (10)
2-methylnaphthalene	ND (10)
naphthalene	ND (10)
2-nitroaniline	ND (50)
3-nitroaniline	ND (50)
4-nitroaniline	ND (50)
nitrobenzene	ND (10)
N-nitroso-dimethylamine	ND (10)
N-nitroso-di-n-propylamine	ND (10)
N-nitroso-diphenylamine(1)	ND (10)
phenanthrene	ND (10)
pyrene	ND (10)
1,2,4-trichlorobenzene	ND (10)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Acid Compounds	
4-chloro-3-methylphenol	ND (10)
2-chlorophenol	ND (10)
2,4-dichlorophenol	ND (10)
2,4-dimethylphenol	ND (10)
2,4-dinitrophenol	ND (50)
4,6-dinitro-2-methylphenol	ND (50)
2-methylphenol	ND (10)
4-methylphenol	ND (10)
2-nitrophenol	ND (10)
4-nitrophenol	ND (50)
pentachlorophenol	ND (50)
phenol	ND (10)
2,4,5-trichlorophenol	ND (50)
2,4,6-trichlorophenol	ND (10)
Pesticides	
Aldrin	ND (0.05)
alpha-BHC	ND (0.05)
beta-BHC	ND (0.05)
delta-BHC	ND (0.05)
gamma-BHC (Lindane)	ND (0.05)
alpha-Chlordane	ND (0.5)
gamma-Chlordane	ND (0.5)
4,4'-DDD	ND (0.1)
4,4'-DDE	ND (0.1)
4,4'-DDT	ND (0.1)
Dieldrin	ND (0.1)
Endosulfan I	ND (0.05)
Endosulfan II	ND (0.1)
Endosulfan sulfate	ND (0.1)
Endrin	ND (0.1)
Endrin ketone	ND (0.1)
Heptachlor	ND (0.05)
Heptachlor epoxide	ND (0.05)
Methoxychlor	ND (0.5)
Toxaphene	ND (1.0)
PCBs	
Arochlor-1016	ND (0.5)
Arochlor-1221	ND (0.5)
Arochlor-1232	ND (0.5)
Arochlor-1242	ND (0.5)
Arochlor-1248	ND (0.5)
Arochlor-1254	ND (1.0)
Arochlor-1260	ND (1.0)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Inorganic Compounds - Filtered (units - µg/L)	
Aluminum	ND (200)
Antimony	ND (60)
Arsenic	ND (5)
Barium	12
Beryllium	ND (5)
Cadmium	ND (5)
Calcium	240,000
Chromium	ND (10)
Cobalt	ND (50)
Copper	ND (10)
Cyanide	NA
Iron	37,000
Lead	ND (5)
Magnesium	96,000
Manganese	3,300
Mercury	ND (0.2)
Nickel	ND (40)
Potassium	6,900
Selenium	ND (5)
Silver	ND (10)
Sodium	270,000
Thallium	ND (10)
Tin	NA
Vanadium	ND (50)
Zinc	270
Inorganic Compounds - Unfiltered (units - µg/L)	
Aluminum	1,100
Antimony	ND (60)
Arsenic	6
Barium	27
Beryllium	ND (5)
Cadmium	ND (5)
Calcium	260,000
Chromium	19
Cobalt	ND (50)
Copper	73
Cyanide	NA
Iron	110,000
Lead	13
Magnesium	100,000
Manganese	3,800
Mercury	ND (0.2)
Nickel	ND (40)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary
	PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Potassium	7,600
Selenium	ND (5)
Silver	ND (10)
Sodium	300,000
Thallium	ND (10)
Tin	NA
Vanadium	ND (50)
Zinc	420
General Chemistry (units - mg/L)	
Acidity	NA
Alkalinity-Total as CaCO3	NA
Alkalinity-pheno	NA
Ammonia, as N	NA
Biological Oxygen Demand	NA
Chemical Oxygen Demand	NA
Chloride	NA
Cyanide	NA
Nitrate (NO3)	NA
Nitrite (NO2)	NA
Phenols	NA
Phosphate (PO4)	NA
Sulfate	NA
Total Dissolved Solids	NA
Total Suspended Solids	NA
Field Parameters	
pH (standard units)	NA
Specific Conductance (µmhos/cm)	NA
Temperature (degrees F)	NA

RINSATE & TRIP BLANKS
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

Preliminary

	PRE-DESIGN	PRE-DESIGN				
Sample Location:	RB					
Sample Number:	RINSATE	TRIP	TRIP	TRIP	TRIP	TRIP
Sample Type:	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK #2
Date Sampled:	11/01/91	10/30/91	10/31/91	11/02/91	11/04/91	11/04/91
Organic Compounds (units - µg/L)						
Volatiles						
acetone	2 J	5 J	ND (10)	ND (10)	5 J	3 J
benzene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
bromodichloromethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
bromoform	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
bromomethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-butanone	ND (10)	46 J	ND (10)	ND (10)	4 J	ND (10)
carbon disulfide	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
carbon tetrachloride	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
chlorobenzene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
chloroethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
chloroform	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
chloromethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
dibromochloromethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,1-dichloroethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,2-dichloroethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,1-dichloroethene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,2-dichloroethene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
trans-1,2-dichloroethene	NA	NA	NA	NA	NA	NA
1,2-dichloropropane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
cis-1,3-dichloropropene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
trans-1,3-dichloropropene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
ethylbenzene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
2-hexanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
methylene chloride	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
4-methyl-2-pentanone	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
styrene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,1,2,2-tetrachloroethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
tetrachloroethene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
toluene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,1,1-trichloroethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
1,1,2-trichloroethane	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
trichloroethene	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
vinyl acetate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
vinyl chloride	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
xylenes (total)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Base/Neutral Compounds						
acenaphthene	ND (10)					
acenaphthylene	ND (10)					
aniline	ND (10)					
anthracene	ND (10)					
benzo(a)anthracene	ND (10)					
benzo(a)pyrene	ND (10)					
benzo(b)fluoranthene	ND (10)					

RINSATE & TRIP BLANKS
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

Preliminary

	PRE-DESIGN	PRE-DESIGN				
Sample Location:	RB					
Sample Number:	RINSATE	TRIP	TRIP	TRIP	TRIP	TRIP
Sample Type:	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK #2
Date Sampled:	11/01/91	10/30/91	10/31/91	11/02/91	11/04/91	11/04/91
benzo(g,h,i)perylene	ND (10)					
benzo(k)fluoranthene	ND (10)					
benzoic acid	ND (10)					
benzyl alcohol	ND (10)					
bis(2-chloroethoxy)methane	ND (10)					
bis(2-chloroethyl)ether	ND (10)					
bis(2-chloroisopropyl)ether	ND (10)					
bis(2-ethylhexyl)phthalate	2 J					
butyl benzyl phthalate	ND (10)					
4-bromophenyl phenyl ether	ND (10)					
carbazole	ND (10)					
4-chloroaniline	ND (10)					
2-chloronaphthalene	ND (10)					
4-chlorophenyl phenyl ether	ND (10)					
chrysene	ND (10)					
dibenz(a,h)anthracene	ND (10)					
dibenzofuran	ND (10)					
1,2-dichlorobenzene	ND (10)					
1,3-dichlorobenzene	ND (10)					
1,4-dichlorobenzene	ND (10)					
3-3'-dichlorobenzidine	ND (10)					
diethylphthalate	ND (10)					
dimethylphthalate	ND (10)					
di-n-butylphthalate	ND (10)					
di-n-octylphthalate	ND (10)					
2,4-dinitrotoluene	ND (10)					
2,6-dinitrotoluene	ND (10)					
fluoranthene	ND (10)					
fluorene	ND (10)					
hexachlorobenzene	ND (10)					
hexachlorobutadiene	ND (10)					
hexachlorocyclopentadiene	ND (10)					
hexachloroethane	ND (10)					
indeno(1,2,3-cd)pyrene	ND (10)					
isophorone	ND (10)					
2-methylnaphthalene	ND (10)					
naphthalene	ND (10)					
2-nitroaniline	ND (50)					
3-nitroaniline	ND (50)					
4-nitroaniline	ND (50)					
nitrobenzene	ND (10)					
N-nitroso-dimethylamine	ND (10)					
N-nitroso-di-n-propylamine	ND (10)					
N-nitroso-diphenylamine(1)	ND (10)					
phenanthrene	ND (10)					
pyrene	ND (10)					
1,2,4-trichlorobenzene	ND (10)					

RINSATE & TRIP BLANKS
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

Preliminary

	PRE-DESIGN	PRE-DESIGN				
Sample Location:	RB					
Sample Number:	RINSATE	TRIP	TRIP	TRIP	TRIP	TRIP
Sample Type:	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK #2
Date Sampled:	11/01/91	10/30/91	10/31/91	11/02/91	11/04/91	11/04/91
Acid Compounds						
4-chloro-3-methylphenol	ND (10)					
2-chlorophenol	ND (10)					
2,4-dichlorophenol	ND (10)					
2,4-dimethylphenol	ND (10)					
2,4-dinitrophenol	ND (50)					
4,6-dinitro-2-methylphenol	ND (50)					
2-methylphenol	ND (10)					
4-methylphenol	ND (10)					
2-nitrophenol	ND (10)					
4-nitrophenol	ND (50)					
pentachlorophenol	ND (50)					
phenol	ND (10)					
2,4,5-trichlorophenol	ND (50)					
2,4,6-trichlorophenol	ND (10)					
Pesticides						
Aldrin	ND (0.05)					
alpha-BHC	ND (0.05)					
beta-BHC	ND (0.05)					
delta-BHC	ND (0.05)					
gamma-BHC (Lindane)	ND (0.05)					
alpha-Chlordane	ND (0.5)					
gamma-Chlordane	ND (0.5)					
4,4'-DDD	ND (0.1)					
4,4'-DDE	ND (0.1)					
4,4'-DDT	ND (0.1)					
Dieldrin	ND (0.1)					
Endosulfan I	ND (0.05)					
Endosulfan II	ND (0.1)					
Endosulfan sulfate	ND (0.1)					
Endrin	ND (0.1)					
Endrin ketone	ND (0.1)					
Heptachlor	ND (0.05)					
Heptachlor epoxide	ND (0.05)					
Methoxychlor	ND (0.5)					
Toxaphene	ND (1.0)					
PCBs						
Arochlor-1016	ND (0.5)					
Arochlor-1221	ND (0.5)					
Arochlor-1232	ND (0.5)					
Arochlor-1242	ND (0.5)					
Arochlor-1248	ND (0.5)					
Arochlor-1254	ND (1.0)					
Arochlor-1260	ND (1.0)					

RINSATE & TRIP BLANKS
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

Preliminary

	PRE-DESIGN	PRE-DESIGN				
Sample Location:	RB					
Sample Number:	RINSATE	TRIP	TRIP	TRIP	TRIP	TRIP
Sample Type:	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK #2
Date Sampled:	11/01/91	10/30/91	10/31/91	11/02/91	11/04/91	11/04/91
Inorganic Compounds - Filtered (units - µg/L)						
Aluminum	ND (200)					
Antimony	ND (60)					
Arsenic	ND (5)					
Barium	ND (10)					
Beryllium	ND (5)					
Cadmium	ND (5)					
Calcium	ND (5,000)					
Chromium	ND (10)					
Cobalt	ND (50)					
Copper	ND (10)					
Cyanide	NA					
Iron	78					
Lead	ND (5)					
Magnesium	ND (5,000)					
Manganese	ND (10)					
Mercury	ND (0.2)					
Nickel	ND (40)					
Potassium	ND (5,000)					
Selenium	ND (5)					
Silver	ND (10)					
Sodium	ND (5,000)					
Thallium	ND (10)					
Tin	NA					
Vanadium	ND (50)					
Zinc	440					
Inorganic Compounds - Unfiltered (units - µg/L)						
Aluminum	ND (200)					
Antimony	ND (60)					
Arsenic	ND (5)					
Barium	21					
Beryllium	ND (5)					
Cadmium	ND (5)					
Calcium	ND (5,000)					
Chromium	ND (10)					
Cobalt	ND (50)					
Copper	ND (10)					
Cyanide	NA					
Iron	ND (50)					
Lead	ND (5)					
Magnesium	ND (5,000)					
Manganese	ND (10)					
Mercury	ND (0.2)					
Nickel	ND (40)					

RINSATE & TRIP BLANKS
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

Preliminary

	PRE-DESIGN	PRE-DESIGN				
Sample Location:	RB					
Sample Number:	RINSATE	TRIP	TRIP	TRIP	TRIP	TRIP
Sample Type:	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK #2
Date Sampled:	11/01/91	10/30/91	10/31/91	11/02/91	11/04/91	11/04/91
Potassium	ND (5,000)					
Selenium	ND (5)					
Silver	ND (10)					
Sodium	ND (5,000)					
Thallium	ND (10)					
Tin	NA					
Vanadium	ND (50)					
Zinc	460					
General Chemistry (units - mg/L)						
Acidity	NA					
Alkalinity-Total as CaCO3	ND (20)					
Alkalinity-pheno	ND (20)					
Ammonia, as N	ND (0.2)					
Biological Oxygen Demand	ND (2)					
Chemical Oxygen Demand	ND (5)					
Chloride	ND (2)					
Cyanide	ND (0.005)					
Nitrate (NO3)	ND (0.1)					
Nitrite (NO2)	ND (0.04)					
Phenols	0.02					
Phosphate (PO4)	ND (0.1)					
Sulfate	ND (1.0)					
Total Dissolved Solids	8					
Total Suspended Solids	ND (5)					
Field Parameters						
pH (standard units)	NA					
Specific Conductance (µmhos/cm)	NA					
Temperature (degrees F)	NA					

ATTACHMENT TM4-2

SURFACE WATER ANALYTICAL DATA

SUMMIT NATIONAL SUPERFUND SITE

DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Notes:

B	Analyte has been found in the laboratory blank as well as the sample. Indicates possible/probable contamination.
+	Correlation coefficient for method of standard addition is less than 0.955.
E	Value is estimated due to presence of interference.
J	An estimated value.
R	Spike sample recovery is not within control limits.
S	Value is determined by standard addition.
[]	Positive values less than required detection limit by contract.
NA	Not analyzed.
ND	Not detected. Value in parenthesis following ND is detection limit.
NR	No reading.
NS	Not sampled.

ON-SITE SURFACE WATER SAMPLE RESULTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	East Pond Surface Waters						West Pond Surface Waters					
	REMEDIAL INVESTIGATION					Preliminary PRE-DESIGN	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN		
Sample Number:	SW002001	SW003001	SW015001	SW015002	AVG.	SW2	SW001001	SW017001	AVG.	SW1	SW1A	AVG.
Date Sampled:	11/28/84	11/28/84	09/16/86	09/16/86		03/11/91	11/28/84	09/16/86		03/11/91	03/11/91	
OTR Number:	E9836	E9837	EC346	EC347		--	E9835	EC349		--	--	
ITR Number:	ME4409	ME4410	MEG788	MEG789		--	ME4408	MEG791		--	--	
Organic Compounds (units - µg/L)												
Volatiles												
acetone	4,000	3,900	30 J, B	32 J, B	1,991	12	45	47 J, B	46	10	11	10.5
benzene	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
bromodichloromethane	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
bromoform	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
bromomethane			16 B	16 B	8	ND(10)		11 B	5.5	ND(10)	4 J	2.0
2-butanone	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
carbon disulfide	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
carbon tetrachloride	NA	NA	NA	NA		ND(10)	NA	59	29.5	ND(10)	ND(10)	
chlorobenzene						ND(10)				ND(10)	ND(10)	
chloroethane						ND(10)				ND(10)	ND(10)	
chloroform						ND(10)				ND(10)	ND(10)	
chloromethane						ND(10)				ND(10)	ND(10)	
dibromochloromethane						ND(10)				ND(10)	ND(10)	
1,1-dichloroethane	860	830	3 J	3 J	1.5	ND(10)				ND(10)	ND(10)	
1,2-dichloroethane			38	41	442	3 J				ND(10)	ND(10)	
1,1-dichloroethene						ND(10)				ND(10)	ND(10)	
1,2-dichloroethene						ND(10)				ND(10)	ND(10)	
trans-1,2-dichloroethene						NA				ND(10)	ND(10)	
1,2-dichloropropane						ND(10)				NA	NA	
cis-1,3-dichloropropene						ND(10)				ND(10)	ND(10)	
trans-1,3-dichloropropene						ND(10)				ND(10)	ND(10)	
ethylbenzene						ND(10)				ND(10)	ND(10)	
2-hexanone						ND(10)				ND(10)	ND(10)	
methylene chloride		51	2 J, B	3 J, B	14	ND(10)		2 J, B	1	ND(10)	3 J	1.5
4-methyl-2-pentanone		78			19.5	ND(10)				ND(10)	ND(10)	
styrene						ND(10)				ND(10)	2 J	1.0
1,1,2,2-tetrachloroethane						ND(10)				ND(10)	ND(10)	
tetrachloroethene						ND(10)				ND(10)	ND(10)	
toluene		120	2 J	1 J	30.8	ND(10)		24	12	ND(10)	ND(10)	
1,1,1-trichloroethane		66	5	5	19	ND(10)				ND(10)	ND(10)	
1,1,2-trichloroethane						ND(10)				ND(10)	ND(10)	
trichloroethene						ND(10)				ND(10)	ND(10)	
vinyl acetate	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
vinyl chloride						ND(10)				ND(10)	ND(10)	
xylenes (total)		100	1 J	1 J	25.5	ND(10)				ND(10)	ND(10)	
Total Volatiles	4,860	5,145	97	102	2,551		45	143	94			
Total Tentatively Identified Volatiles	0	0	30.5	33.9	16.1		0	29.6	14.8			

ON-SITE SURFACE WATER SAMPLE RESULTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	East Pond Surface Waters						*West Pond Surface Waters*					
	REMEDIAL INVESTIGATION					Preliminary *PRE-DESIGN*	*REMEDIAL INVESTIGATION*			Preliminary *PRE-DESIGN*		
Sample Number:	*SW002001*	*SW003001*	*SW015001*	*SW015002*	*AVG.*	*SW2*	*SW001001*	*SW017001*	*AVG.*	*SW1*	*SW1A*	*AVG.*
Date Sampled:	*11/28/84*	*11/28/84*	*09/16/86*	*09/16/86*		*03/11/91*	*11/28/84*	*09/16/86*		*03/11/91*	*03/11/91*	
OTR Number:	*E9836*	*E9837*	*EC346*	*EC347*		--	*E9835*	*EC349*		--	--	
ITR Number:	*ME4409*	*ME4410*	*MEG788*	*MEG789*		--	*ME4408*	*MEG791*		--	--	
Base/Neutral Compounds												
acenaphthene						ND(10)				ND(10)	ND(10)	
acenaphthylene						ND(10)				ND(10)	ND(10)	
aniline	227	231			115	ND(10)				ND(10)	ND(10)	
anthracene						ND(10)				ND(10)	ND(10)	
benzo(a)anthracene						ND(10)				ND(10)	ND(10)	
benzo(a)pyrene			4 J		1.0	ND(10)				ND(10)	ND(10)	
benzo(b)fluoranthene			3 J		0.8	ND(10)				ND(10)	ND(10)	
benzo(g,h,i)perylene			3 J		0.8	ND(10)				ND(10)	ND(10)	
benzo(k)fluoranthene			3 J		0.8	ND(10)				ND(10)	ND(10)	
benzoic acid	47 J				11.8	ND(10)				ND(10)	ND(10)	
benzyl alcohol						ND(10)				ND(10)	ND(10)	
bis(2-chloroethoxy)methane	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
bis(2-chloroethyl)ether	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
bis(2-chloroisopropyl)ether						ND(10)				ND(10)	ND(10)	
bis(2-ethylhexyl)phthalate	25 B	20 B	7 J, B	10 J, B	15.5	ND(10)	10 B	9 J, B	9.5	ND(10)	ND(10)	
butyl benzyl phthalate						ND(10)				ND(10)	ND(10)	
4-bromophenyl phenyl ether	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
carbazole	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
4-chloroaniline	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
2-chloronaphthalene	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
4-chlorophenyl phenyl ether	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
chrysene						ND(10)				ND(10)	ND(10)	
dibenz(a,h)anthracene			3 J		0.8	ND(10)				ND(10)	ND(10)	
dibenzofuran						ND(10)				ND(10)	ND(10)	
1,2-dichlorobenzene						ND(50)		24 J	12	ND(50)	ND(50)	
1,3-dichlorobenzene						ND(50)				ND(50)	ND(50)	
1,4-dichlorobenzene						ND(50)		49 J	24.5	ND(50)	ND(50)	
3,3'-dichlorobenzidine	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
diethylphthalate						ND(10)				ND(10)	ND(10)	
dimethylphthalate						ND(10)				ND(10)	ND(10)	
di-n-butylphthalate						ND(10)				ND(10)	ND(10)	
di-n-octyl phthalate						ND(10)				ND(10)	ND(10)	
2,4-dinitrotoluene	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
2,6-dinitrotoluene	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
fluoranthene						ND(10)				ND(10)	ND(10)	
fluorene						ND(10)				ND(10)	ND(10)	
hexachlorobenzene						ND(10)				ND(10)	ND(10)	
hexachlorobutadiene	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
hexachlorocyclopentadiene						ND(10)				ND(10)	ND(10)	
hexachloroethane						ND(10)		14 J	7	ND(10)	ND(10)	

ON-SITE SURFACE WATER SAMPLE RESULTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	East Pond Surface Waters						*West Pond Surface Waters*					
	REMEDIAL INVESTIGATION					Preliminary *PRE-DESIGN*	*REMEDIAL INVESTIGATION*			Preliminary *PRE-DESIGN*		
Sample Number:	*SW002001*	*SW003001*	*SW015001*	*SW015002*	*AVG.*	*SW2*	*SW001001*	*SW017001*	*AVG.*	*SW1*	*SW1A*	*AVG.*
Date Sampled:	*11/28/84*	*11/28/84*	*09/16/86*	*09/16/86*		*03/11/91*	*11/28/84*	*09/16/86*		*03/11/91*	*03/11/91*	
OTR Number:	*E9836*	*E9837*	*EC346*	*EC347*		--	*E9835*	*EC349*		--	--	
ITR Number:	*ME4409*	*ME4410*	*MEG788*	*MEG789*		--	*ME4408*	*MEG791*		--	--	
Base/Neutral Compounds (cont'd)												
indeno (1,2,3-cd)pyrene			3 J		0.8	ND(10)				ND(10)	ND(10)	
isophorone	12	13			6.3	ND(10)				ND(10)	ND(10)	
2-methylnaphthalene						ND(10)				ND(10)	ND(10)	
naphthalene						ND(10)				ND(10)	ND(10)	
2-nitroaniline	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
3-nitroaniline	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
4-nitroaniline	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
nitrobenzene	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
N-nitrosodimethylamine						ND(10)				ND(10)	ND(10)	
N-nitroso-di-n-propylamine	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
N-nitrosodiphenylamine (1)						ND(10)				ND(10)	ND(10)	
phenanthrene						ND(10)				ND(10)	ND(10)	
pyrene						ND(10)				ND(10)	ND(10)	
1,2,4-trichlorobenzene						ND(10)				ND(10)	ND(10)	
Acid Compounds												
4-chloro-3-methylphenol						ND(10)				ND(10)	ND(10)	
2-chlorophenol	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
2,4-dichlorophenol	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
2,4-dimethylphenol						ND(10)				ND(10)	ND(10)	
2,4-dinitrophenol	NA	NA	NA	NA		ND(50)	NA	NA		ND(50)	ND(50)	
4,6-dinitro-2-methylphenol	NA	NA	NA	NA		ND(50)	NA	NA		ND(50)	ND(50)	
2-methylphenol						ND(10)				ND(10)	ND(10)	
4-methylphenol						ND(10)				ND(10)	ND(10)	
2-nitrophenol						ND(10)				ND(10)	ND(10)	
4-nitrophenol						ND(50)				ND(50)	ND(50)	
pentachlorophenol						ND(50)				ND(50)	ND(50)	
phenol	8 J	12			5	ND(10)				ND(10)	ND(10)	
2,4,5-trichlorophenol	NA	NA	NA	NA		ND(50)	NA	NA		ND(50)	ND(50)	
2,4,6-trichlorophenol	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
Total Base/Neutrals and Acids	319	276	26	10	158		10	96	53			
Total Tentatively Identified Base/Neutrals and Acids	521	205	36	30.2	198		270	95.2	183			

ON-SITE SURFACE WATER SAMPLE RESULTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	East Pond Surface Waters						*West Pond Surface Waters*					
	REMEDIAL INVESTIGATION					Preliminary *PRE-DESIGN*	*REMEDIAL INVESTIGATION*			Preliminary *PRE-DESIGN*		
Sample Number:	*SW002001*	*SW003001*	*SW015001*	*SW015002*	*AVG.*	*SW2*	*SW001001*	*SW017001*	*AVG.*	*SW1*	*SW1A*	*AVG.*
Date Sampled:	*11/28/84*	*11/28/84*	*09/16/86*	*09/16/86*		*03/11/91*	*11/28/84*	*09/16/86*		*03/11/91*	*03/11/91*	
OTR Number:	*E9836*	*E9837*	*EC346*	*EC347*		--	*E9835*	*EC349*		--	--	
ITR Number:	*ME4409*	*ME4410*	*MEG788*	*MEG789*		--	*ME4408*	*MEG791*		--	--	
Pesticides												
Aldrin						ND(0.05)				ND(0.05)	ND(0.05)	
alpha-BHC						ND(0.05)				ND(0.05)	ND(0.05)	
beta-BHC						ND(0.05)				ND(0.05)	ND(0.05)	
delta-BHC						ND(0.05)				ND(0.05)	ND(0.05)	
gamma-BHC (Lindane)						ND(0.05)				ND(0.05)	ND(0.05)	
alpha-Chlordane	NA	NA	NA	NA		ND(0.5)	NA	NA		ND(0.5)	ND(0.5)	
gamma-Chlordane	NA	NA	NA	NA		ND(0.5)	NA	NA		ND(0.5)	ND(0.5)	
4,4'-DDD	NA	NA	NA	NA		ND(0.1)	NA	NA		ND(0.1)	ND(0.1)	
4,4'-DDE						ND(0.1)				ND(0.1)	ND(0.1)	
4,4'-DDT						ND(0.1)				ND(0.1)	ND(0.1)	
Dieldrin						ND(0.1)				ND(0.1)	ND(0.1)	
Endosulfan I						ND(0.05)				ND(0.05)	ND(0.05)	
Endosulfan II	NA	NA	NA	NA		ND(0.1)	NA	NA		ND(0.1)	ND(0.1)	
Endosulfan sulfate	NA	NA	NA	NA		ND(0.1)	NA	NA		ND(0.1)	ND(0.1)	
Endrin						ND(0.1)				ND(0.1)	ND(0.1)	
Endrin ketone	NA	NA	NA	NA		ND(0.1)	NA	NA		ND(0.1)	ND(0.1)	
Heptachlor						ND(0.05)				ND(0.05)	ND(0.05)	
Heptachlor epoxide						ND(0.05)				ND(0.05)	ND(0.05)	
Methoxychlor	NA	NA	NA	NA		ND(0.5)	NA	NA		ND(0.5)	ND(0.5)	
Mirex						NA				NA	NA	
Toxaphene						ND(1.0)				ND(1.0)	ND(1.0)	
PCBs												
Arochlor-1016	NA	NA	NA	NA		ND(0.5)	NA	NA		ND(0.5)	ND(0.5)	
Arochlor-1221	NA	NA	NA	NA		ND(0.5)	NA	NA		ND(0.5)	ND(0.5)	
Arochlor-1232						ND(0.5)				ND(0.5)	ND(0.5)	
Arochlor-1242						ND(0.5)				ND(0.5)	ND(0.5)	
Arochlor-1248						ND(0.5)				ND(0.5)	ND(0.5)	
Arochlor-1254						ND(1.0)				ND(1.0)	ND(1.0)	
Arochlor-1260	NA	NA	NA	NA		ND(1.0)	NA	NA		ND(1.0)	ND(1.0)	
Total Pesticides and PCBs						ND				ND	ND	
Percent Moisture (Volatiles)												

ON-SITE SURFACE WATER SAMPLE RESULTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	East Pond Surface Waters						*West Pond Surface Waters*					
	REMEDIAL INVESTIGATION					Preliminary *PRE-DESIGN*	*REMEDIAL INVESTIGATION*			Preliminary *PRE-DESIGN*		
Sample Number:	*SW002001*	*SW003001*	*SW015001*	*SW015002*	*AVG.*	*SW2*	*SW001001*	*SW017001*	*AVG.*	*SW1*	*SW1A*	*AVG.*
Date Sampled:	*11/28/84*	*11/28/84*	*09/16/86*	*09/16/86*		*03/11/91*	*11/28/84*	*09/16/86*		*03/11/91*	*03/11/91*	
OTR Number:	*E9836*	*E9837*	*EC346*	*EC347*		--	*E9835*	*EC349*		--	--	
ITR Number:	*ME4409*	*ME4410*	*MEG788*	*MEG789*		--	*ME4408*	*MEG791*		--	--	
Inorganic Compounds - Unfiltered (units - µg/L)												
Aluminum		200	1,000	972	148,300	8,700	17,620	39,800	28,710	36,000	36,000	36,000
Antimony	62				15.5	ND(60)	121		60.5	ND(60)	ND(60)	
Arsenic		25 +, S			6.3	ND(5)		27 S	13.5	ND(5)	ND(5)	
Barium			[24]	[25]	12.3	55		[9.9]	5.0	12	28	20
Beryllium						ND(5)	5	[7.9]	6.5	6	5	5.5
Cadmium	9					9	35	23	29	28	26	27
Calcium	232,600	171,100	297,000 E	296000 E	249,175	400,000	139,000	16,200 E	77,600	150,000	160,000	155,000
Chromium				[4.2]	1.1	10	28	21	24.5	23	34	28.5
Cobalt			[15]	[13]	7	ND(50)	70	123	96.5	97	100	98.5
Copper			[13]	[11]	6	36	102	122	112	74	80	77
Cyanide						NA				NA	NA	
Iron	68,500	51,260	3,160	3,030	31,488	36,000	5,300	8,740	7,020	8,100	7,900	8,000
Lead						15				ND(5)	ND(5)	
Magnesium	85,580	63,300	120,000	120,000	97,220	160,000	32,500	44,500	38,500	44,000	45,000	44,500
Manganese	8,100	6,000	7,800	7,880	7,445	12,000	3,740	4,760	4,250	4,200	4,300	4,250
Mercury						ND(0.2)				ND(0.2)	ND(0.2)	
Nickel	54	45	[20]	[20]	34.8	120	210	322	266	280	310	295
Potassium	8,450	5,730	12,400	12,400	9,745	12,000	3,670	6,280	4,975	8,000	7,800	7,900
Selenium						ND(5)		16 S	8	ND(5)	48	24.0
Silver						ND(10)				ND(10)	ND(10)	
Sodium	55,000	40,500	71,500	72,100	59,775	57,000	14,700	15,200	14,950	8,200	7,500	7,850
Thallium						ND(10)				ND(10)	ND(10)	
Tin						NA				NA	NA	
Vanadium						ND(50)				ND(50)	ND(50)	
Zinc	490	340	204	202	309	1,300	1,600	1,660	1,630	1,700	1,900	1,800
Inorganic Compounds - Filtered (units - µg/L)												
Aluminum	NA	NA	NA	NA		8,600	NA	NA		36,000	35,000	35,500
Antimony	NA	NA	NA	NA		ND(60)	NA	NA		ND(60)	ND(60)	
Arsenic	NA	NA	NA	NA		ND(5)	NA	NA		ND(5)	ND(5)	
Barium	NA	NA	NA	NA		50	NA	NA		10	31	20.5
Beryllium	NA	NA	NA	NA		ND(5)	NA	NA		ND(5)	5	2.5
Cadmium	NA	NA	NA	NA		ND(5)	NA	NA		22	25	23.5
Calcium	NA	NA	NA	NA		420,000	NA	NA		2,000	150,000	76,000
Chromium	NA	NA	NA	NA		11	NA	NA		11	20	15.5
Cobalt	NA	NA	NA	NA		ND(50)	NA	NA		ND(50)	97	48.5
Copper	NA	NA	NA	NA		27	NA	NA		ND(10)	80	40
Cyanide	NA	NA	NA	NA		NA	NA	NA		NA	NA	

ON-SITE SURFACE WATER SAMPLE RESULTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	East Pond Surface Waters						*West Pond Surface Waters*					
	REMEDIAL INVESTIGATION					Preliminary *PRE-DESIGN*	*REMEDIAL INVESTIGATION*			Preliminary *PRE-DESIGN*		
Sample Number:	*SW002001*	*SW003001*	*SW015001*	*SW015002*	*AVG.*	*SW2*	*SW001001*	*SW017001*	*AVG.*	*SW1*	*SW1A*	*AVG.*
Date Sampled:	*11/28/84*	*11/28/84*	*09/16/86*	*09/16/86*		*03/11/91*	*11/28/84*	*09/16/86*		*03/11/91*	*03/11/91*	
OTR Number:	*E9836*	*E9837*	*EC346*	*EC347*		--	*E9835*	*EC349*		--	--	
ITR Number:	*ME4409*	*ME4410*	*MEG788*	*MEG789*		--	*ME4408*	*MEG791*		--	--	
Iron	NA	NA	NA	NA		20,000	NA	NA		460	6,500	3,480
Lead	NA	NA	NA	NA		15	NA	NA		ND(5)	ND(5)	
Magnesium	NA	NA	NA	NA		160,000	NA	NA		1,100	45,000	23,050
Manganese	NA	NA	NA	NA		12,000	NA	NA		20	4,200	2,110
Mercury	NA	NA	NA	NA		ND(0.2)	NA	NA		ND(0.2)	ND(0.2)	
Nickel	NA	NA	NA	NA		89	NA	NA		ND(40)	280	140
Potassium	NA	NA	NA	NA		13,000	NA	NA		1,300	7,400	4,350
Selenium	NA	NA	NA	NA		ND(5)	NA	NA		ND(5)	ND(5)	
Silver	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
Sodium	NA	NA	NA	NA		60,000	NA	NA		800	7,300	4,050
Thallium	NA	NA	NA	NA		ND(10)	NA	NA		ND(10)	ND(10)	
Tin	NA	NA	NA	NA		NA	NA	NA		NA	NA	
Vanadium	NA	NA	NA	NA		ND(50)	NA	NA		ND(50)	ND(50)	
Zinc	NA	NA	NA	NA		1,500	NA	NA		ND(20)	2,100	1,050
General Chemistry (units - mg/L)												
Acidity	NA	NA	43	45	44	NA	NA	320		NA	NA	
Alkalinity-Total as CaCO3	NA	NA				ND(20)	NA			ND(20)	ND(20)	
Alkalinity-pheno	NA	NA				ND(20)	NA			ND(20)	ND(20)	
Ammonia as N	NA	NA	4.6	4.5	4.6	9.5	NA			2	2	2.0
Biological Oxygen Demand	NA	NA	NA	NA		ND(2)	NA			ND(2)	ND(2)	
Chemical Oxygen Demand	NA	NA	NA	NA		ND(5)	NA			17	ND(5)	8.5
Chloride	NA	NA	123	85	104	66	NA	47		16	17	16.5
Cyanide	NA	NA	NA	NA		ND(0.005)	NA			ND(0.005)	ND(0.005)	
Nitrate (NO3)	NA	NA				ND(0.1)	NA			0.4	0.4	0.4
Nitrite (NO2)	NA	NA				ND(0.04)	NA			ND(0.04)	ND(0.04)	
Phenols	NA	NA	NA	NA		ND(0.01)	NA			ND(0.01)	0.02	0.0
Phosphate (PO4)	NA	NA	NA	NA		ND(0.1)	NA			ND(0.1)	ND(0.1)	
Sulfate	NA	NA	1,300	1,330	1,315	1,800	NA	850		800	740	770
Total Dissolved Soilds	NA	NA	2,210	2,090	2,150	1,900	NA	1,320		1,100	1,100	1,100
Total Suspended Solids	NA	NA	7	7	7	440	NA	41		14	11	12.5
Field Parameters												
pH (s.u.)	6.2	6.5	4.0	4.0	5.2	NA	3.4	4.0	3.7	NA	NA	
Specific Conductance (µmho/cm)	1,050	1,130	2,000	2,000	1,545	NA	1,160	1,440	1,300	NA	NA	
Temperature (degrees F)	NA	NA	NA	NA		NA	NA	NA		NA	NA	

TECHNICAL MEMORANDUM NO. 5

CHARACTERIZATION OF THE TIPPLE WELL

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 5

CHARACTERIZATION OF THE TIPPLE WELL SUMMIT NATIONAL SUPERFUND SITE DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

A. OPENING OF THE TIPPLE WELL

To complete the characterization of the Tipple Well at the Summit National Superfund Site (Site), pursuant to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Design Work Plan (RD Work Plan) for the Site, Boyles Brothers Drilling Company of Reading, Pennsylvania was retained to conduct the drilling activities and Marshall Miller and Associates of Bluefield, Virginia was retained to provide downhole camera and borehole geophysical logging. All activities were conducted during the period of November 6 to November 14, 1991 under the direction of Conestoga-Rovers & Associates (CRA).

The USEPA Remedial Investigation (RI) Report indicated that USEPA attempted to open the Tipple Well during Phase II activities of the RI, and established that the Tipple Well is constructed with an 8-inch diameter steel casing to a depth of 60 feet below ground surface (bgs) and a smaller diameter open rock borehole to 101 feet bgs. USEPA previously terminated the boring due to the presence of a metal obstruction in the hole at a depth of 101 feet bgs.

Upon commencement of the Tipple Well characterization pre-design task, the well was found to be cut off at ground surface with no locking cap or protective cover. On October 31, 1991, the water level as measured with an electronic water level tape was determined to be 9.20 feet below the top of the steel casing (BTOC), and the depth to the bottom of the well or obstruction was determined to be approximately 87.0 feet BTOC.

Due to uncertainties associated with the construction of the Tipple Well and previous evidence of downhole obstructions, a downhole camera log of the well was conducted on November 6, 1991. The downhole camera log was run from the top of the 8-inch diameter steel casing to a depth of 77 feet BTOC where an unidentifiable obstruction was encountered. The downhole camera log established that the 8-inch diameter steel casing extends to a depth of approximately 30 feet BTOC, and that the well is an open rock hole from 30 feet BTOC to the viewed depth of 77 feet BTOC. The diameter of the open rock hole was determined to narrow from 8 inches in diameter to 6 inches in diameter at a depth of approximately 55 feet BTOC. A video of the downhole camera logging was provided to CRA for a permanent record.

Following completion of the downhole camera work on November 6, 1991, a Mobile B-61 truck mounted drill rig, drill rod and tools were steam cleaned and moved to the Tipple Well. A nominal 6-inch diameter rotary drill bit attached to drill rod was advanced to a depth of approximately 95 feet BTOC before resistance was encountered. Due to considerable caving in of the existing open rock hole from 95 to 99 feet BTOC, bentonite mud was used to increase the viscosity of the drilling fluid. Drilling continued to a depth of 100 feet 10 inches BTOC when metal chips were encountered in the return mud. Drilling was terminated at this depth due to the presence of an unknown metal obstruction. The open section of the well then was flushed with water to remove the drilling mud. Drilling fluids were pumped to the on-Site wastewater storage tank.

B. GEOPHYSICAL LOGGING

After drilling activities were completed on November 7, 1991, the open section of the Tipple Well was logged using borehole geophysical tools to determine subsurface stratigraphy and the potential presence of flow zones. The geophysical tools included spontaneous potential, natural gamma, and resistivity. The geophysical log of the open section of the well is contained in Attachment TM5-1. CRA's geological interpretation of the subsurface stratigraphy based on the geophysical logging of the Tipple Well is as follows:

0 to 30 feet BTOC	Overburden (cased)
30 to 58 feet BTOC	Mercer Member (Upper Intermediate Unit)
58 to 63 feet BTOC	Unnamed Limestone (Marker)
63 to 100 feet BTOC	Mercer Member (Lower Intermediate Unit)

Based on the results of the geophysical logging and drilling program, it was determined that the Tipple Well is only open across the intermediate bedrock aquifer.

C. PACKER TESTING

On November 14, 1991 the Tipple Well was purged of stagnant water from the top to the bottom of the well using a 10-foot long steel bailer operated with a winch on the drill rig. Approximately 450 gallons of water was purged from the well before the well went dry. This volume of purge water equates to 2.25 well volumes. The purge water was still very turbid after completion of the purging. The well was allowed to recover prior to commencement of packer testing. Based on the results of the geophysical logging, two intervals were selected for packer testing; 83 to 72.5 feet BTOC and 59.5 to 70 feet BTOC.

A packer test could not be conducted above 55 feet BTOC since the open rock hole widened to 8 inches in diameter, which was too large a diameter for the packer system available. The lower interval was interpreted to be an interbedded limestone and shale which could exhibit higher permeability than the basal section of the Mercer Member. The upper interval selected for packer testing was interpreted to be a silty shale grading upward into the Unnamed Limestone.

The packer assembly utilized consisted of two 40-inch long inflatable packers separated by a 10-foot 6-inch length of 2-inch internal diameter (I.D.) perforated steel pipe. The packers were 5-inch outside diameter (O.D.) uninflated, and could be expanded to greater than 6-inch O.D. after inflation. The packer assembly was inflated to a pressure of 70 pounds per square inch (psi) using nitrogen gas.

The packer test was conducted using a downhole 1.66-inch diameter submersible pump that was placed at the base of the test interval. The pumping rate was varied in increments to determine a pumping rate that could be maintained. This steady state pumping rate was then used to estimate the specific capacity of the interval tested. The water level above the packer assembly was monitored during the packer test to determine whether the test interval was effectively isolated. Tables TM5-1 and TM5-2 provide a summary of the field data from the lower and upper packer tests, respectively.

The lower interval packer test successfully isolated the zone tested and was run for a duration of 51 minutes 55 seconds. The test was continued until a steady state flow rate was reached. As shown in Table TM5-1, a steady state flow rate was achieved during the last 23 minutes of the test with an average specific capacity of 0.06 gallons per minute per foot (gpm/ft) for the interval tested. The upper interval packer test did not effectively isolate the zone tested and was discontinued after it was determined that the water level in the borehole above the packer declined during the test. It is likely that the test interval could not be isolated because of the uneven nature of the open rock hole.

The results from the lower interval packer test conducted on the lower portion of the Mercer Member indicates that there are discrete zones within this unit that exhibit moderate permeability.

D. GROUNDWATER SAMPLING

Following completion of the lower interval packer test (83 to 72.5 feet BTOC), this interval of the intermediate bedrock aquifer was sampled. The sampling was conducted while the packers were inflated using a submersible pump.

Approximately 55 gallons of groundwater was purged from this interval during the packer test, which is the equivalent of 3.6 interval volumes. Consequently, groundwater sampling was conducted immediately following completion of the packer test. Groundwater from this interval was collected from the submersible pump discharge tube directly into the sample containers. These samples were submitted to Wadsworth/Alert Laboratories, Inc. of North Canton, Ohio, for analyses of Target Compound List Volatile Organic compounds (TCL VOCs) and Base Neutral and Acid Extractable Compounds (BNAs), Pesticides/Polychlorinated Biphenyls (PCBs) and Target Analyte List (TAL) Metals.

The upper interval packer test zone was not sampled since this interval could not be successfully isolated from the upper Mercer units. Likewise, the upper Mercer units were not independently sampled since the 8-inch diameter rock hole above 55 feet BTOC could not be isolated.

The laboratory analytical results for the groundwater sample obtained from the lower Mercer unit are contained in Attachment TM5-2. TCL VOCs and Pesticides/PCBs were all reported below method detection limits. Of the BNAs, only bis(2-ethylhexyl)phthalate was detected at an estimated concentration of two micrograms per litre (2 µg/L). A number of trace metals were detected in the filtered and unfiltered samples, although no exceedences of USEPA Maximum Containment Levels (MCLs) were noted. These results suggest that the Lower Intermediate Unit in the vicinity of Tipple Well has not been impacted by Site-related contaminants.

E. DISCUSSION

The Tipple Well is currently open across the Upper and Lower Intermediate Unit. Sampling and analyses of groundwater collected from the Lower Intermediate Unit indicates that this unit has not been impacted by Site-related contaminants.

It is unlikely that the Upper Sharon Aquifer in the vicinity of the Tipple Well has been impacted by the Site given that the Lower Intermediate Unit (at the Tipple Well) and the Water Table Unit (at monitoring well MW-2) are unaffected.

It is therefore recommended that the Tipple Well be properly closed and abandoned during the Remedial Action.

F. USEPA/OEPA OVERSIGHT

Oversight for the above activities was provided by Black & Veatch Waste Science Technology on behalf of USEPA, and by OEPA personnel on an intermittent basis. As recorded in the Site's sign in/sign out log, representatives for USEPA and OEPA were on Site on the following days:

Date	*USEPA Representative*	*OEPA Representative*
11/6/91	X	X
11/7/91	X	X
11/8/91	X	

During the above operations, USEPA and OEPA representatives expressed concurrence with all activities conducted at the Site as required by the RD Work Plan.

TABLE TM5-1

PACKER TEST DATA - LOWER INTERVAL
CHARACTERIZATION OF THE TIPPLE WELL
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Start Interval Time	*End Interval Time*	*Elapsed Time*	*Flow Rate(gpm)*
1:10:25	1:12:15	1:50	2.73
1:12:15	1:14:05	1:50	2.73
1:14:05	1:15:55	1:50	2.73
1:15:55	1:17:50	1:55	2.61
1:17:50	1:20:50	2:00	2.5
1:20:50	1:24:30	3:40	1.36
1:24:30	1:30:18	5:48	0.86
1:30:20	1:36:30	6:10	0.81
1:38:50	1:46:50	8:00	0.63
1:46:50	1:54:55	8:05	0.62
1:55:00	2:02:20	7:20	0.68

Notes:

i) Interval Tested: 72.5 to 83 feet BTOC
ii) Test Duration: 51 min. 55 sec.
iii) Water Level Start of Test: 42.3 feet BTOC
iv) Water Level End of Test: 41.4 feet BTOC
v) Specific Capacity of Tested Interval: 0.06 gpm/ft

TABLE TM5-2

PACKER TEST DATA - UPPER INTERVAL
CHARACTERIZATION OF THE TIPPLE WELL
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Start Interval Time	*End Interval Time*	*Elapsed Time*	*Flow Rate (gpm)*
2:57:00	2:58:50	1:50	3.33
2:58:50	3:00:50	2:00	2.5
3:00:50	3:03:00	2:10	2.31
3:03:00	3:05:05	2:05	2.4
3:05:10	3:07:12	2:02	2.46
3:07:15	3:09:25	2:10	2.31
3:10:00	3:11:40	1:40	3.01
3:11:50	3:13:30	1:40	3.01
3:14:15	3:15:25	1:05	4.62
3:15:25	3:16:30	1:05	4.62
3:19:10	3:21:25	2:15	2.22
3:22:00	3:24:30	2:30	2.00
3:24:30	3:27:40	3:10	1.58

Notes:

i) Interval Tested: 59.5 to 70 feet BTOC
ii) Test Duration: 30 min. 40 sec.
iii) Water Level Start of Test: 40.0 feet BTOC
iv) Water Level End of Test: 50.3 feet BTOC
v) Test Terminated: Pumping Impacting Water Level Above Test Interval

ATTACHMENT TM5-1

TIPPLE WELL GEOPHYSICAL LOG

SUMMIT NATIONAL SUPERFUND SITE

DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

SDMS US EPA REGION V
FORMAT- OVERSIZED - 5
IMAGERY INSERT FORM

The item(s) listed below are not available in SDMS. In order to view original document or document pages, contact the Superfund Records Center.

SITE NAME	**SUMMIT NATIONAL**		
DOC ID #	**128682**		
DESCRIPTION OF ITEM(S)	**TRIPPLE WELL ANALYSIS**		
REASON WHY UNSCANNABLE	**_X_ OVERSIZED**	**OR**	**___ FORMAT**
DATE OF ITEM(S)	**11-07-1991**		
NO. OF ITEMS	**1**		
PHASE	**REMEDIATION**		
PRP			
PHASE (AR DOCUMENTS ONLY)	___ Remedial ___ Removal ___ Deletion Docket ___ AR ___ Original ___ Update # ___ Volume ___ of ___		
O.U.			
LOCATION	Box # _3_ Folder # _6_ Subsection _____		
COMMENT(S)			

ATTACHMENT TM5-2

GROUNDWATER ANALYTICAL DATA
TIPPLE WELL CHARACTERIZATION
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Notes:

ND Not detected. Value in parenthesis following ND is detection limit.
J An estimated value.
NA Not analyzed.

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Organic Compounds (units - µg/L)	
Volatiles	
acetone	ND (10)
benzene	ND (10)
bromodichloromethane	ND (10)
bromoform	ND (10)
bromomethane	ND (10)
2-butanone	ND (10)
carbon disulfide	ND (10)
carbon tetrachloride	ND (10)
chlorobenzene	ND (10)
chloroethane	ND (10)
chloroform	ND (10)
chloromethane	ND (10)
dibromochloromethane	ND (10)
1,1-dichloroethane	ND (10)
1,2-dichloroethane	ND (10)
1,1-dichloroethene	ND (10)
1,2-dichloroethene	ND (10)
trans-1,2-dichloroethene	ND (10)
1,2-dichloropropane	ND (10)
cis-1,3-dichloropropene	ND (10)
trans-1,3-dichloropropene	ND (10)
ethylbenzene	ND (10)
2-hexanone	ND (10)
methylene chloride	ND (10)
4-methyl-2-pentanone	ND (10)
styrene	ND (10)
1,1,2,2-tetrachloroethane	ND (10)
tetrachloroethene	ND (10)
toluene	ND (10)
1,1,1-trichloroethane	ND (10)
1,1,2-trichloroethane	ND (10)
trichloroethene	ND (10)
vinyl acetate	ND (10)
vinyl chloride	ND (10)
xylenes (total)	ND (10)
Base/Neutral Compounds	
acenaphthene	ND (10)
acenaphthylene	ND (10)
aniline	ND (10)
anthracene	ND (10)
benzo(a)anthracene	ND (10)
benzo(a)pyrene	ND (10)
benzo(b)fluoranthene	ND (10)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
benzo(g,h,i)perylene	ND (10)
benzo(k)fluoranthene	ND (10)
benzoic acid	ND (10)
benzyl alcohol	ND (10)
bis(2-chloroethoxy)methane	ND (10)
bis(2-chloroethyl)ether	ND (10)
bis(2-chloroisopropyl)ether	ND (10)
bis(2-ethylhexyl)phthalate	2 J
butyl benzyl phthalate	ND (10)
4-bromophenyl phenyl ether	ND (10)
carbazole	ND (10)
4-chloroaniline	ND (10)
2-chloronaphthalene	ND (10)
4-chlorophenyl phenyl ether	ND (10)
chrysene	ND (10)
dibenz(a,h)anthracene	ND (10)
dibenzofuran	ND (10)
1,2-dichlorobenzene	ND (10)
1,3-dichlorobenzene	ND (10)
1,4-dichlorobenzene	ND (10)
3-3'-dichlorobenzidine	ND (10)
diethylphthalate	ND (10)
dimethylphthalate	ND (10)
di-n-butylphthalate	ND (10)
di-n-octylphthalate	ND (10)
2,4-dinitrotoluene	ND (10)
2,6-dinitrotoluene	ND (10)
fluoranthene	ND (10)
fluorene	ND (10)
hexachlorobenzene	ND (10)
hexachlorobutadiene	ND (10)
hexachlorocyclopentadiene	ND (10)
hexachloroethane	ND (10)
indeno(1,2,3-cd)pyrene	ND (10)
isophorone	ND (10)
2-methylnaphthalene	ND (10)
naphthalene	ND (10)
2-nitroaniline	ND (50)
3-nitroaniline	ND (50)
4-nitroaniline	ND (50)
nitrobenzene	ND (10)
N-nitroso-dimethylamine	ND (10)
N-nitroso-di-n-propylamine	ND (10)
N-nitroso-diphenylamine(1)	ND (10)
phenanthrene	ND (10)
pyrene	ND (10)
1,2,4-trichlorobenzene	ND (10)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary
	PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Acid Compounds	
4-chloro-3-methylphenol	ND (10)
2-chlorophenol	ND (10)
2,4-dichlorophenol	ND (10)
2,4-dimethylphenol	ND (10)
2,4-dinitrophenol	ND (50)
4,6-dinitro-2-methylphenol	ND (50)
2-methylphenol	ND (10)
4-methylphenol	ND (10)
2-nitrophenol	ND (10)
4-nitrophenol	ND (50)
pentachlorophenol	ND (50)
phenol	ND (10)
2,4,5-trichlorophenol	ND (50)
2,4,6-trichlorophenol	ND (10)
Pesticides	
Aldrin	ND (0.05)
alpha-BHC	ND (0.05)
beta-BHC	ND (0.05)
delta-BHC	ND (0.05)
gamma-BHC (Lindane)	ND (0.05)
alpha-Chlordane	ND (0.5)
gamma-Chlordane	ND (0.5)
4,4'-DDD	ND (0.1)
4,4'-DDE	ND (0.1)
4,4'-DDT	ND (0.1)
Dieldrin	ND (0.1)
Endosulfan I	ND (0.05)
Endosulfan II	ND (0.1)
Endosulfan sulfate	ND (0.1)
Endrin	ND (0.1)
Endrin ketone	ND (0.1)
Heptachlor	ND (0.05)
Heptachlor epoxide	ND (0.05)
Methoxychlor	ND (0.5)
Toxaphene	ND (1.0)
PCBs	
Arochlor-1016	ND (0.5)
Arochlor-1221	ND (0.5)
Arochlor-1232	ND (0.5)
Arochlor-1242	ND (0.5)
Arochlor-1248	ND (0.5)
Arochlor-1254	ND (1.0)
Arochlor-1260	ND (1.0)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Inorganic Compounds - Filtered (units - µg/L)	
Aluminum	ND (200)
Antimony	ND (60)
Arsenic	ND (5)
Barium	12
Beryllium	ND (5)
Cadmium	ND (5)
Calcium	240,000
Chromium	ND (10)
Cobalt	ND (50)
Copper	ND (10)
Cyanide	NA
Iron	37,000
Lead	ND (5)
Magnesium	96,000
Manganese	3,300
Mercury	ND (0.2)
Nickel	ND (40)
Potassium	6,900
Selenium	ND (5)
Silver	ND (10)
Sodium	270,000
Thallium	ND (10)
Tin	NA
Vanadium	ND (50)
Zinc	270
Inorganic Compounds - Unfiltered (units - µg/L)	
Aluminum	1,100
Antimony	ND (60)
Arsenic	6
Barium	27
Beryllium	ND (5)
Cadmium	ND (5)
Calcium	260,000
Chromium	19
Cobalt	ND (50)
Copper	73
Cyanide	NA
Iron	110,000
Lead	13
Magnesium	100,000
Manganese	3,800
Mercury	ND (0.2)
Nickel	ND (40)

TIPPLE WELL
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	Preliminary PRE-DESIGN
Sample Location:	TIPPLE WELL
Sample Number:	111491-JC-0001
Sample Type:	ONSITE
Date Sampled:	11/14/91
Potassium	7,600
Selenium	ND (5)
Silver	ND (10)
Sodium	300,000
Thallium	ND (10)
Tin	NA
Vanadium	ND (50)
Zinc	420
General Chemistry (units - mg/L)	
Acidity	NA
Alkalinity-Total as CaCO3	NA
Alkalinity-pheno	NA
Ammonia, as N	NA
Biological Oxygen Demand	NA
Chemical Oxygen Demand	NA
Chloride	NA
Cyanide	NA
Nitrate (NO3)	NA
Nitrite (NO2)	NA
Phenols	NA
Phosphate (PO4)	NA
Sulfate	NA
Total Dissolved Solids	NA
Total Suspended Solids	NA
Field Parameters	
pH (standard units)	NA
Specific Conductance (µmhos/cm)	NA
Temperature (degrees F)	NA

TECHNICAL MEMORANDUM NO. 6

UPPER SHARON AQUIFER CHARACTERIZATION

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 6

UPPER SHARON AQUIFER CHARACTERIZATION
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

A. INVESTIGATION METHODS

In accordance with the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Design Work Plan (RD Work Plan) for the Summit National Superfund Site (Site), characterization of the Upper Sharon Aquifer has been performed by Conestoga-Rovers & Associates (CRA) on behalf of the Summit National Facility Trust (SNFT). The objective of the characterization was to define the direction of groundwater flow within the Upper Sharon Aquifer. In addition to this, the water quality was determined under the groundwater characterization task of the Pre-Design Investigation (PDI).

Relevant sections within the USEPA Remedial Investigation (RI) report were reviewed to determine well construction, screened intervals, historic water level elevations, hydraulic conductivity and groundwater sampling results. Information obtained from the RI was combined with water level and groundwater quality data obtained during the SNFT pre-design activities, to complete characterization of the Upper Sharon Aquifer within the vicinity of the Site. Water levels were measured at all existing monitoring wells by CRA on October 28, 1991 and on December 10, 1991. Groundwater samples were collected from these wells during the period of October 30 to November 4, 1991, and submitted to Wadsworth/Alert Laboratories, Inc. of North Canton, Ohio for analyses. The results of the water level measurements and analyses of the groundwater samples are presented in Technical Memorandum No. 4. In addition, CRA reviewed data collected by Browning-Ferris Industries of Ohio, Inc. (BFI) as part of their hydrogeologic investigations of the nearby Willow Creek Landfill.

Six monitoring wells were installed during the RI with well screens located within the Upper Sharon Aquifer (MW-5, MW-6, MW-8, MW-13, MW-14 and MW-26). Although the well construction logs are not well documented in the RI report, it appears that the upper units were cased off at each of the Upper Sharon wells. This suggests that each of the Upper Sharon wells should provide meaningful data on hydraulic head and groundwater quality over the interval monitored. All Upper Sharon wells appear to be completed in the upper shale member of this unit.

For ease of reference, summary of all groundwater quality data for the Upper Sharon Aquifer is presented in Attachment TM6-1. A summary of the water

level elevation data is presented on Table TM6-1. Attached Figures TM6-1 and TM6-2 present the groundwater contours for the Upper Sharon Aquifer based on the October 1991 and December 1991 water level measurements, respectively.

B. GROUNDWATER FLOW

As shown in attached Figures TM6-1 and TM6-2, groundwater flow in the Upper Sharon appears to be towards the southeast across the western part of the Site and towards the northwest across the southeastern corner of the Site, with a southwest dipping trough indicated from the center of the Site to the southwest corner of the Site. The trend in the groundwater flow directions is consistent between the two rounds of water levels collected during the PDI.

Comparison of the water level data collected during the PDI and the RI (see Table 4-5 of the USEPA RI Report) indicates that the water level data in most wells are consistent. Two major exceptions which occur are at MW-14 where the water level is approximately five feet lower in 1991 and at MW-6 where the water level is over 10 feet higher in 1991, compared to the 1984 RI water level measurements. The RI data yielded similar groundwater flows across the western part of the Site (i.e. from MW-8 to MW-26) and from the southwest portion of the Site (i.e. MW-6 to MW-26). The RI data, however, indicated flow from MW-14 to MW-26.

Vertical gradients between the intermediate bedrock units and the Upper Sharon appear to display the same pattern as reported in the RI report. Gradients are upward near the southern perimeter of the Site, and conversely are downward near the center of the Site. The presence of a downward gradient across the central region of the Site suggests that there is a component of vertical leakage from the intermediate bedrock aquifer to the Upper Sharon Aquifer. The BFI report indicated that no wells on the Willow Creek Landfill Site were completed in the Upper Sharon Aquifer. The lowest unit investigated by BFI was the Connequenessing Sandstone.

C. GROUNDWATER QUALITY

Attachment TM6-1 summarizes the detectable concentrations of all analytes detected in groundwater samples collected from the Upper Sharon Aquifer monitoring wells at the Site. Examination of these data indicates that, based on the PDI data, the only exceedance of a Maximum Contaminant Level (MCL) occurs at MW-26 (1,2-dichloroethane at 91 micrograms per liter (µg/L) and 15 µg/L). Groundwater samples from the remaining monitoring wells

completed in the Upper Sharon Aquifer did not have detectable compounds above any relevant standards.

The characterization of the Tipple Well has shown that the Intermediate Unit in the vicinity of the Tipple Well does not contain Site-related contaminants. This is not surprising given that the Water Table Unit (MW-2) in the same vicinity is not contaminated and the groundwater flow direction in the Intermediate Unit is southerly. Therefore, it was concluded that the Upper Sharon Aquifer in the vicinity of the Tipple Well would not contain Site-related contaminants (refer to Technical Memorandum No. 5).

D. DISCUSSION

The Upper Sharon Aquifer characterization has shown that the groundwater flow within this unit is dominated by a southwest dipping trough. This pattern was consistent over both rounds of water level measurements (October 1991 and December 1991). Although this groundwater flow pattern is consistent with the RI generated data over the western and southeastern portions of the Site, the flow direction between MW-14 and MW-26 was determined by the RI data to be northeast, opposite to that determined during the PDI. Vertical hydraulic gradients are consistent between the RI and PDI data.

The PDI characterization of the Tipple Well indicates that the Upper Sharon Aquifer in the vicinity of the Tipple Well does not contain Site-related contaminants. The PDI groundwater characterization indicates that Site-related contaminants in the Upper Sharon Aquifer above a MCL only exist at MW-26 (i.e. in the middle of the Site).

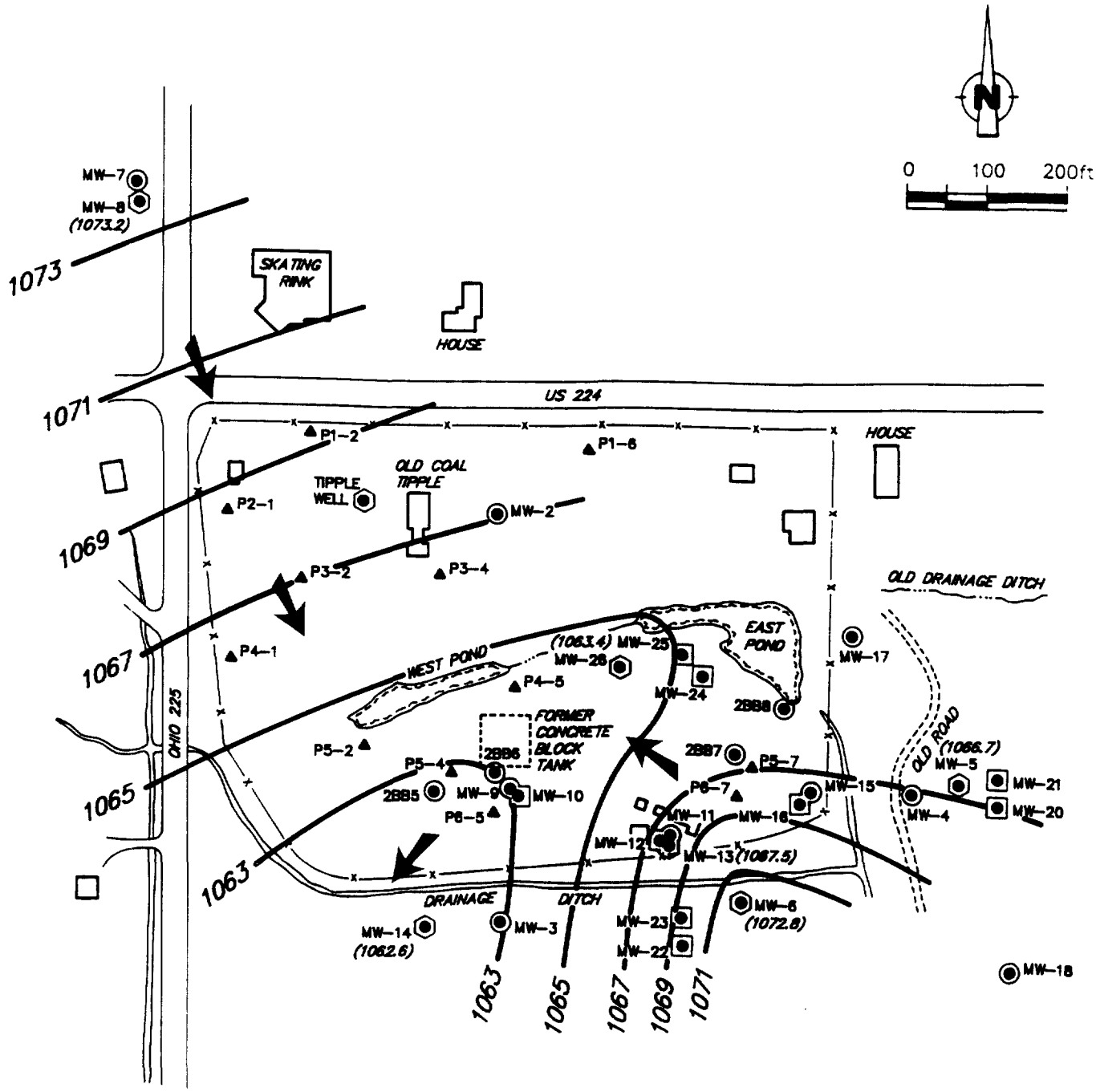
Given that the flow direction in the Upper Sharon Aquifer has been determined by the PDI to not be to the northeast and that the Upper Sharon Aquifer in the vicinity of the Tipple Well is not contaminated, further evaluation of the Upper Sharon Aquifer is not required.

Ref. 2372

TABLE TM 6-1

WATER LEVEL MEASUREMENTS
UPPER SHARON AQUIFER MONITORING WELLS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

	Remedial Investigation											Remedial Design					
			December 1985 Water Level (1)		January 1984 Water Level (2)		June 1986 Water Level (3)		September 1986	September 1984 Water Level (2)			October 1991 Water Level		December 1991 Water Level		
Well/ Piezometer Number	PVC Elevation	Casing Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Elevation (4)	Depth	Elevation	Casing Elevation	Depth	Elevation	Depth	Elevation	Casing Elevation Difference
MW-5	1,087.48	1,087.58	20.34	1,067.24	20.70	1,066.88	20.35	1,067.13	1,087.78	21.30	1,066.48	1,087.92	21.25	1,066.67	17.26	1,070.66	0.34
MW-6	1,101.71	1,101.81	30.25	1,071.56	37.60	1,064.21	36.85	1,064.86	1,101.70	35.70	1,066.00	1,101.96	29.21	1,072.75	18.50	1,083.46	0.15
MW-8	1,106.56	1,106.74	32.32*	1,074.24	32.95	1,073.79	31.95	1,074.61	1,106.62	33.00	1,073.62	1,106.79	33.55	1,073.24	33.24	1,073.55	0.05
MW-13	1,096.20	1,096.43	29.79	1,066.64	26.90	1,069.53	26.75	1,069.45	1,096.41	28.60	1,067.81	1,096.49	28.85	1,067.64	35.43	1,061.06	0.06
MW-14	1,098.84	1,099.34	42.19	1,057.15	34.90	1,064.44	33.55	1,065.29	1,099.27	32.25	1,067.02	1,099.12	36.48	1,062.64	37.02	1,062.10	-0.22
MW-26	1,096.53	1,096.72	--	--	36.50	1,060.22	32.85	1,063.68	1,096.74	33.60	1,063.14	1,096.86	3.81	1,093.05	33.02	1,063.84	0.14



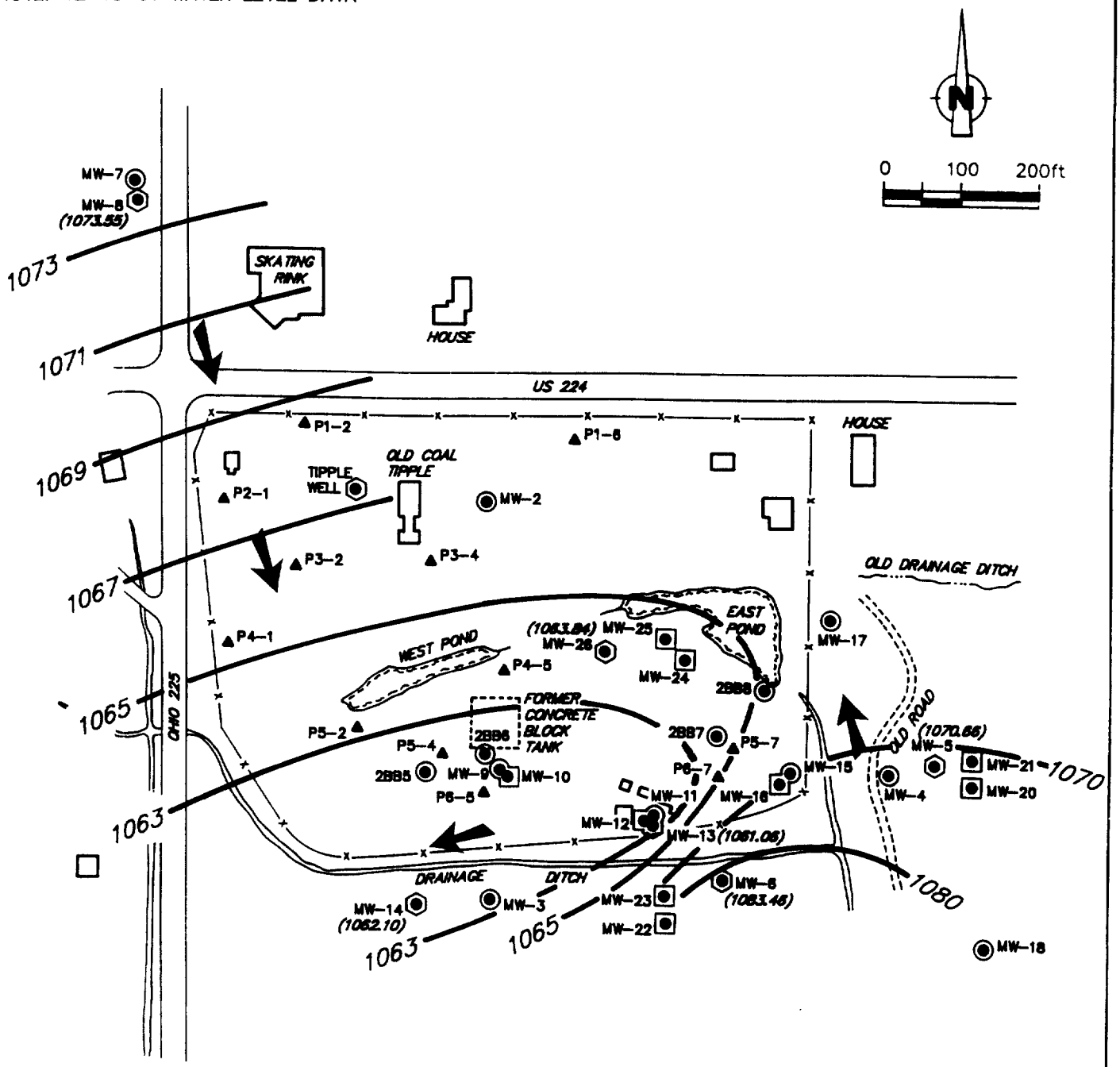
LEGEND

- ▲ WATER TABLE UNIT PIEZOMETER LOCATION
- ◉ WATER TABLE UNIT MONITORING WELL LOCATION
- ▣ INTERMEDIATE UNIT MONITORING WELL LOCATION
- ⬢ UPPER SHARON AQUIFER MONITORING WELL LOCATION
- (1073.2) GROUNDWATER ELEVATION (OCT. 1991)
- 1065 GROUNDWATER CONTOUR
- ← GROUNDWATER FLOW DIRECTION

figure TM6-1

UPPER SHARON AQUIFER
GROUNDWATER CONTOURS – OCTOBER 1991

NOTE: 12-10-91 WATER LEVEL DATA



LEGEND

- ▲ WATER TABLE UNIT PIEZOMETER LOCATION
- ◉ WATER TABLE UNIT MONITORING WELL LOCATION
- ▣ INTERMEDIATE UNIT MONITORING WELL LOCATION
- ⬢ UPPER SHARON AQUIFER MONITORING WELL LOCATION
- (1083.46) GROUNDWATER ELEVATION (DEC. 1991)
- 1065 —— GROUNDWATER CONTOUR
- ← GROUNDWATER FLOW DIRECTION

figure TM6-2

UPPER SHARON AQIUFIER
GROUNDWATER CONTOURS – DECEMBER 1991
SUMMIT NATIONAL SUPERFUND SITE
Deerfield Township of Portage County, Ohio

CRA

2372(L)-DEC.13/91-REV.0

ATTACHMENT TM6-1

GROUNDWATER ANALYTICAL DATA
UPPER SHARON AQUIFER
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

- MW-5
- MW-6
- MW-8
- MW-13
- MW-14
- MW-26

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Organic Compounds (units - µg/L)					
Volatiles					
acetone		3 J, B	4 J, B	2.3	5 J
benzene	4 J, B			1.3	ND (10)
bromodichloromethane	NA	NA	NA		ND (10)
bromoform	NA	NA	NA		ND (10)
bromomethane	NA	NA	NA		ND (10)
2-butanone		15 B	16 B	10.3	8 J
carbon disulfide					ND (10)
carbon tetrachloride	NA	NA	NA		ND (10)
chlorobenzene					ND (10)
chloroethane	NA	NA	NA		ND (10)
chloroform					ND (10)
chloromethane					ND (10)
dibromochloromethane	NA	NA	NA		ND (10)
1,1-dichloroethane					ND (10)
1,2-dichloroethane					ND (10)
1,1-dichloroethene					ND (10)
1,2-dichloroethene	NA	NA	NA		ND (10)
trans-1,2-dichloroethene					NA
1,2-dichloropropane	NA	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA	NA		ND (10)
ethylbenzene					ND (10)
2-hexanone					5 J
methylene chloride	957	3 J	3 J	321	ND (10)
4-methyl-2-pentanone					4 J
styrene					ND (10)
1,1,2,2-tetrachloroethane					ND (10)
tetrachloroethene					ND (10)
toluene		4 J	3 J	2.3	3 J
1,1,1-trichloroethane					ND (10)
1,1,2-trichloroethane					ND (10)
trichloroethene					ND (10)
vinyl acetate	NA	NA	NA		ND (10)
vinyl chloride					ND (10)
xylenes (total)					5 J
Base/Neutral Compounds					
acenaphthene					ND (10)
acenaphthylene					ND (10)
aniline					ND (10)
anthracene					ND (10)
benzo(a)anthracene					ND (10)
benzo(a)pyrene					ND (10)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
benzo(b)fluoranthene					ND (10)
benzo(g,h,i)perylene					ND (10)
benzo(k)fluoranthene					ND (10)
benzoic acid					ND (10)
benzyl alcohol					ND (10)
bis(2-chloroethoxy)methane	NA	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA	NA		ND (10)
bis(2-chloroisopropyl)ether					ND (10)
bis(2-ethylhexyl)phthalate		6 J, B	5 J, B	3.7	24
butyl benzyl phthalate					ND (10)
4-bromophenyl phenyl ether	NA	NA	NA		ND (10)
carbazole	NA	NA	NA		ND (10)
4-chloroaniline	NA	NA	NA		ND (10)
2-chloronaphthalene	NA	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA			ND (10)
chrysene					ND (10)
dibenz(a,h)anthracene					ND (10)
dibenzofuran					ND (10)
1,2-dichlorobenzene					ND (10)
1,3-dichlorobenzene					ND (10)
1,4-dichlorobenzene					ND (10)
3-3'-dichlorobenzidine	NA	NA	NA		ND (10)
diethylphthalate					ND (10)
dimethylphthalate					ND (10)
di-n-butylphthalate		2 J, B	3 J, B	1.7	ND (10)
di-n-octylphthalate					ND (10)
2,4-dinitrotoluene	NA	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA	NA		ND (10)
fluoranthene					ND (10)
fluorene					ND (10)
hexachlorobenzene					ND (10)
hexachlorobutadiene	NA	NA	NA		ND (10)
hexachlorocyclopentadiene					ND (10)
hexachloroethane					ND (10)
indeno(1,2,3-cd)pyrene					ND (10)
isophorone					ND (10)
2-methylnaphthalene					ND (10)
naphthalene					ND (10)
2-nitroaniline	NA	NA	NA		ND (50)
3-nitroaniline	NA	NA	NA		ND (50)
4-nitroaniline	NA	NA	NA		ND (50)
nitrobenzene	NA	NA	NA		ND (10)
N-nitroso-dimethylamine					ND (10)
N-nitroso-di-n-propylamine	NA	NA	NA		ND (10)
N-nitroso-diphenylamine(1)					ND (10)
phenanthrene					ND (10)
pyrene					ND (10)
1,2,4-trichlorobenzene					ND (10)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Acid Compounds					
4-chloro-3-methylphenol					ND (10)
2-chlorophenol	NA	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA	NA		ND (10)
2,4-dimethylphenol					ND (10)
2,4-dinitrophenol	NA	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA	NA		ND (50)
2-methylphenol					ND (10)
4-methylphenol					ND (10)
2-nitrophenol					ND (10)
4-nitrophenol					ND (50)
pentachlorophenol					ND (50)
phenol					ND (10)
2,4,5-trichlorophenol	NA	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA	NA		ND (10)
Pesticides					
Aldrin					ND (0.05)
alpha-BHC					ND (0.05)
beta-BHC					ND (0.05)
delta-BHC					ND (0.05)
gamma-BHC (Lindane)					ND (0.05)
alpha-Chlordane	NA	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA	NA		ND (0.5)
4,4'-DDD	NA	NA	NA		ND (0.1)
4,4'-DDE					ND (0.1)
4,4'-DDT					ND (0.1)
Dieldrin					ND (0.1)
Endosulfan I					ND (0.05)
Endosulfan II	NA	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA	NA		ND (0.1)
Endrin					ND (0.1)
Endrin ketone	NA	NA	NA		ND (0.1)
Heptachlor					ND (0.05)
Heptachlor epoxide					ND (0.05)
Methoxychlor	NA	NA	NA		ND (0.5)
Toxaphene					ND (1.0)
PCBs					
Arochlor-1016	NA	NA	NA		ND (0.5)
Arochlor-1221	NA	NA	NA		ND (0.5)
Arochlor-1232					ND (0.5)
Arochlor-1242					ND (0.5)
Arochlor-1248					ND (0.5)
Arochlor-1254					ND (1.0)
Arochlor-1260	NA	NA	NA		ND (1.0)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-5	MW-5	MW-5	MW-5	MW-5
Sample Number:	GW005001	GW020001	GW020002	AVERAGE	1091-005
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/5/84	9/9/86	9/9/86		11/2/91
OTR Number:	E9862	EB198	EB199		
ITR Number:	ME4435	MEB398	MEB399		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	572		170 [ ]	247	5,600
Antimony					ND (60)
Arsenic					5
Barium	52 [ ], R	59 [ ]	64 [ ]	58.3	150
Beryllium					ND (5)
Cadmium					ND (5)
Calcium	2,180 [ ], R	1,560 [ ]	1,780 [ ]	1,840	6,200
Chromium					11
Cobalt					ND (50)
Copper					19
Cyanide					NA
Iron	454 R, E	97 [ ]	86 [ ]	212	4,900
Lead					ND (5)
Magnesium	635 [ ],R,E	504 [ ]	604 [ ]	581	ND (5000)
Manganese	16		7.8 [ ]	7.9	73
Mercury					ND (0.2)
Nickel					ND (40)
Potassium	5,720	3,680 [ ]	3,740 [ ]	4,380	ND (5000)
Selenium					ND (5)
Silver		10		3.3	ND (10)
Sodium	256,400 E	434,000	435,000	375,133	370,000
Thallium					ND (10)
Tin					NA
Vanadium					ND (50)
Zinc		3.8 [ ]	6.4 [ ]	3.4	133
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	NA	3,350	3,920	3,635	14,000
Antimony	NA				ND (60)
Arsenic	NA				5
Barium	NA	137 [ ]	149 [ ]	143	290
Beryllium	NA				ND (5)
Cadmium	NA				ND (5)
Calcium	NA	11,200	11,800	11,500	24,000
Chromium	NA	6.1 [ ]	5.6 [ ]	5.9	21
Cobalt	NA				ND (50)
Copper	NA	20 [ ]	23 [ ]	21.5	27
Cyanide					NA
Iron	NA	5,660	5,750	5,705	14,000
Lead	NA				11
Magnesium	NA	1,580 [ ]	1,590 [ ]	1,585	ND (5000)
Manganese	NA	101	104	103	230
Mercury	NA				ND (0.2)
Nickel	NA	8.3 [ ]		4.2	ND (40)

MW-5
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

Sample Location:	REMEDIAL INVESTIGATION				Preliminary
Sample Number:	MW-5	MW-5	MW-5	MW-5	PRE-DESIGN
Sample Type:	GW005001	GW020001	GW020002	AVERAGE	MW-5
Date Sampled:	OFFSITE	OFFSITE	OFFSITE		1091-005
OTR Number:	12/5/84	9/9/86	9/9/86		OFFSITE
ITR Number:	E9862	EB198	EB199		11/2/91
	ME4435	MEB398	MEB399		
Potassium	NA	3,700 [ ], E	4,030 [ ], E	3,865	7,200
Selenium	NA				ND (5)
Silver	NA				ND (10)
Sodium	NA	353,000	376,000	364,500	360,000
Thallium	NA				ND (10)
Tin	NA				NA
Vanadium	NA	9.2 [ ]	7.3 [ ]	8.3	ND (50)
Zinc	NA	32	33	32.5	170
General Chemistry (units - mg/L)					
Acidity	NA	NR	NR		NA
Alkalinity-Total as CaCO3	NA	842	830	836	910
Alkalinity-pheno	NA	NA	NA		68
Ammonia, as N	NA	0.8	0.85	0.8	1.8
Biological Oxygen Demand	NA	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA	NA		20
Chloride	NA	12	13	12.5	20
Cyanide	NA	NA	NA		0.006
Nitrate (NO3)	NA	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA	NA		0.18
Phenols	NA	NA	NA		0.05
Phosphate (PO4)	NA	NA	NA		0.3
Sulfate	NA	8.8	10	9.4	29
Total Dissolved Solids	NA	938	926	932	1,100
Total Suspended Solids	NA	126	87	107	290
Field Parameters					
pH (standard units)	8.1	7.2	7.2	7.5	> 10
Specific Conductance (µmhos/cm)	1,950	1,500	1,500	1,650	5,100
Temperature (degrees F)	NA	58	52	55	54

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Organic Compounds (units - µg/L)				
Volatiles				
acetone	9	7 J, B	8.0	4 J
benzene	40 B		20.0	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone	30	16 B, J	23.0	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				2 J
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		6 J
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride		2 J, B	1.0	ND (10)
4-methyl-2-pentanone		2 J, B	1.0	ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene		5 J	2.5	ND (10)
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				ND (10)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate				ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether		NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate				ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene	14		7.0	ND (10)
naphthalene	6 J		3.0	ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol		3 J	1.5	ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT	0.11		0.06	ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene				ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	1,310	816	1,063	ND (200)
Antimony				ND (60)
Arsenic	15		7.5	ND (5)
Barium	52 [ ], R	22 [ ]	37.0	59
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	3,604 [ ], R	2,060 [ ]	2,832	400,000
Chromium	33 E		16.5	ND (10)
Cobalt				ND (50)
Copper	12 [ ]		6.0	ND (10)
Cyanide				NA
Iron	1,168 R, E	130	649	78
Lead				ND (5)
Magnesium	1,279 [ ],R,E	255 [ ]	767	15,000
Manganese	35		17.5	120
Mercury				ND (0.2)
Nickel	22 [ ],R		11.0	ND (40)
Potassium	5,027	5,470	5,249	10,000
Selenium	6		3.0	ND (5)
Silver				ND (10)
Sodium	284,800 E	355,000	319,900	270,000
Thallium				ND (10)
Tin				NA
Vanadium				ND (50)
Zinc		11 [ ]	5.5	98
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	14,000		710
Antimony	NA			ND (60)
Arsenic	NA	10 R		ND (5)
Barium	NA	248		69
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	11,200		360,000
Chromium	NA	19		ND (10)
Cobalt	NA	16 [ ]		ND (50)
Copper	NA	42		ND (10)
Cyanide				NA
Iron	NA	29,000		1,300
Lead	NA	18		ND (5)
Magnesium	NA	4,800 [ ]		15,000
Manganese	NA	529		140
Mercury	NA			ND (0.2)
Nickel	NA	36 [ ]		ND (40)

MW-6
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-6	MW-6	MW-6	MW-6
Sample Number:	GW006001	GW043001	AVERAGE	1091-006
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86		11/04/91
OTR Number:	E9863	EC324		
ITR Number:	ME4436	MEG766		
Potassium	NA	8,000		9,400
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	331,000		240,000
Thallium	NA			ND (10)
Tin	NA			NA
Vanadium	NA	26 [ ]		ND (50)
Zinc	NA	106		ND (20)
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	678		26
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	4.4		4.1
Biological Oxygen Demand	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA		37
Chloride	NA	94		130
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.01
Phosphate (PO4)	NA	NA		ND (0.1)
Sulfate	NA	49		950
Total Dissolved Solids	NA	1,100		2,200
Total Suspended Solids	NA	510		31
Field Parameters				
pH (standard units)	10.4	NA		8.23
Specific Conductance (µmhos/cm)	2,500	1,625	2,063	1,500
Temperature (degrees F)	NA	58		NA

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Organic Compounds (units - µg/L)				
Volatiles				
acetone		13 B, J	6.5	ND (10)
benzene	8 B		4.0	ND (10)
bromodichloromethane	NA	NA		ND (10)
bromoform	NA	NA		ND (10)
bromomethane	NA	NA		ND (10)
2-butanone		13 B	6.5	ND (10)
carbon disulfide				ND (10)
carbon tetrachloride	NA	NA		ND (10)
chlorobenzene				ND (10)
chloroethane	NA	NA		ND (10)
chloroform				ND (10)
chloromethane				ND (10)
dibromochloromethane	NA	NA		ND (10)
1,1-dichloroethane				ND (10)
1,2-dichloroethane				ND (10)
1,1-dichloroethene				ND (10)
1,2-dichloroethene	NA	NA		ND (10)
trans-1,2-dichloroethene				NA
1,2-dichloropropane	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA		ND (10)
ethylbenzene				ND (10)
2-hexanone				ND (10)
methylene chloride		1 J	0.5	ND (10)
4-methyl-2-pentanone				ND (10)
styrene				ND (10)
1,1,2,2-tetrachloroethane				ND (10)
tetrachloroethene				ND (10)
toluene		1 J	0.5	ND (10)
1,1,1-trichloroethane				ND (10)
1,1,2-trichloroethane				ND (10)
trichloroethene				ND (10)
vinyl acetate	NA	NA		ND (10)
vinyl chloride				ND (10)
xylenes (total)				ND (10)
Base/Neutral Compounds				
acenaphthene				ND (10)
acenaphthylene				ND (10)
aniline				ND (10)
anthracene				ND (10)
benzo(a)anthracene				ND (10)
benzo(a)pyrene				ND (10)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
benzo(b)fluoranthene				ND (10)
benzo(g,h,i)perylene				ND (10)
benzo(k)fluoranthene				ND (10)
benzoic acid				ND (10)
benzyl alcohol				ND (10)
bis(2-chloroethoxy)methane	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA		ND (10)
bis(2-chloroisopropyl)ether				ND (10)
bis(2-ethylhexyl)phthalate		6 J, B	3.0	ND (10)
butyl benzyl phthalate				ND (10)
4-bromophenyl phenyl ether	NA	NA		ND (10)
carbazole	NA	NA		ND (10)
4-chloroaniline	NA	NA		ND (10)
2-chloronaphthalene	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA		ND (10)
chrysene				ND (10)
dibenz(a,h)anthracene				ND (10)
dibenzofuran				ND (10)
1,2-dichlorobenzene				ND (10)
1,3-dichlorobenzene				ND (10)
1,4-dichlorobenzene				ND (10)
3-3'-dichlorobenzidine	NA	NA		ND (10)
diethylphthalate				ND (10)
dimethylphthalate				ND (10)
di-n-butylphthalate		4 J, B	2.0	ND (10)
di-n-octylphthalate				ND (10)
2,4-dinitrotoluene	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA		ND (10)
fluoranthene				ND (10)
fluorene				ND (10)
hexachlorobenzene				ND (10)
hexachlorobutadiene	NA	NA		ND (10)
hexachlorocyclopentadiene				ND (10)
hexachloroethane				ND (10)
indeno(1,2,3-cd)pyrene				ND (10)
isophorone				ND (10)
2-methylnaphthalene				ND (10)
naphthalene				ND (10)
2-nitroaniline	NA	NA		ND (50)
3-nitroaniline	NA	NA		ND (50)
4-nitroaniline	NA	NA		ND (50)
nitrobenzene	NA	NA		ND (10)
N-nitroso-dimethylamine				ND (10)
N-nitroso-di-n-propylamine	NA	NA		ND (10)
N-nitroso-diphenylamine(1)				ND (10)
phenanthrene				ND (10)
pyrene				ND (10)
1,2,4-trichlorobenzene				ND (10)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Acid Compounds				
4-chloro-3-methylphenol				ND (10)
2-chlorophenol	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA		ND (10)
2,4-dimethylphenol				ND (10)
2,4-dinitrophenol	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA		ND (50)
2-methylphenol				ND (10)
4-methylphenol				ND (10)
2-nitrophenol				ND (10)
4-nitrophenol				ND (50)
pentachlorophenol				ND (50)
phenol				ND (10)
2,4,5-trichlorophenol	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA		ND (10)
Pesticides				
Aldrin				ND (0.05)
alpha-BHC				ND (0.05)
beta-BHC				ND (0.05)
delta-BHC				ND (0.05)
gamma-BHC (Lindane)				ND (0.05)
alpha-Chlordane	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA		ND (0.5)
4,4'-DDD	NA	NA		ND (0.1)
4,4'-DDE				ND (0.1)
4,4'-DDT				ND (0.1)
Dieldrin				ND (0.1)
Endosulfan I				ND (0.05)
Endosulfan II	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA		ND (0.1)
Endrin				ND (0.1)
Endrin ketone	NA	NA		ND (0.1)
Heptachlor				ND (0.05)
Heptachlor epoxide				ND (0.05)
Methoxychlor	NA	NA		ND (0.5)
Toxaphene	13.40		6.7	ND (1.0)
PCBs				
Arochlor-1016	NA	NA		ND (0.5)
Arochlor-1221	NA	NA		ND (0.5)
Arochlor-1232				ND (0.5)
Arochlor-1242				ND (0.5)
Arochlor-1248				ND (0.5)
Arochlor-1254				ND (1.0)
Arochlor-1260	NA	NA		ND (1.0)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	302	200	251	460
Antimony				ND (60)
Arsenic	6 [ ]		3.0	ND (5)
Barium	50 [ ],R	30 [ ]	40	96
Beryllium				ND (5)
Cadmium				ND (5)
Calcium	14,080 R	3,080 [ ]	8,580	ND (5000)
Chromium				ND (10)
Cobalt				ND (50)
Copper		3.3 [ ]	1.7	18
Cyanide				NA
Iron	2,889 R, E	90 [ ]	1,490	740
Lead				ND (5)
Magnesium	4,874 [ ],R,E	1,050 [ ]	2,962	ND (5000)
Manganese	145	27	86	120
Mercury				ND (0.2)
Nickel				ND (40)
Potassium	15,197	19,200	17,199	ND (5000)
Selenium				ND (5)
Silver				ND (10)
Sodium	341,900 E	570,000	455,950	430,000
Thallium				ND (10)
Tin				NA
Vanadium				ND (50)
Zinc		8.6 [ ]	4.3	570
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	NA	736		1,100
Antimony	NA			ND (60)
Arsenic	NA			ND (5)
Barium	NA	45 [ ]		110
Beryllium	NA			ND (5)
Cadmium	NA			ND (5)
Calcium	NA	5,610		7,400
Chromium	NA			ND (10)
Cobalt	NA			ND (50)
Copper	NA	16 [ ]		18
Cyanide				NA
Iron	NA	1,180		950
Lead	NA			ND (5)
Magnesium	NA	1,230 [ ]		ND (5000)
Manganese	NA	63		180
Mercury	NA	0.3		ND (0.2)
Nickel	NA			ND (40)

MW-8
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION			Preliminary PRE-DESIGN
Sample Location:	MW-8	MW-8	MW-8	MW-8
Sample Number:	GW008001	GW022001	AVERAGE	1091-008
Sample Type:	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/09/86		11/04/91
OTR Number:	E9865	EC301		
ITR Number:	ME4438	MEG743		
Potassium	NA	17,700 E		ND (5000)
Selenium	NA			ND (5)
Silver	NA			ND (10)
Sodium	NA	513,000		470,000
Thallium	NA			ND (10)
Tin	NA	29 [ ]		NA
Vanadium	NA			ND (50)
Zinc	NA	37		530
General Chemistry (units - mg/L)				
Acidity	NA	NR		NA
Alkalinity-Total as CaCO3	NA	1,080		1,400
Alkalinity-pheno	NA	NA		ND (20)
Ammonia, as N	NA	1.2		1.6
Biological Oxygen Demand	NA	NA		65
Chemical Oxygen Demand	NA	NA		7
Chloride	NA	42		53
Cyanide				ND (0.005)
Nitrate (NO3)	NA	NA		ND (0.1)
Nitrite (NO2)	NA	NA		ND (0.04)
Phenols	NA	NA		0.01
Phosphate (PO4)	NA	NA		0.2
Sulfate	NA	1,020		16
Total Dissolved Solids	NA	1,350		460
Total Suspended Solids	NA	47		10
Field Parameters				
pH (standard units)	9.3	6.0	7.7	8.12
Specific Conductance (µmhos/cm)	3,000	2,000	2,500	1,600
Temperature (degrees F)	NA	64		50

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Organic Compounds (units - µg/L)					
Volatiles					
acetone			11 B	3.7	
benzene	4 J, B	4 J, B	1 J	3.0	
bromodichloromethane	NA	NA	NA		
bromoform	NA	NA	NA		
bromomethane	NA	NA	NA		
2-butanone			13 B	4.3	
carbon disulfide					
carbon tetrachloride	NA	NA	NA		
chlorobenzene					
chloroethane	NA	NA	NA		
chloroform					
chloromethane					
dibromochloromethane	NA	NA	NA		
1,1-dichloroethane					
1,2-dichloroethane					
1,1-dichloroethene			7	2.3	
1,2-dichloroethene	NA	NA	NA		
trans-1,2-dichloroethene	46	35	32	37.7	
1,2-dichloropropane	NA	NA	NA		
cis-1,3-dichloropropene	NA	NA	NA		
trans-1,3-dichloropropene	NA	NA	NA		
ethylbenzene					
2-hexanone					
methylene chloride			1 J	0.3	
4-methyl-2-pentanone					
styrene					
1,1,2,2-tetrachloroethane					
tetrachloroethene					
toluene					
1,1,1-trichloroethane			3 J	1.0	
1,1,2-trichloroethane					
trichloroethene	15	12	46	24.3	
vinyl acetate	NA	NA	NA		
vinyl chloride					
xylenes (total)					
Base/Neutral Compounds					
acenaphthene					
acenaphthylene					
aniline					
anthracene					
benzo(a)anthracene					
benzo(a)pyrene					

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
benzo(b)fluoranthene					
benzo(g,h,i)perylene					
benzo(k)fluoranthene					
benzoic acid					
benzyl alcohol					
bis(2-chloroethoxy)methane	NA	NA	NA		
bis(2-chloroethyl)ether	NA	NA	NA		
bis(2-chloroisopropyl)ether					
bis(2-ethylhexyl)phthalate					
butyl benzyl phthalate					
4-bromophenyl phenyl ether	NA	NA	NA		
carbazole	NA	NA	NA		
4-chloroaniline	NA	NA	NA		
2-chloronaphthalene	NA	NA	NA		
4-chlorophenyl phenyl ether	NA	NA	NA		
chrysene					
dibenz(a,h)anthracene					
dibenzofuran					
1,2-dichlorobenzene					
1,3-dichlorobenzene					
1,4-dichlorobenzene					
3-3'-dichlorobenzidine	NA	NA	NA		
diethylphthalate					
dimethylphthalate					
di-n-butylphthalate					
di-n-octylphthalate					
2,4-dinitrotoluene	NA	NA	NA		
2,6-dinitrotoluene	NA	NA	NA		
fluoranthene					
fluorene					
hexachlorobenzene					
hexachlorobutadiene	NA	NA	NA		
hexachlorocyclopentadiene					
hexachloroethane					
indeno(1,2,3-cd)pyrene					
isophorone	13	8 J		7.00	
2-methylnaphthalene					
naphthalene					
2-nitroaniline	NA	NA	NA		
3-nitroaniline	NA	NA	NA		
4-nitroaniline	NA	NA	NA		
nitrobenzene	NA	NA	NA		
N-nitroso-dimethylamine					
N-nitroso-di-n-propylamine	NA	NA	NA		
N-nitroso-diphenylamine(1)					
phenanthrene					
pyrene					
1,2,4-trichlorobenzene					

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Acid Compounds					
4-chloro-3-methylphenol					
2-chlorophenol	NA	NA	NA		
2,4-dichlorophenol	NA	NA	NA		
2,4-dimethylphenol					
2,4-dinitrophenol					
4,6-dinitro-2-methylphenol					
2-methylphenol					
4-methylphenol					
2-nitrophenol					
4-nitrophenol	NA	NA	NA		
pentachlorophenol	NA	NA	NA		
phenol					
2,4,5-trichlorophenol	NA	NA	NA		
2,4,6-trichlorophenol	NA	NA	NA		
Pesticides					
Aldrin					
alpha-BHC		0.07		0.02	
beta-BHC					
delta-BHC					
gamma-BHC (Lindane)					
alpha-Chlordane	NA	NA	NA		
gamma-Chlordane	NA	NA	NA		
4,4'-DDD	NA	NA	NA		
4,4'-DDE					
4,4'-DDT	0.20	0.16		0.12	
Dieldrin					
Endosulfan I					
Endosulfan II	NA	NA	NA		
Endosulfan sulfate	NA	NA	NA		
Endrin					
Endrin ketone	NA	NA	NA		
Heptachlor					
Heptachlor epoxide					
Methoxychlor	NA	NA	NA		
Toxaphene					
PCBs					
Arochlor-1016	NA	NA	NA		
Arochlor-1221	NA	NA	NA		
Arochlor-1232					
Arochlor-1242					
Arochlor-1248					
Arochlor-1254					
Arochlor-1260	NA	NA	NA		

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	NA	NA			
Antimony	NA	NA			
Arsenic	NA	NA			
Barium	NA	NA	24 [ ]		
Beryllium	NA	NA			
Cadmium	NA	NA			
Calcium	NA	NA	268,000		
Chromium	NA	NA			
Cobalt	NA	NA			
Copper	NA	NA			
Cyanide	NA	NA			
Iron	NA	NA	402		
Lead	NA	NA			
Magnesium	NA	NA	127,000		
Manganese	NA	NA	3,690		
Mercury	NA	NA			
Nickel	NA	NA			
Potassium	NA	NA	15,600		
Selenium	NA	NA			
Silver	NA	NA			
Sodium	NA	NA	369,000 E		
Thallium	NA	NA			
Tin	NA	NA			
Vanadium	NA	NA			
Zinc	NA	NA	6.1 [ ]		
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	51 [ ]	76 [ ]	356	161	
Antimony					
Arsenic		8 [ ]		2.7	
Barium			33 [ ]	11.0	
Beryllium					
Cadmium					
Calcium	111,200 R	117,100 R	270,000	166,100	
Chromium	487 E			162	
Cobalt					
Copper			13 [ ]	4.3	
Cyanide		109	35	48.0	
Iron	1,746 R, E	176 R, E	2,790	1,571	
Lead					
Magnesium	37,450 R, E	40,490 R, E	129,000	68,980	
Manganese	898	878	3,680	1,819	
Mercury					
Nickel	254 R			84.7	

MW-13
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13
Sample Number:	GW013001	GW013002	GW044001	AVERAGE	1091-013
Sample Type:	ONSITE	ONSITE	ONSITE		ONSITE
Date Sampled:	12/07/84	12/07/84	09/12/86		11/02/91
OTR Number:	E9849	E9867	EC325		WELL DRY
ITR Number:	ME4422	ME4440	MEG767		
Potassium	13,504	14,125	16,400	14,676	
Selenium					
Silver					
Sodium	429,700 E	425,600 E	377,000	410,767	
Thallium					
Tin					
Vanadium	23 [ ]	20 [ ]		14.3	
Zinc			22	7.3	
General Chemistry (units - mg/L)					
Acidity	NA	NA	NR		
Alkalinity-Total as CaCO3	NA	NA	646		
Alkalinity-pheno	NA	NA	NA		
Ammonia, as N	NA	NA	1.4		
Biological Oxygen Demand	NA	NA	NA		
Chemical Oxygen Demand	NA	NA	NA		
Chloride	NA	NA	122		
Cyanide	NA	NA	NA		
Nitrate (NO3)	NA	NA			
Nitrite (NO2)	NA	NA			
Phenols	NA	NA	NA		
Phosphate (PO4)	NA	NA	NA		
Sulfate	NA	NA	950		
Total Dissolved Solids	NA	NA	2,690		
Total Suspended Solids	NA	NA	27		
Field Parameters					
pH (standard units)	8.2	8.1	NA	8.15	
Specific Conductance (µmhos/cm)	4,000	4,200	4,300	4,167	
Temperature (degrees F)	NA	NA	58		

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Organic Compounds (units - µg/L)					
Volatiles					
acetone	638	14 B, J	19 B, J	224	ND (10)
benzene	3 J, B			1.0	ND (10)
bromodichloromethane	NA	NA	NA		ND (10)
bromoform	NA	NA	NA		ND (10)
bromomethane	NA	NA	NA		ND (10)
2-butanone	206	19 B, J	19 B, J	81.3	ND (10)
carbon disulfide					ND (10)
carbon tetrachloride	NA	NA	NA		ND (10)
chlorobenzene					ND (10)
chloroethane	NA	NA	NA		ND (10)
chloroform					ND (10)
chloromethane					ND (10)
dibromochloromethane	NA	NA	NA		ND (10)
1,1-dichloroethane					ND (10)
1,2-dichloroethane					ND (10)
1,1-dichloroethene					ND (10)
1,2-dichloroethene	NA	NA	NA		ND (10)
trans-1,2-dichloroethene					NA
1,2-dichloropropane	NA	NA	NA		ND (10)
cis-1,3-dichloropropene	NA	NA	NA		ND (10)
trans-1,3-dichloropropene	NA	NA	NA		ND (10)
ethylbenzene					ND (10)
2-hexanone		6 J, B		2.0	ND (10)
methylene chloride		5 B, J	2 J, B	2.3	ND (10)
4-methyl-2-pentanone		2 J, B		0.7	ND (10)
styrene					ND (10)
1,1,2,2-tetrachloroethane					ND (10)
tetrachloroethene					ND (10)
toluene		5 J	4 J	3.0	ND (10)
1,1,1-trichloroethane					ND (10)
1,1,2-trichloroethane					ND (10)
trichloroethene					ND (10)
vinyl acetate	NA	NA	NA		ND (10)
vinyl chloride					ND (10)
xylenes (total)		1 J		0.3	ND (10)
Base/Neutral Compounds					
acenaphthene					ND (10)
acenaphthylene					ND (10)
aniline					ND (10)
anthracene					ND (10)
benzo(a)anthracene					ND (10)
benzo(a)pyrene					ND (10)

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
benzo(b)fluoranthene					ND (10)
benzo(g,h,i)perylene					ND (10)
benzo(k)fluoranthene					ND (10)
benzoic acid					ND (10)
benzyl alcohol					ND (10)
bis(2-chloroethoxy)methane	NA	NA	NA		ND (10)
bis(2-chloroethyl)ether	NA	NA	NA		ND (10)
bis(2-chloroisopropyl)ether					ND (10)
bis(2-ethylhexyl)phthalate					5 J
butyl benzyl phthalate					ND (10)
4-bromophenyl phenyl ether	NA	NA	NA		ND (10)
carbazole	NA	NA	NA		ND (10)
4-chloroaniline	NA	NA	NA		ND (10)
2-chloronaphthalene	NA	NA	NA		ND (10)
4-chlorophenyl phenyl ether	NA	NA	NA		ND (10)
chrysene					ND (10)
dibenz(a,h)anthracene					ND (10)
dibenzofuran					ND (10)
1,2-dichlorobenzene					ND (10)
1,3-dichlorobenzene					ND (10)
1,4-dichlorobenzene					ND (10)
3-3'-dichlorobenzidine	NA	NA	NA		ND (10)
diethylphthalate					ND (10)
dimethylphthalate					ND (10)
di-n-butylphthalate					ND (10)
di-n-octylphthalate					ND (10)
2,4-dinitrotoluene	NA	NA	NA		ND (10)
2,6-dinitrotoluene	NA	NA	NA		ND (10)
fluoranthene					ND (10)
fluorene					ND (10)
hexachlorobenzene					ND (10)
hexachlorobutadiene	NA	NA	NA		ND (10)
hexachlorocyclopentadiene					ND (10)
hexachloroethane					ND (10)
indeno(1,2,3-cd)pyrene					ND (10)
isophorone					ND (10)
2-methylnaphthalene					ND (10)
naphthalene					ND (10)
2-nitroaniline	NA	NA	NA		ND (50)
3-nitroaniline	NA	NA	NA		ND (50)
4-nitroaniline	NA	NA	NA		ND (50)
nitrobenzene	NA	NA	NA		ND (10)
N-nitroso-dimethylamine					ND (10)
N-nitroso-di-n-propylamine	NA	NA	NA		ND (10)
N-nitroso-diphenylamine(1)					ND (10)
phenanthrene					ND (10)
pyrene					ND (10)
1,2,4-trichlorobenzene					ND (10)

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Acid Compounds					
4-chloro-3-methylphenol					ND (10)
2-chlorophenol	NA	NA	NA		ND (10)
2,4-dichlorophenol	NA	NA	NA		ND (10)
2,4-dimethylphenol					ND (10)
2,4-dinitrophenol	NA	NA	NA		ND (50)
4,6-dinitro-2-methylphenol	NA	NA	NA		ND (50)
2-methylphenol					ND (10)
4-methylphenol					ND (10)
2-nitrophenol					ND (10)
4-nitrophenol					ND (50)
pentachlorophenol					ND (50)
phenol		3 J	3 J	2.0	ND (10)
2,4,5-trichlorophenol	NA	NA	NA		ND (50)
2,4,6-trichlorophenol	NA	NA	NA		ND (10)
Pesticides					
Aldrin					ND (0.05)
alpha-BHC					ND (0.05)
beta-BHC					ND (0.05)
delta-BHC					ND (0.05)
gamma-BHC (Lindane)					ND (0.05)
alpha-Chlordane	NA	NA	NA		ND (0.5)
gamma-Chlordane	NA	NA	NA		ND (0.5)
4,4'-DDD	NA	NA	NA		ND (0.1)
4,4'-DDE					ND (0.1)
4,4'-DDT	0.14				ND (0.1)
Dieldrin					ND (0.1)
Endosulfan I					ND (0.05)
Endosulfan II	NA	NA	NA		ND (0.1)
Endosulfan sulfate	NA	NA	NA		ND (0.1)
Endrin					ND (0.1)
Endrin ketone	NA	NA	NA		ND (0.1)
Heptachlor					ND (0.05)
Heptachlor epoxide					ND (0.05)
Methoxychlor	NA	NA	NA		ND (0.5)
Toxaphene					ND (1.0)
PCBs					
Arochlor-1016	NA	NA	NA		ND (0.5)
Arochlor-1221	NA	NA	NA		ND (0.5)
Arochlor-1232					ND (0.5)
Arochlor-1242					ND (0.5)
Arochlor-1248					ND (0.5)
Arochlor-1254					ND (1.0)
Arochlor-1260	NA	NA	NA		ND (1.0)

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Inorganic Compounds - Filtered (units - µg/L)					
Aluminum	161 [ ]	1,410	257	609	18,000
Antimony					ND (60)
Arsenic	9 [ ]			3.0	6
Barium		84 [ ]	80 [ ]	55	330
Beryllium					ND (5)
Cadmium					ND (5)
Calcium	5,829 R	3,850 [ ]	3,310 [ ]	4,330	10,000
Chromium					27
Cobalt					ND (50)
Copper					22
Cyanide					NA
Iron	198 R, E	371	72 [ ]	214	9,100
Lead					6
Magnesium	4,477 [ ],R,E	1,810 [ ]	1,620 [ ]	2,636	ND (5000)
Manganese	11 [ ]	50	39	33	460
Mercury					ND (0.2)
Nickel					ND (40)
Potassium	45,580	10,400	10,200	22,060	10,000
Selenium					ND (5)
Silver					ND (10)
Sodium	415,100 E	609,000	615,000	546,367	580,000
Thallium					ND (10)
Tin					NA
Vanadium					ND (50)
Zinc		40	21	20	710
Inorganic Compounds - Unfiltered (units - µg/L)					
Aluminum	NA	44,800	37,500	41,150	35,000
Antimony	NA				ND (60)
Arsenic	NA	18 R	17 R	18	8
Barium	NA	1,720	1,610	1,665	520
Beryllium	NA	3.1 [ ]	2.9 [ ]	3.0	ND (5)
Cadmium	NA				5
Calcium	NA	17,800	17,100	17,450	20,000
Chromium	NA	68	60	64	52
Cobalt	NA	52	50 [ ]	51	ND (50)
Copper	NA	91	90	91	56
Cyanide					NA
Iron	NA	101,000	90,800	95,900	56,000
Lead	NA	37	32	34.5	22
Magnesium	NA	19,300	17,400	18,350	12,000
Manganese	NA	2,860	2,630	2,745	2,700
Mercury	NA				ND (0.2)
Nickel	NA	98	93	96	56

MW-14
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INVESTIGATION				Preliminary PRE-DESIGN
Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Number:	GW014001	GW040001	GW040002	AVERAGE	1091-014
Sample Type:	OFFSITE	OFFSITE	OFFSITE		OFFSITE
Date Sampled:	12/06/84	09/12/86	09/12/86		11/04/91
OTR Number:	E9859	EC320	EC321		
ITR Number:	ME4432	MEG762	MEG763		
Potassium	NA	16,400	15,000	15,700	14,000
Selenium	NA				ND (5)
Silver	NA				ND (10)
Sodium	NA	565,000	550,000	557,500	570,000
Thallium	NA				ND (10)
Tin	NA				NA
Vanadium	NA	75	64	70	56
Zinc	NA	292	264	278	570
General Chemistry (units - mg/L)					
Acidity	NA	NR	NR		NA
Alkalinity-Total as CaCO3	NA	1,220	1,220	1,220	1,600
Alkalinity-pheno	NA	NA	NA		.50
Ammonia, as N	NA	1.3	1.3	1.3	2.6
Biological Oxygen Demand	NA	NA	NA		ND (2)
Chemical Oxygen Demand	NA	NA	NA		20
Chloride	NA	179	166	173	150
Cyanide					ND (0.005)
Nitrate (NO3)	NA	NA	NA		0.3
Nitrite (NO2)	NA	NA	NA		0.44
Phenols	NA	NA	NA		ND (0.01)
Phosphate (PO4)	NA	NA	NA		0.2
Sulfate	NA	39	42	40.5	440
Total Dissolved Solids	NA	1,820	1,630	1,725	1,900
Total Suspended Solids	NA	2,810	3,340	3,075	1,200
Field Parameters					
pH (standard units)	9.4	NA	NA		8.51
Specific Conductance (µmhos/cm)	2,500	2,500	2,500	2,500	1,100
Temperature (degrees F)	NA	58	58		49

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Organic Compounds (units - µg/L)				
Volatiles				
acetone	18 B, J	14	14	14
benzene		ND (10)	ND (10)	ND (10)
bromodichloromethane	NA	ND (10)	ND (10)	ND (10)
bromoform	NA	ND (10)	ND (10)	ND (10)
bromomethane	NA	ND (10)	ND (10)	ND (10)
2-butanone	15 B, J	3 J	3 J	3 J
carbon disulfide		ND (10)	ND (10)	ND (10)
carbon tetrachloride	NA	ND (10)	ND (10)	ND (10)
chlorobenzene		ND (10)	ND (10)	ND (10)
chloroethane	NA	ND (10)	ND (10)	ND (10)
chloroform		ND (10)	ND (10)	ND (10)
chloromethane		ND (10)	ND (10)	ND (10)
dibromochloromethane	NA	ND (10)	ND (10)	ND (10)
1,1-dichloroethane		3 J	ND (10)	1.5 J
1,2-dichloroethane		91	15	53
1,1-dichloroethene		ND (10)	ND (10)	ND (10)
1,2-dichloroethene	NA	ND (10)	ND (10)	ND (10)
trans-1,2-dichloroethene		NA	NA	NA
1,2-dichloropropane	NA	ND (10)	ND (10)	ND (10)
cis-1,3-dichloropropene	NA	ND (10)	ND (10)	ND (10)
trans-1,3-dichloropropene	NA	ND (10)	ND (10)	ND (10)
ethylbenzene		ND (10)	ND (10)	ND (10)
2-hexanone		ND (10)	ND (10)	ND (10)
methylene chloride	1 J, B	ND (10)	ND (10)	ND (10)
4-methyl-2-pentanone		ND (10)	ND (10)	ND (10)
styrene		ND (10)	ND (10)	ND (10)
1,1,2,2-tetrachloroethane		ND (10)	ND (10)	ND (10)
tetrachloroethene		ND (10)	ND (10)	ND (10)
toluene	1 J	ND (10)	ND (10)	ND (10)
1,1,1-trichloroethane		ND (10)	ND (10)	ND (10)
1,1,2-trichloroethane		ND (10)	ND (10)	ND (10)
trichloroethene		ND (10)	ND (10)	ND (10)
vinyl acetate	NA	ND (10)	ND (10)	ND (10)
vinyl chloride		ND (10)	ND (10)	ND (10)
xylenes (total)		3 J	3 J	3 J
Base/Neutral Compounds				
acenaphthene		ND (10)	ND (10)	ND (10)
acenaphthylene		ND (10)	ND (10)	ND (10)
aniline		ND (10)	ND (10)	ND (10)
anthracene		ND (10)	ND (10)	ND (10)
benzo(a)anthracene		ND (10)	ND (10)	ND (10)
benzo(a)pyrene		ND (10)	ND (10)	ND (10)
benzo(b)fluoranthene		ND (10)	ND (10)	ND (10)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
benzo(g,h,i)perylene		ND (10)	ND (10)	ND (10)
benzo(k)fluoranthene		ND (10)	ND (10)	ND (10)
benzoic acid		ND (10)	ND (10)	ND (10)
benzyl alcohol		ND (10)	ND (10)	ND (10)
bis(2-chloroethoxy)methane	NA	ND (10)	ND (10)	ND (10)
bis(2-chloroethyl)ether	NA	ND (10)	ND (10)	ND (10)
bis(2-chloroisopropyl)ether		ND (10)	ND (10)	ND (10)
bis(2-ethylhexyl)phthalate	4 J	ND (10)	ND (10)	ND (10)
butyl benzyl phthalate		ND (10)	ND (10)	ND (10)
4-bromophenyl phenyl ether	NA	ND (10)	ND (10)	ND (10)
carbazole	NA	ND (10)	ND (10)	ND (10)
4-chloroaniline	NA	ND (10)	ND (10)	ND (10)
2-chloronaphthalene	NA	ND (10)	ND (10)	ND (10)
4-chlorophenyl phenyl ether	NA	ND (10)	ND (10)	ND (10)
chrysene		ND (10)	ND (10)	ND (10)
dibenz(a,h)anthracene		ND (10)	ND (10)	ND (10)
dibenzofuran		ND (10)	ND (10)	ND (10)
1,2-dichlorobenzene		ND (10)	ND (10)	ND (10)
1,3-dichlorobenzene		ND (10)	ND (10)	ND (10)
1,4-dichlorobenzene		ND (10)	ND (10)	ND (10)
3-3'-dichlorobenzidine	NA	ND (10)	ND (10)	ND (10)
diethylphthalate		ND (10)	ND (10)	ND (10)
dimethylphthalate		ND (10)	ND (10)	ND (10)
di-n-butylphthalate		ND (10)	ND (10)	ND (10)
di-n-octylphthalate		ND (10)	ND (10)	ND (10)
2,4-dinitrotoluene	NA	ND (10)	ND (10)	ND (10)
2,6-dinitrotoluene	NA	ND (10)	ND (10)	ND (10)
fluoranthene		ND (10)	ND (10)	ND (10)
fluorene		ND (10)	ND (10)	ND (10)
hexachlorobenzene		ND (10)	ND (10)	ND (10)
hexachlorobutadiene	NA	ND (10)	ND (10)	ND (10)
hexachlorocyclopentadiene		ND (10)	ND (10)	ND (10)
hexachloroethane		ND (10)	ND (10)	ND (10)
indeno(1,2,3-cd)pyrene		ND (10)	ND (10)	ND (10)
isophorone		ND (10)	ND (10)	ND (10)
2-methylnaphthalene		ND (10)	ND (10)	ND (10)
naphthalene		ND (10)	ND (10)	ND (10)
2-nitroaniline	NA	ND (50)	ND (50)	ND (50)
3-nitroaniline	NA	ND (50)	ND (50)	ND (50)
4-nitroaniline	NA	ND (50)	ND (50)	ND (50)
nitrobenzene	NA	ND (10)	ND (10)	ND (10)
N-nitroso-dimethylamine		ND (10)	ND (10)	ND (10)
N-nitroso-di-n-propylamine	NA	ND (10)	ND (10)	ND (10)
N-nitroso-diphenylamine(1)		ND (10)	ND (10)	ND (10)
phenanthrene		ND (10)	ND (10)	ND (10)
pyrene		ND (10)	ND (10)	ND (10)
1,2,4-trichlorobenzene		ND (10)	ND (10)	ND (10)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

		Preliminary		
	REMEDIAL INV.	PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Acid Compounds				
4-chloro-3-methylphenol		ND (10)	ND (10)	ND (10)
2-chlorophenol	NA	ND (10)	ND (10)	ND (10)
2,4-dichlorophenol	NA	ND (10)	ND (10)	ND (10)
2,4-dimethylphenol		ND (10)	ND (10)	ND (10)
2,4-dinitrophenol	NA	ND (50)	ND (50)	ND (50)
4,6-dinitro-2-methylphenol	NA	ND (50)	ND (50)	ND (50)
2-methylphenol		ND (10)	ND (10)	ND (10)
4-methylphenol		ND (10)	ND (10)	ND (10)
2-nitrophenol		ND (10)	ND (10)	ND (10)
4-nitrophenol		ND (50)	ND (50)	ND (50)
pentachlorophenol		ND (50)	ND (50)	ND (50)
phenol	6 J	ND (10)	ND (10)	ND (10)
2,4,5-trichlorophenol	NA	ND (50)	ND (50)	ND (50)
2,4,6-trichlorophenol	NA	ND (10)	ND (10)	ND (10)
Pesticides				
Aldrin		ND (0.05)	ND (0.05)	ND (0.05)
alpha-BHC		ND (0.05)	ND (0.05)	ND (0.05)
beta-BHC		ND (0.05)	ND (0.05)	ND (0.05)
delta-BHC		ND (0.05)	ND (0.05)	ND (0.05)
gamma-BHC (Lindane)		ND (0.05)	ND (0.05)	ND (0.05)
alpha-Chlordane	NA	ND (0.5)	ND (0.5)	ND (0.5)
gamma-Chlordane	NA	ND (0.5)	ND (0.5)	ND (0.5)
4,4'-DDD	NA	ND (0.1)	ND (0.1)	ND (0.1)
4,4'-DDE		ND (0.1)	ND (0.1)	ND (0.1)
4,4'-DDT		ND (0.1)	ND (0.1)	ND (0.1)
Dieldrin		ND (0.1)	ND (0.1)	ND (0.1)
Endosulfan I		ND (0.05)	ND (0.05)	ND (0.05)
Endosulfan II	NA	ND (0.1)	ND (0.1)	ND (0.1)
Endosulfan sulfate	NA	ND (0.1)	ND (0.1)	ND (0.1)
Endrin		ND (0.1)	ND (0.1)	ND (0.1)
Endrin ketone	NA	ND (0.1)	ND (0.1)	ND (0.1)
Heptachlor		ND (0.05)	ND (0.05)	ND (0.05)
Heptachlor epoxide		ND (0.05)	ND (0.05)	ND (0.05)
Methoxychlor	NA	ND (0.5)	ND (0.5)	ND (0.5)
Toxaphene		ND (1.0)	ND (1.0)	ND (1.0)
PCBs				
Arochlor-1016	NA	ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1221	NA	ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1232		ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1242		ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1248		ND (0.5)	ND (0.5)	ND (0.5)
Arochlor-1254		ND (1.0)	ND (1.0)	ND (1.0)
Arochlor-1260	NA	ND (1.0)	ND (1.0)	ND (1.0)

GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Inorganic Compounds - Filtered (units - µg/L)				
Aluminum	2,580	2,600	2,500	2,550
Antimony		ND (60)	ND (60)	ND (60)
Arsenic		13	13	13
Barium	4.8 [ ]	47	56	51.5
Beryllium		ND (5)	ND (5)	ND (5)
Cadmium		ND (5)	ND (5)	ND (5)
Calcium	845 [ ]	13,000	16,000	14,500
Chromium		ND (10)	ND (10)	ND (10)
Cobalt		ND (50)	ND (50)	ND (50)
Copper		ND (10)	ND (10)	ND (10)
Cyanide		NA	NA	NA
Iron	48.[ ]	1,800	1,800	1,800
Lead		ND (5)	ND (5)	ND (5)
Magnesium	102 [ ]	ND (5,000)	ND (5,000)	ND (5,000)
Manganese		24	43	33.5
Mercury		ND (0.2)	ND (0.2)	ND (0.2)
Nickel		ND (40)	ND (40)	ND (40)
Potassium	5,870	ND (5,000)	ND (5,000)	ND (5,000)
Selenium		ND (5)	ND (5)	ND (5)
Silver		ND (10)	ND (10)	ND (10)
Sodium	462,000	460,000	440,000	450,000
Thallium		ND (10)	ND (10)	ND (10)
Tin		NA	NA	NA
Vanadium	13 [ ]	ND (50)	ND (50)	ND (50)
Zinc	13 [ ]	92	90	91
Inorganic Compounds - Unfiltered (units - µg/L)				
Aluminum	2,600	2,800	2,300	2,550
Antimony		ND (60)	ND (60)	ND (60)
Arsenic		13	11	12
Barium	12 [ ]	50	49	49.5
Beryllium		ND (5)	ND (5)	ND (5)
Cadmium		ND (5)	ND (5)	ND (5)
Calcium	7,700	20,000	21,000	20,500
Chromium		ND (10)	ND (10)	ND (10)
Cobalt		ND (50)	ND (50)	ND (50)
Copper	20 [ ]	ND (10)	ND (10)	ND (10)
Cyanide		NA	NA	NA
Iron	160	2,400	1,700	2,050
Lead		ND (5)	ND (5)	ND (5)
Magnesium	94 [ ]	ND (5,000)	ND (5,000)	ND (5,000)
Manganese		39	28	33.5
Mercury		ND (0.2)	ND (0.2)	ND (0.2)
Nickel		ND (40)	ND (40)	ND (40)

MW-26
GROUNDWATER DATA
SUMMIT NATIONAL SUPERFUND SITE
PORTAGE COUNTY, OHIO

	REMEDIAL INV.	Preliminary PRE-DESIGN		
Sample Location:	MW-26	MW-26	MW-26 (Dup.)	MW-26
Sample Number:	GW038001	1091-026	1091-030	AVERAGE
Sample Type:	ONSITE	ONSITE	ONSITE	
Date Sampled:	09/12/86	11/01/91	11/01/91	
OTR Number:	EC318			
ITR Number:	MEG760			
Potassium	5,850	ND (5,000)	ND (5,000)	ND (5,000)
Selenium		ND (5)	ND (5)	ND (5)
Silver		ND (10)	ND (10)	ND (10)
Sodium	462,000	420,000	410,000	415,000
Thallium		ND (10)	ND (10)	ND (10)
Tin		NA	NA	NA
Vanadium	14 [ ]	ND (50)	ND (50)	ND (50)
Zinc	24	ND (20)	120	60
General Chemistry (units - mg/L)				
Acidity	NR	NA	NA	NA
Alkalinity-Total as CaCO3	991	840	850	845
Alkalinity-pheno	NA	210	280	245
Ammonia, as N	2.5	6.4	2.9	4.7
Biological Oxygen Demand	NA	170	130	150
Chemical Oxygen Demand	NA	ND (5)	13	6.5
Chloride	61	71	68	69.5
Cyanide		ND (0.005)	ND (0.005)	ND (0.005)
Nitrate (NO3)	NA	0.1	ND (0.1)	0.05
Nitrite (NO2)	NA	ND (0.04)	ND (0.04)	ND (0.04)
Phenols	NA	0.02	0.02	0.02
Phosphate (PO4)	NA	1.1	0.1	0.6
Sulfate	75	110	43	76.5
Total Dissolved Solids	1,150	1,200	1,200	1,200
Total Suspended Solids	31	78	120	99
Field Parameters				
pH (standard units)	NA	> 10	NA	
Specific Conductance (µmhos/cm)	4,600	1,300	NA	
Temperature (degrees F)	60	52	NA	

TECHNICAL MEMORANDUM NO. 7

BEDROCK PROFILING

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 7

BEDROCK PROFILING
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

A. INVESTIGATION METHODS

A subsurface soil boring program at the Summit National Superfund Site (Site) was performed during the period of November 8 to 13, 1991, in accordance with the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Design Work Plan (RD Work Plan) for the Site. The RD Work Plan required the subsurface soil boring program to be conducted along the proposed alignment of the pipe and media drain, where soil borings were to be completed at a spacing of approximately 100 feet to the top of bedrock to determine the bedrock profile along the proposed pipe and media drain alignment and soil samples were to be collected for grain size analyses. Data obtained from the soil boring program then would be utilized, along with existing data, to determine the soil types and bedrock profile along the proposed pipe and media drain alignment.

Environmental Design Group (EDG) of Akron, Ohio was retained under the direction of Conestoga-Rovers & Associates (CRA) to locate the proposed soil boring locations. During the period of October 8 to 29, 1991, EDG located stakes at 100-foot intervals along the centerline of the proposed pipe and media drain. Boyles Brothers Drilling Company of Reading, Pennsylvania was retained under the direction of CRA to conduct the soil boring program. The boring program, which was conducted during the period of November 8 to 13, 1991, included the completion of 15 soil borings. The soil borings were completed using 4 1/4-inch inside diameter hollow stem augers, and soil samples were collected using 2-inch diameter split-spoon samples. In most instances, it was necessary to conduct the soil borings at off sets from the surveyed locations due to topographic restrictions. The actual locations of the completed soil borings were therefore resurveyed on November 14, 1991 by EDG and are shown on Plan TM7-1.

In accordance with the RD Work Plan, the back of the drill rig, auger flights, and other ancillary drilling tools were steam cleaned prior to the start of the soil boring program and prior to the drill rig leaving the Site to conduct the soil borings along the southern perimeter ditch.

Soil samples generally were collected at 5-foot depth intervals with a 2-inch diameter split-spoon sampler using standard penetration test methods. Select soil samples were removed from the split-spoon sampler and placed in a glass

jar for grain size analysis. Auger cuttings were monitored at 5-foot depth intervals for volatile organics using a photoionization detector (PID). Top of bedrock was confirmed by auger refusal and/or the presence of rock in the split-spoon sampler. After the top of bedrock was confirmed, the auger flights were removed from the borehole and auger cuttings were used to backfill the borehole to one foot below surface grade. The last foot of borehole was backfilled with a cement/bentonite mixture. Remaining auger cuttings were placed in plastic bags and transported to the on-Site sediment stockpile.

B. RESULTS OF THE SOIL BORING PROGRAM

Table TM7-1 provides the stratigraphic log for each of the soil borings and summarizes the results of the air monitoring of the auger cuttings. Table TM7-2 provides the horizontal coordinates, ground surface elevations and bedrock elevations for each of the soil boring locations. The resulting bedrock profile is shown on Plan TM7-2.

The depth to bedrock along the western perimeter of the Site (BH1 through BH4) ranged from 20 to 26 feet below ground surface (bgs). Overburden consisted of 18.5 to 20 feet of fill overlying glacial till at two of the soil borings, BH1 and BH2. Air monitoring results indicated low-level volatile organics (less than five parts per million (5 ppm)) on some auger cuttings at all four boring locations.

The seven borings along the southern perimeter ditch showed a wide range in depth to bedrock (7.5 to 35.5 feet bgs). As shown in Table TM7-2, the highest bedrock elevation was encountered at BH5. The bedrock elevations immediately east of BH5 are approximately 15 feet deeper, and show a gradual rise towards the eastern end of the existing perimeter ditch. Although glacial till was encountered at relatively shallow depths at BH5, the four soil borings to the east show fill material comprising the majority of the overburden. Air monitoring results indicated low-level volatile organics (less than 5 ppm) on some auger cuttings at four of the seven boring locations (BH5, BH6, BH9, and BH10).

Similar to the pattern found along the west side of the Site, the depth to bedrock along the eastern perimeter showed a consistent rise in bedrock elevation towards the north. Overburden consisted of five to 20 feet of miscellaneous fill overlying till in borings BH12, BH13 and BH14. Pond sediments were the predominant soil type at BH15. Air monitoring results indicated low-level volatile organics on some auger cuttings at all four borings, and 30 ppm of a split-spoon peat sample at BH12 at a depth of 15 to 16 feet bgs.

C. GRAIN SIZE ANALYSES

Soil samples were collected for grain size analyses at each soil boring location, generally representative of the upper, mid and lower third depths of overburden materials at each soil boring location. A summary of the samples collected is presented on Table TM7-3 and results of the grain size analyses are presented in Attachment TM7-1. Based on the range of gradation reported for soil samples collected along the proposed alignment of the pipe and media drain, it appears one soil gradation may be designed for the media component of the pipe and media drain.

D. USEPA/OEPA OVERSIGHT

Oversight for the above activities was provided by Black & Veatch Waste Science Technology on behalf of USEPA on an intermittent basis. As recorded in the Site's sign in/out log, USEPA's representative was on Site on November 8, 1991, whereas OEPA representatives were not present during the soil boring activities. USEPA's representative expressed concurrence with all soil boring/sample collection activities conducted at the Site as required by the RD Work Plan.

TABLE TM7-1

STRATIGRAPHIC LOGS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Boring No.	Depth	Soil Description	Auger Cuttings Air Monitoring
BH1	0 to 18.5	Coal (fill)	3 ft - 5 ppm 10 ft - 0 ppm 15 ft - 0 ppm
	20 to 26.0	Silty clay, little gravel, gray to dark brown (glacial till)	20 ft - 0 ppm 24 ft - 0 ppm
	26.0	Bedrock - shale	
	26.1	End of boring	
BH2	0 to 18.5	Rock fragments and sand and gravel, gray to dark brown (fill)	0 to 5 ft - 0 ppm 10 ft - 0 ppm 15 ft - 2.4 ppm
	18.5 to 26.5	Clay and silt, little rock fragments, gray (till) peat layer encountered at 19.5 feet	20 ft - 0 ppm
	26.5	Bedrock - shale	24 ft - 0 ppm
	26.9	End of boring	
BH3	0 to 20.0	Clay, little silt, rock fragments, and coal (fill)	0 to 5 ft - 0 ppm 5 ft - 3.8 ppm 15 ft - 3.9 ppm 20 ft - 0.8 ppm
	20	Weathered bedrock (gray to black shale)	
	20.5	End of boring	

TABLE TM7-1

STRATIGRAPHIC LOGS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Boring No.	Depth	Soil Description	Auger Cuttings Air Monitoring
BH4	0 to 20.5	Clay and silt, little gravel, trace sand, brown to black (fill)	0 to 5 ft - 3 ppm 10 ft - 3.3 ppm 15 ft - 0 ppm
	20.5	Bedrock - shale	20 - 0 ppm
	20.8	End of boring	
BH5	0 to 5.0	Sand and gravel, little rock fragments (fill)	10 ft - 2.0 ppm
	5 to 20.0	Sandy clay and gravel, light brown to dart gray (till)	20 ft - 0 ppm
	20.0	Bedrock	
	20.25	End of boring	
BH6	0 to 34.5	Sandy to silty clay with rock fragments, light brown to dark gray (fill)	0 to 5 ft - 1.5 ppm 10 ft - 1.5 ppm 15 ft - 2.0 ppm 25 ft - 0 ppm 35 ft - 0 ppm
	34.5	Bedrock - shale	
	34.5	End of boring	
BH7	0 to 35.5	Sandy clay and rock fragments, tan to dark brown. Increasing clay content with depth (fill)	0 to 5 ft - 0 ppm 10 ft - 0 ppm 15 ft - 0 ppm 20 ft - 0 ppm 25 ft - 0 ppm 30 ft - 0 ppm

TABLE TM7-1

STRATIGRAPHIC LOGS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Boring No.	Depth	Soil Description	Auger Cuttings Air Monitoring
	35.5	Bedrock	
	35.9	End of boring	
BH8	0 to 26.0	Sandy clay, little medium to coarse sand, coal and rock fragments (fill)	0 to 5 ft - 0 ppm 10 ft - 0 ppm 15 ft - 0 ppm 20 ft - 0 ppm 25 ft - 0 ppm
	26.0 to 32.5	Silty clay, little gravel, dark brown to gray (till)	30 ft - 0 ppm
	32.5	Bedrock	
	33.5	End of boring	
BH9	0 to 26.0	Sand, clay, gravel, and shale rock fragments (fill). Coal fragments (15 to 17 ft)	0 to 5 ft - 0 ppm 10 ft - 0.7 ppm 15 ft - 0 ppm 20 ft - 13.0 ppm 25 ft - 0 ppm
	26 to 27.0	Weathered bedrock	
	27.0	Bedrock	
	28.5	End of boring	

TABLE TM7-1

STRATIGRAPHIC LOGS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Boring No.	Depth	Soil Description	Auger Cuttings Air Monitoring
BH10	0 to 12.5	Silty clay, little gravel, brown to gray (till)	4.5 ft - 0 ppm 10 ft - 3 ppm
	12.5	Bedrock - shale	
	13	End of boring	
BH11	0 to 7.5	Silt, brown grading to silty clay, gray to brown with coal at base (till)	5 ft - 0 ppm
	7.5	Bedrock	
	7.5	End of Boring	
BH12	0 to 5.0	Sand and gravel, rock fragments (fill)	5 ft - 0 ppm
	5.0 to 15.0	Silty clay, little gravel, light brown to gray to black (till)	10 ft - 0 ppm
	15 to 16	Peat	15 ft - 30.0 ppm on split spoon
	16 to 20	Silty clay, little gravel (till)	20 ft - 0 ppm
	20	Bedrock - grey limestone	
	20.5	End of boring	

TABLE TM7-1

STRATIGRAPHIC LOGS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Boring No.	Depth	Soil Description	Auger Cuttings Air Monitoring
BH13	0 to 16.0	Clayey silt, little gravel and sand (till). Peat at 15 ft	5 ft - 0 ppm 10 ft - 4.0 ppm 14 ft - 0 ppm
	16.0	Bedrock - shale	
	16.5	End of borehole	
BH14	0 to 15	Clayey silt, little rock fragments and coal (fill)	4 ft - 0 ppm 10 ft - 2.0 ppm 15 ft - 2.0 ppm
	15.0	Gray shaley limestone	
	15.9	End of boring	
BH15	0 to 11.0	Clay, gray to brown (pond sediments). Rock fragments last 3 ft	5 ft - 0 ppm 10 ft - 2.0 ppm
	11.0	Bedrock - shaley limestone	
	12.0	End of boring	

TABLE TM7-2

SOIL BORING SURVEY DATA
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Boring No.	*Coordinates*		*Ground Surface*	*Bedrock Elevation*
	North	*East*		
BH1	9636.95699	5078.17610	1096.37	1070.4
BH2	9537.06911	5089.64100	1096.54	1070.0
BH3	9471.16274	5153.88631	1093.63	1073.6
BH4	9405.45198	5216.98803	1091.79	1071.3
BH5	9314.43309	5244.54084	1098.89	1078.9
BH6	9320.75785	5399.54140	1097.94	1063.4
BH7	9333.36590	5506.87519	1098.69	1063.2
BH8	9338.74620	5591.79902	1099.30	1066.8
BH9	9349.94682	5672.08464	1099.98	1073.0
BH10	9406.72556	5763.75533	1083.17	1070.7
BH11	9414.14187	5809.73833	1081.56	1074.1
BH12	9490.69838	5797.12136	1094.43	1074.4
BH13	9545.11879	5801.93441	1091.77	1075.8
BH14	9622.66235	5804.58872	1090.60	1075.6
BH15	9790.03052	5800.50093	1088.21	1077.2

TABLE TM7-3

SUMMARY OF GRAIN SIZE ANALYSES
BEDROCK PROFILING
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Borehole Number	*Sample Number*	*Sample Interval (ft bgs)*	*USCS Classification*	*Soil Sample Description*
BH1	S1	5 to 7	GP	coal
	S3	10 to 12	GP	coal and shale, black to gray
	S4	20 to 22	CL-GW	silty clay, some sand and gravel
	S5	25 to 26.1	N/A	shale fragments with clayey silt
BH2	S1	5 to 7	GP	crushed stone, gray
	S2	10 to 12	GM-GC	silty clay and shale fragments, brown to gray
	S3	15 to 17	GM	shale fragments with little sand and silty clay, brown to gray
	S4	20 to 22	CL	silty clay, trace clay, gray
	S5	25 to 27	N/A	shale fragments, with some sand and silty clay
BH3	S1	5 to 7	CL	silty clay with shale and rock fragments, brown to gray
	S2	10 to 12	CL	silty clay, some cool fragments, brown
	S3	15 to 17	CL	silty clay, some shale fragments, brown
	S4	20 to 20.5	N/A	shale with silt and clay, gray
BH4	S1	5 to 7	CL	silty clay, brown
	S2	10 to 12	CL	silty clay, some sand brown to gray
	S3	15 to 17	GP-SP	shale and coal with some silt, gray
	S4	20 to 20.8	N/A	weathered shale, gray
BH5	S1	10 to 12	CL	silty clay, mottled, brown to gray
	S2	20 to 20.3	GM	shale, with some silt and sand
BH6	S1	5 to 7	CL	silty clay, some shale fragments, brown
	S2	10 to 12	CL	silty clay, some shale fragments
	S3	20 to 22	GC	shale fragments, sand, and silty clay, brown to gray
	S4	30 to 32	GC	shale fragments, with sand and silty clay
BH7	S1	5 to 7	CL	silty clay, brown
	S2	10 to 12	CL	silty clay, trace shale and gravel, brown
	S3	15 to 17	GC	shale fragments and silty clay, brown
	S4	20 to 22	CL	silty clay, brown
	S5	25 to 27	GC	shale fragments, with sand, silt, and clay, gray
	S6	34 to 35.9	GC	shale and coal, with some silty clay, gray to brown

TABLE TM7-3

SUMMARY OF GRAIN SIZE ANALYSES
BEDROCK PROFILING
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Borehole Number	*Sample Number*	*Sample Interval (ft bgs)*	*USCS Classification*	*Soil Sample Description*
BH8	S1	5 to 7	ML	silty clay, with little coal, brown
	S2	10 to 12	GC	silty clay and shale fragments, brown
	S3	15 to 17	GC	silty clay and shale fragments, gray to brown
	S4	20 to 22	GC	shale fragments with some silty clay, brown to gray
	S5	25 to 27	CL	silty clay, with some shale fragments, brown to gray
	S6	28.5 to 30	CL	silty clay, with some shale fragments
BH9	S1	5 to 7	CL	silty to sandy clay, little shale fragments, dark brown
	S2	10 to 12	GP	shale fragments, little silty clay, gray to brown
	S3	15 to 17	GC	silty clay with shale fragments, brown to gray
	S4	20 to 22	GC	silty clay with shale fragments, brown to gray
	S5	25 to 27	GC	shale with silt and clay, gray
BH10	S1	5 to 7	CL	silty clay, little shale fragments, brown to gray
	S2	10 to 12	CL	silty clay, little clay, coal and shale, brown to gray
BH11	S1	5 to 7	CL	silty clay, trace shale fragments, brown to gray
BH12	S1	5 to 7	CL	silty clay, some shale fragments, brown to gray
	S2	10 to 12	CL-GW	silty clay and shale fragments, brown
	S3	15 to 17	CL-PT	silty clay, some peat, brown
	S4	20 to 20.5	N/A	shale, gray
BH13	S1	5 to 7	CL	silty clay, little coal and shale fragments
	S2	10 to 12	CL	silty clay, mottled, brown to gray
	S3	15 to 17	OL	organic silt-clay with shale fragments, brown to gray
BH14	S1	5 to 7	CL	silty clay with some shale fragments, gray
	S2	10 to 12	SC-GC	weathered shale, little coal and silty clay, gray
	S3	15.0 to 15.9	N/A	shaley limestone, gray
BH15	S1	5 to 7	CL	silty clay, gray to brown
	S2	10 to 12	CL	silty clay, little shale fragments

ATTACHMENT TM7-1

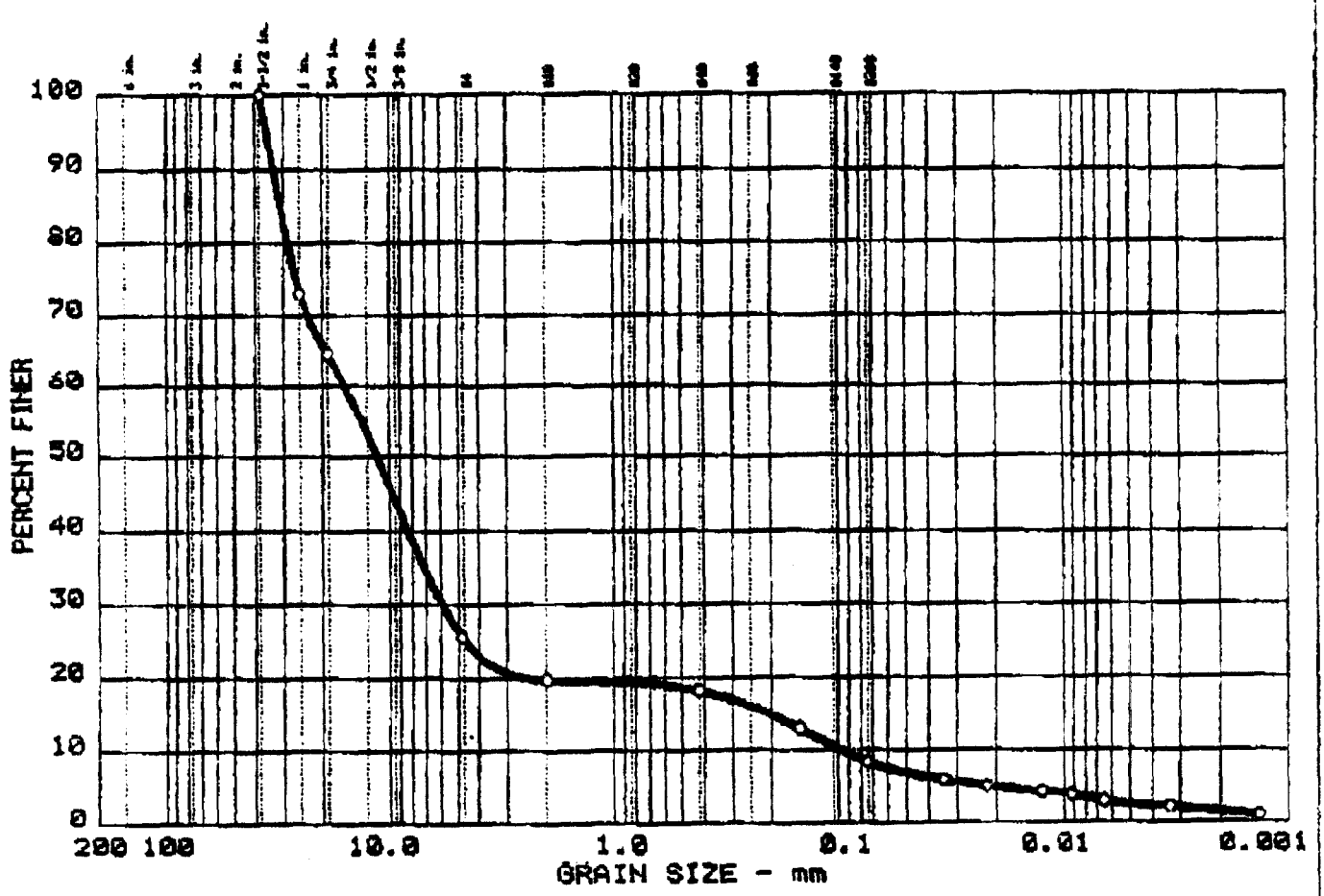
GRAIN SIZE ANALYSIS

BEDROCK PROFILING

SUMMIT NATIONAL SUPERFUND SITE

DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	74.6	16.9	6.0	2.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	31.22	15.98	11.44	5.868	0.2058	0.0930	23.17	171.8

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY CRUSHED STONE		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

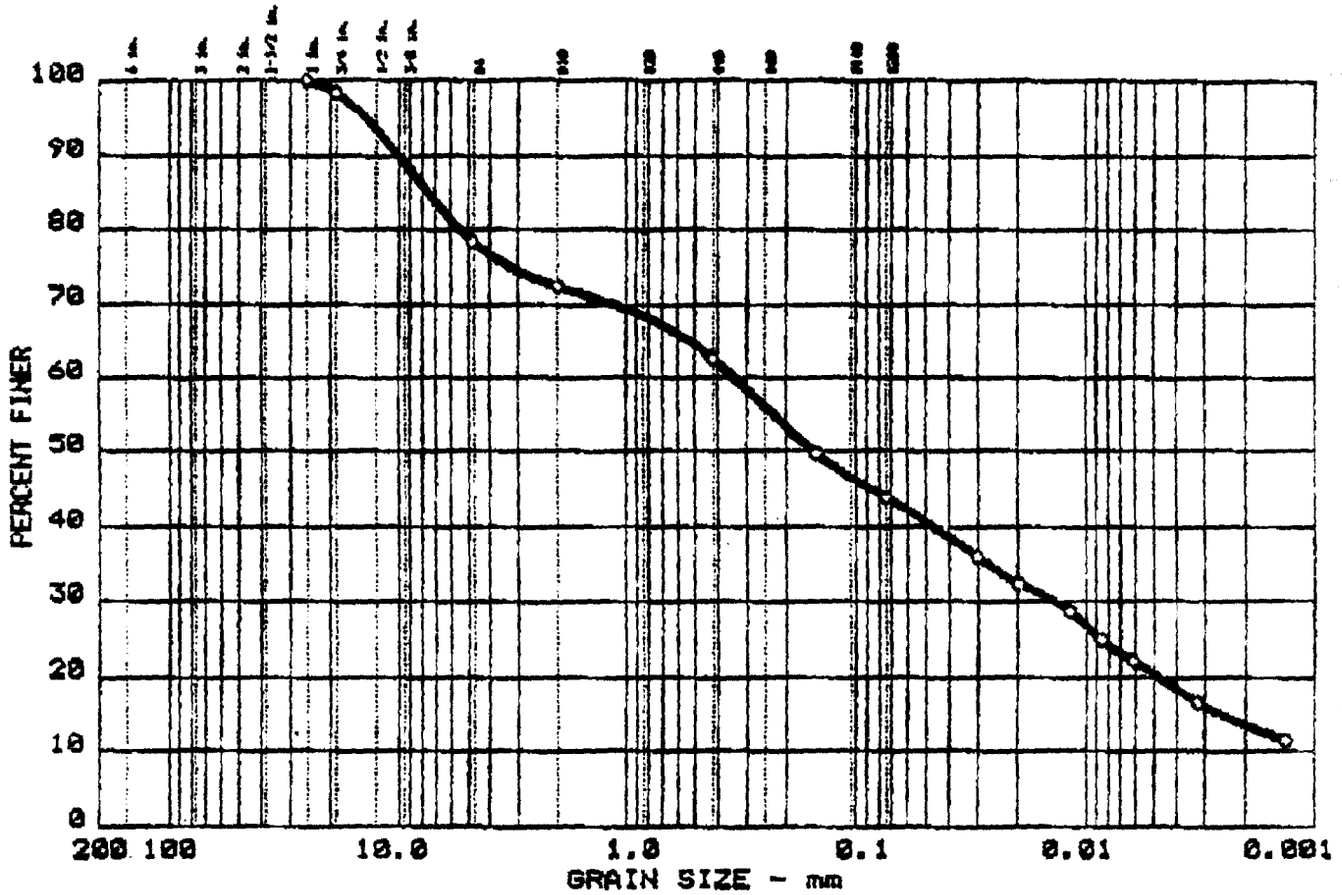
Date: 11-27-91

Remarks:
BH2 S-1 @ 5-7'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	21.6	34.5	23.5	20.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	7.41	0.33	0.15	0.014	0.0025			

MATERIAL DESCRIPTION	USCS	AASHTO
O BR.&GR. SILTY CLAY WITH SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

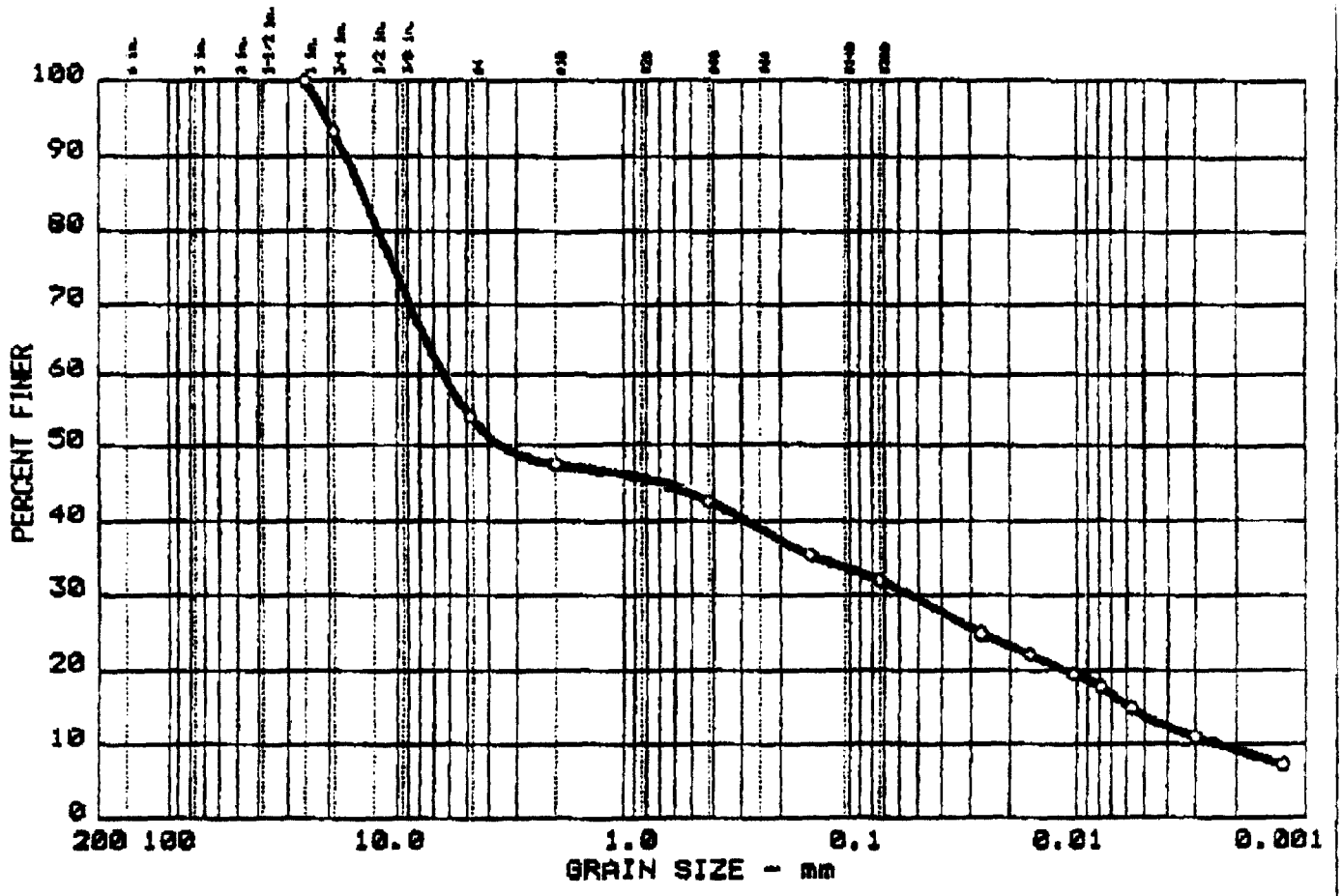
Date: 11-27-91

Remarks:
BH2 S-2 @ 10-12'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.2

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	46.1	21.9	18.2	13.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	14.13	6.24	3.55	0.054	0.0058	0.0024	0.20	2630.3

MATERIAL DESCRIPTION	USCS	AASHTO
○ BR.&GR. SILTY CLAY WITH SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

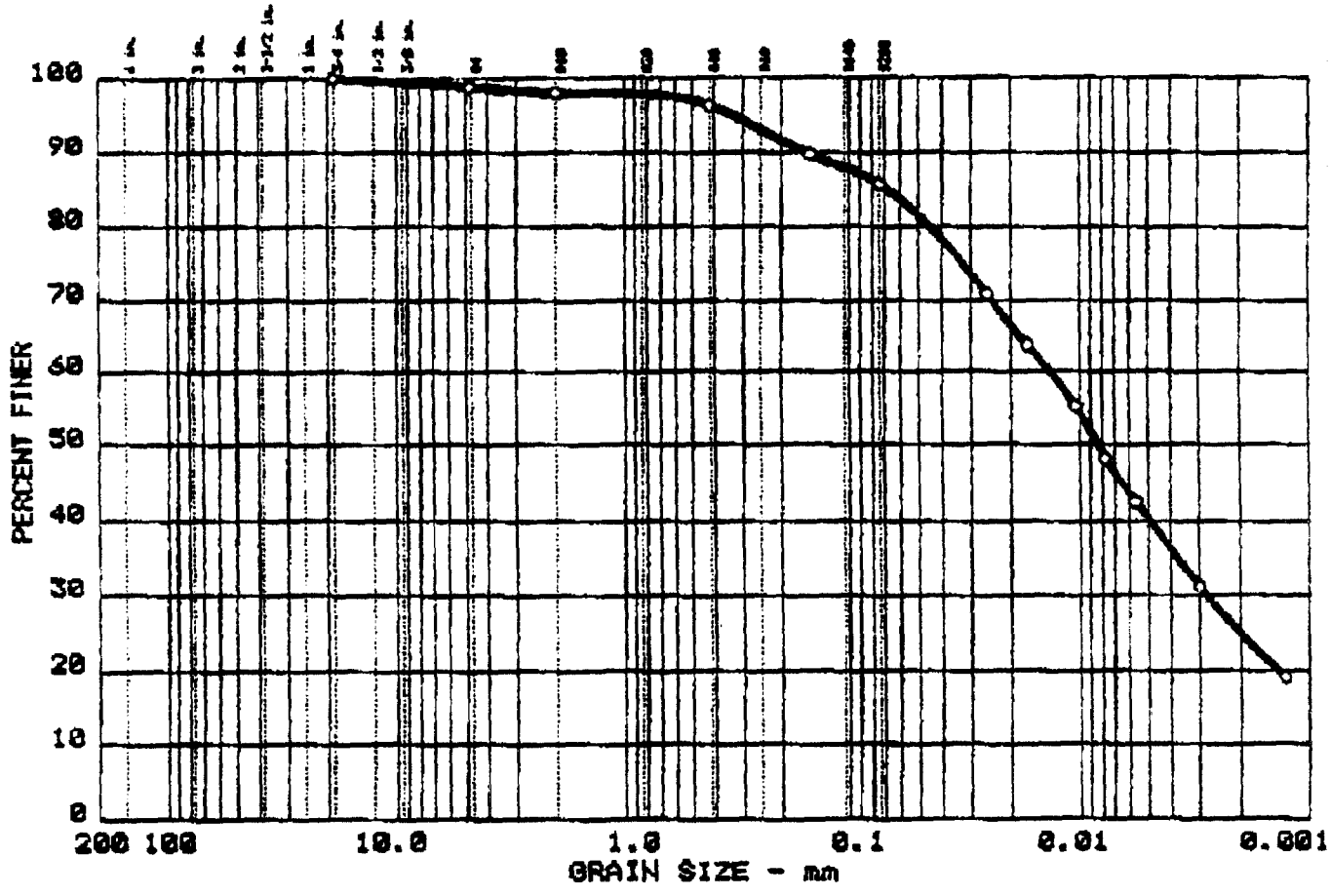
Date: 11-27-91

Remarks:
BH2 S-3 @ 15-17'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.3

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	1.2	13.2	45.3	40.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A			0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SILTY CLAY. TRACE BROWN CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

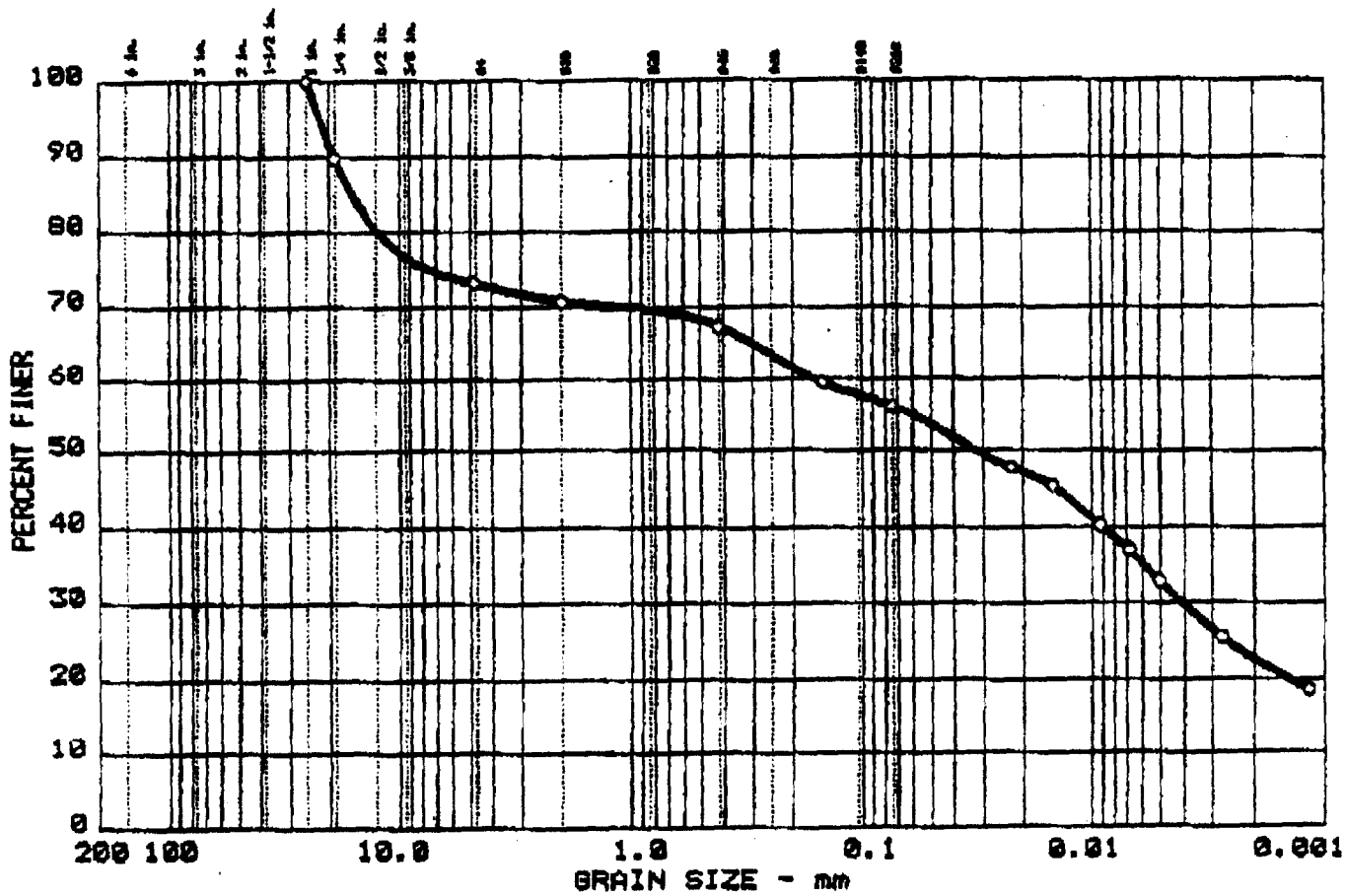
Date: 11-27-91

Remarks:
BH2 S-4 @ 20-22'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.4

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	26.8	17.0	23.6	32.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	16.01	0.16	0.03	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR.& GR. SILTY CLAY. SOME SHALE & ROCK FRAGMENT		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

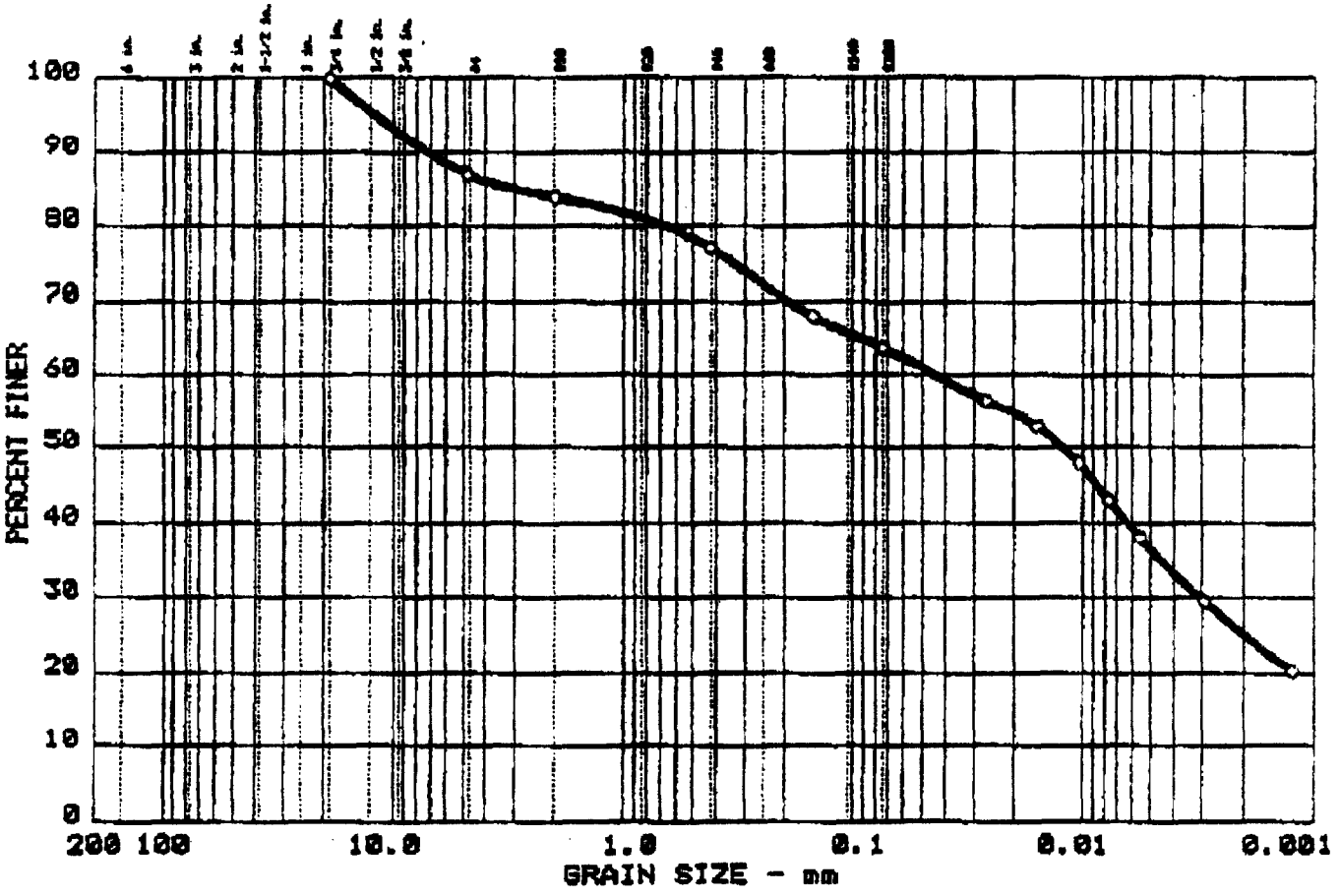
Date: 11-27-91

Remarks:
BH3 S-1 @ 5-7'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.5

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	13.0	23.2	27.3	36.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	2.95		0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
O BROWN SILTY CLAY. SOME COAL FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

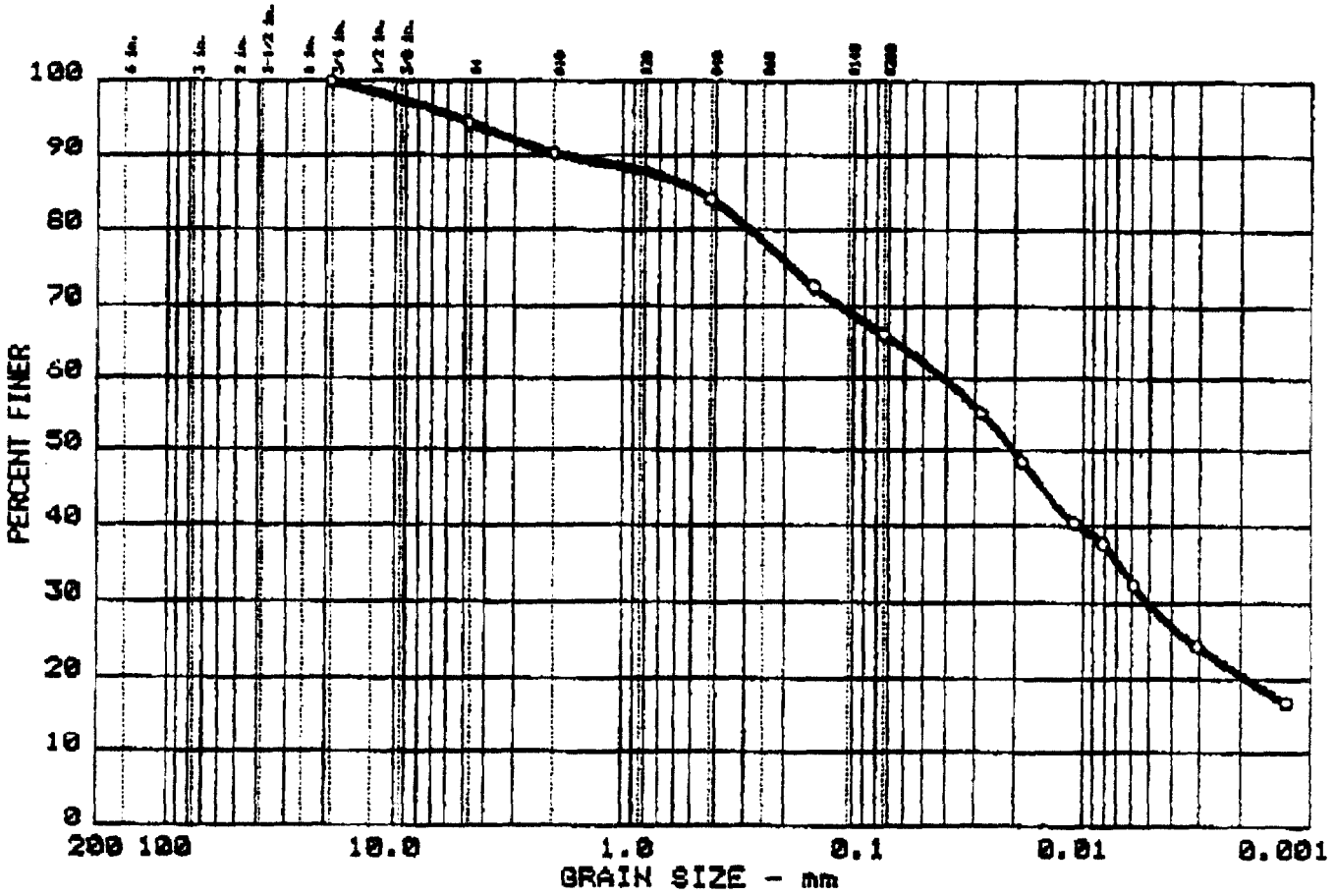
Date: 12-05-91

Remarks:
BH3 S-2 @ 10-12'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.6

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	5.6	28.4	36.4	29.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	0.46		0.02	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
O BROWN SILTY CLAY. SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

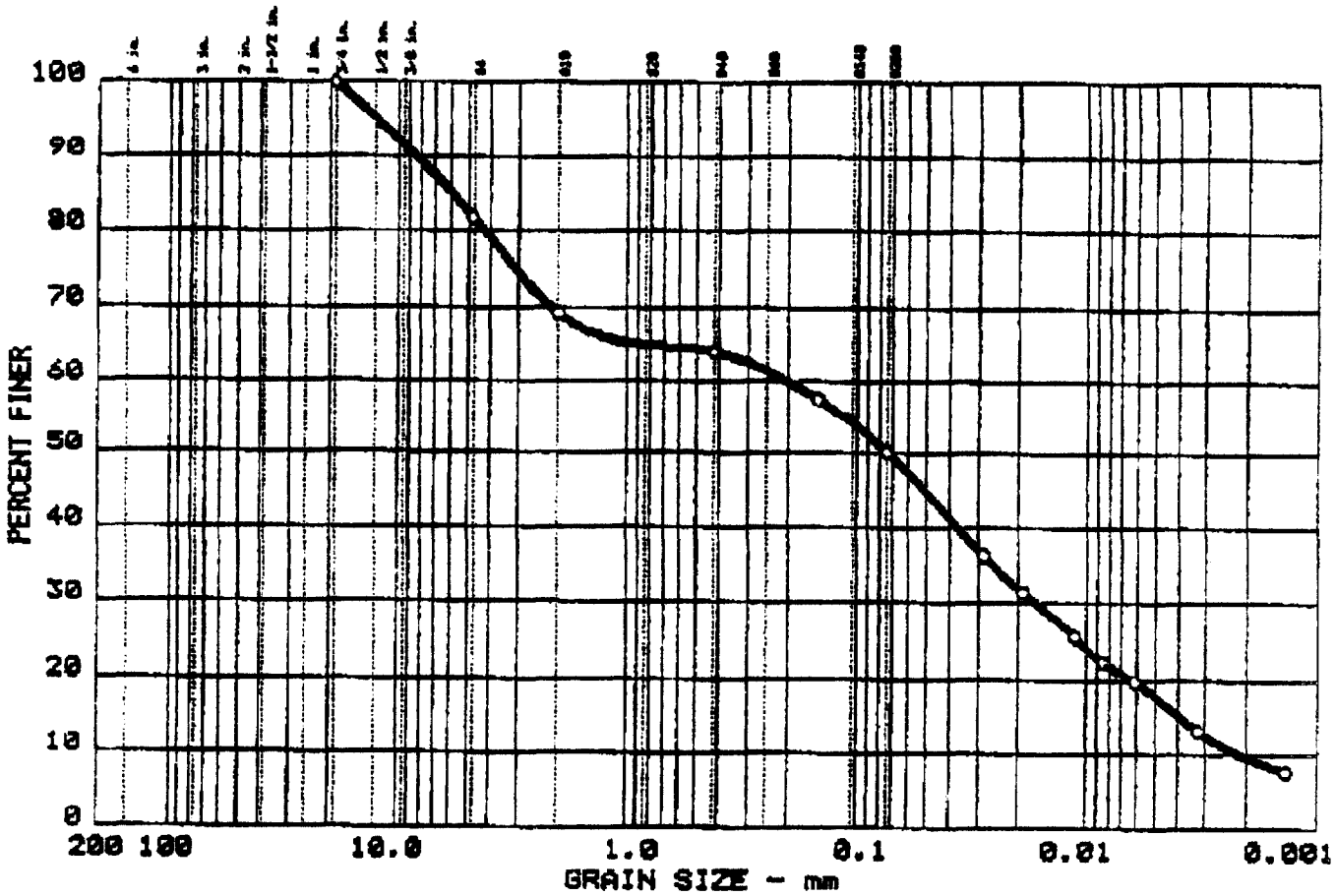
Date: 12-05-91

Remarks:
BH3 S-3 @ 15-17'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.7

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	18.2	31.6	32.4	17.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	5.89	0.20	0.07	0.017	0.0038	0.0021	0.67	94.4

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE WITH SILT AND CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

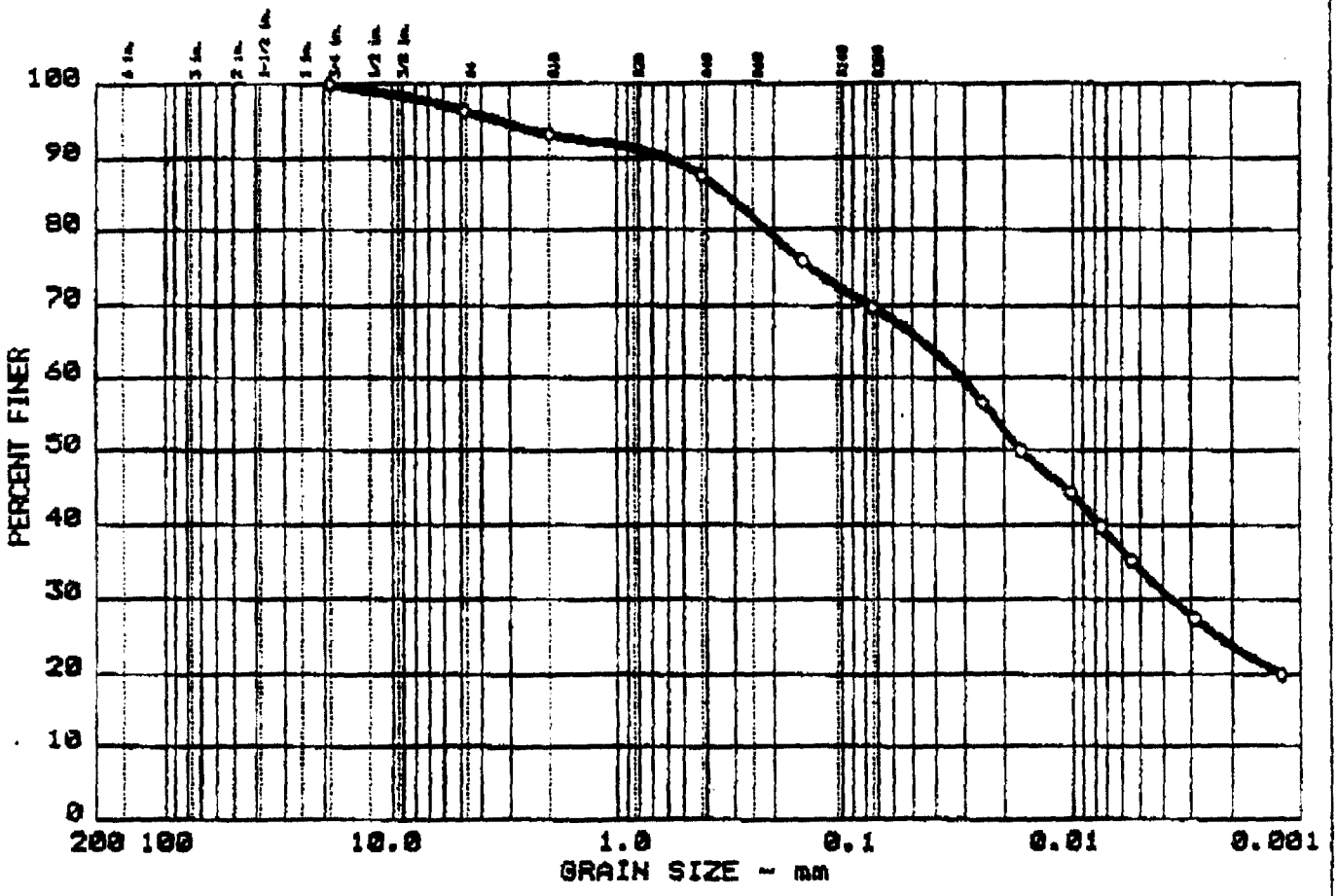
Date: 12-05-91

Remarks:
BH3 S-4 @ 20-20.5'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.8

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	3.5	26.8	35.7	34.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	0.32		0.02	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

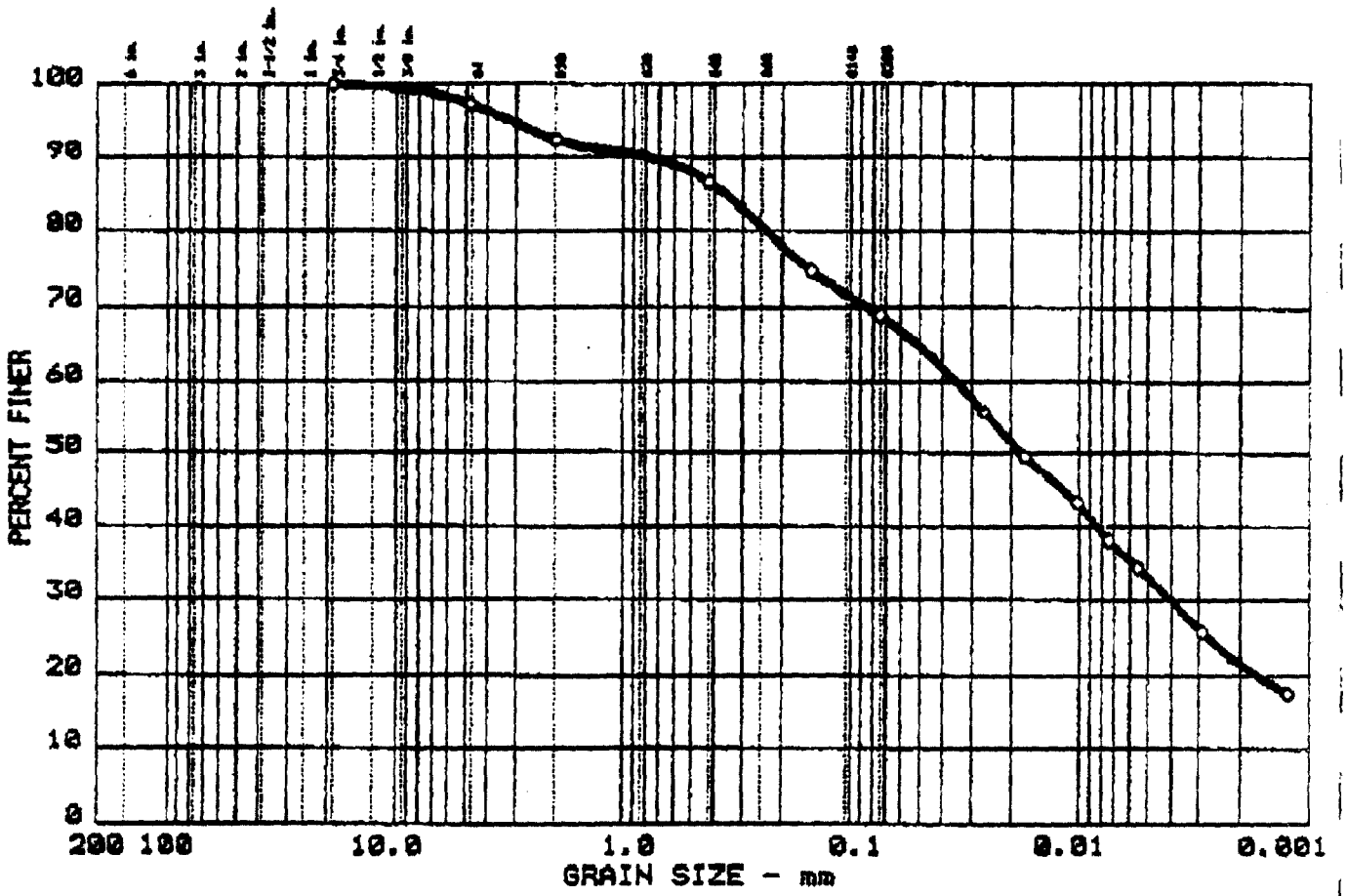
Date: 12-05-91

Remarks:
BH4 S-1 @ 5-7'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.9

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.7	28.4	35.8	33.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	0.35		0.02	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND GRAY SILTY CLAY. SOME SAND.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

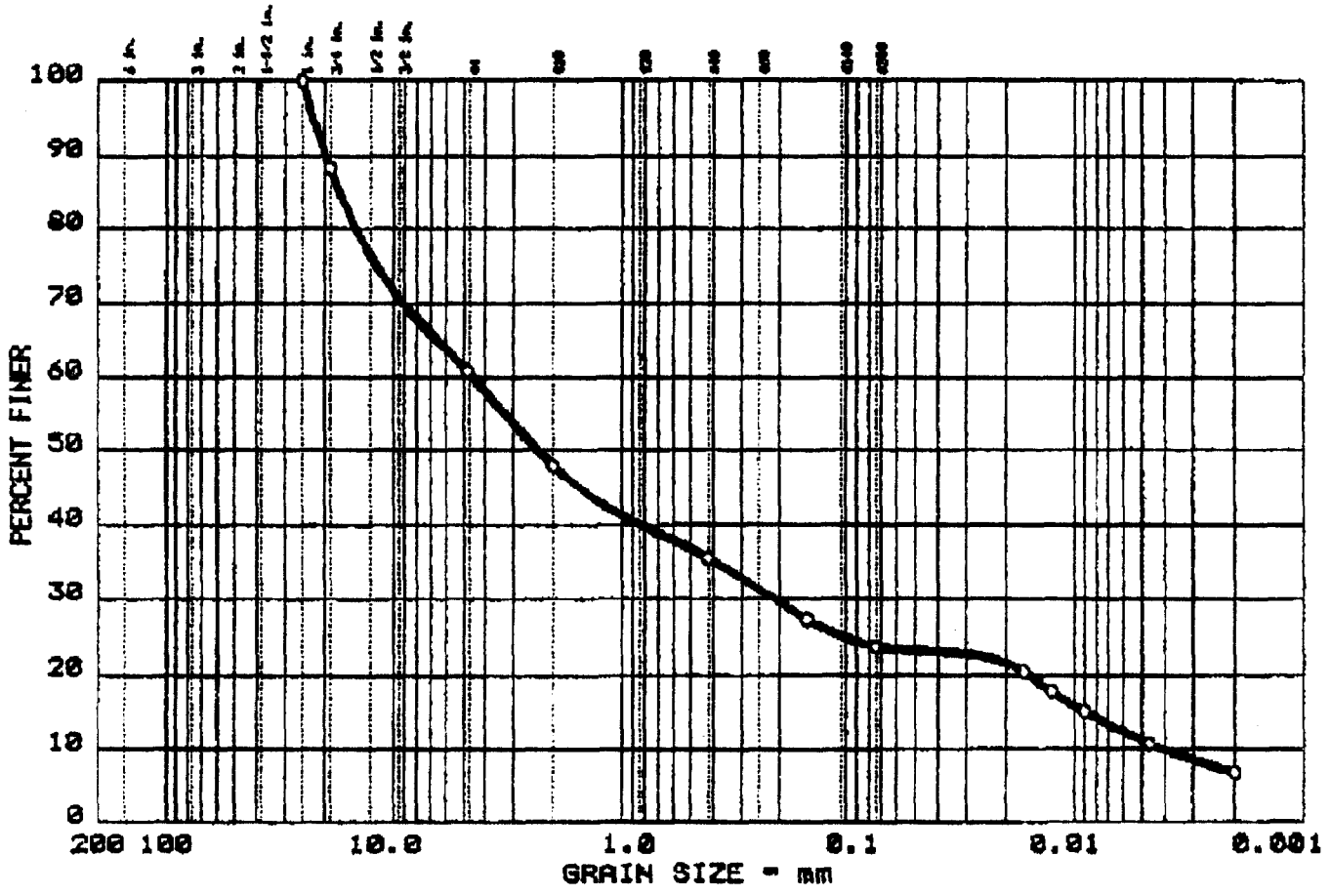
Date: 12-05-91

Remarks:
BH4 S-2 @ 10-12'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.10

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	39.1	37.2	12.5	11.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	17.34	4.46	2.31	0.208	0.0088	0.0040	2.43	1109.2

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY SHALE AND COAL WITH SOME SILT.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

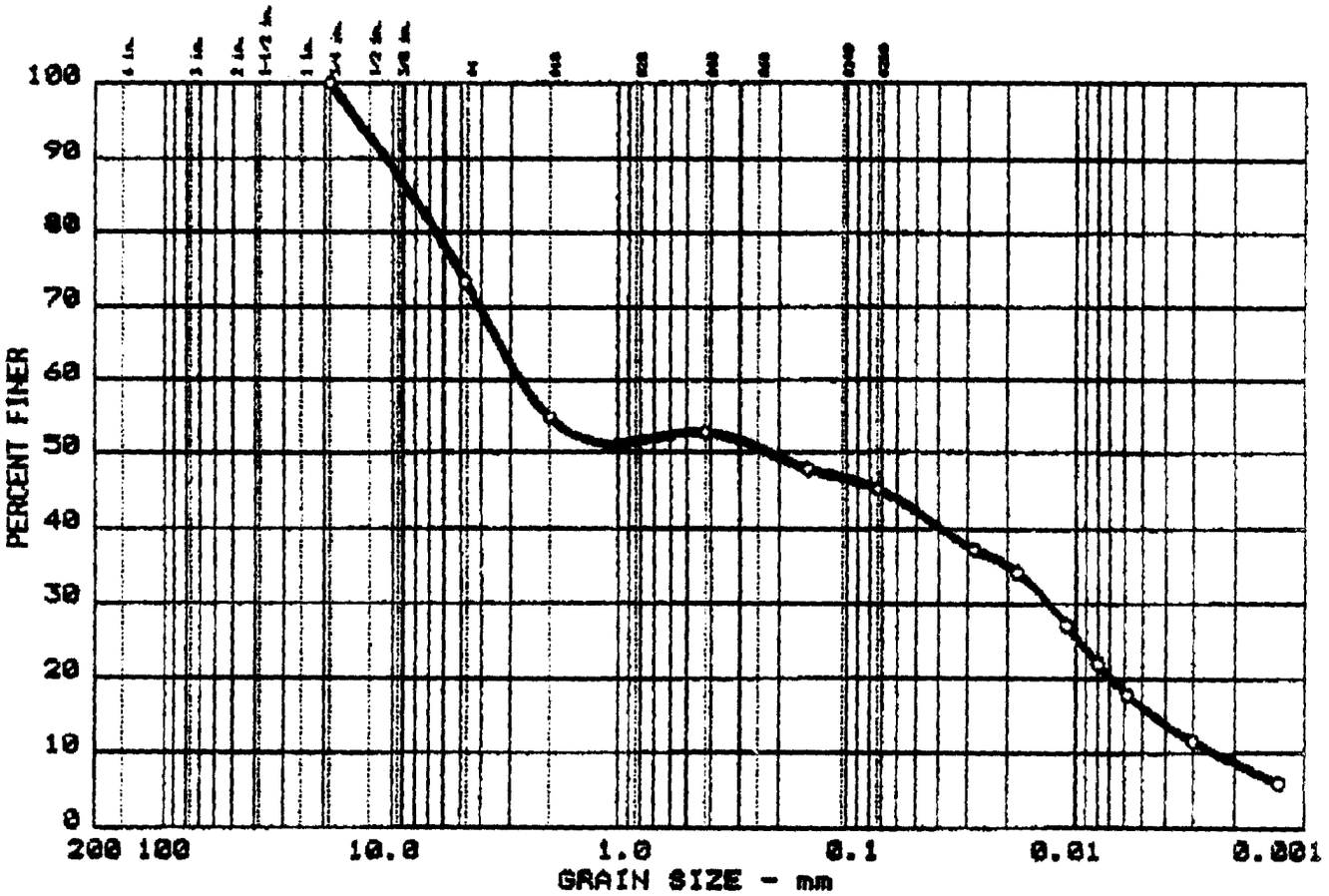
Date: 12-05-91

Remarks:
BH4 S-3 @ 15-17'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.11

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	26.8	27.9	29.3	16.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	8.22	2.69	0.22	0.013	0.0045	0.0024	0.03	1122.0

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY WEATHERED SHALE.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

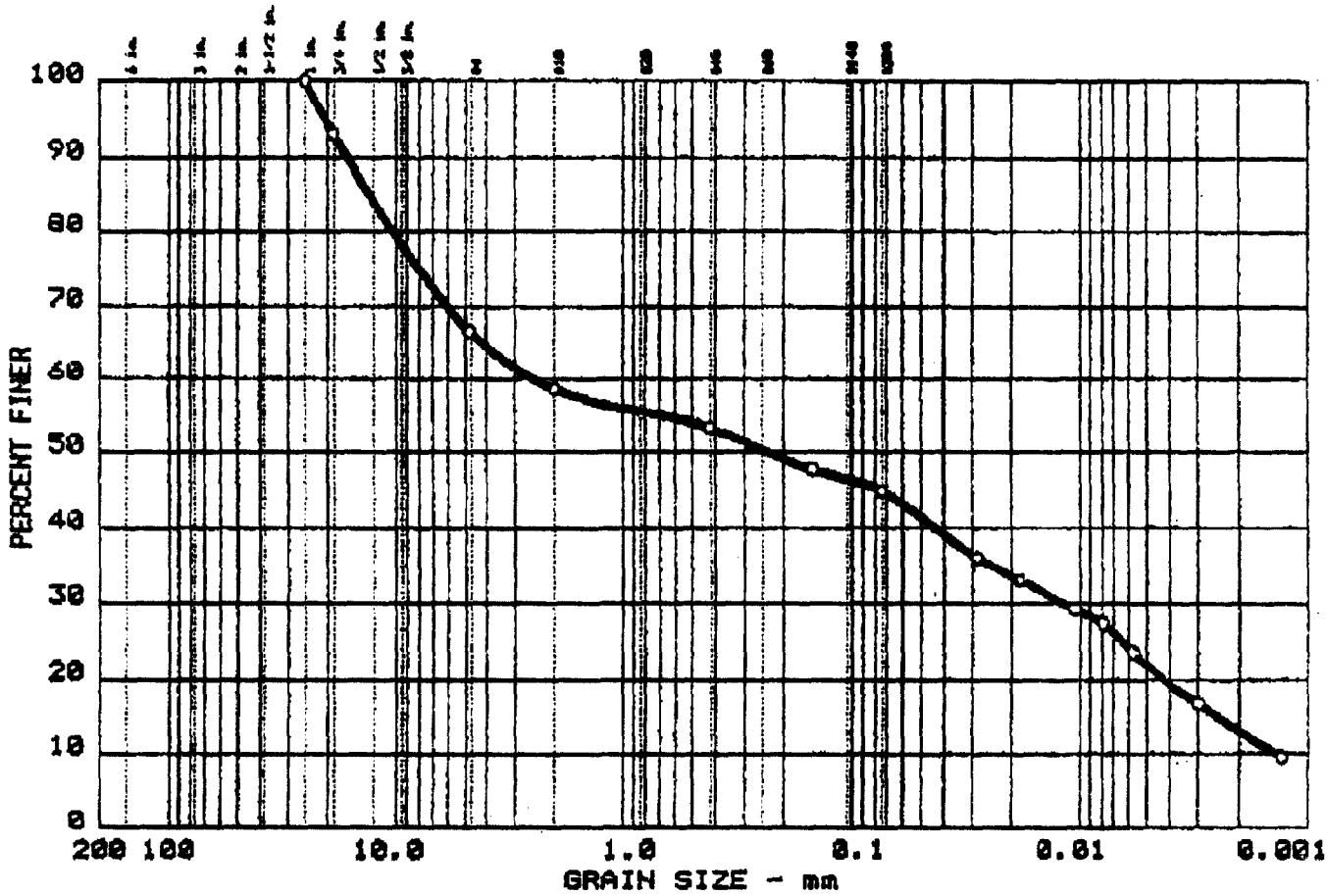
Date: 12-05-91

Remarks:
BH4 S-4 @ 20-20.8'
SAMPLED ON 11-08-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.12

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	33.5	21.7	23.0	21.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	13.18	2.45	0.23	0.012	0.0025	0.0014	0.04	1798.9

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND GRAY SILTY CLAY W/ SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

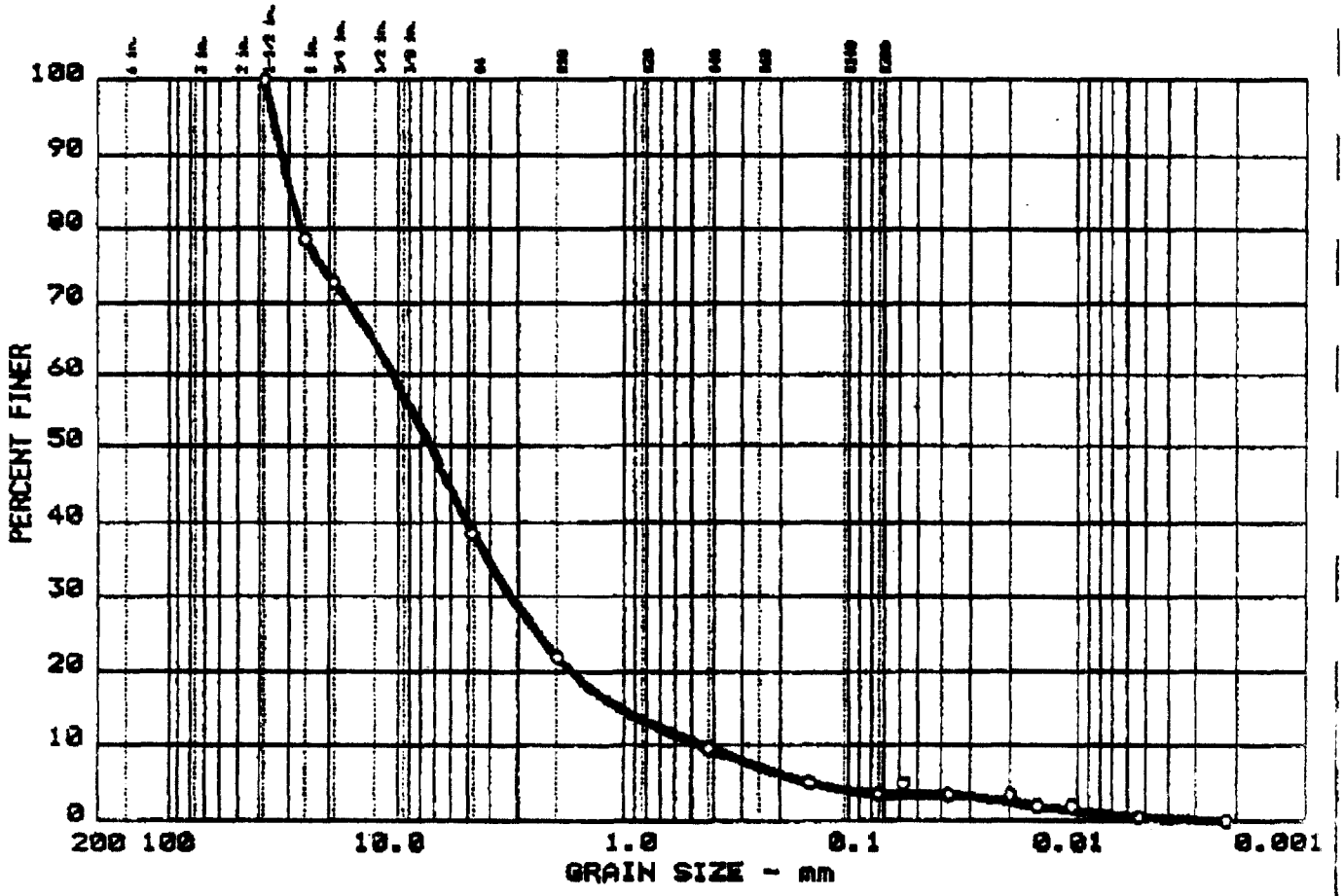
Date: 12-05-91

Remarks:
BH2 S-5 @ 25-27'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.13

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	61.4	34.9	3.1	0.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	29.51	10.59	7.33	3.236	1.0471	0.4467	2.21	23.7

MATERIAL DESCRIPTION	USCS	AASHTO
○ COAL		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

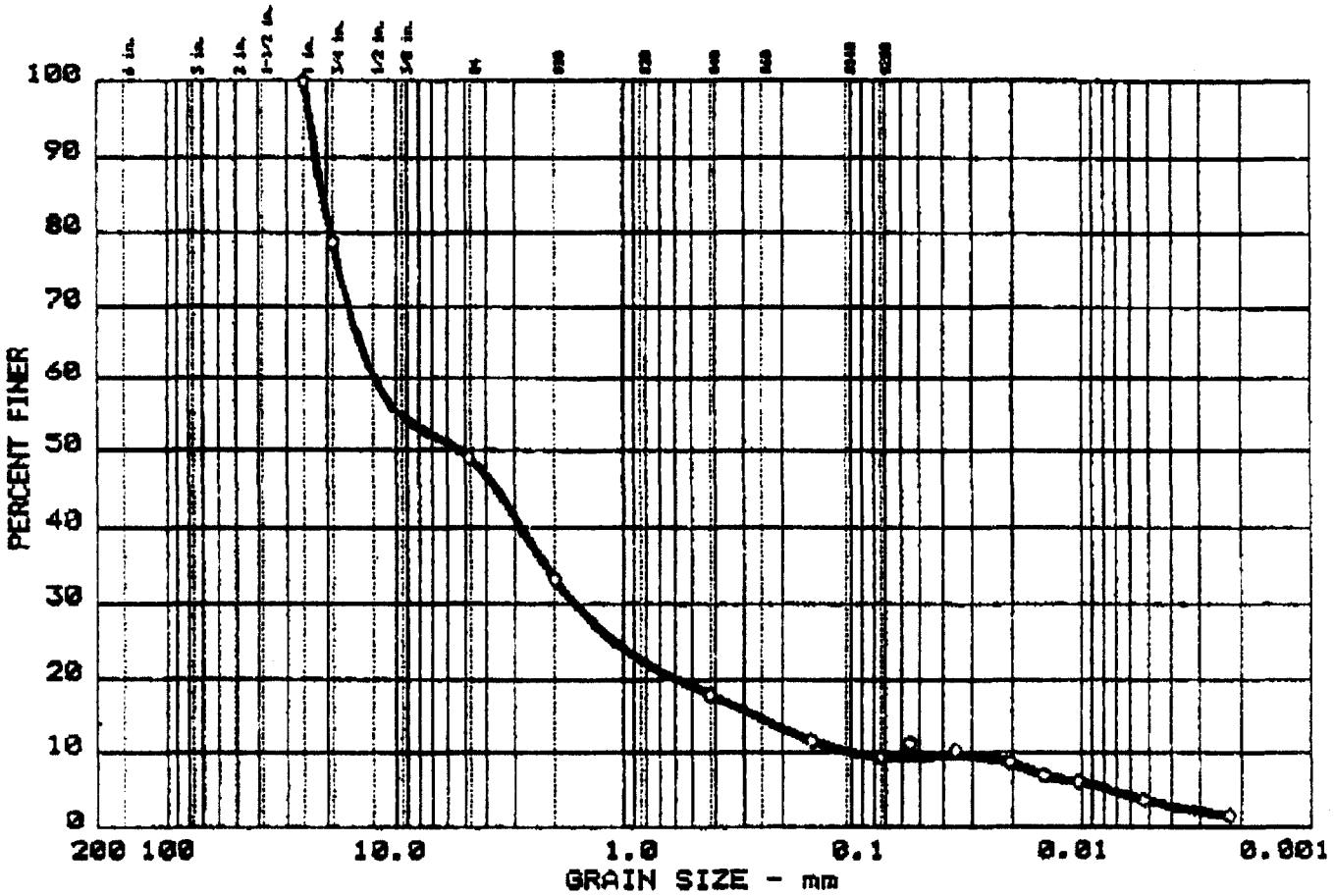
Date: 12-05-91

Remarks:
BH1 S-1 @ 5-7'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 14

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	50.9	39.7	5.9	3.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	20.89	12.45	5.19	1.641	0.2630	0.0933	2.32	133.4

MATERIAL DESCRIPTION	USCS	AASHTO
O BLACK AND GRAY COAL AND SHALE.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

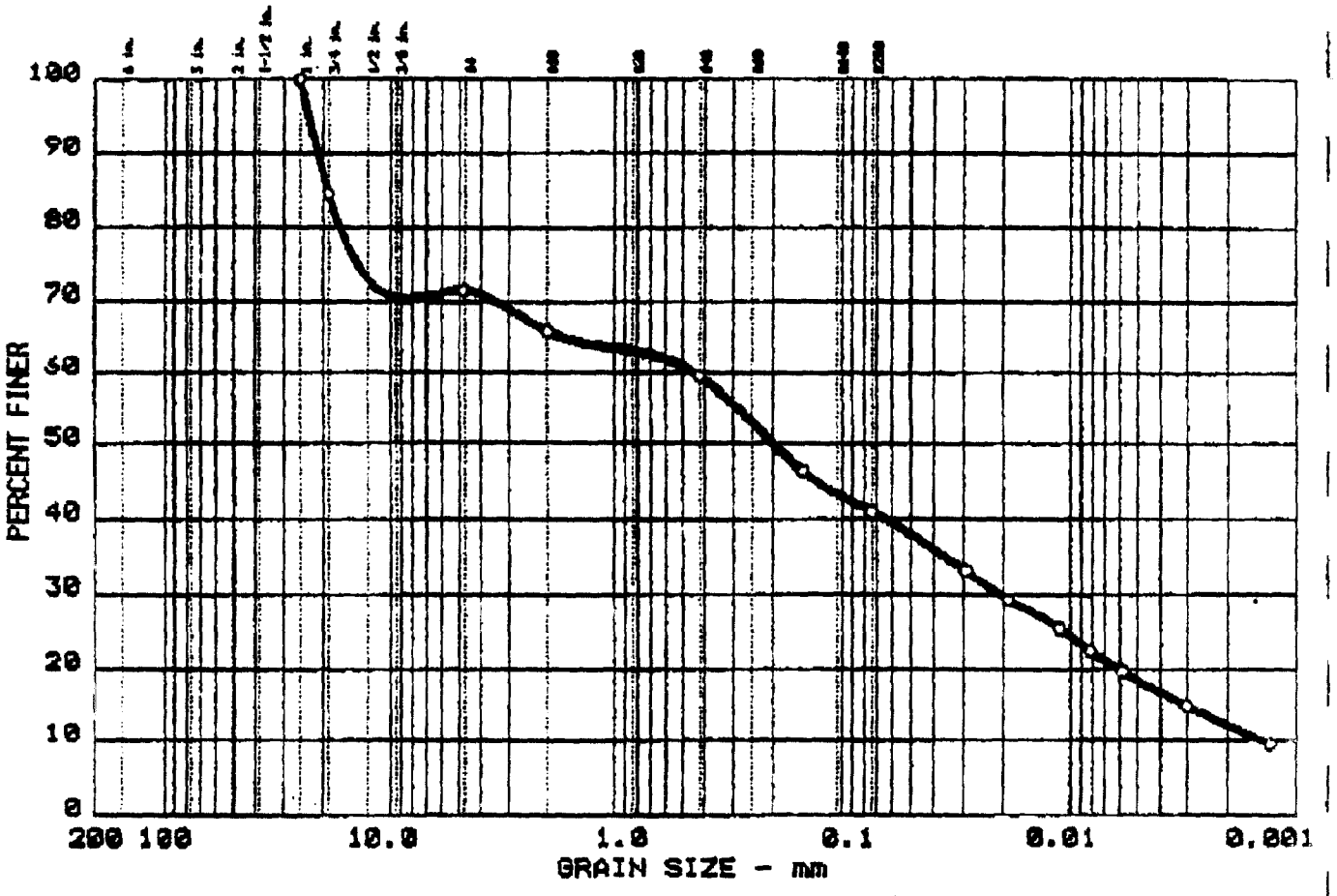
Date: 12-05-91

Remarks:
BH1 S-3 @ 15-17'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.15

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	28.6	30.5	22.6	18.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	19.23	0.44	0.20	0.020	0.0031	0.0014	0.68	312.6

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN & GRAY SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

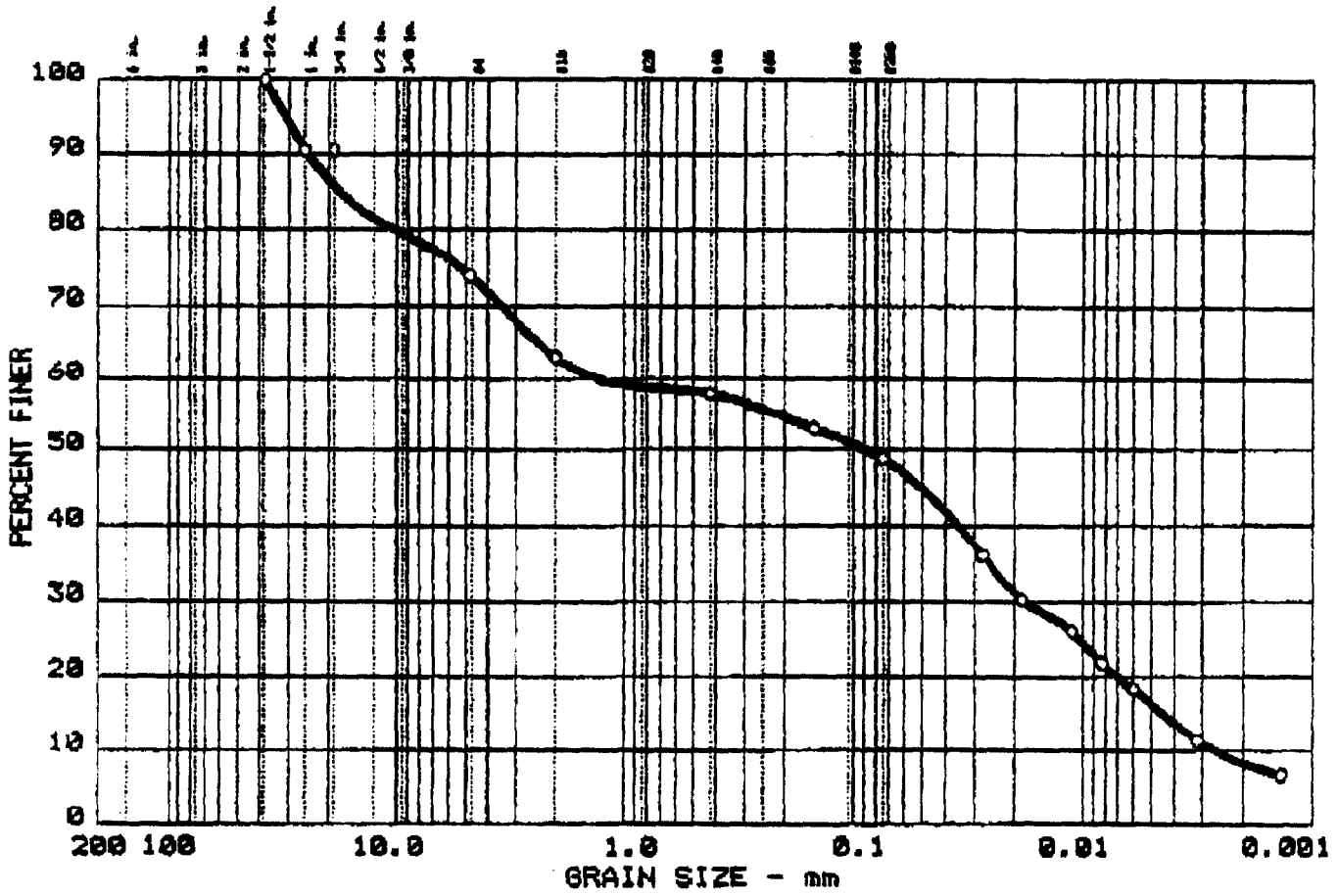
Date: 12-05-91

Remarks:
BH1 S-4 @ 20-22'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.16

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	26.1	25.2	32.4	16.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	17.78	1.26	0.09	0.018	0.0044	0.0026	0.10	478.6

MATERIAL DESCRIPTION	USCS	AASHTO
O BROWN AND GRAY SILT W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

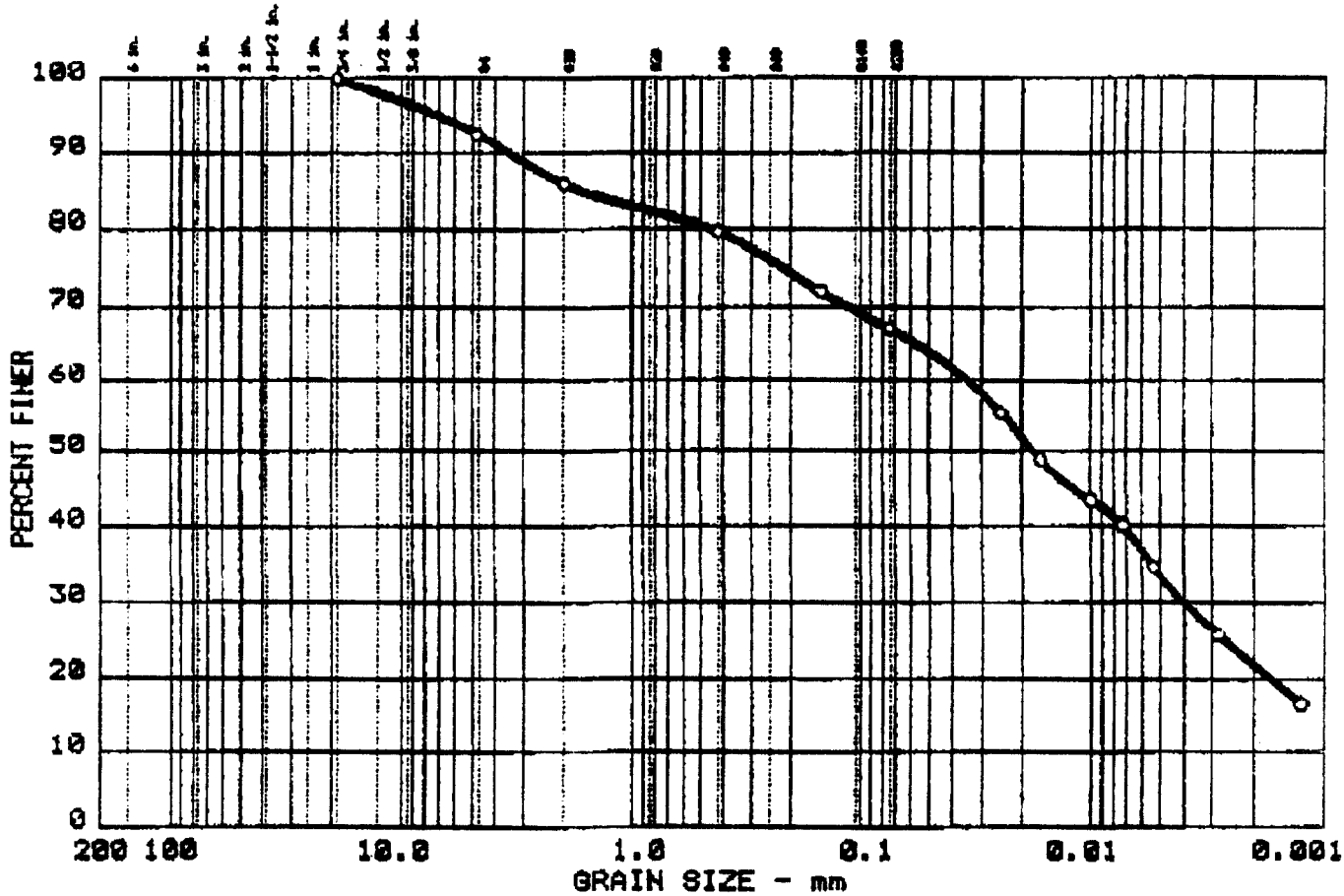
Date: 12-05-91

Remarks:
BH1 S-5 @ 25-26.1'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.17

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	7.5	25.5	33.6	33.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	1.60		0.02	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN & GRAY SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

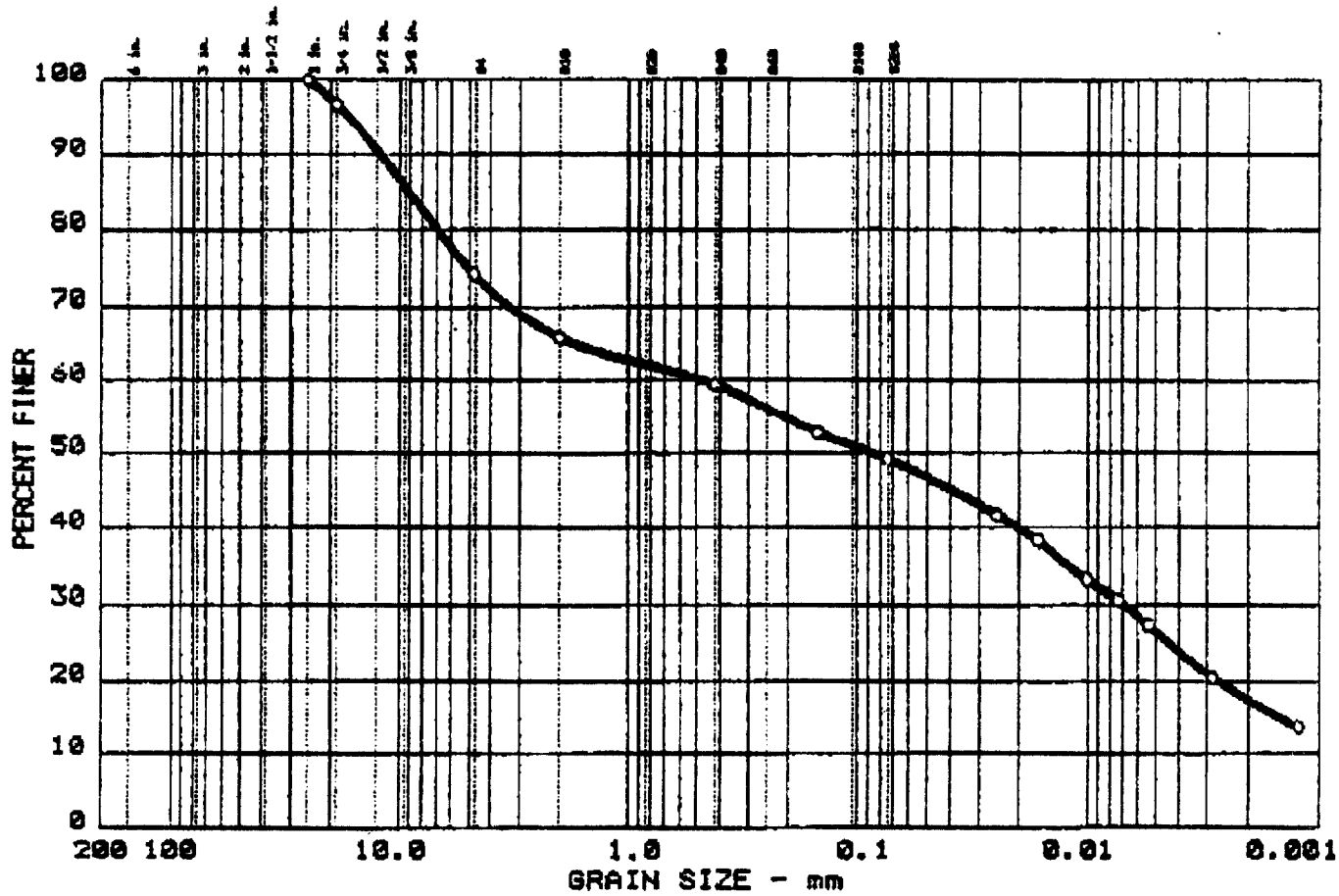
Date: 12-05-91

Remarks:
BH12 S-1 @ 5-7'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.18

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	25.8	25.0	22.9	26.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	9.12	0.45	0.08	0.007	0.0015			

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

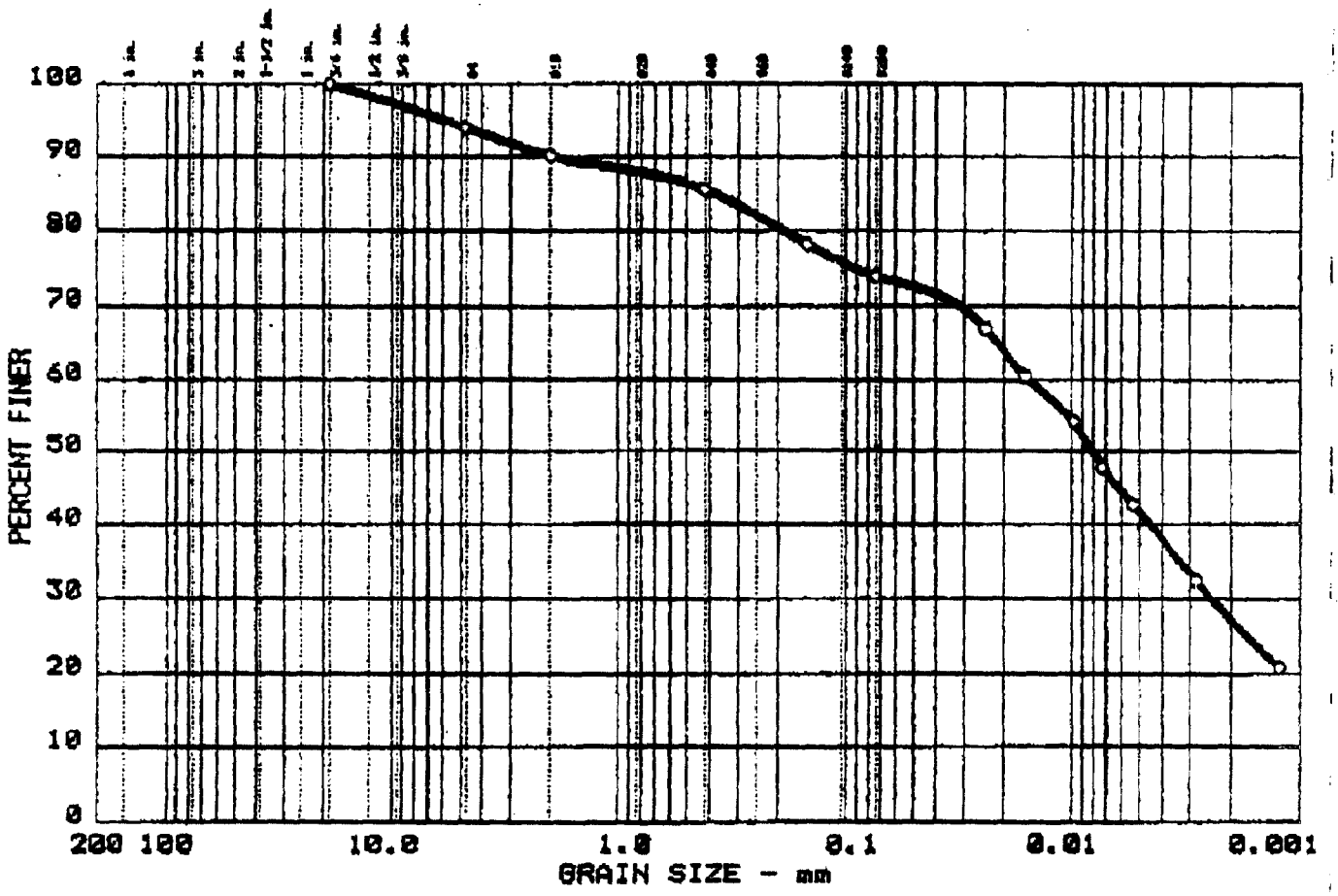
Date: 12-05-91

Remarks:
BH12 S-2 @ 10-12'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.19

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	6.0	20.2	32.3	41.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	0.37		0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BR.SILTY CLAY W/SOME ORGANICS. ODOR NOTED.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

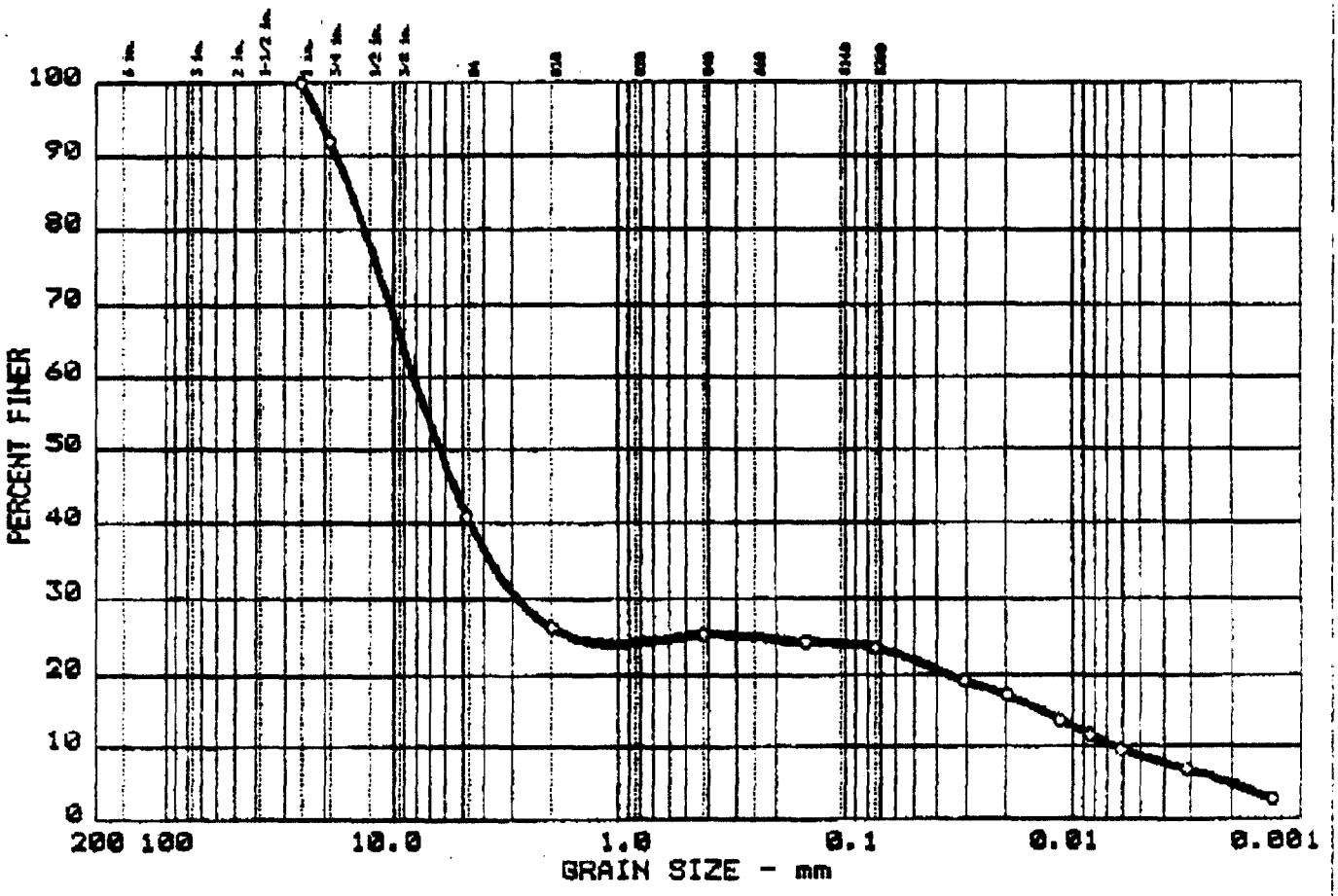
Date: 12-05-91

Remarks:
BH12 S-3 @ 15-17'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.20

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75_	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	59.1	17.2	15.0	8.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	15.47	8.18	6.28	2.805	0.0139	0.0065	147.91	1258.9

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

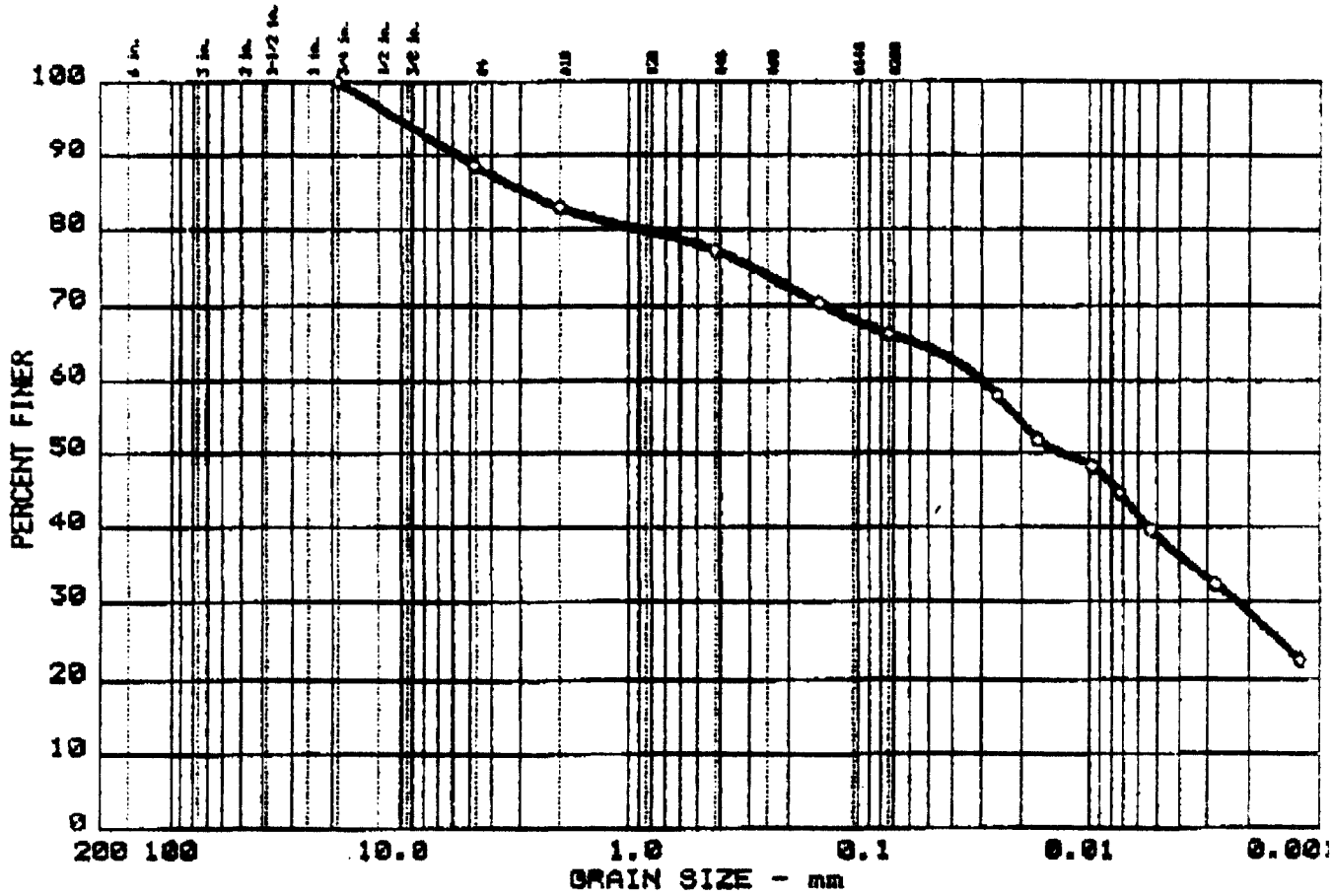
Date: 12-05-91

Remarks:
BH12 S-4 @ 20-20.5'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 21

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	11.4	22.4	27.5	38.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O			2.85		0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
O GR.& BR. SILTY CLAY,TR.COAL & SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

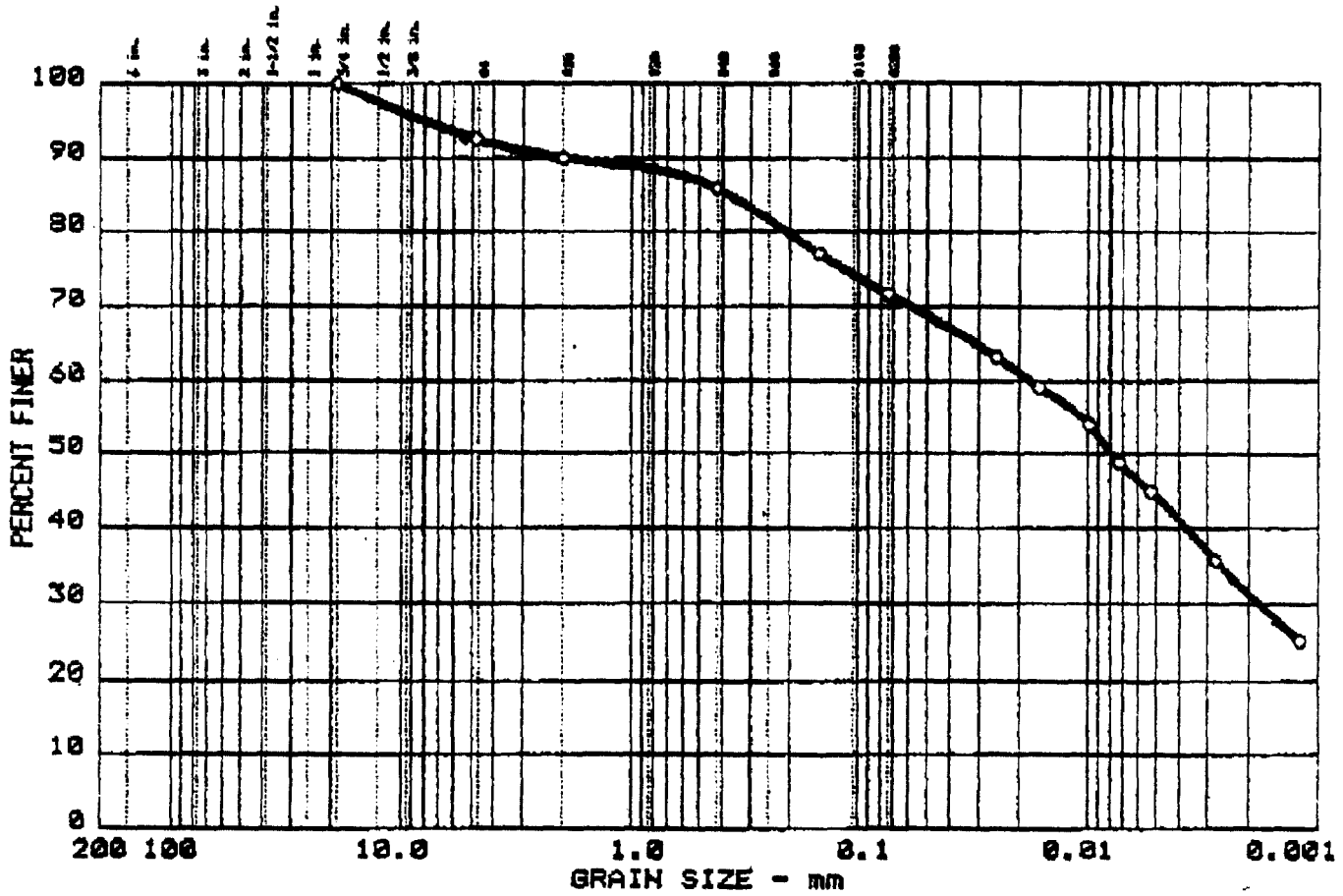
Date: 12-05-91

Remarks:
BH13 S-1 @ 5-7'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.22

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	7.4	21.0	27.4	44.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.37		0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BR. & GR. MOTTLED SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

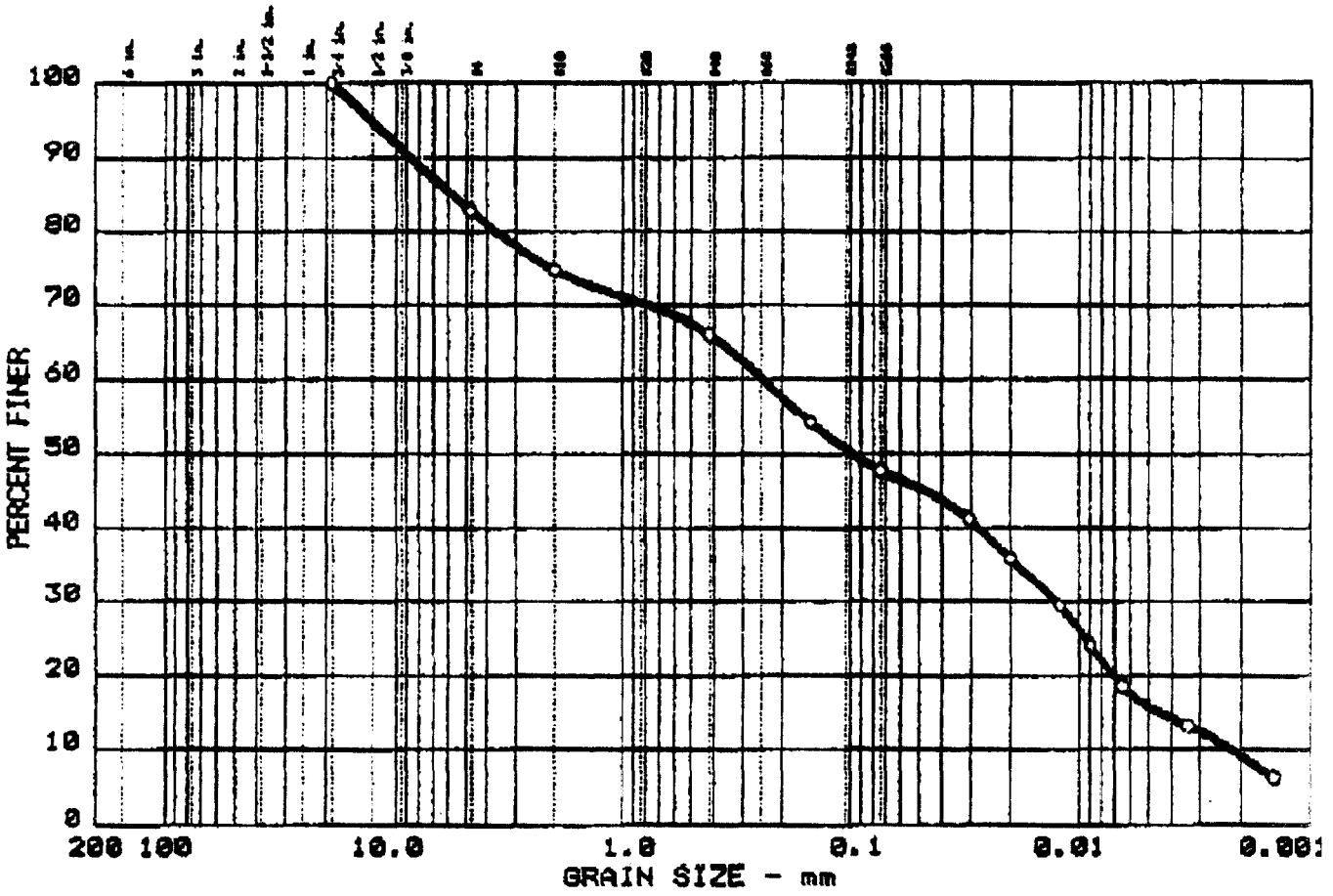
Date: 12-05-91

Remarks:
BH13 S-2 @ 10-12'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.23

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	17.2	35.1	32.1	15.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O			5.69	0.24	0.10	0.013	0.0045	0.0022	0.31	110.9

MATERIAL DESCRIPTION	USCS	AASHTO
O GR.& BR. ORGANIC SILT-CLAY W/SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

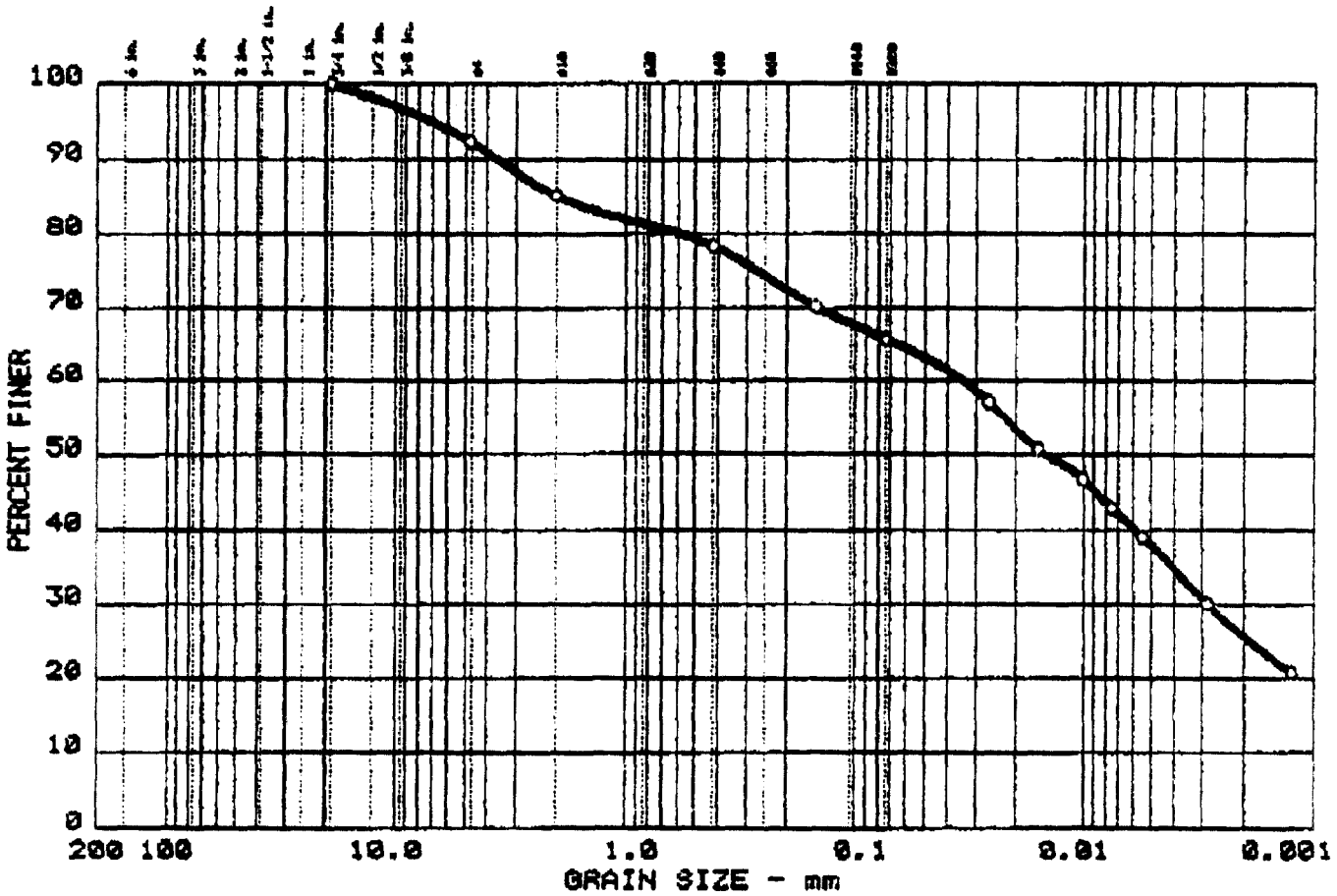
Date: 12-05-91

Remarks:
BH13 S-3 @ 15-17'
SAMPLED ON 11-09-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB.INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.24

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	7.7	26.6	27.7	38.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.95		0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
○ GR. SILTY CLAY W/SOME SHALE FRAGMENTS.TR. WOOD.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

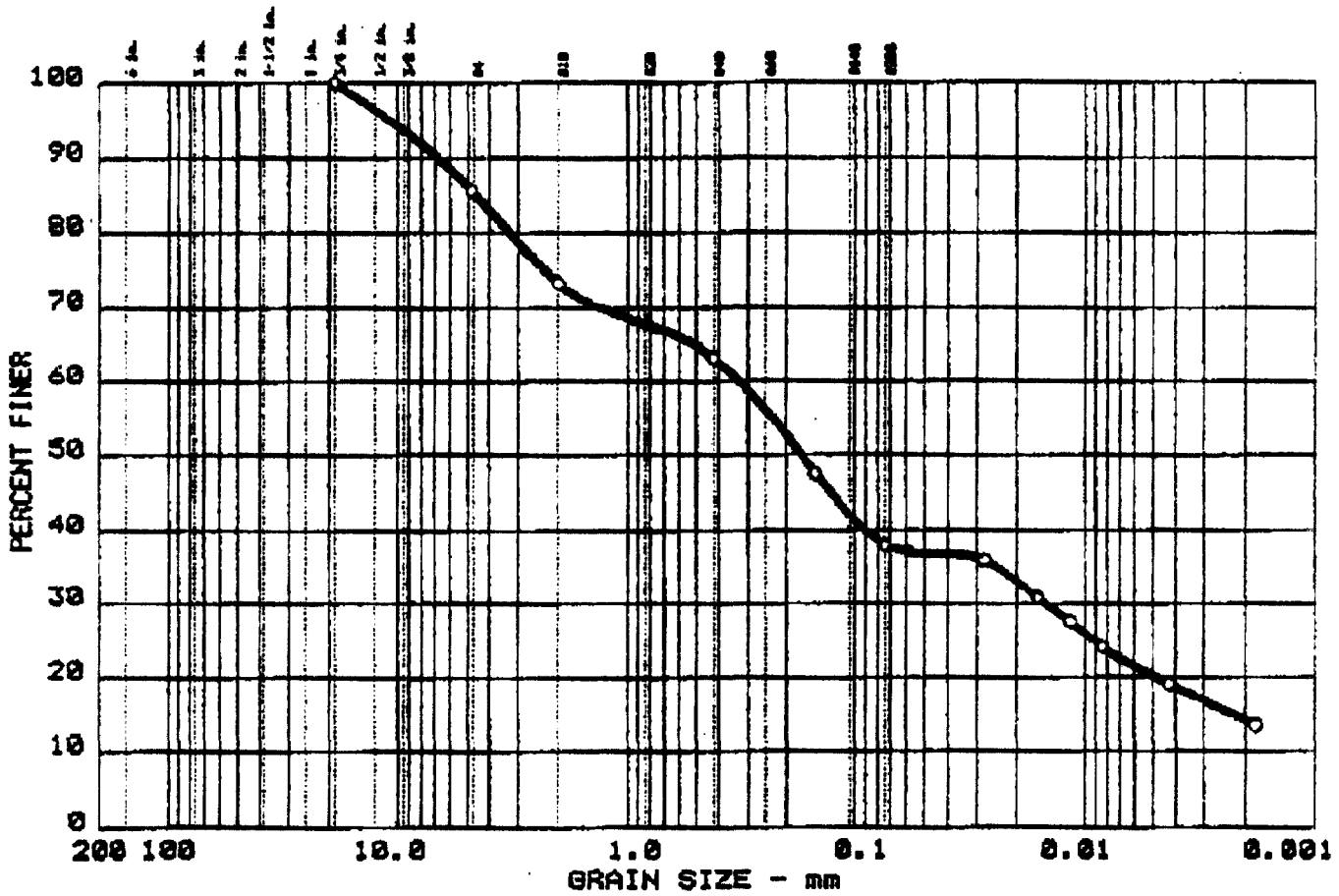
Date: 12-05-91

Remarks:
BH14 S-1 @ 5-7'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.25

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	14.4	47.5	18.0	20.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.57	0.32	0.17	0.015	0.0023			

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY WEATHERED SHALE.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

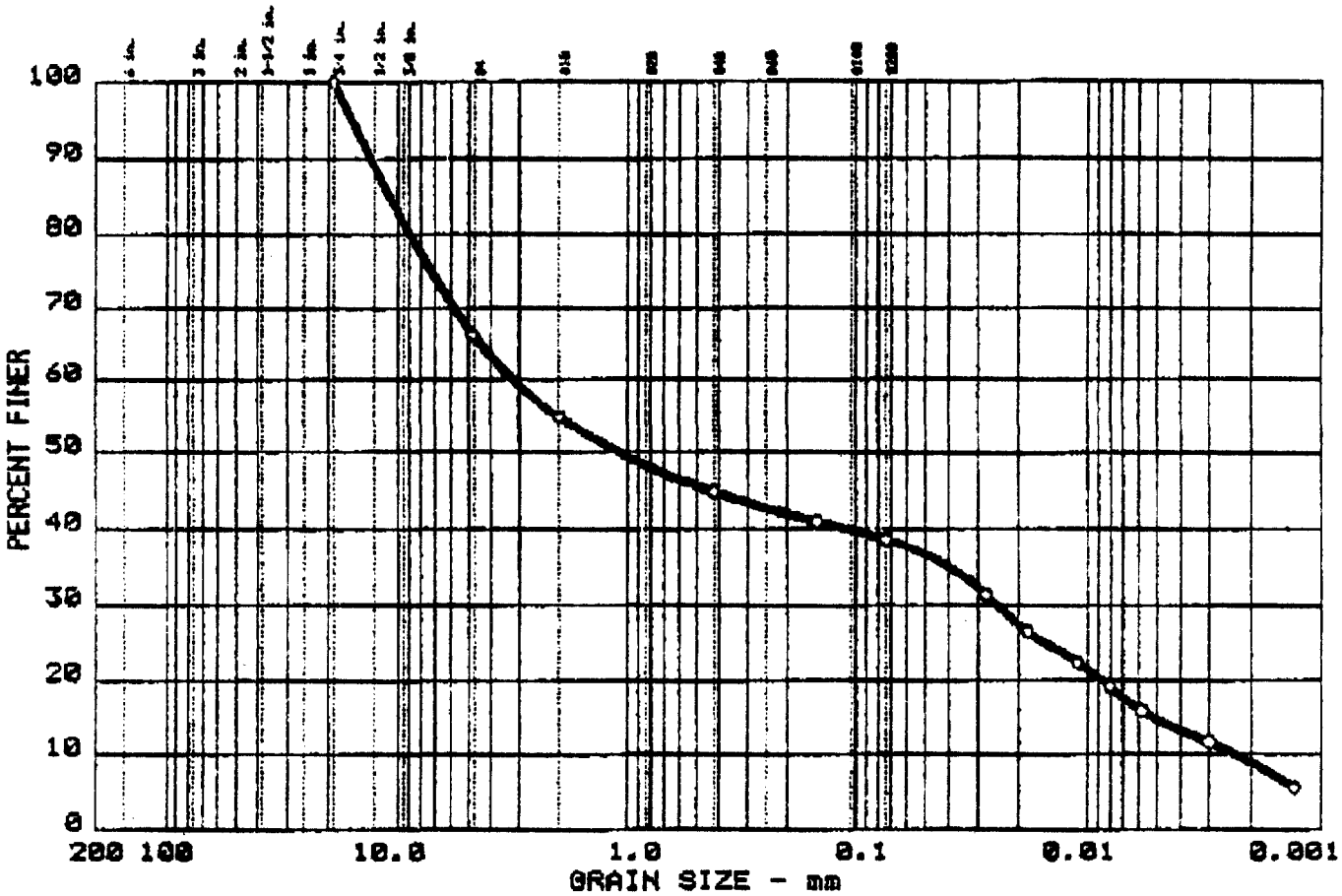
Date: 12-05-91

Remarks:
BH14 S-2 @ 10-12'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.26

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	33.7	27.6	24.1	14.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O			10.93	3.15	1.09	0.024	0.0053	0.0023	0.08	1364.6

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE. OXIDATION STAINED.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

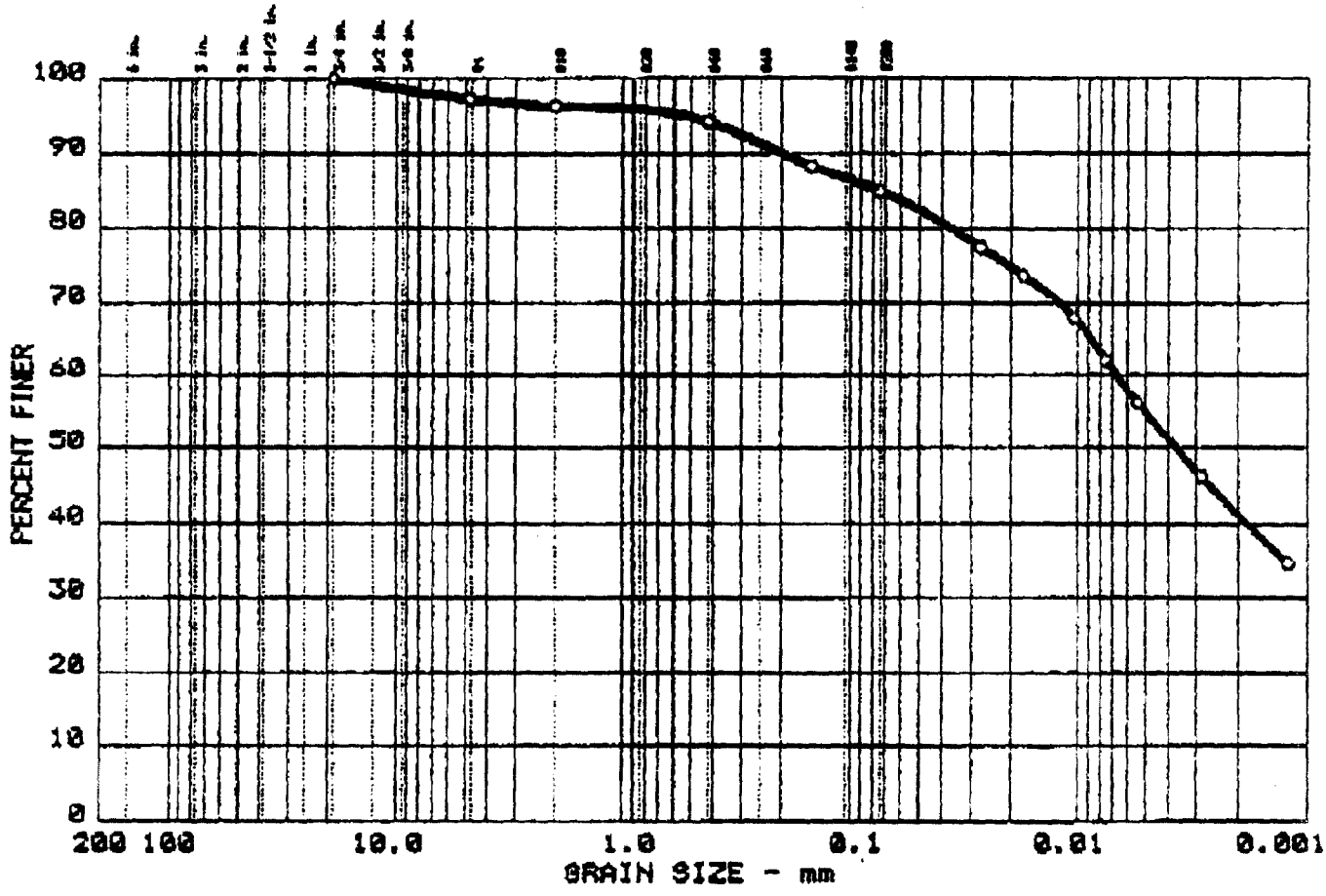
Date: 12-05-91

Remarks:
BH14 S-3 @ 15-15.9'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.27

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.7	12.3	30.2	54.8

	LL	PI	D_{95}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A			0.00					

MATERIAL DESCRIPTION	USCS	AASHTO
○ BR.& GR. MOTTLED SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

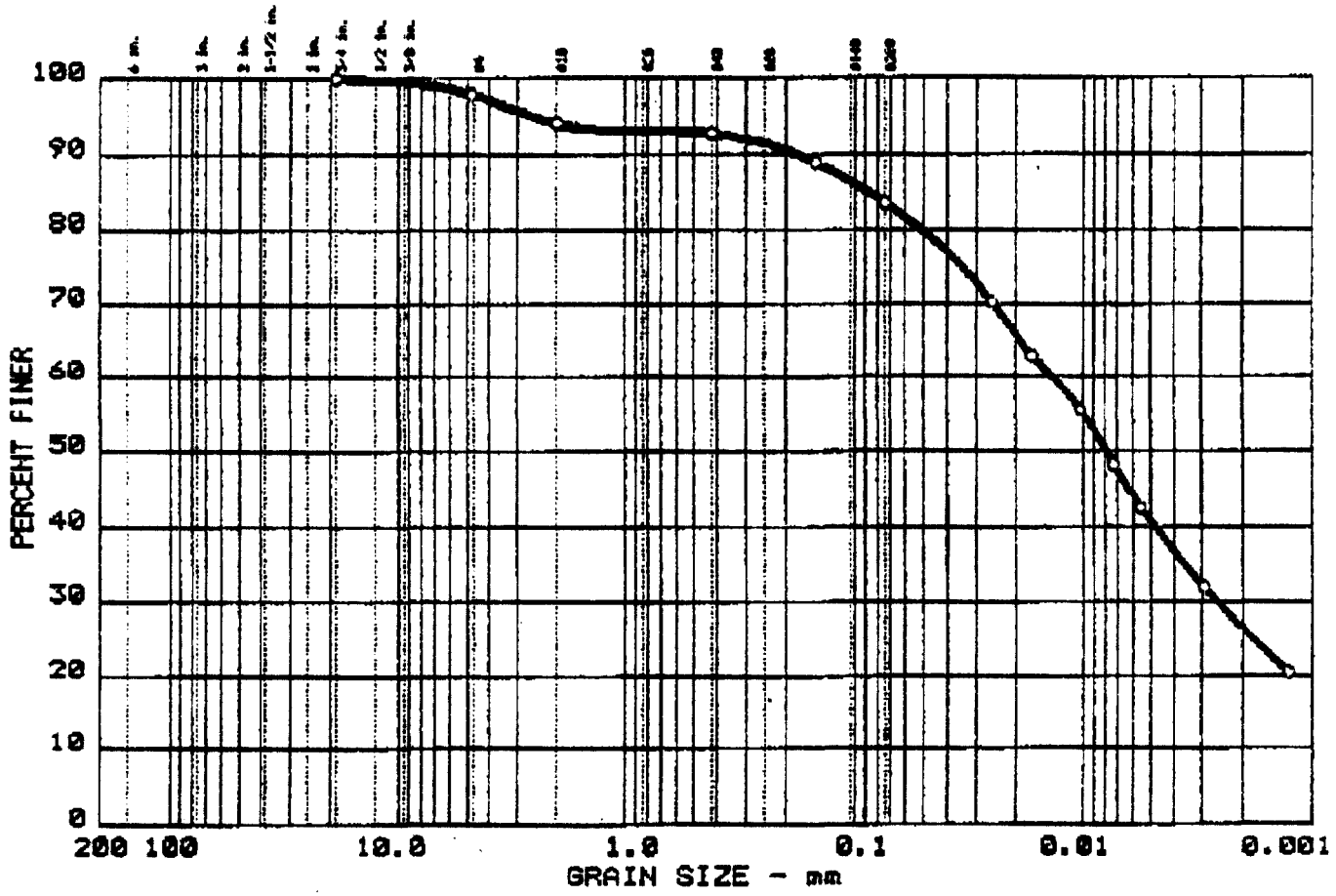
Date: 12-06-91

Remarks:
BH15 S-1 @ 5-7'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.23

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	2.1	14.4	42.9	40.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	0.09		0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. & GR. SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

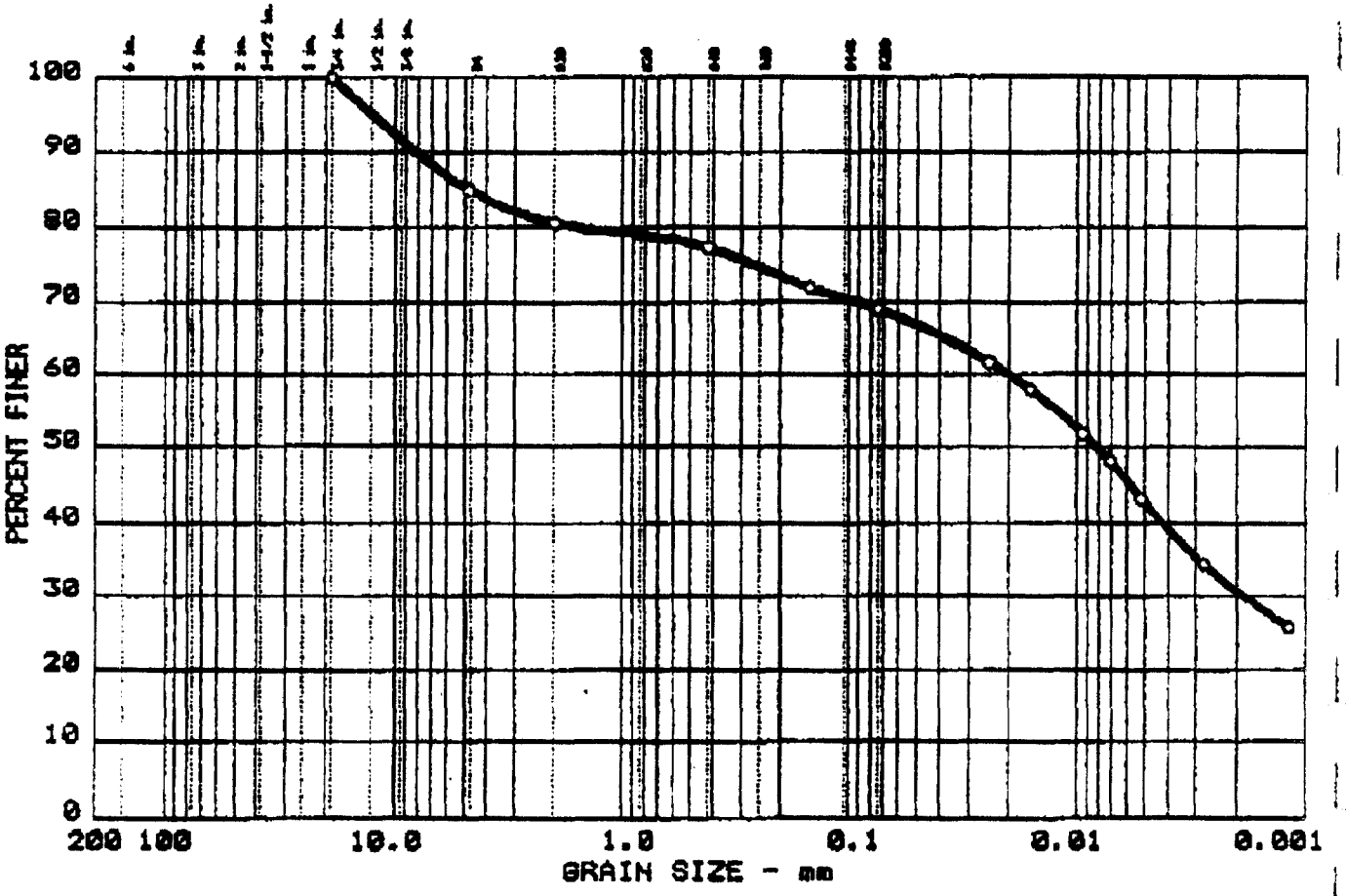
Date: 12-06-91

Remarks:
BH15 S-2 @ 10-12'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.29

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	15.1	16.0	26.3	42.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	4.79		0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. & GR. MOTTLED SILTY CLAY W/SOME SHALE FRAG.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

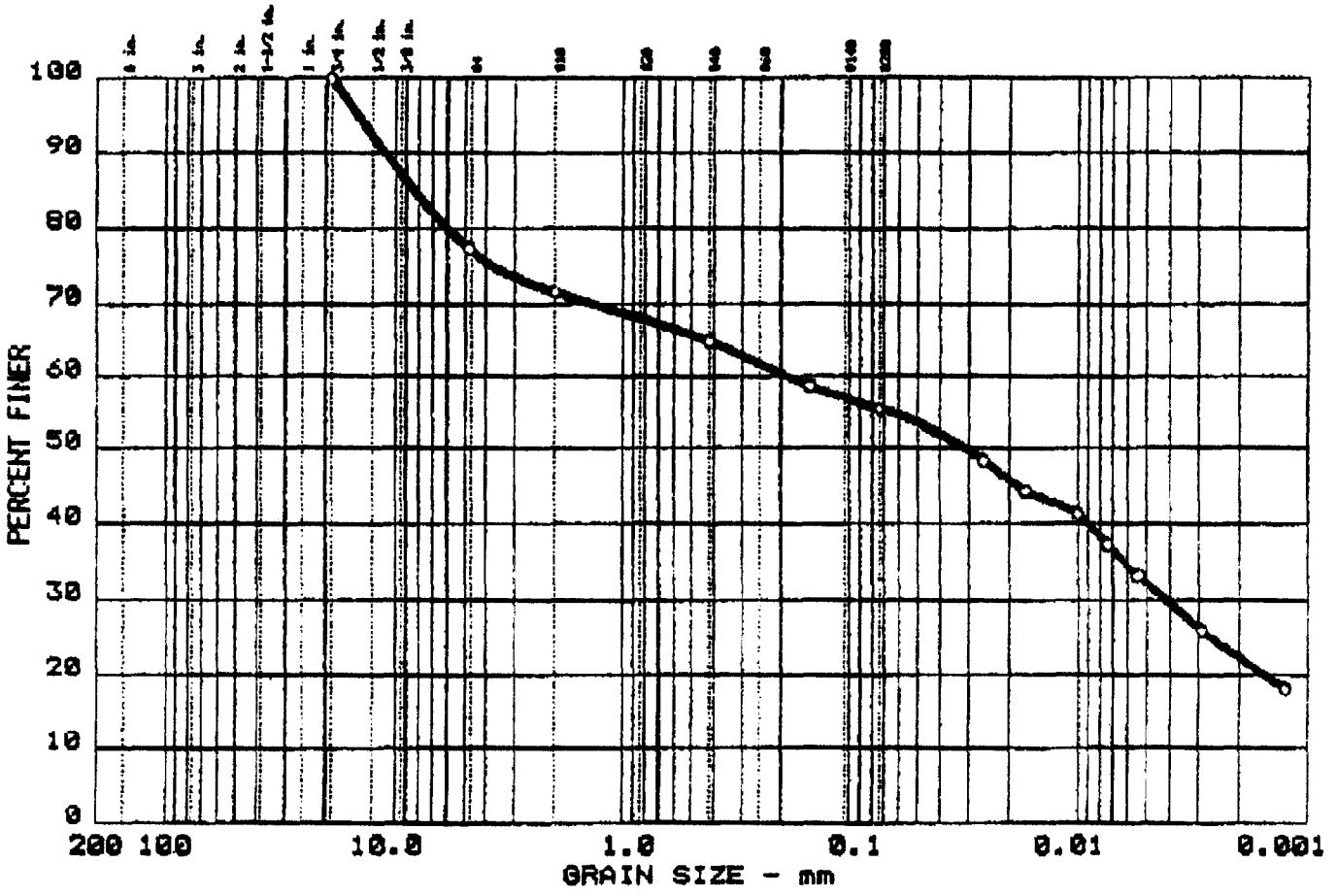
Date: 12-06-91

Remarks:
BH10 S-1 @ 5-7'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.30

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	22.7	21.8	23.3	32.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	8.32	0.19	0.03	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. SILTY CLAY. SOME GR. CLAY, COAL, AND SHALE.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

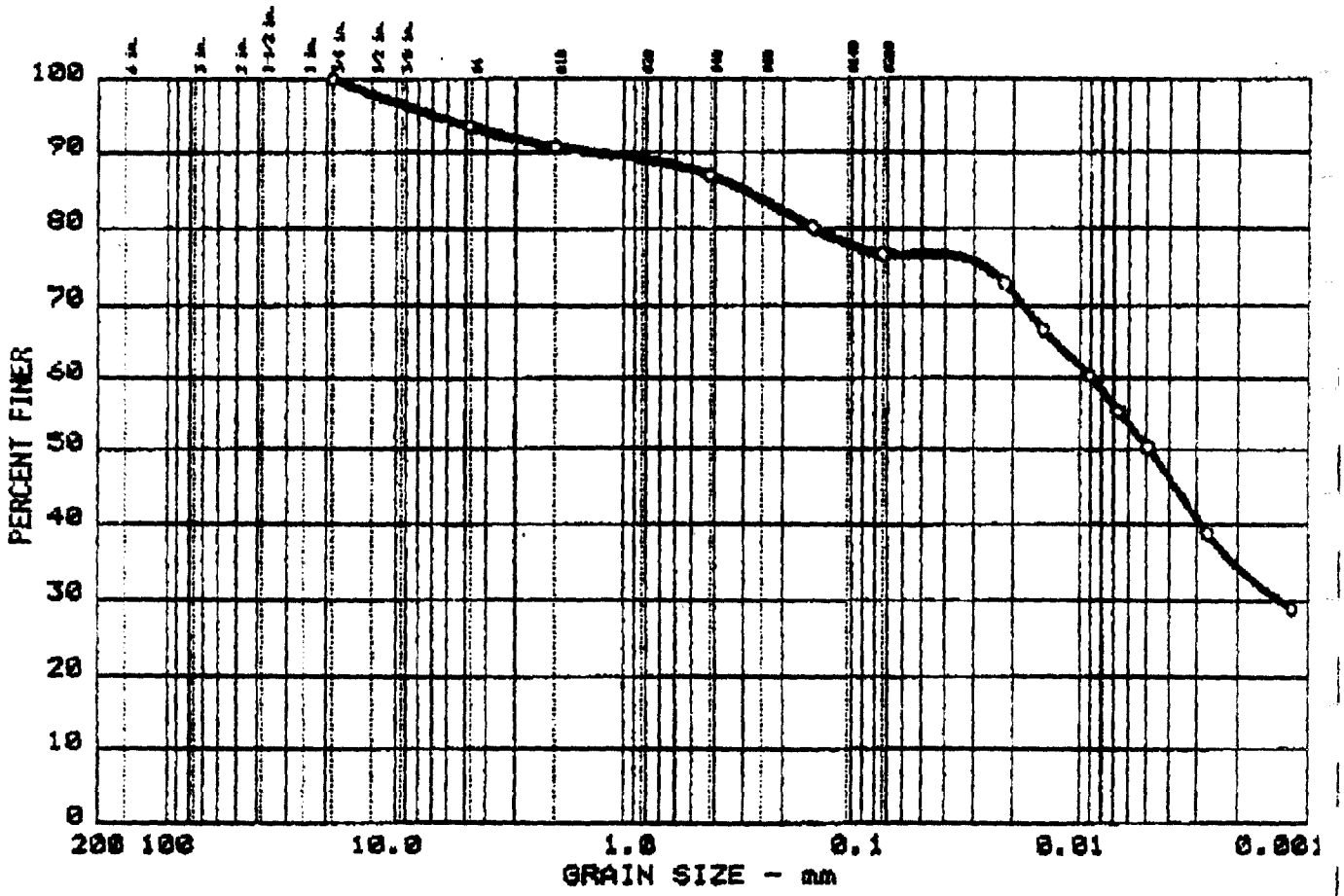
Date: 12-06-91

Remarks:
BH10 S-2 @ 10-12'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.31

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	6.5	16.8	26.1	50.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	0.30		0.00	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. W/SOME GR. SILTY CLAY. TR. SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

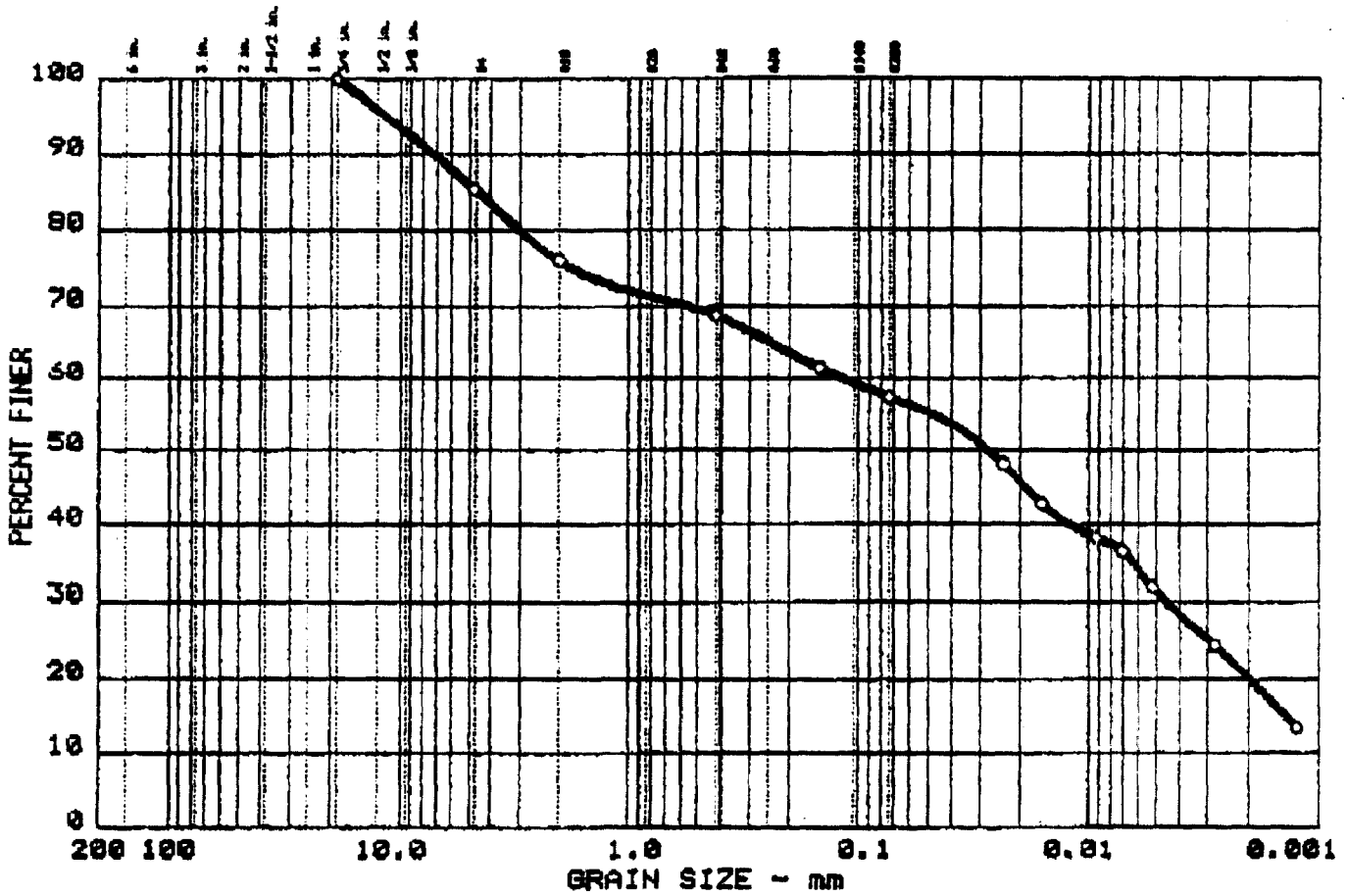
Date: 12-06-91

Remarks:
BH11 S-1 @ 5-7'
SAMPLED ON 11-10-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.32

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	14.7	27.8	26.3	31.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	4.57	0.12	0.03	0.005	0.0014			

MATERIAL DESCRIPTION	USCS	AASHTO
○ DARK BR. SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

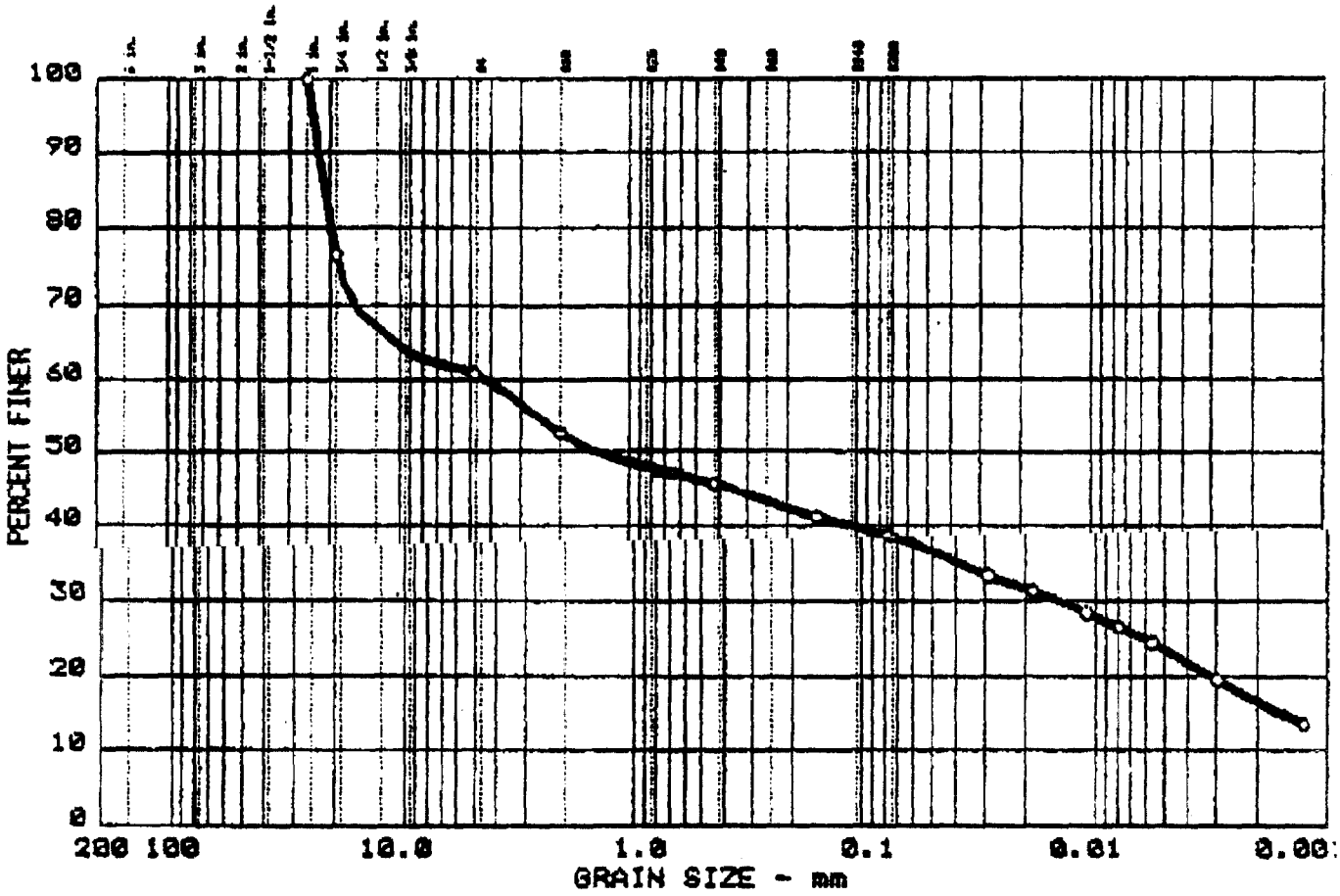
Date: 12-06-91

Remarks:
BH9 S-1 @ 5-7'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.33

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	39.1	22.3	15.0	23.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	21.50	4.19	1.40	0.015	0.0016			

MATERIAL DESCRIPTION	USCS	AASHTO
○ GR. SHALE W/SOME BR. SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

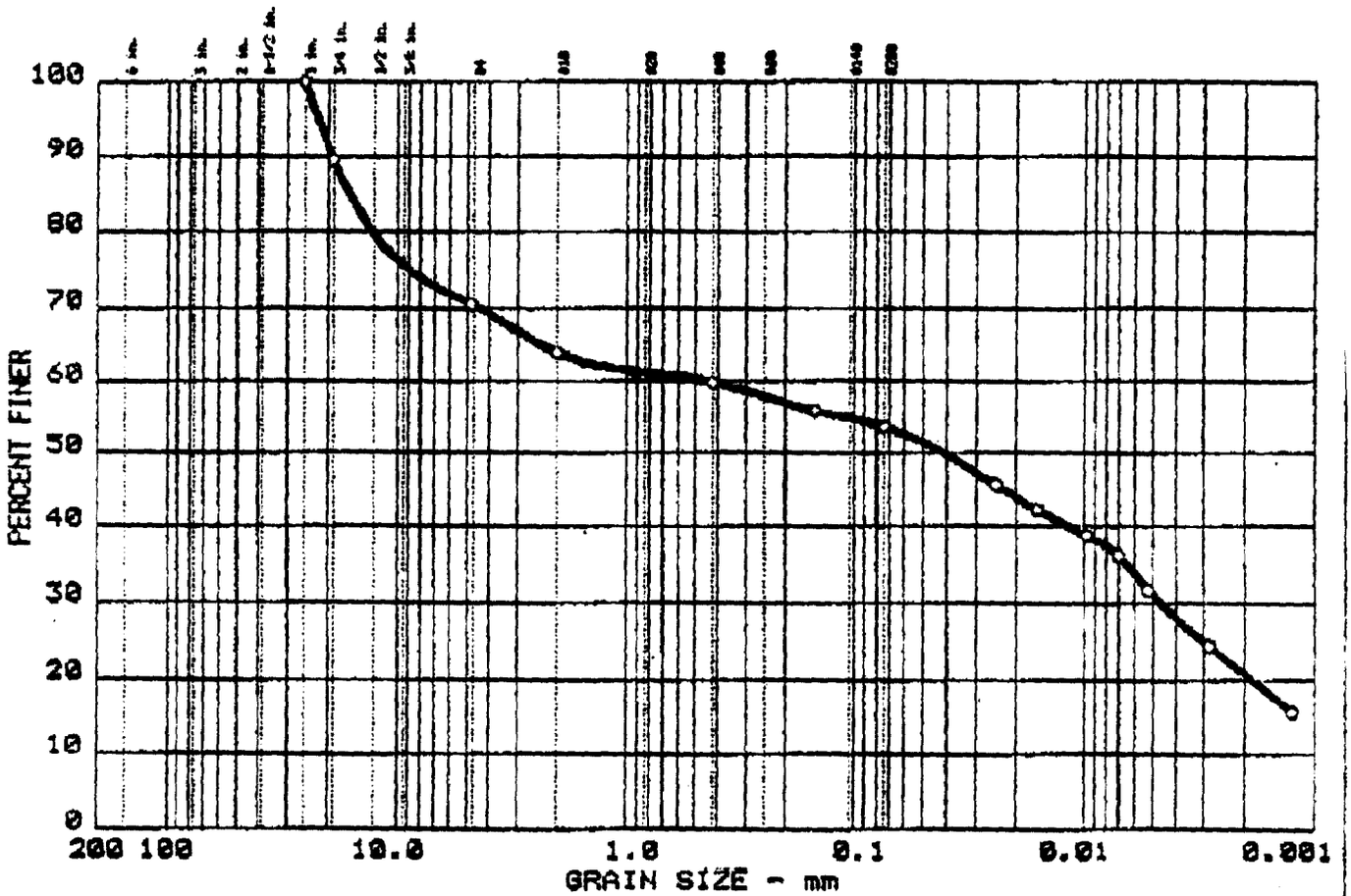
Date: 12-06-91

Remarks:
BH9 S-2 @ 10-12'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.34

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	29.6	16.9	22.6	30.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	16.22	0.42	0.04	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND GRAY SILTY CLAY W/SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

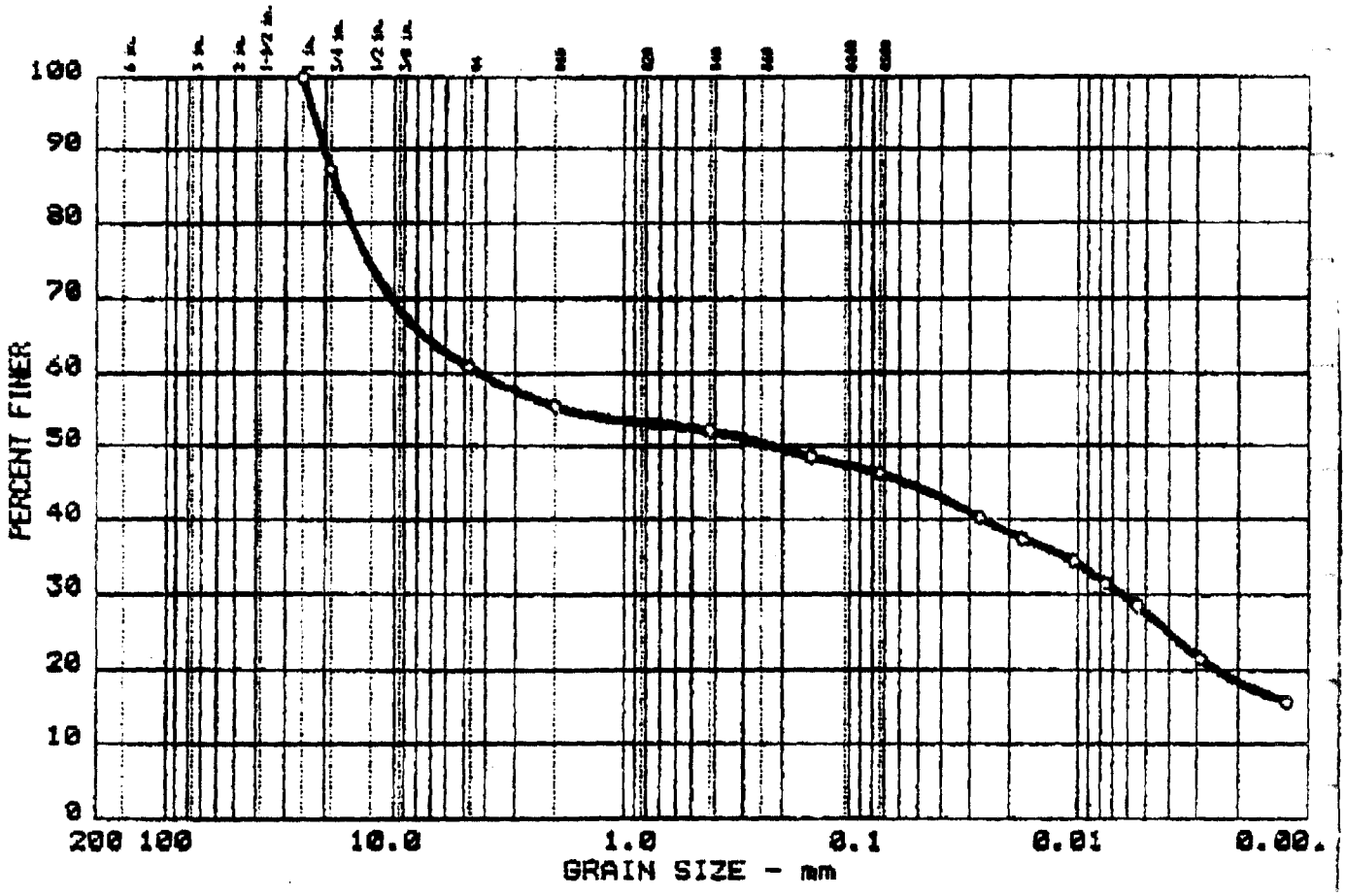
Date: 12-06-91

Remarks:
BH9 S-3 @ 15-17'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.35

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	39.1	14.7	18.6	27.6

	LL	PI	D_{95}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	17.99	4.17	0.22	0.086				

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY & BROWN SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

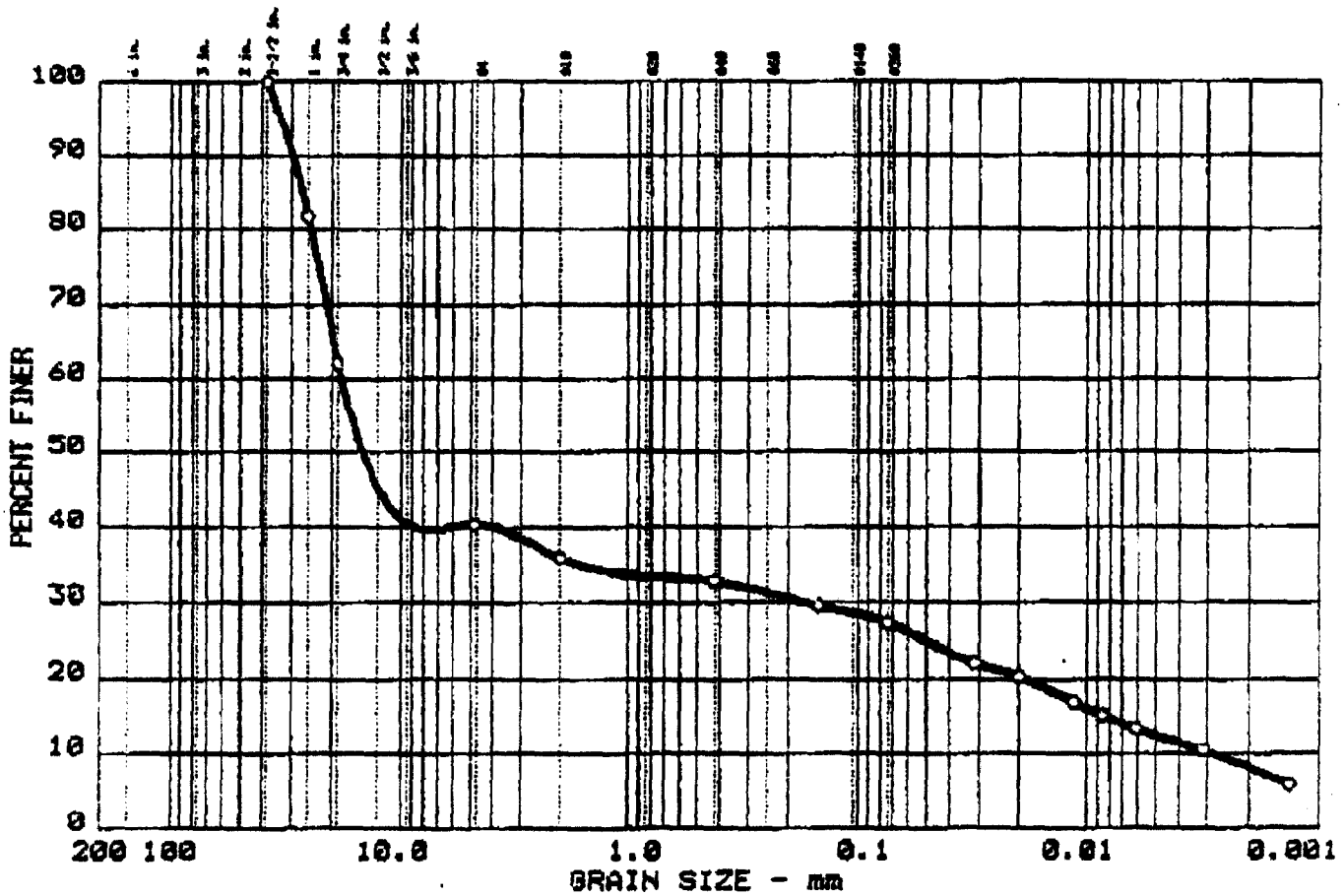
Date: 12-09-91

Remarks:
BH9 S-4 @ 20-22'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.36

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	59.6	13.0	14.9	12.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	26.85	18.34	14.91	0.165	0.0084	0.0028	0.54	6606.9

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE W/SOME SILT AND CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

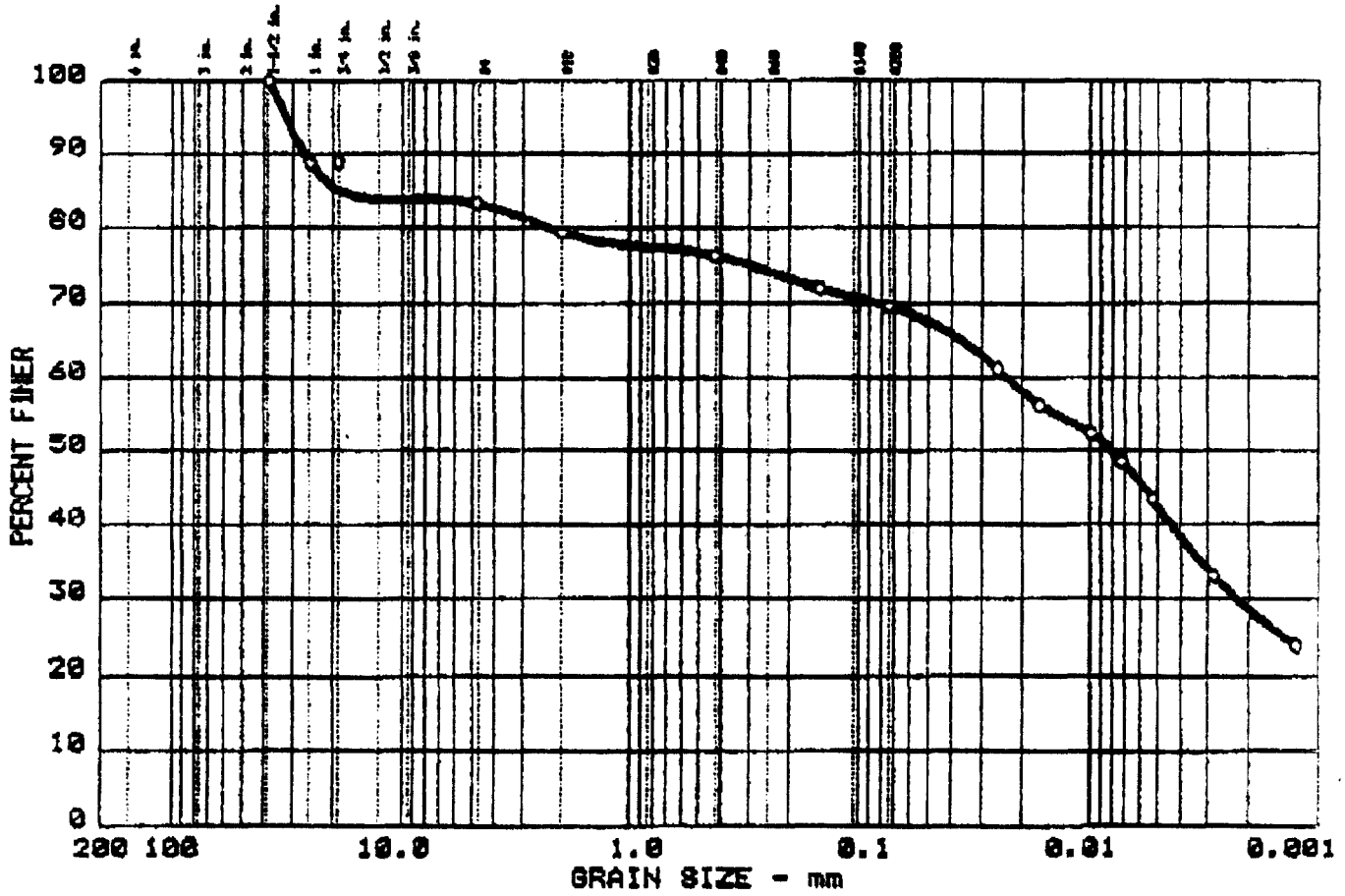
Date: 12-09-91

Remarks:
BH9 S-5 @ 25-27'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.37

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	16.7	13.8	27.1	42.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	18.84		0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILTY CLAY W/SOME COAL.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

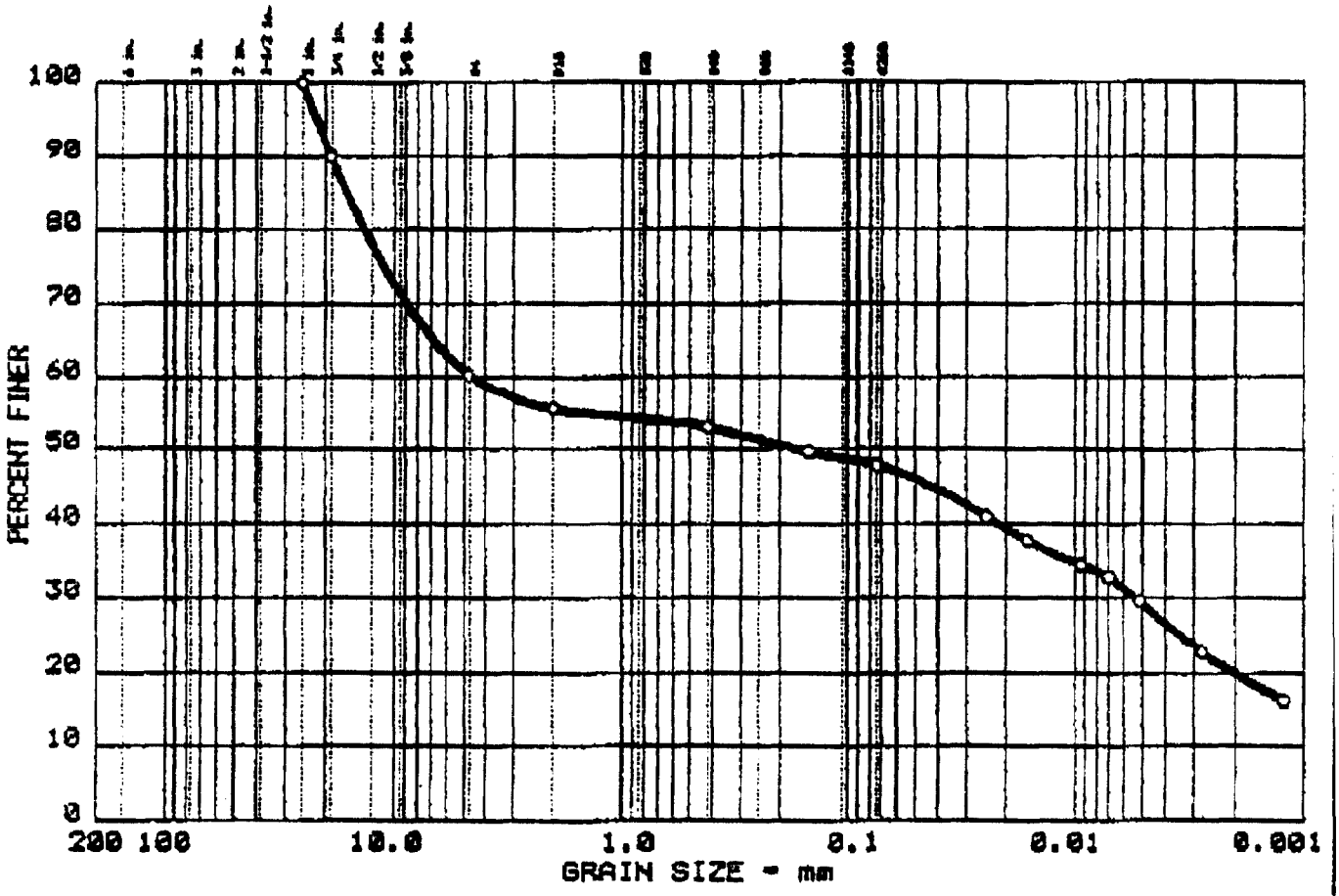
Date: 12-09-91

Remarks:
BHS S-1 @ 5-7'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.38

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	39.6	12.5	18.7	29.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	16.22	4.57	0.16	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILTY CLAY W/SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

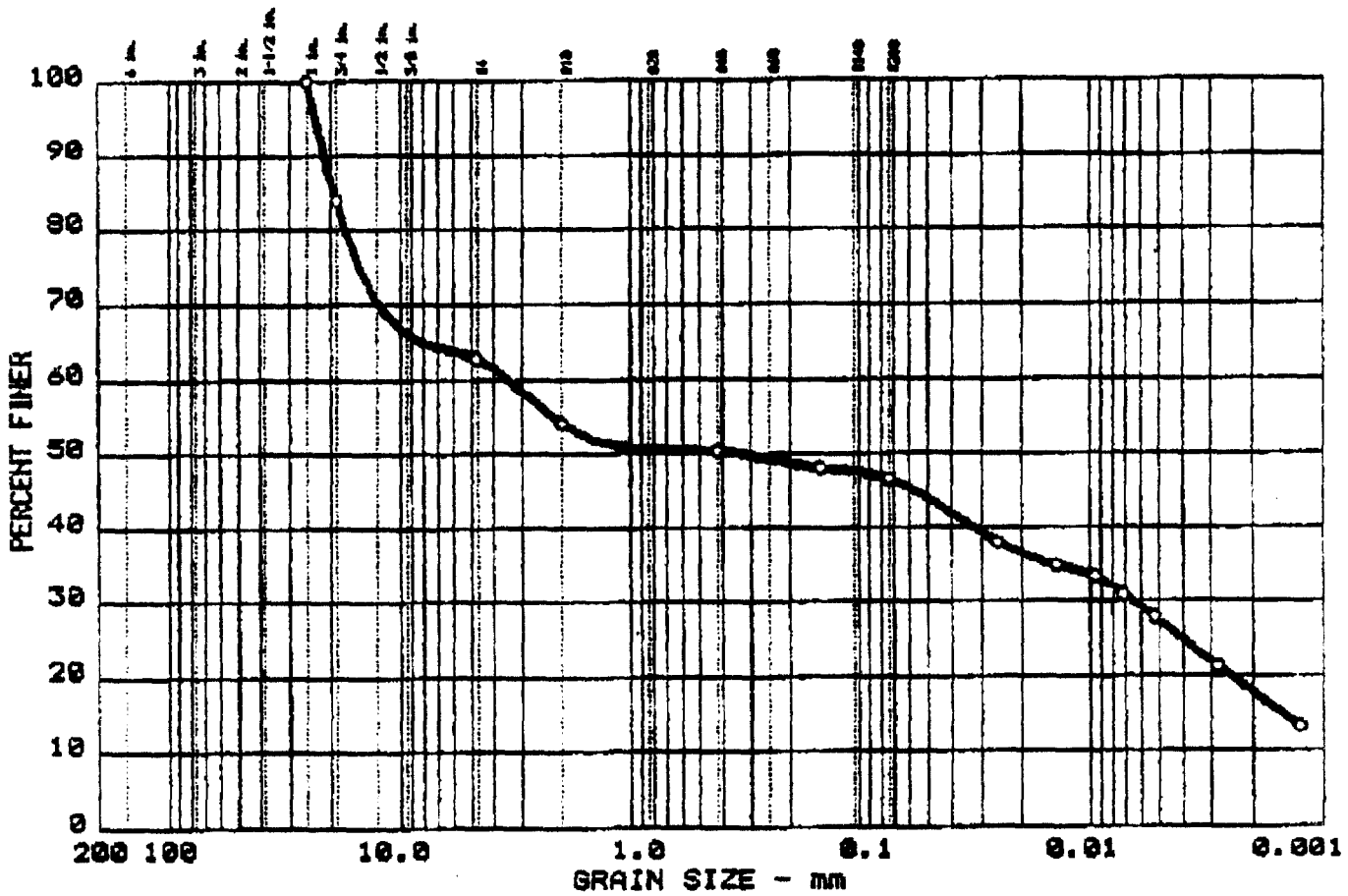
Date: 12-09-91

Remarks:
BHS S-2 @ 10-12'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.39

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	37.0	16.4	19.4	27.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	19.48	3.38	0.33	0.007	0.0015			

MATERIAL DESCRIPTION	USCS	AASHTO
○ GR. W/TR. BR. SILTY CLAY. SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

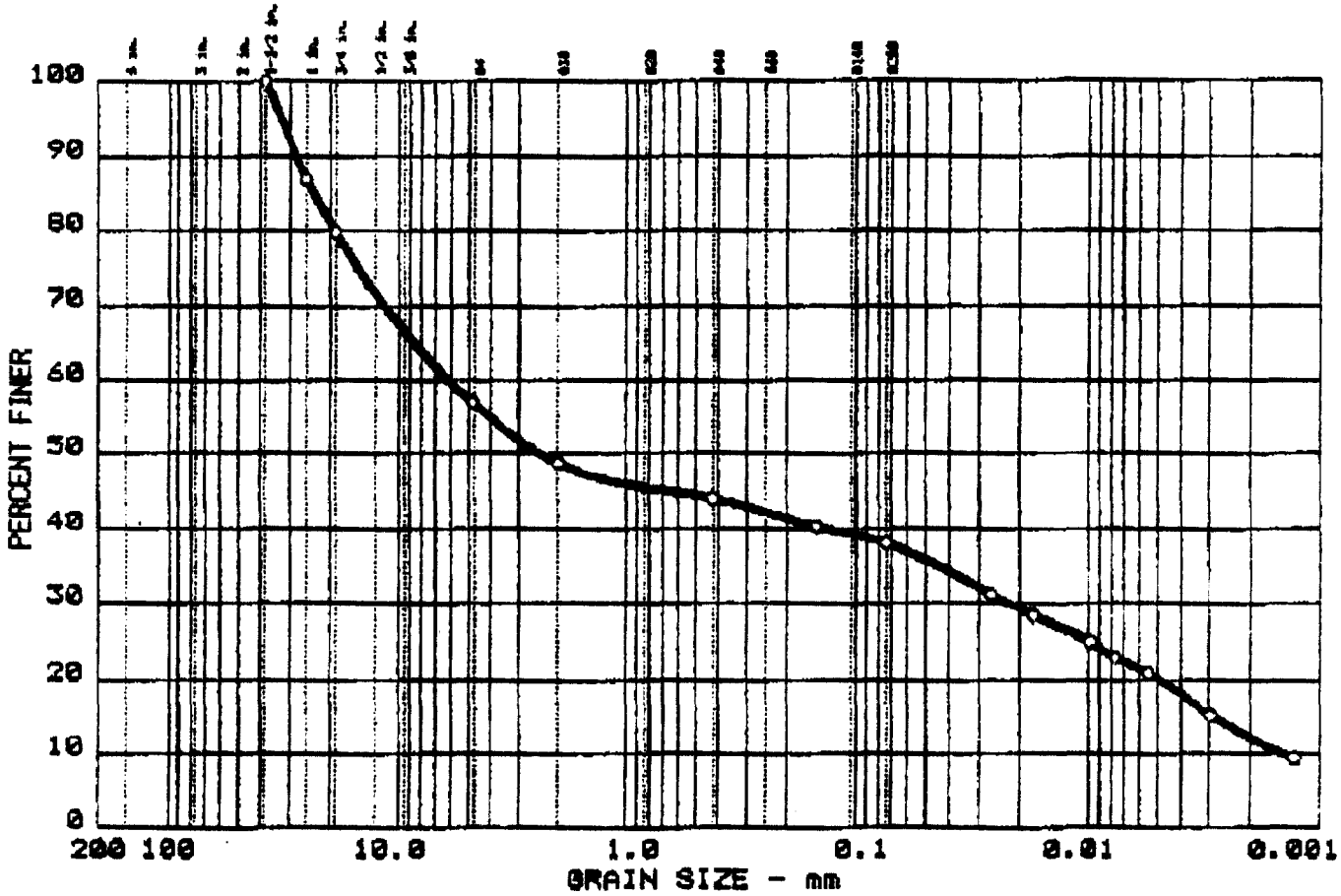
Date: 12-09-91

Remarks:
BHS S-3 @ 15-17'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.40

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	43.2	18.8	17.9	20.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	23.71	6.10	2.37	0.022	0.0029	0.0014	0.06	4365.2

MATERIAL DESCRIPTION	USCS	AASHTO
○ GR. W/SOME BR. SILTY CLAY. SOME SHALE FRAGMENTS		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

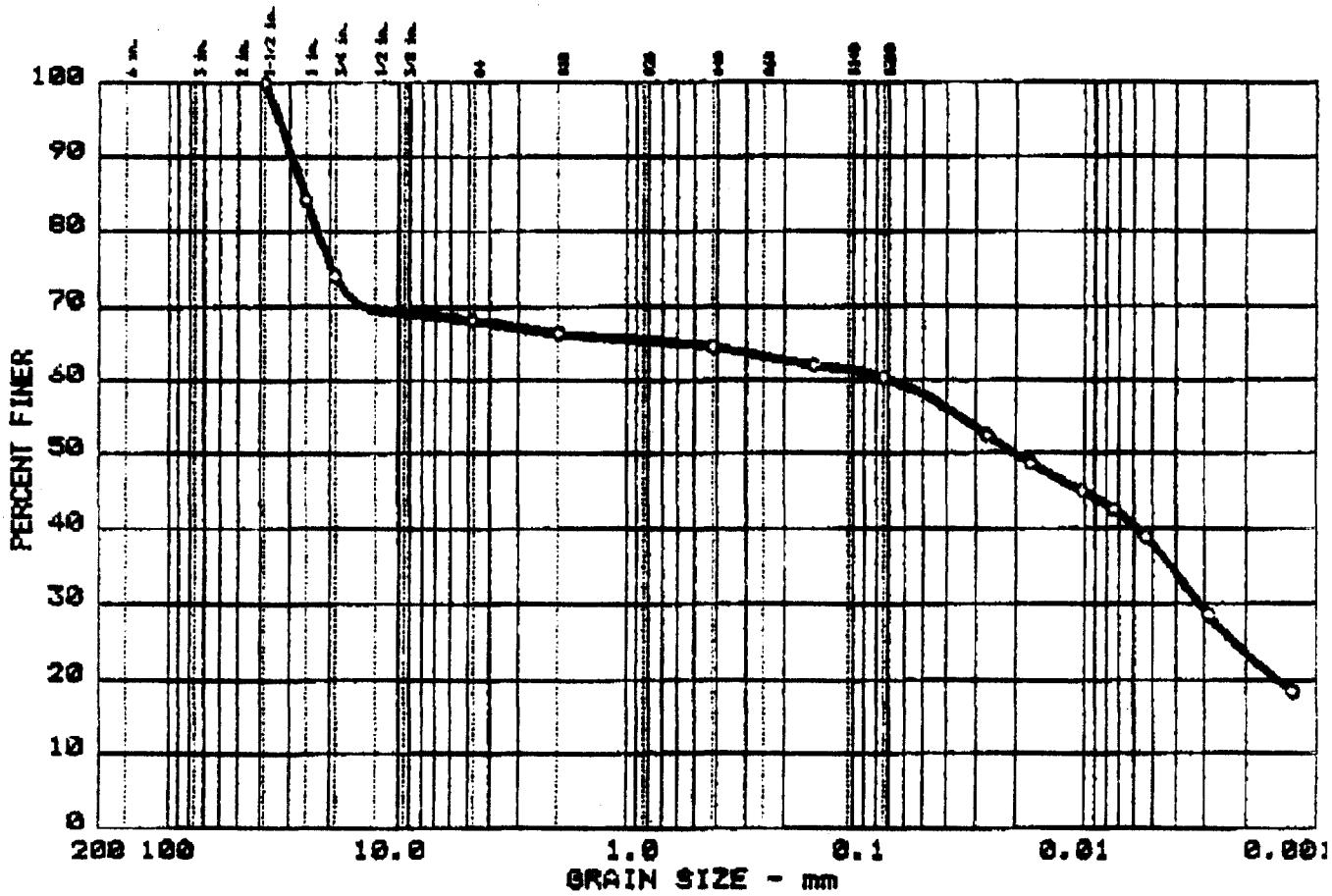
Date: 12-09-91

Remarks:
BH8 S-4 @ 20-22'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.41

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	32.0	7.6	22.7	37.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	25.94		0.02	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
○ GR. W/SOME BR. SILTY CLAY. SOME SHALE FRAGMENTS		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

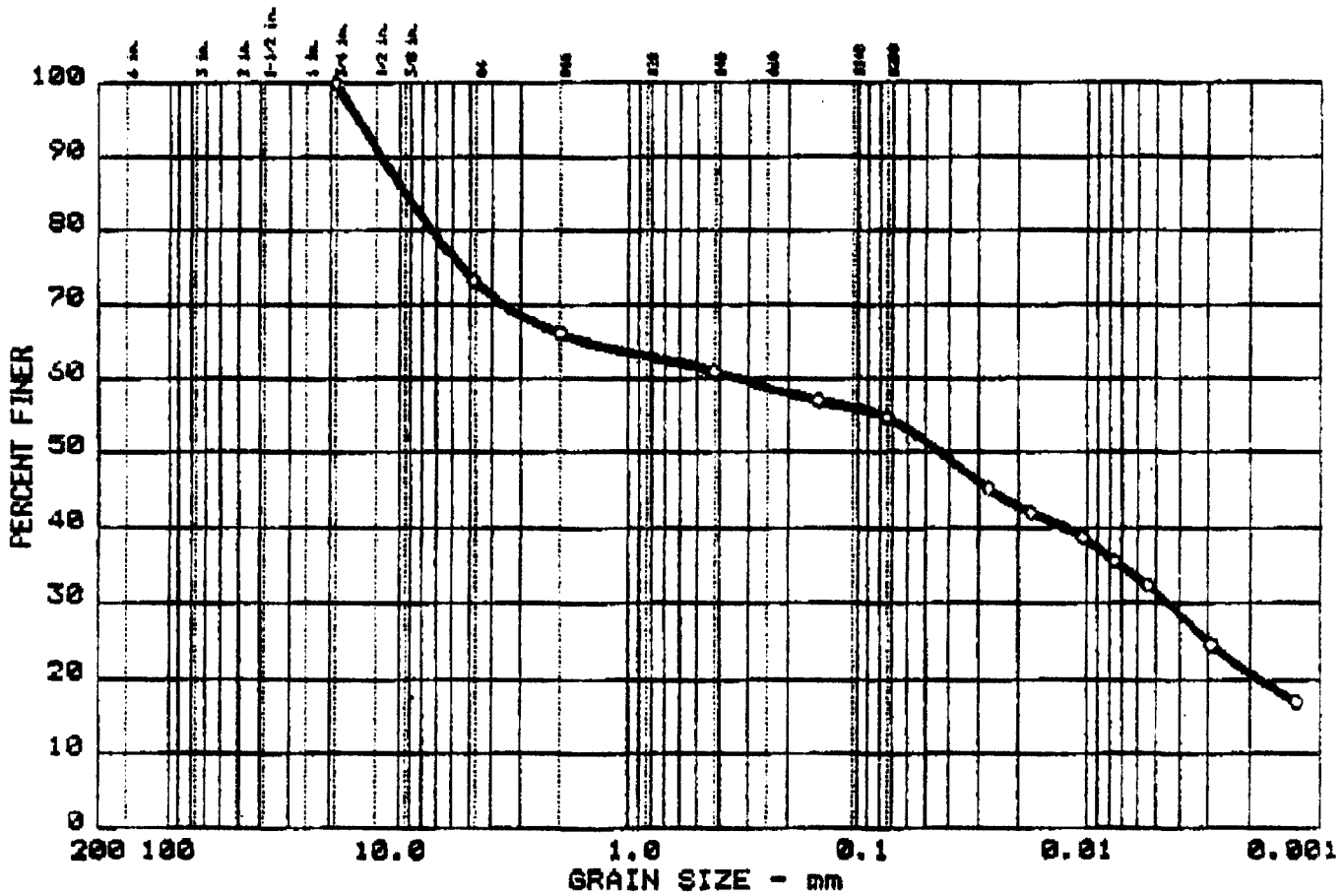
Date: 12-09-91

Remarks:
BHS S-5 @ 25-27'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.42

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	26.0	19.4	23.3	31.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	9.55	0.33	0.04	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BR. & GR. SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

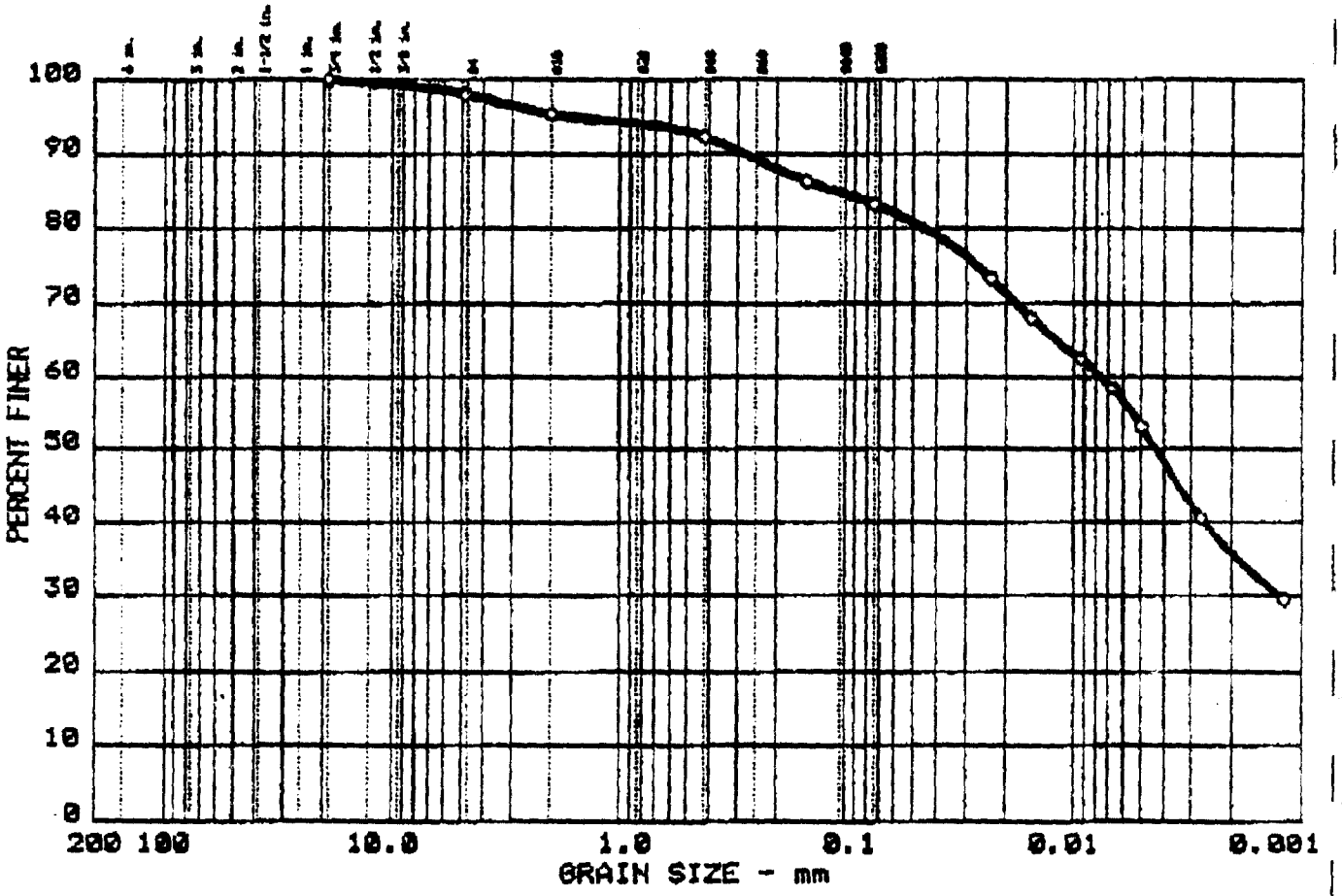
Date: 12-09-91

Remarks:
BHS S-6 @ 28.5-30.5'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.43

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.9	15.0	30.1	53.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	0.11		0.00	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

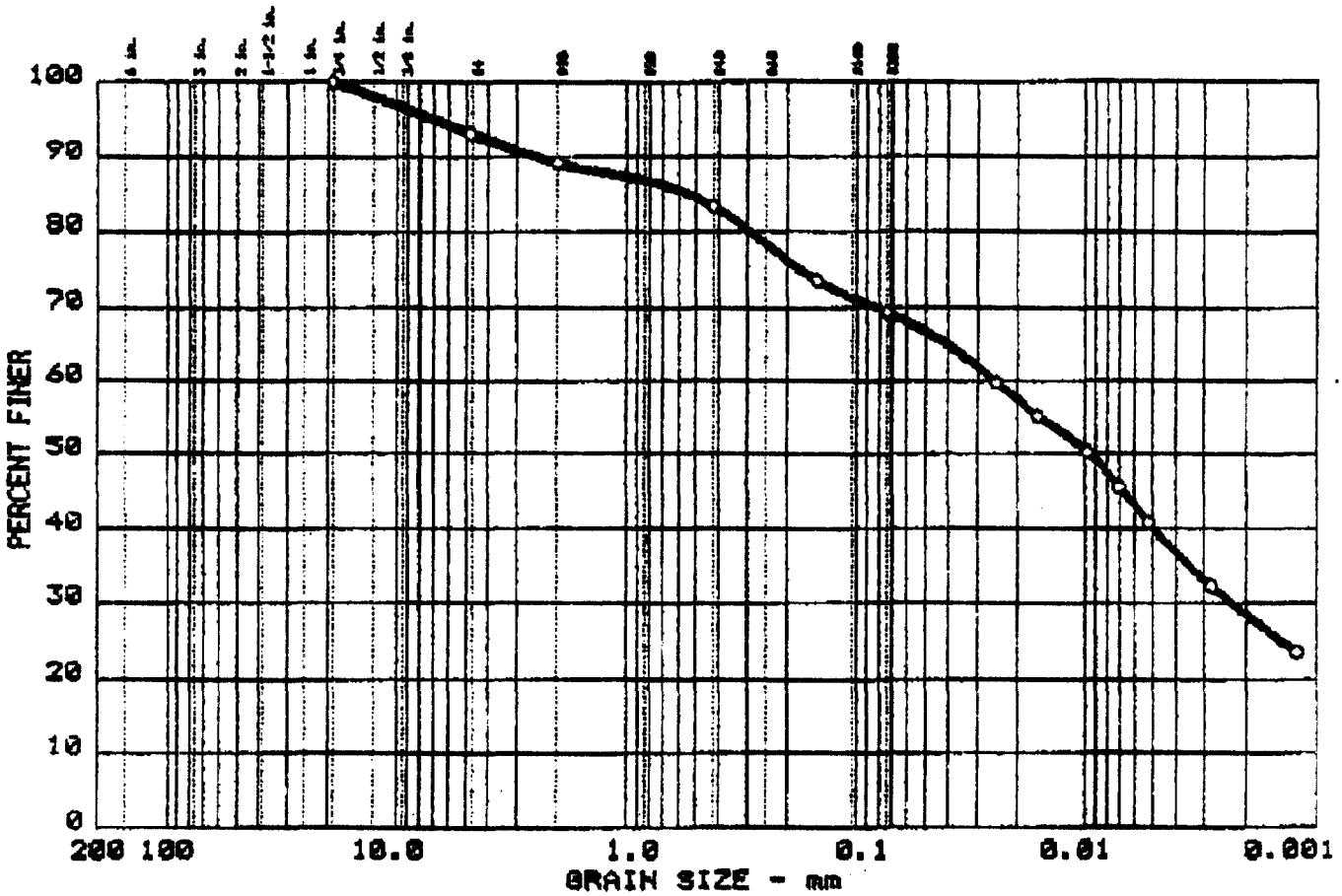
Date: 12-09-91

Remarks:
BH7 S-1 @ 5-7'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.44

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	6.9	23.7	29.3	40.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	0.54		0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. SILTY CLAY. TRACE SHALE AND GRAVEL.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

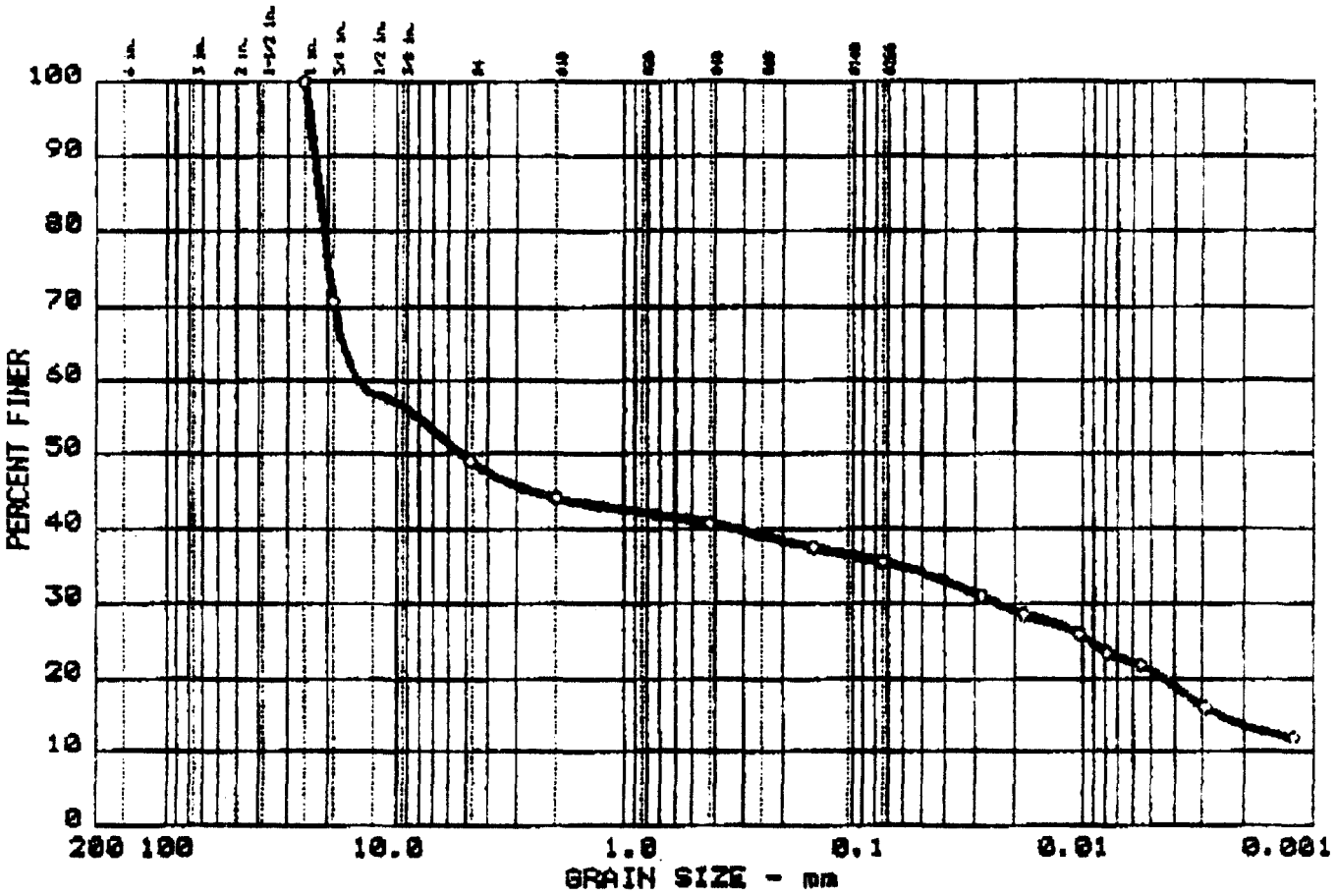
Date: 12-09-91

Remarks:
BH7 S-2 @ 10-12'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.45

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	51.0	13.5	14.5	21.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	22.23	14.86	5.21	0.024	0.0026			

MATERIAL DESCRIPTION	USCS	AASHTO
O BROWN SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

Date: 12-10-91

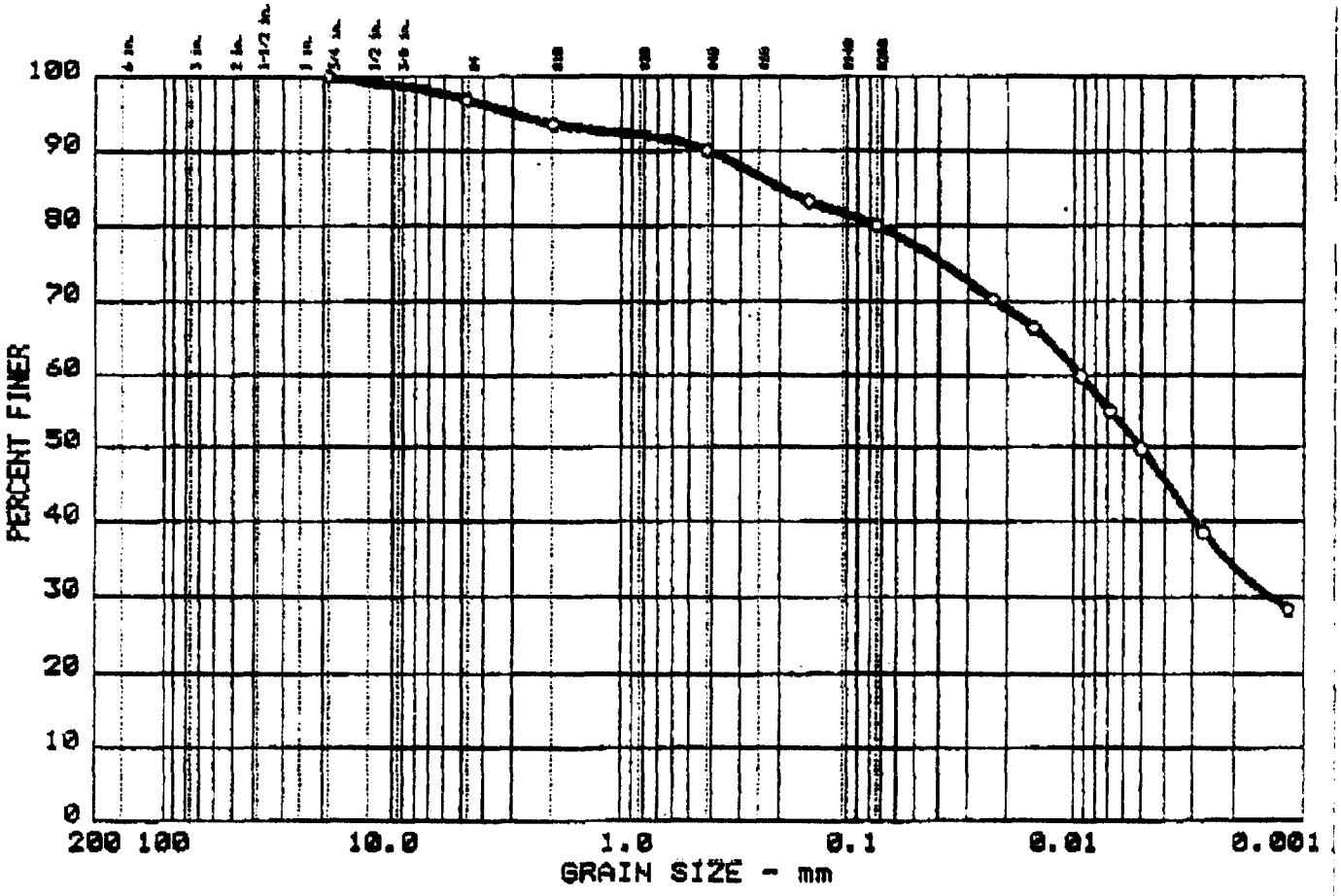
Remarks:
BH7 S-3 @ 15-17'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT

APPLIED CONSTRUCTION TECH., INC.

Figure No.46

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	3.1	16.9	30.2	49.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	0.20		0.01	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. W/TRACE OF GRAY SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

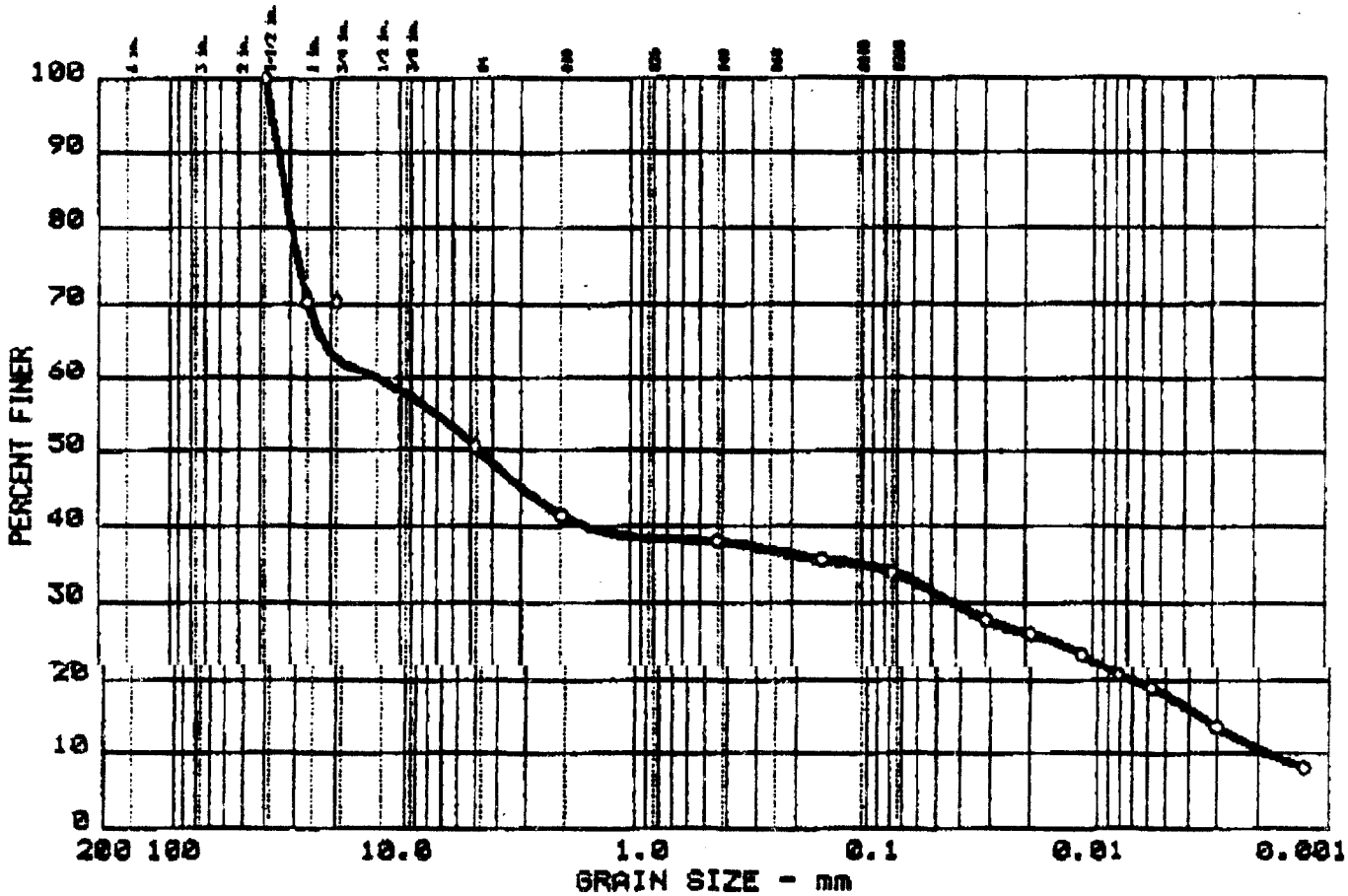
Date: 12-10-91

Remarks:
BH7 S-4 @ 20-22'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.47

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	49.5	16.5	16.1	17.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	31.84	12.39	4.55	0.041	0.0035	0.0018	0.07	6998.4

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE FRAGMENTS W/SOME SILT AND CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP,PORTAGE CTY,OHIO

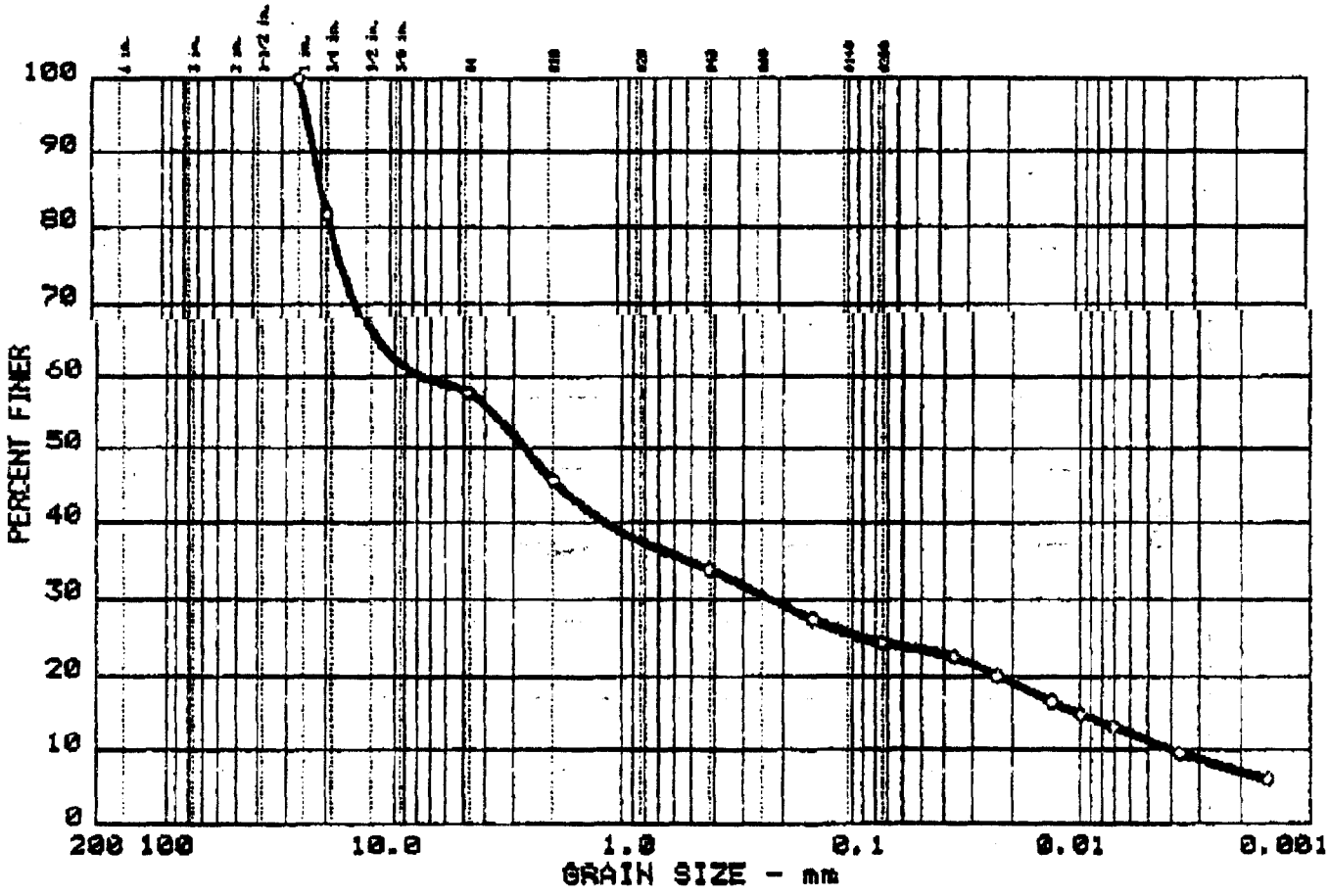
Date: 12-10-91

Remarks:
BH7 S-5 @ 25-27'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB,INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.48

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	42.2	33.4	13.1	11.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	20.18	7.50	2.66	0.226	0.0102	0.0039	1.76	1927.5

MATERIAL DESCRIPTION	USCS	AASHTO
○ GR. SHALE AND COAL W/SOME BROWN SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

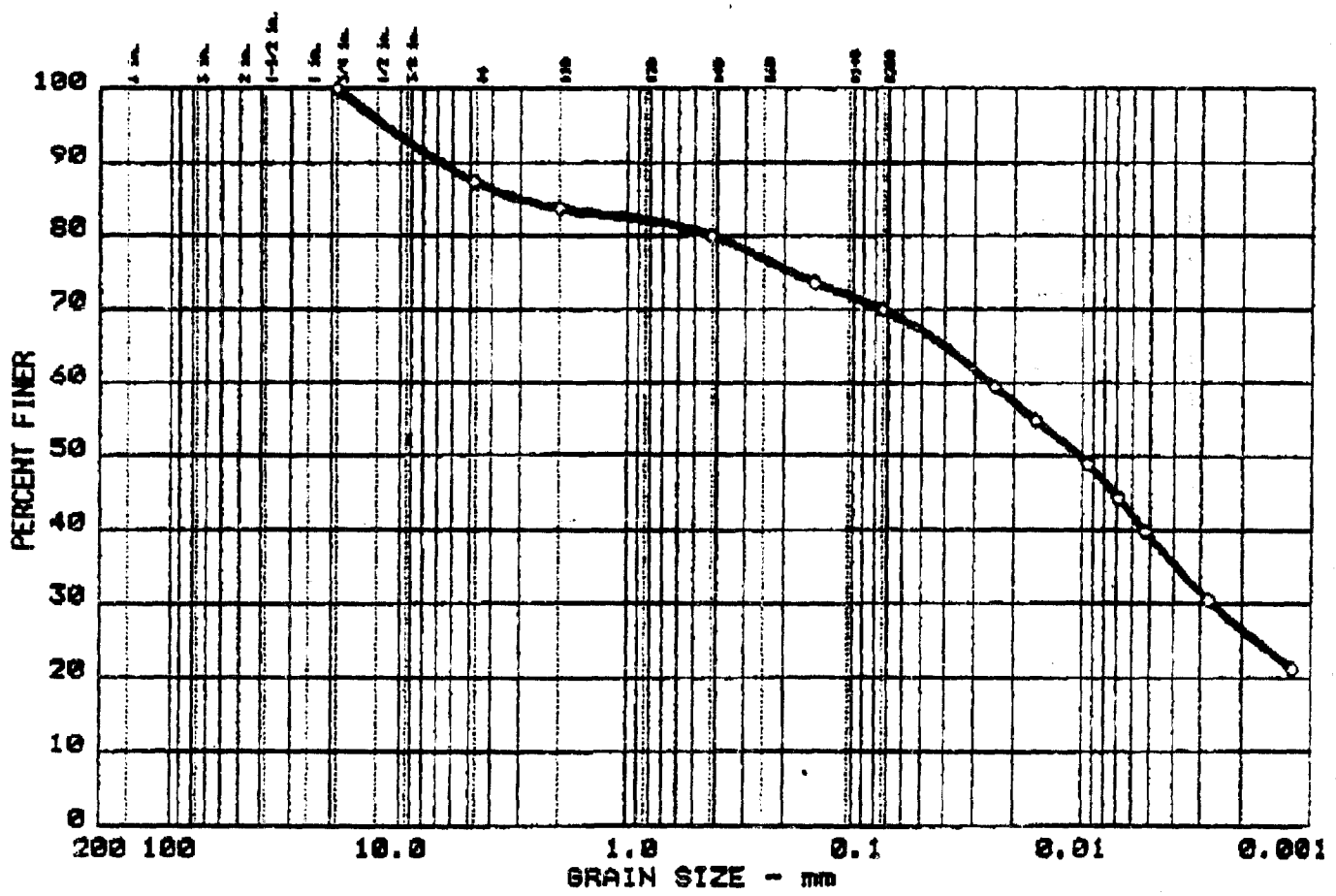
Date: 12-10-91

Remarks:
BH7 S-6 @ 34-35.9'
SAMPLED ON 11-11-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.49

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	12.5	17.6	30.9	39.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	2.95		0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN SILTY CLAY. SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

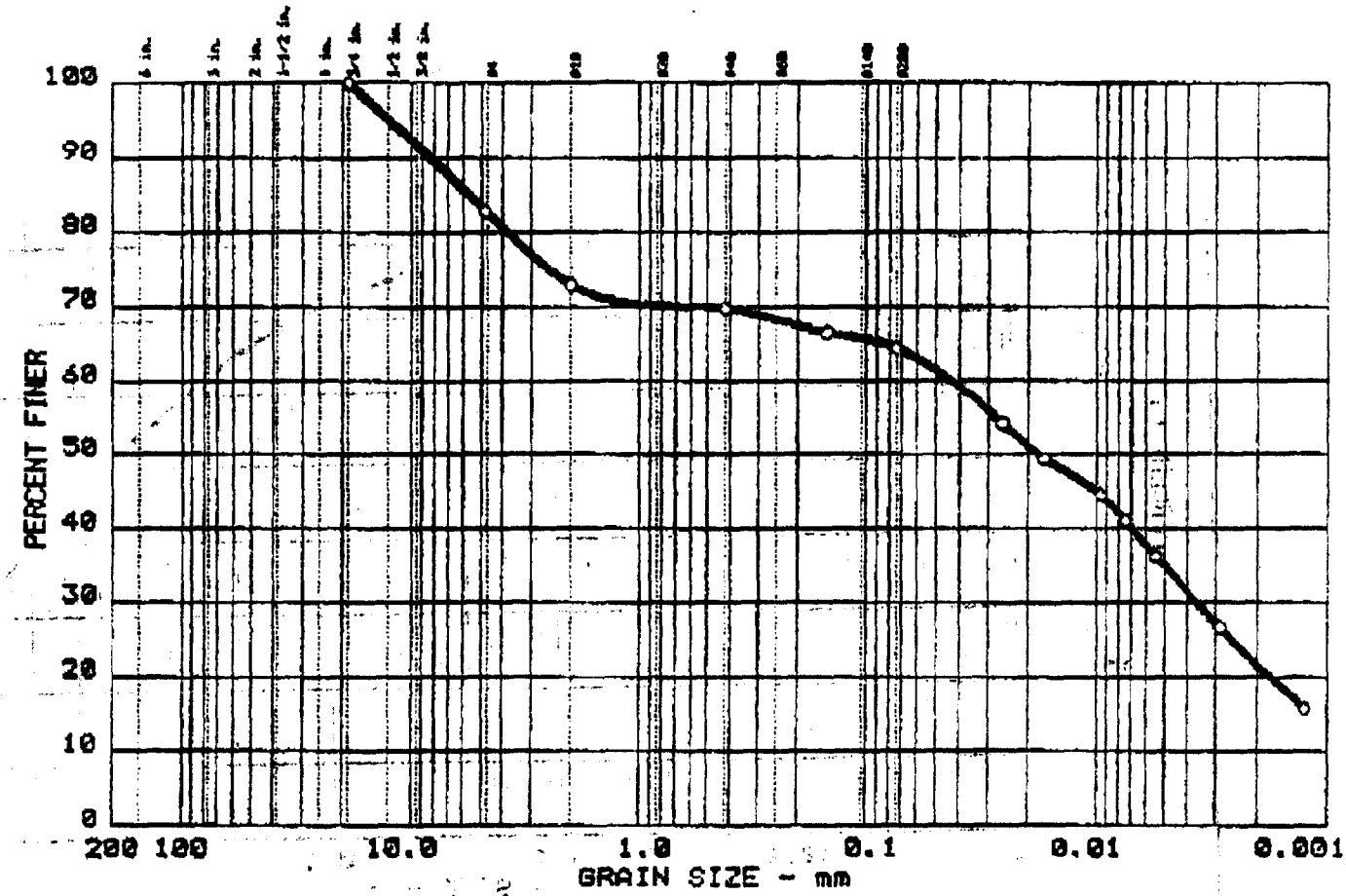
Date: 12-10-91

Remarks:
BH6 S-1 @ 5-7'
SAMPLED ON 11-12-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 50

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	17.1	18.4	29.6	34.9

	LL	PI	D_{95}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	5.56		0.02	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
O BR. & GR. SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

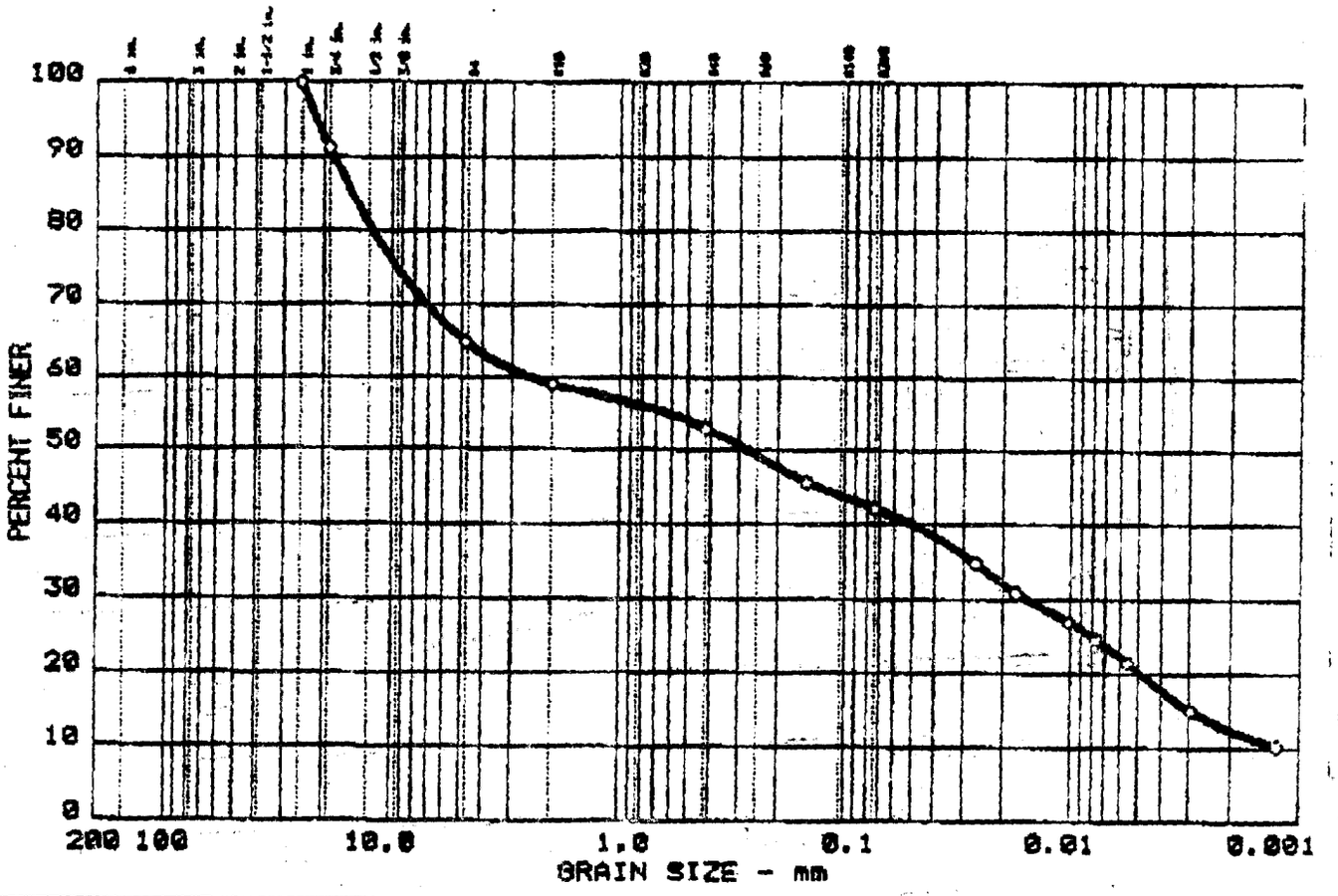
Date: 12-10-91

Remarks:
BH6 S-2 @ 10-12'
SAMPLED ON 11-12-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.51

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	35.1	22.6	22.0	20.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	15.00	2.36	0.27	0.015	0.0029			

MATERIAL DESCRIPTION	USCS	AASHTO
○ BR. & GR. SILTY CLAY W/SOME SHALE FRAGMENTS.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

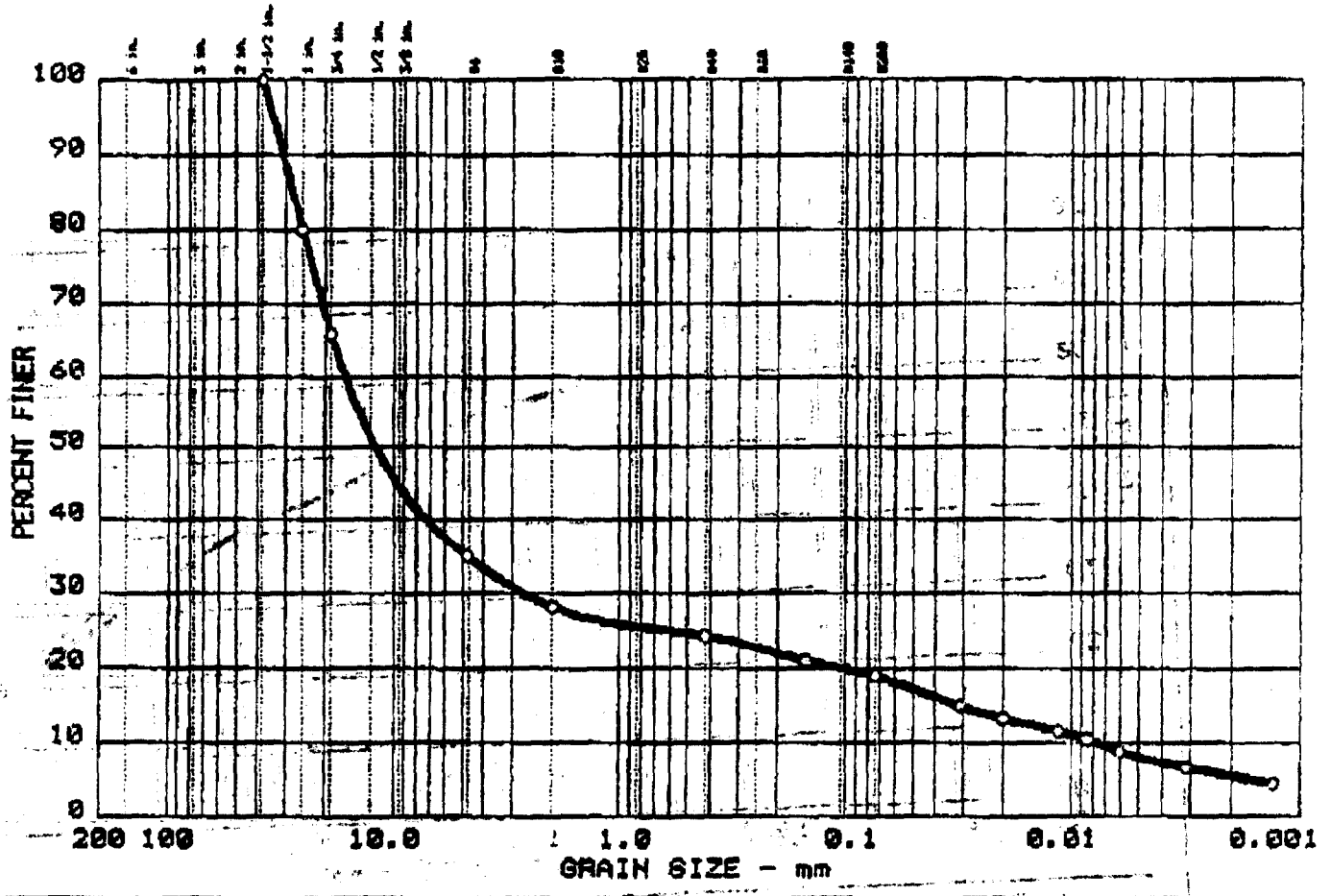
Date: 12-10-91

Remarks:
BH6 S-3 @ 20-22'
SAMPLED ON 11-12-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.52

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	65.0	16.2	10.8	8.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	28.05	16.52	12.11	2.649	0.0311	0.0075	56.89	2213.1

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE FRAGMENTS W/SOME BR. SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

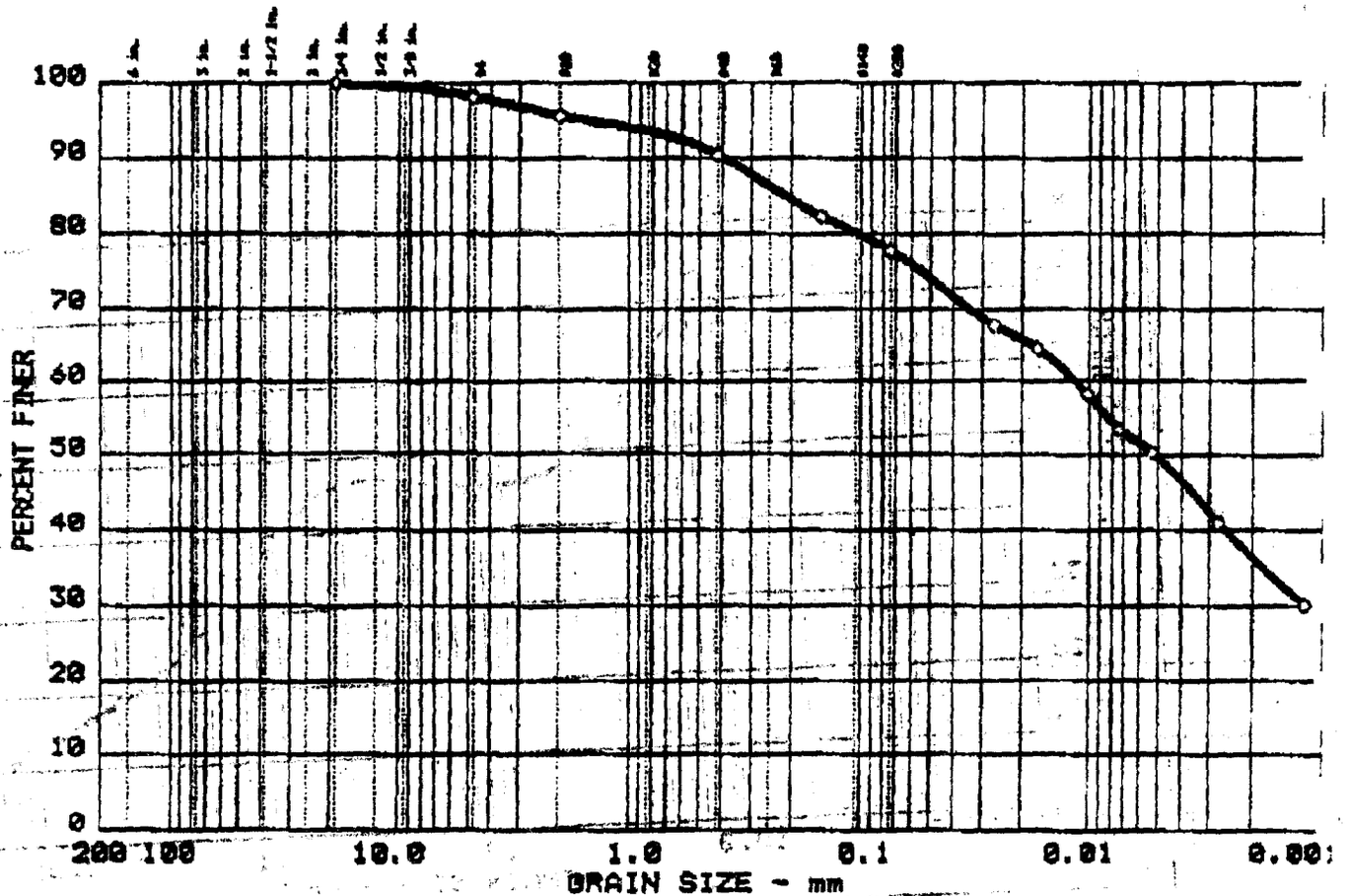
Date: 12-10-91

Remarks:
BH6 S-4 @ 30-32'
SAMPLED ON 11-12-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 53

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	1.8	20.5	28.0	49.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	N/A	N/A	0.21		0.01					

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND GRAY MOTTLED SILTY CLAY.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
○ Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

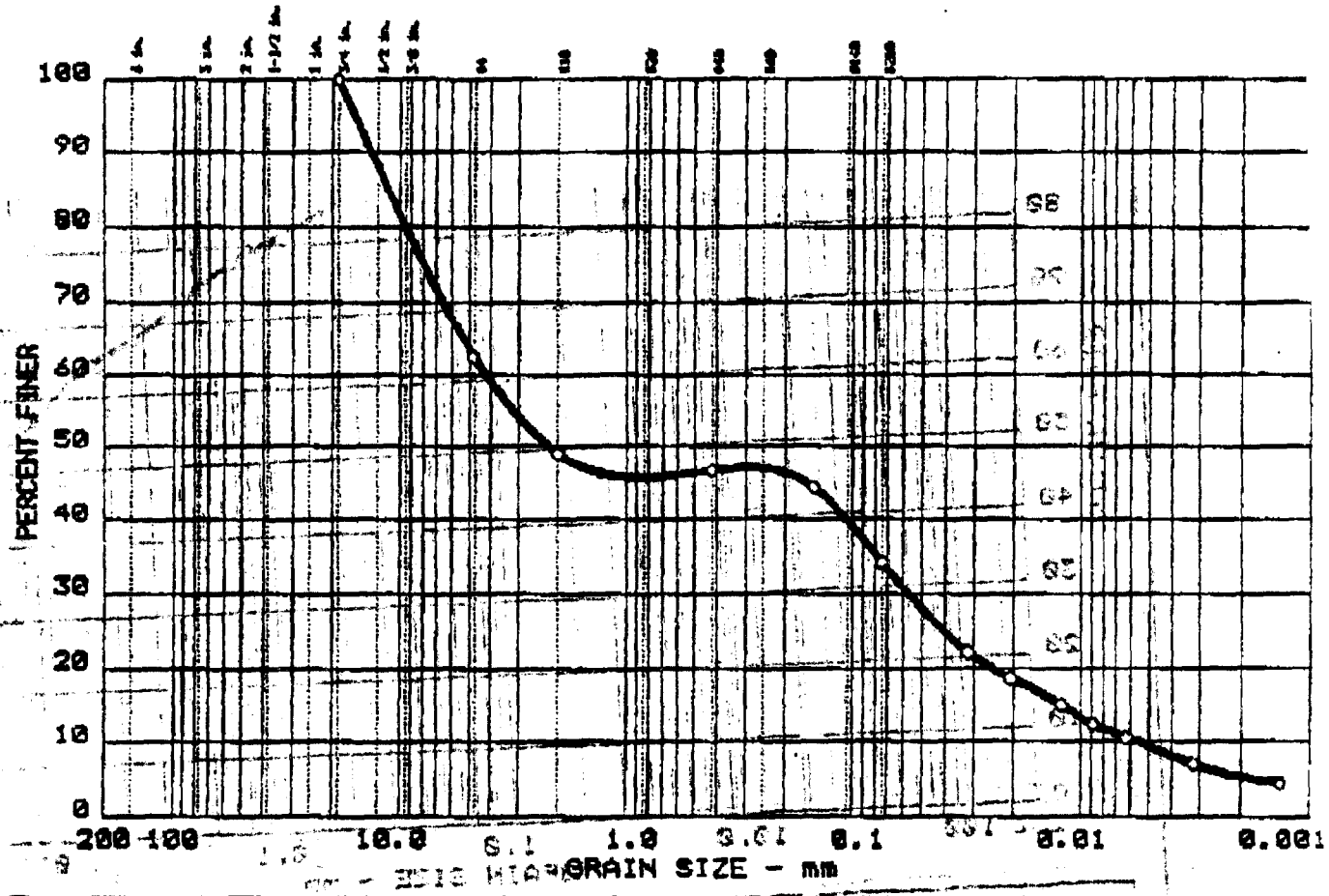
Date: 12-10-91

Remarks:
BH5 S-1 @ 10-12'
SAMPLED ON 11-12-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No.54

GRAIN SIZE DISTRIBUTION TEST REPORT



	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	37.4	28.5	24.6	9.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	N/A	N/A	11.35	4.17	2.19	0.057	0.0120	0.0055	0.14	758.6

MATERIAL DESCRIPTION	USCS	AASHTO
O GRAY SHALE FRAGMENTS W/SOME SILT.		

Project No.: 9111.34
Project: SUMMIT NATIONAL SUPERFUND SITE
O Location: DEERFIELD TOWNSHIP, PORTAGE CTY, OHIO

Date: 12-10-91

Remarks:
BH5 S-2 @ 20-20.3'
SAMPLED ON 11-12-91
RECEIVED @ ACT 11-13-91
WADSWORTH/ALERT LAB, INC.

GRAIN SIZE DISTRIBUTION TEST REPORT
APPLIED CONSTRUCTION TECH., INC.

Figure No. 55

SDMS US EPA REGION V
FORMAT- OVERSIZED - 5
IMAGERY INSERT FORM

The item(s) listed below are not available in SDMS. In order to view original document or document pages, contact the Superfund Records Center.

SITE NAME	**SUMMIT NATIONAL**		
DOC ID #	**128682**		
DESCRIPTION OF ITEM(S)	**MAPS, (PLAN TM7-1, TM7-2)**		
REASON WHY UNSCANNABLE	**__X__ OVERSIZED**	**OR**	**___ FORMAT**
DATE OF ITEM(S)	**12-01-1991**		
NO. OF ITEMS	**2**		
PHASE	**REMEDIATION**		
PRP			
PHASE (AR DOCUMENTS ONLY)	___ Remedial ___ Removal ___ Deletion Docket ___ AR ___ Original ___ Update # ___ Volume ___ of ___		
O.U.			
LOCATION	Box # __3__ Folder # __6__ Subsection ____		
COMMENT(S)			

TECHNICAL MEMORANDUM NO. 8

GROUNDWATER TREATABILITY STUDY

Ref. No. 2372

TECHNICAL MEMORANDUM NO. 8

GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Groundwater Treatability Study testing was performed during the period of November 14 to 22, 1991, in accordance with the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Design Work Plan (RD Work Plan) for the Site. Representative groundwater samples were extracted from on-Site monitoring wells and laboratory-scale, bench-scale and pilot-scale tests were performed to determine the effectiveness of pH adjustment, addition of coagulant aids, filtration by multi-media and greensand filters, aeration and activated carbon treatment methods.

A. PUMPING TESTS

Step-drawdown pumping tests were conducted on monitoring wells at the Site to determine the maximum flow rates that could be obtained for the groundwater treatability studies. The step-drawdown pumping tests, conducted from November 14 to 20, 1991, indicated the maximum combined sustainable flow rate that could be achieved from the on-Site monitoring wells was in the order of 1.5 to 2 gallons per minute (gpm), significantly less than the 5 to 10 gpm proposed in the RD Work Plan for the proposed 3-week duration pilot scale air stripping test (Test No. 6).

B. TREATABILITY TESTS

During the week of November 18 to 22, 1991, Test No.'s 1 to 4 of the groundwater treatability study were performed using 29 gallons of water, extracted from MW-9 (8 gallons), MW-11 (8 gallons), MW-15 (8 gallons), MW-10 (3 gallons) and MW-16 (2 gallons). pH titration adjustment lab-scale jar tests (Test 1) as well as aeration tests (Test 3) were conducted to determine the solids precipitation potential. Chemical coagulation bench-scale tests were also conducted to determine clarification and solids removal potentials (Test 1). The extracted groundwater also was filtered (Test 2) to determine media filtration and green sand filtration effectiveness for iron and solids removal. A sample of the extracted groundwater was subjected to carbon adsorption tests (Test 4) to determine carbon isotherm data. In addition, two batch operation separate pilot-scale air stripping tests (Test 5) were conducted on November 21 and 22, 1991, using the air stripper/carbon adsorption pilot-scale system. The groundwater used for Test 5 was pumped during the previous day and overnight from monitoring wells MW-9 (0.05 gpm),

MW-11 (1.1 gpm), 2BB6 (0.06 gpm) and 2BB8 (0.5 gpm) to accumulate 2,000 gallons in the equalization tank prior to operation of the pilot-scale unit. The two pilot-scale tests (Test 5) were conducted at four water flow rates (5, 10, 15 and 20 gpm) and two air flow rates of 400 and 350 cubic feet per minute. During all tests, treated and untreated water samples were collected for analyses, and the treated water was discharged into the on-Site 8,000-gallon wastewater storage tank. Two samples of the airstripped water also were subjected to carbon adsorption tests to determine carbon isotherm data.

Tests 1, 2, 3 and 5 are schematically illustrated in Attachment TM8-1.

Test No. 6 (the extended 21-day pilot airstripping test) was not performed due to the lack of water from the monitoring wells.

C. ANALYTICAL RESULTS

Table TM8-1 presents a summary of the treatability tests performed and the resulting data.

The analytical results were evaluated with regards to the validity of the data for purposes of completing the design of the groundwater treatment system and the practicality of conducting Test 6 (3-week duration pilot scale study) at a reduced flow rate of 1.5 to 2.0 gpm. It was determined that it would not be meaningful nor practicable to conduct Test 6 on the basis that Test 6 would not provide additional treatability data and that the groundwater pumping systems would not practicably be able to sustain a continuous pumping rate of 1.5 to 2.0 gpm for the two to three week test, 24 hours per day. Mechanical failure of two of the extraction pumps was experienced during the four days of pumping for Test Nos. 1 to 5. Accordingly, it was decided not to conduct Test 6.

D. DEMOBILIZATION

On December 11, 1991, treatment of wastewater being stored at the Site in all of the on-Site wastewater tanks was conducted, using the pilot scale groundwater treatment system. Treated water was discharged into the on-Site ponds. The on-Site ponds were selected as the discharge point since only approximately 7,000 gallons of wastewater were treated. Demobilization of the on-Site trailers and groundwater treatability study equipment was performed on December 12, 1991.

E. USEPA/OEPA OVERSIGHT

Oversight for the above activities was provided by Black & Veatch Waste Science Technology on behalf of USEPA on an intermittent basis. Representatives of OEPA were not present during the treatability study tests. As recorded in the Site's sign in/sign out log, USEPA's representative was on Site on the following days:

Date	*USEPA Representative*
11/13/91	X
11/14/91	X
11/20/91	X
11/21/91	X

During the above operations, USEPA's representative expressed concurrence with all activities conducted at the Site as required by the RD Work Plan.

F. PRELIMINARY DATA INTERPRETATION

1. The groundwater is extremely high in iron, manganese, calcium, sodium and total dissolved solids (TDS). pH adjustment will substantially reduce iron, manganese and calcium. Aeration will reduce iron but has no impact on manganese or calcium. Coagulation with alum will shift half of the total iron to dissolved iron but has minimal affect on total dissolved solids (TDS).

2. Greensand filtration will remove 90% of the total iron, whereas multi-media filtration will remove 60%.

3. The primary organic constituents in the groundwater are:

	µg/L
Acetone	12,000 to 210,000
2-butanone (MEK)	16,000 to 110,000
4-methyl-2-pentanone (MIBK)	1,400 to 3,900
111 TCA	3,800 to 7,800
TCE	1,200 to 4,400
Balance	5,000 to 7,000

Airstripping at air to water ratios as high as 600 to 1 did not result in significant removal of acetone, MEK or MIBK (<10%), while the other VOC's were removed easily at much lower air to water ratios.

4. If liquid phase carbon is used as the primary treatment step for acetone, MEK and MIBK, the following consumption is expected:

	carbon/day	
flow rate	*30,000 µg/L*	*200,000 µg/L*
100 gpm	3,600 lb	11,000 lb
40 gpm	1,440 lb	4,400 lb
20 gpm	720 lb	2,200 lb

Based on these high consumption numbers, a biological pretreatment step may be recommended. This could be an isolated step or can be incorporated as part of the initial aeration/equalization step.

5. If acetone, MEK and MIBK can be removed in a pretreatment biological step, an air stripping column strictly for the other VOC's may not be required. It is assumed that much of the VOC's also will be removed along with the acetone/ketones in that first step. If they are not and taking the worst case scenario, the maximum amount of carbon necessary to treat the non-acetone/ketone VOC's are:

flow rate	*carbon/day*
100 gpm	1,152 lb
40 gpm	461 lb
20 gpm	230 lb

6. Impact to 30% design:

- eliminate alum addition;
- increase retention time in equalization tank for VOC removal;
- consider adding a bioreactor or biocontractor for acetone/MEK/MIBK degradation;
- review influent quality assumptions and consider eliminating the air stripping column

TABLE TM8-1

SUMMARY GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DERRFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Approved Test	*Test Performed*	*Sample*	*Results*
Test 1: Bench scale jar test for treatment by clarification for solids/metal removal	• pH adjustment testing by addition of alum solution to groundwater samples, volume		
	- control sample		- pH groundwater samples 6.2 - 6.4 - Fe groundwater sample 0.7 ppm soluble, 25 ppm total - Mn groundwater sample 4.35 ppm soluble, 4.5 total - Ca groundwater sample 380 ppm soluble, 385 total

	floc thickness	*final pH*	*TDL g/l*	*TVDS g/l*
- addition 0 ml	< 1	6.4	-	-
- addition 10 ml	3	5.49	4.66	3.53
- addition 20 ml	7	5.12	5.87	3.83
- addition 30 ml	10	5.05	4.98	4.01
- addition 40 ml	8	4.85	5.32	4.47
- addition 50 ml	7	4.77	5.76	5.04

				Control (90219-11)	*pH9.1 (90217-13)*
• pH adjustment tests using 1N NaOH					
- control sample - Filtered Liquid	90217-11(ABCD)	- initial pH 6.1	Total Iron	16,000 ug/L	370 ug/L
- Filtered Solids	90217-12A	- initial temp 14°C	Dissolved Iron	340 ug/L	240 ug/L
- addition 3 ml NaOH		- pH 7.1 - temp 16°C - color light yellow, no precipitation	Total Mn Dissolved Mn	5,500 ug/L 4,700 ug/L	190 ug/L ND
- addition 6.2 ml NaOH - Filtered Liquids	90217-13(ABCD)	- pH 8.1	CA	400,000 ug/L	42,000 ug/L
- Filtered Solids	90217-14A	- temp 16°C - color light yellow-orange, some precipitation	TSS	ND	ND
- addition 11.5 ml NaOH	90213-D	- pH 9.1 - temp 19°C - color orange-yellow, heavy precipitation	TDS Filtered Solids Weight	4,300 ug/L 1.3 gm	4,300 ug/L 4.75 gm

		pH	*Temp.*	*Initial Color*	*20 Minutes of Stirring @ 30 rpm density*	*floc size*	*color*	*30 min. settling height*	*60 min. settling height*
• bench scale coagulation tests by adding AlSO4 solution mixing at 30 rpm/20 minutes and settling 30/60 minutes									
- control sample	90217-31(ABC)	6.0	14°C	lt. yellow	dense	small	lt. yellow	nothing	nothing
- addition 10 ml	90217-32(ABC)	6.0	14°C	lt. yellow	dense	small	lt. yellow	1.7/slow	1.7
- addition 20 ml	90217-33(ABC)	6.0	14°C	lt. yellow	slight dns	large	white	3.4/fast	3.3
- addition 30 ml	90217-34(ABC)	6.0	14°C	lt. yellow	slight dns	large	white	3.8/fast	3.6
- addition 40 ml	90217-35(ABC)	6.0	14°C	lt. yellow	slight dns	large	white	3.4/v. fast	4.2
- addition 50 ml	90217-36(ABC)	6.0	14°C	lt. yellow	slight dns	large	white	3.5/fast	4.4

* See Attachment I

• pH adjustment 6.45 to 9.45 by NaOH and filtration with Whatman #1 filter

- precipitate - 0.744 g/l (dry basis)
- 11.5% volatiles @ 550°C
- filtrate total dissolved solids - 4.23 g/l
- total dissolved volatiles - 1.07 g/l
- metal in filtrate of control/treated total iron - 5.5/1.6, Mn 4.5/3.5, Ca 370/110

* See Attachment II

• filtration of Test 3 aeration samples by Whatman #1 paper

- control water	90217-21D
- control solids	90217-22A
- 1 hour water	90217-23 (ABC), 23(D)
- 1 hour solids	90217-24A
- 2 hour water	90217-25(ABC), 25(D)
- 2 hour solids	90217-26(A)

* See Attachment II

ATTACHMENT I

	Iron (µg/L)		Mn (µg/L)		µg/L	mg/L	mg/L
	Total	Dissolved	Total	Dissolved	CA	TSS	TDS
90217-31 ABCD	35,000	400	5,400	8,100	390,000	ND	4,300
90217-32 ABCD	30,000	700	5,700	4,800	410,000	5	4,500
90217-33 ABCD	21,000	10,000	5,800	4,400	420,000	21	4,800
90217-34 ABCD	20,000	14,000	5,800	4,400	410,000	9	4,800
90217-35 ABCD	19,000	15,000	5,500	4,500	400,000	8	5,100
90217-36 ABCD	19,000	15,000	5,500	4,500	400,000	21	4,400

ATTACHMENT II

Control (90217-21)	1-Hour (90217-23)	2-Hour (90217-25)
44,000 µg/L	9,400 µg/L	3,300 µg/L
560 µg/L	420 µg/L	300 µg/L
5,900 µg/L	5,800 µg/L	5,200 µg/L
4,800 µg/L	3,100 µg/L	2,700 µg/L
420,000 µg/L	410,000 µg/L	420,000 µg/L
8 mg/L	ND mg/L	ND mg/L
4,300 mg/L	4,300 mg/L	4,300 mg/L
2.16 gm	3.66 gm	3.14 gm

TABLE TM8-1

SUMMARY GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Approved Test	*Test Performed*	*Sample*	*Results*
Test 2: Bench scale test for treatment by filtration for	• filtration of groundwater sample by Whatman #1 paper		
	- control filtered solid sample	90217-12A	1.3 gms
	- 11.5 ml NaOH filtred solid sample	90217-14A	4.75 gms
	• filtration of control sample by Whatman #1 filter		- suspended solids over 11 micron - 0.05-0.25 g/l - total dissolved solids after Whatman #1 filtration - 4.74 g/l
	• multi medi filtration test conducted for 15 minutes at 5 gpm/sq. ft.		
	- inlet sample	90217-51A	
	- outlet sample	90217-52A	
	• green sand filtration test conducted for 30 minutes at 1.5 gpm/sq. ft.		
	- inlet sample	90217-61A	
	- outlet sample	90217-62A	

	MULTIMEDIA		*GREEN SAND*	
	In	*Out*	*In*	*Out*
Total Iron	29,000	11,000 ug/L	29,000 ug/L	2,600 ug/L
Dissolved Iron	2,700	480 ug/L	2,700 ug/L	290 ug/L
Total Mn	5,700	6,000 ug/L	5,700 ug/L	7,000 ug/L
Dissolved Mn	2,700	5,400 ug/L	5,200 ug/L	6,300 ug/L
CA	42,000	410,000 ug/L	420,000 ug/L	250,000 ug/L
TSS	21 mg/L	11 mg/L	14 mg/L	ND
TDS	4,400 mg/L	4,200 mg/L	43,000 mg/L	4,300 mg/L

TABLE TM8-1

SUMMARY GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Approved Test	*Test Performed*	*Sample Key*	*Results*			
Test 3: Bench scale test for treatment by aeration for VOC removal, solids	• aeration groundwater sample for two hours (1500 cc/minutes)		- slight brownish color, no change in turbidity - total dissolved solids filtrate 4.33 g/l - total volatile solids 1.07 g/l			
	• bench scale air stripper test using 2-inch air stripper		*Acetone*	*2-Butanone*	*1,2DCA*	*Other Constituents**
	- sample influent to 20 gpm/sq. ft.	90217-41(ABC)	39,000 ug/L	110,000 ug/L	12,000 ug/L	ND*
	- 0.4 gpm, 2 cfm (30:1 air to water) (20 gpm/sq. ft.)	90217-42(ABC)	430,000 ug/L	130,000 ug/L	14,000 ug/L	ND*
	- 0.44 gpm, 6cfm (100:1 air to water) (20 gpm/sq. ft.)	90217-43(ABC)	310,000 ug/L	91,000 ug/L	3,900 ug/L	ND*
	- sample influent to 10 gpm/sq. ft.	90217-44(ABC)	370,000 ug/L	120,000 ug/L	14,000 ug/L	ND*
	- 0.2 gpm, 1 cfm (30:1 air to water) (10 gpm/sq. ft.)	90217-45(ABC)	400,000 ug/L	130,000 ug/L	15,000 ug/L	ND*
	- 0.2 gpm, 2 cfm (1000:1 air to water) (10 gpm/sq. ft.)	90217-46(ABC)	420,000 ug/L	130,000 ug/L	13,000 ug/L	ND*

* Higher than usual detection limits (6,300 to 130,000 ug/L) were recorded for these smaples, making data interpreatation difficult.

TABLE TM-8

SUMMARY GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Approved Test	*Test Performed*	*Sample*	*Results*			
			THE CARBON ISOTHERMS GENERATED THE FOLLOWING;			
				MEK/Acetone*	MIBK	Other VOCs**
Test 4: Bench scale tests for treatment by carbon	• conducted carbon isotherm tests concurrent with Test 5, taking taking samples from following locations on Pilot System:					
	• 5 gpm/400 cfm influent					
	- 0.15 g carbon	90217-83A	Inlet Concentration (µg/L)	30,000	5,000	18,000
	- 0.30 g carbon	90217-83B	Min.	200,000	10,000	
	- 0.61 g carbon	90217-83C	Mx.			
	- 101 g carbon	90217-83D				
	- 160 g carbon	90217-83E	Post Air-Stripping ***			
			Concentration (ug/L)			
	• 5 gpm/400 cfm before carbon		Min.	27,000	4,500	900
	- 0.15 g carbon	90217-84A	Ms.	180,000	9,000	
	- 0.30 g carbon	90217-84B				
	- 0.61 g carbon	90217-84C	X			
	- 101 g carbon	90217-84D	M Min.	10.1 mg/gm	2.8 mg/gm	17 mg/gm
	- 160 g carbon	90217-84E				
			X			
	• 15 gpm/400 cfm before carbon		M Max.	22 mg/gm	3.1 mg/gm	
	- 0.15 g carbon	90217-85A				
	- 0.30 g carbon	90217-85B	X			
	- 0.61 g carbon	90217-85C	M Air Strip			
	- 101 g carbon	90217-85D	Min.	10.05	2.7 mg/gm	4.6 mg/gm
	- 160 g carbon	90217-85E	Max.	21 mg/gm	3.0 mg/gm	
	• air stripper 20 gpm/sq. ft at 100:1 airwater		Carbon Consumption (#/1000 gal.)			
	- 0.15 g carbon	90217-86A	Min.	25	15	8
	- 0.30 g carbon	90217-86B	Max.	76	27	
	- 0.61 g carbon	90217-86C				
	- 101 g carbon	90217-86D	Carbon Consumption (#/1000 gal.)			
	- 160 g carbon	90217-86E	with Air Stripping			
			Min.	22	14	1.6
			Max.	71	24	

* Due to the lack of acetone data. Assumed MEK for both
** Used 1,1,1 TCA to represent all.
*** Assumed 10% removal for MEK/Acetone/MIBK and 95 % for Balance.

TABLE TM-8
SUMMARY GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Approved Test	*Test Performed*	*Sample*	*Results*	
Test 5: Pilot scale tests for treatment by a combination of air stripping and carbon filtration	• pilot air stripper and carbon system test conducted on site at 20 gpm with air flow of 400 cfm		- 8.5-inch water pressure drop across column - 11 psi pressure at carbon filter	- 150 to 1 air to water ratio - No removal of acetone, MEK and MIBK was recorded (inlet at 17000, 20,000, and 3,900 µg/L respectively) 47% removal for the other VOCs.
	- influent sample	90217-71A		
	- after air stripper sample	90217-72 (ABC)		
	- before carbon sample	90217-73(ABC)		
	• pilot air stripper and carbon system test conducted on site at 15 gpm with air flow of 400 cfm		- 8.5-inch water pressure drop across column - 9 psi pressure at carbon filter	- 200 to 1 air to water ratio - No removal of acetone, MEK, and MIBK was recorded (inlet at 12,000, 16,000 and 3,600 ug/L). - 95% removal for the other VOCs.
	- influent sample	90217-74A		
	- after air stripper sample	90217-75ABC		
	- before carbon sample	90217-76ABC		
	• pilot air stripper and carbon system test conducted on site at 5 gpm with air flow of 400 cfm		- 8.5-inch water pressure drop across column - 9 psi pressure at carbon filter	- 600 to 1 air to water ratio. - 37% removal for acetone, MEK and MIBK 99% removal for the other VOCs.
	- influent sample	90217-77ABC		
	- after stripper sample	90217-78ABC		
	- before carbon sample	90217-79ABC		
	• pilot air stripper and carbon system test conducted on site at 10 gpm with air flow of 400 cfm		- 8.5-inch water pressure drop across column - 9 psi pressure at carbon filter	- 300 to 1 air to water ratio. - No removal of acetone, MEK, and MIBK. 97% removal for the other VOCs.
	- influent sample	90217-80ABC		
	- after air stripper sample	90217-81ABC		
	- before carbon sample	90217-82ABC		
	• pilot air stripper and carbon system test conducted on site at 5 gpm with air flow of 350 cfm		- 7-inch water pressure drop across column - 11 psi pressure at carbon filter	- 33% removal of MEK and MIBK. No data on acetone. 96% removal for the other VOCs. - 525 to 1 air to water ratio.
	- influent sample	90217-93ABC		
	- after air stripper sample	90217-94ABC		
	- before carbon sample	90217-95ABC		

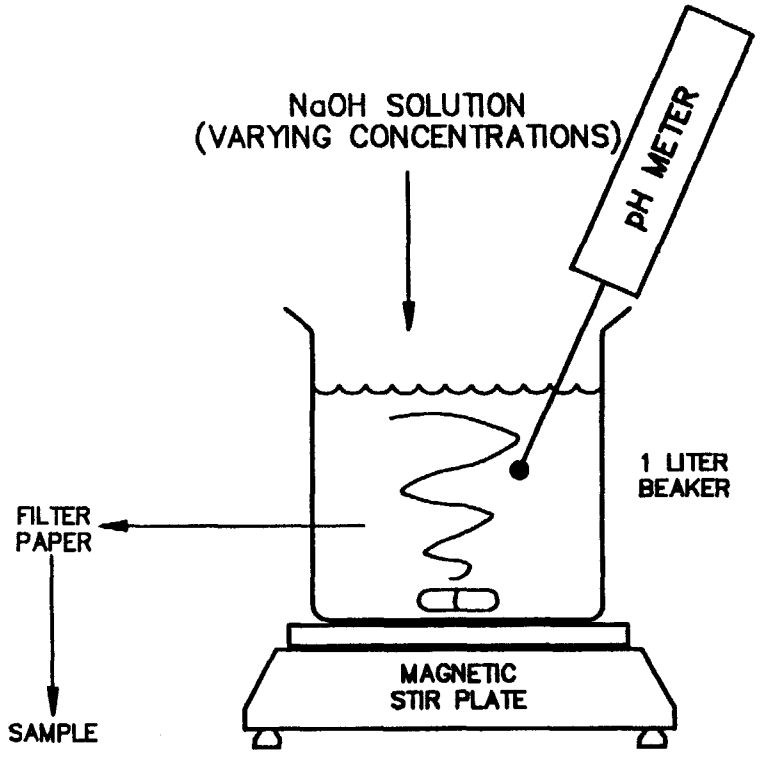
TABLE TM-8
SUMMARY GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Approved Test	*Test Performed*	*Sample Key*	*Results*	
Test 5: Pilot scale tests for treatment by a combination of air stripping and carbon filtration	• pilot air stripper and carbon system test conducted at 10 gpm with air flow of 350 cfm - influent sample - after air stripper sample - before carbon sample	 90217-96ABC 90217-97ABC 90217-98ABC	- 7-inch water pressure drop across column - 11 psi pressure at carbon filter	- 262 o 1 air to water ratio. - 17% removal of MEK and MIBK. No data on acetone. 95% removal for the other VOCs.
	• pilot air stripper and carbon system test conducted at 15 gpm with air flow of 350 cfm - influent sample - after air stripper sample - before carbon sample	 90217-90ABC 90217-91ABC 90217-92ABC	- 7.5-inch water pressure drop across column - 11 psi pressure at carbon filter	- 175 to 1 air to water ratio. - 37% removal of MEK and MIBK. No data on acetone. - 95% removal for the other VOCs.
	• pilot air stripper and carbon system test conducted at 20 gpm with air flow of 350 cfm - influent sample - after air stripper sample - before carbon sample	 90217-87ABC 90217-88ABC 90217-89ABC	- 7.5-inch water pressure drop across column - 12 psi pressure at carbon filter	- 130 to 1 air to water ratio. No removal was recorded for MEK and MIBK. Acetone results were not reported due to analtyical interference. 88% removal for the other VOCs.

ATTACHMENT TM8-1

SCHEMATIC ILLUSTRATIONS
GROUNDWATER TREATABILITY STUDY TESTS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

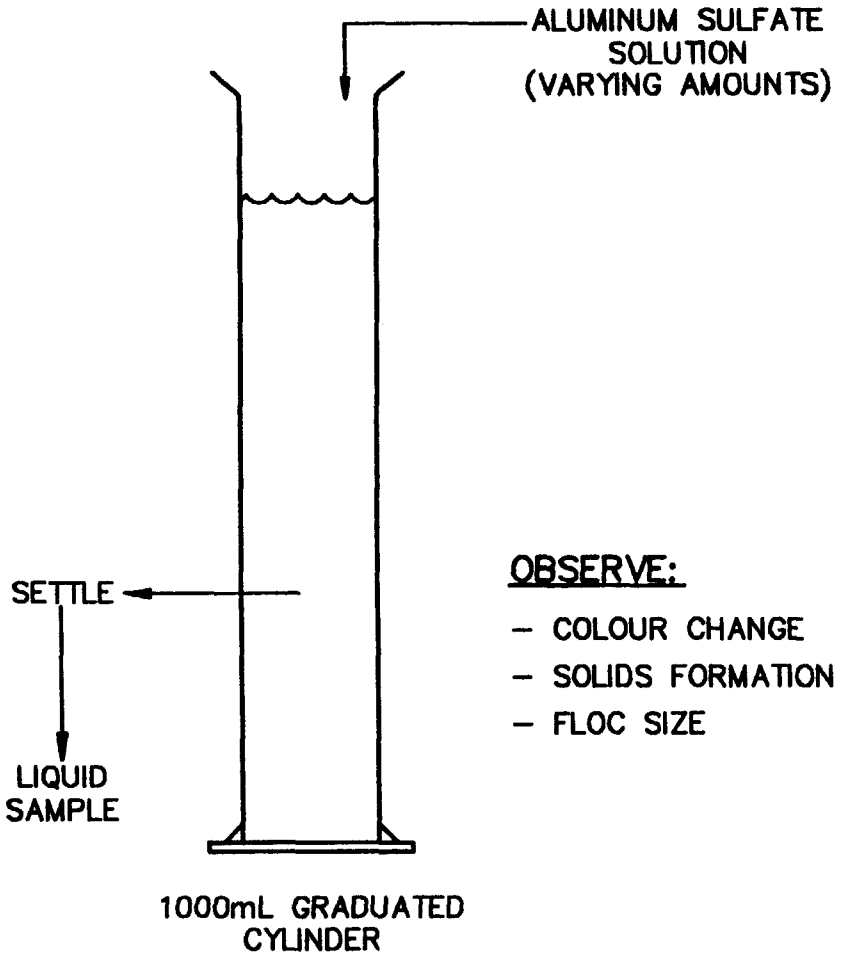
- TEST 1
- TEST 2
- TEST 3
- TEST 5



OBSERVE:

- COLOUR CHANGE
- SOLIDS TRANSFORMATION

pH TEST APPARATUS



OBSERVE:

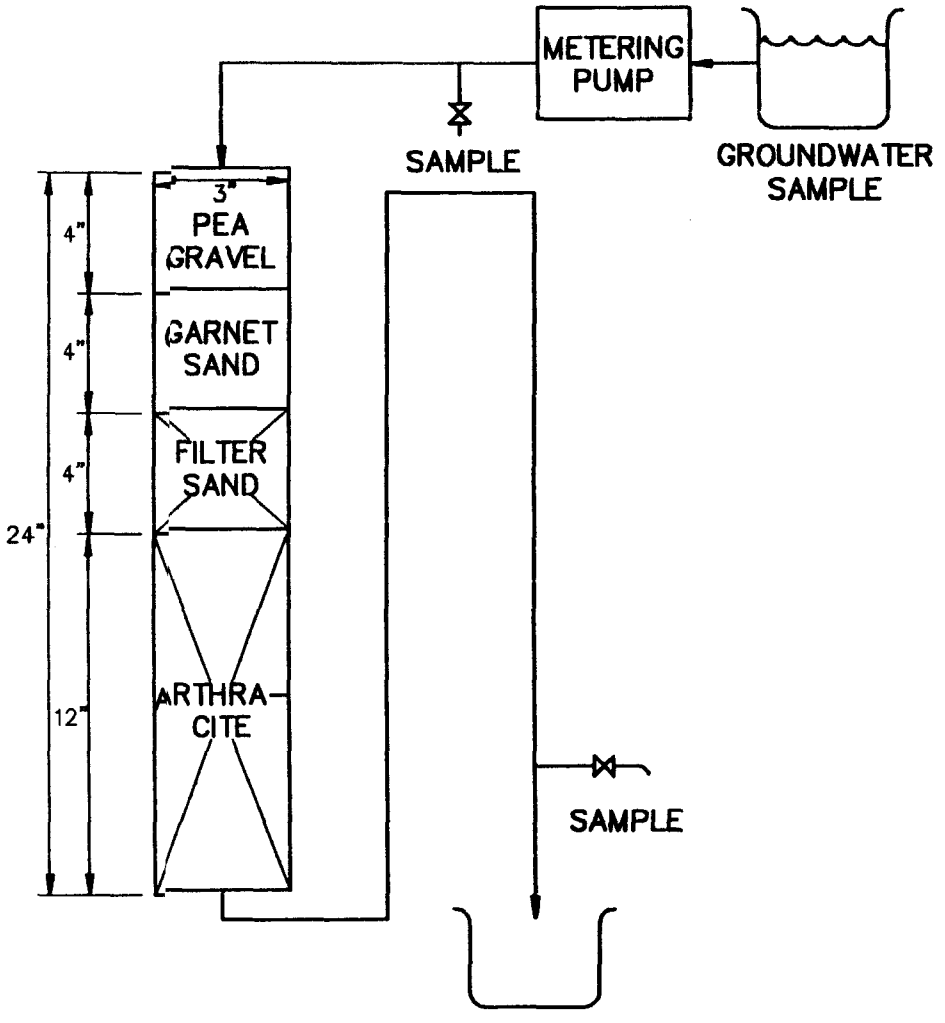
- COLOUR CHANGE
- SOLIDS FORMATION
- FLOC SIZE

COAGULATION TEST

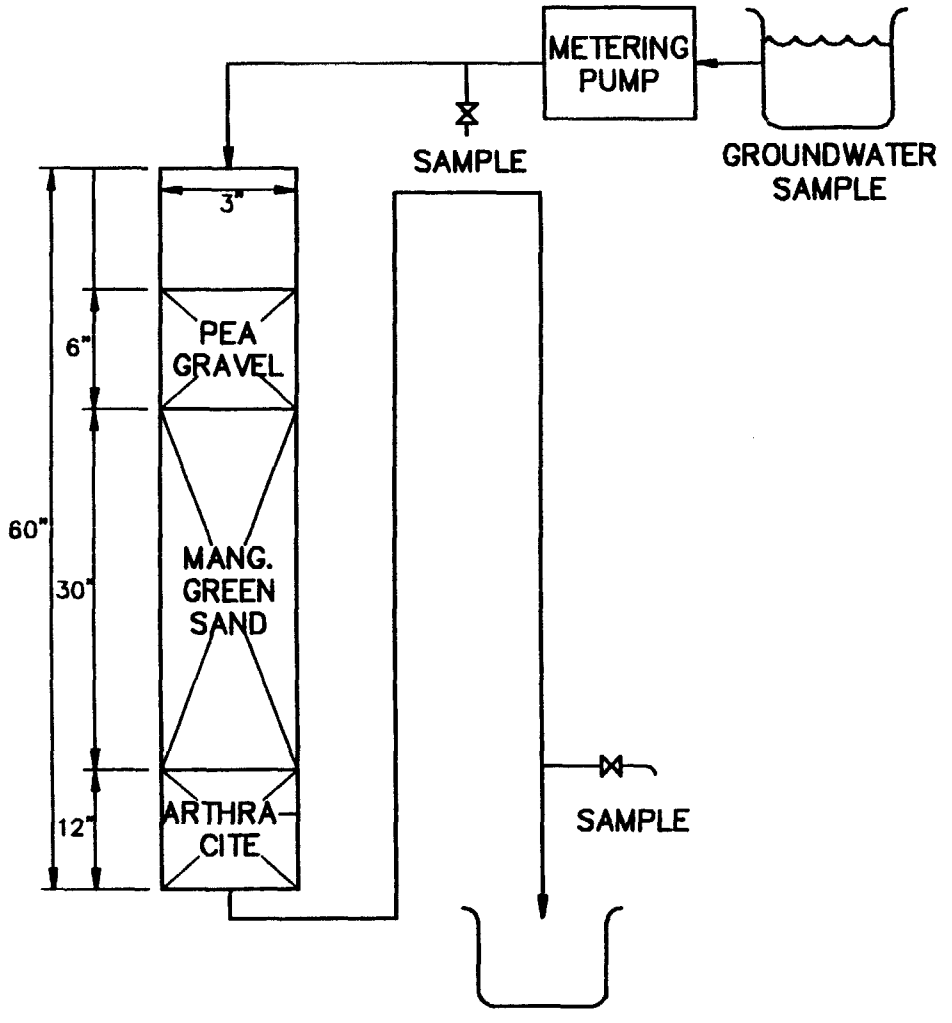
TEST 1
BENCH-SCALE TESTS FOR CLARIFICATION
GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

CRA

2372-11/12/91-L-0 (D-11)



MULTI-MEDIA FILTRATION TEST

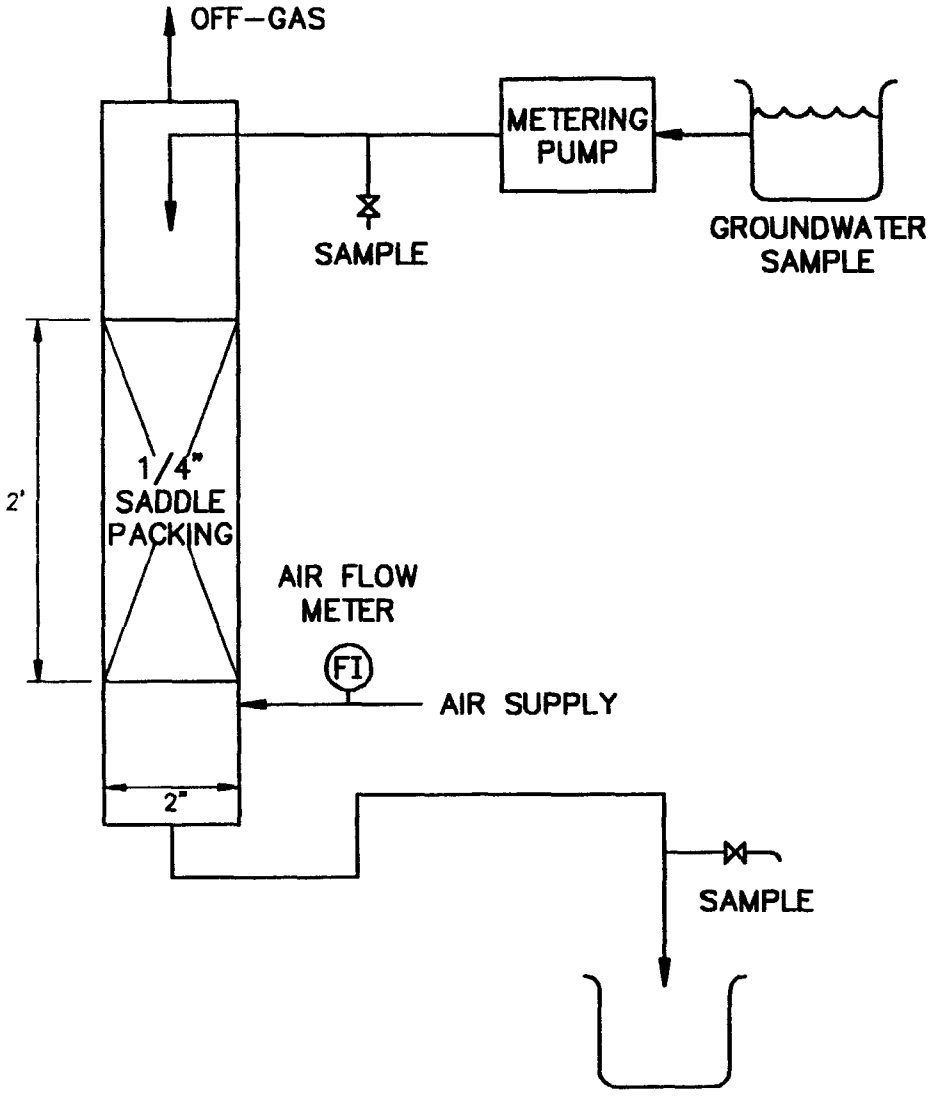


MANGANESE GREEN SAND FILTRATION TEST

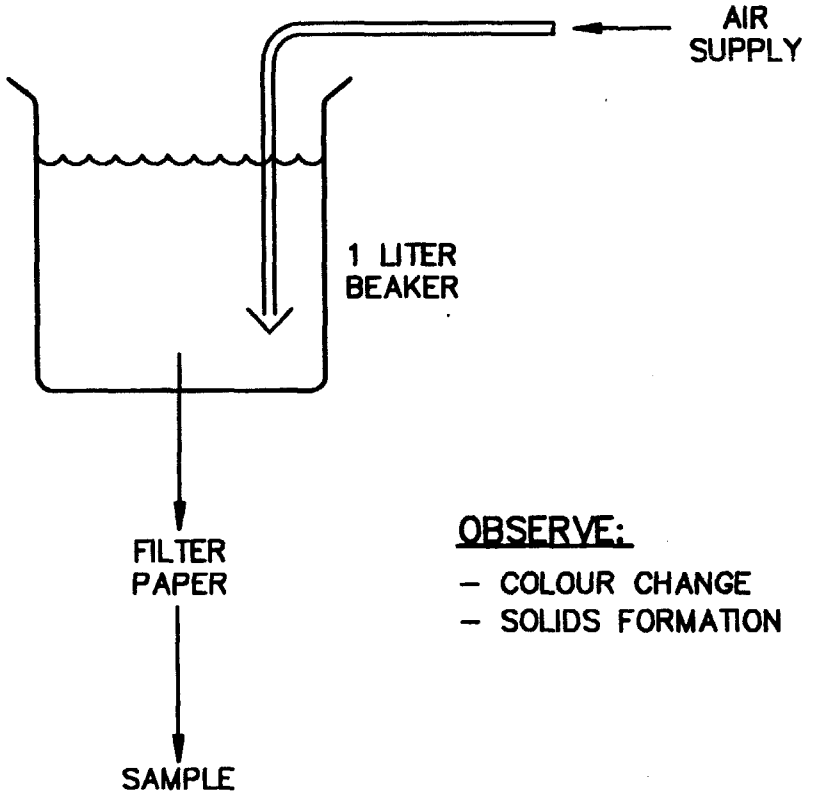
TEST 2
BENCH-SCALE TESTS FOR FILTRATION
GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

CRA

2372-11/12/91-L-0 (D-12)



AIR STRIPPER TEST



OBSERVE:

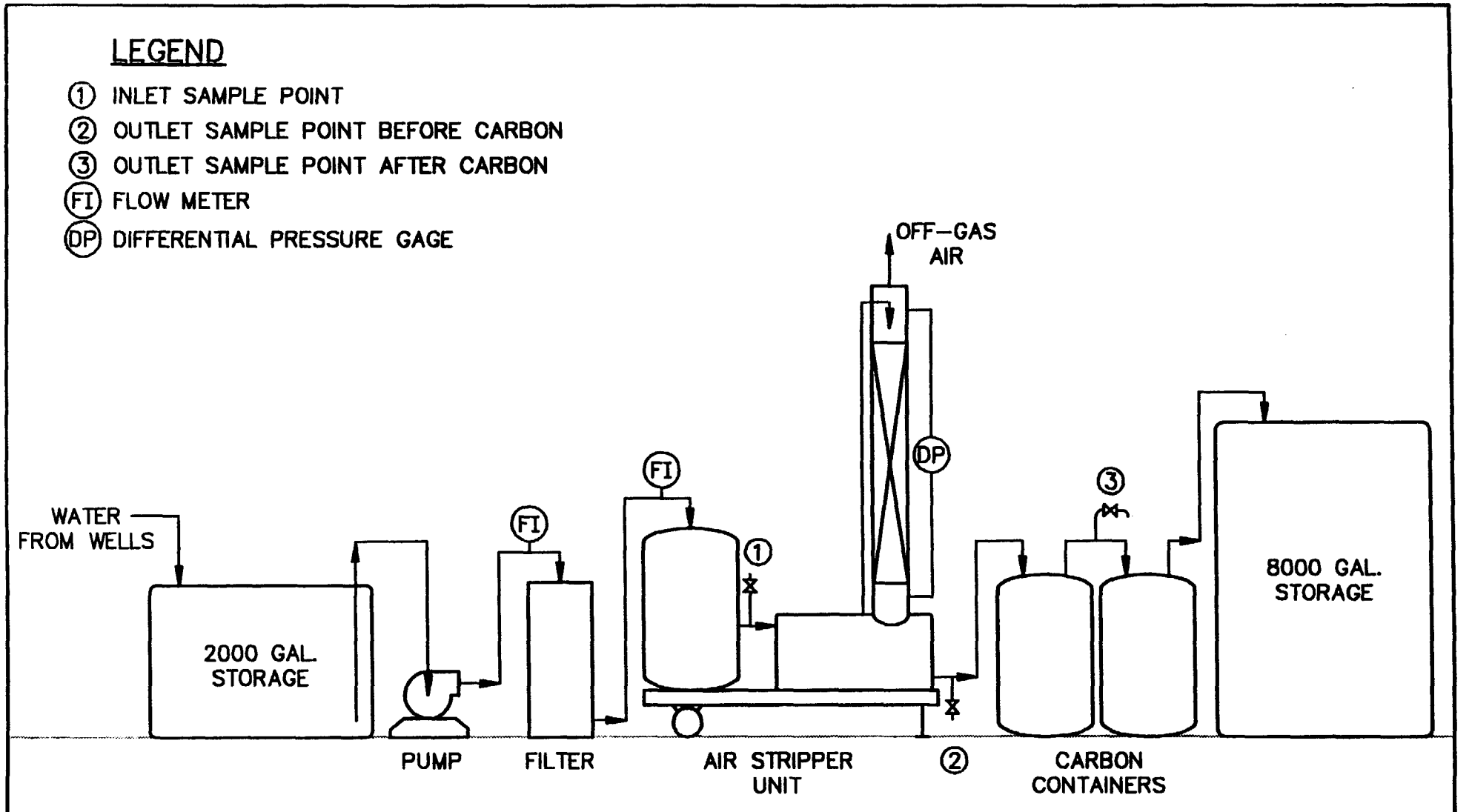
- COLOUR CHANGE
- SOLIDS FORMATION

AERATION TEST

TEST 3
BENCH-SCALE TESTS FOR AERATION
GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

CRA

2372-11/12/91-L-0 (D-13)



TEST 5
PILOT-SCALE TESTS FOR AIR STRIPPING/CARBON FILTRATION
GROUNDWATER TREATABILITY STUDY
SUMMIT NATIONAL SUPERFUND SITE
Deerfield, Ohio

CRA

2372-09/12/91-L-0 (D-14)