The electronic version of this file/report should have the file name:

Type of document . Site Number . Year-Month . File *Year-Year* or Report name . pdf

1

_____ . _____ - ___ . File _____ .pdf

example: *letter . Year-Month . File Year-Year . pdf*

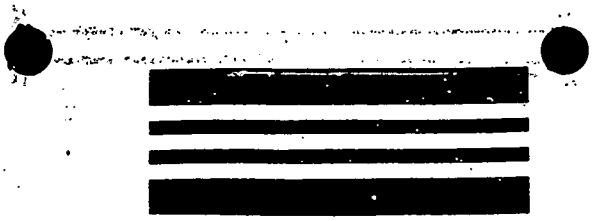
CONSENT ~~letter~~ . HW . 915063 . 1994-08-24 . 1994-1999 ORDER .pdf

example: *report . Site Number . Year-Month . Report Name . pdf*

Project Site numbers will be proceeded by the following:

Municipal Brownfields - B
Superfund - HW
Spills - SP
ERP - E
VCP - V
BCP - C

AKA: 915031



915063
Corres. file
DEED Restriction

ERIE COUNTY CLERKS OFFICE
County Clerk's Recording Page

Return To:

BOX 21

Index DEED LIBER

Book 10946 Page 0735

No. Pages 0075

Instrument RESTRICTIONS

Date : 1/27/1999

Time : 11:26:05

Control # 199901270449

NIAGARA MOHAWK POWER
CORPORATION

Employee ID FG

COUNTY	$	230.50
	$	.00
COE	$	5.00
	$	.00
	$	.00
	$	.00
	$	.00
	$	.00
	$	.00
Total:	$	235.50

STATE OF NEW YORK
ERIE COUNTY CLERKS OFFICE

WARNING - THIS SHEET CONSTITUTES THE CLERK'S ENDORSEMENT, REQUIRED BY SECTION 316-a(5) & SECTION 319 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK. DO NOT DETACH

DAVID J SWARTS
COUNTY CLERK

D109460735

DECLARATION OF COVENANTS AND RESTRICTIONS

WHEREAS, Niagara Mohawk Power Corporation is a corporation organized under the laws of the State of New York having its principal place of business at 300 Erie Boulevard West, Syracuse, New York 13202; and

WHEREAS, Niagara Mohawk Power Corporation is the owner of a certain inactive hazardous waste disposal site, namely NIAGARA MOHAWK CHERRY FARM SITE (Site #9-15-063), located on River Road in the Town of Tonawanda, Erie County, State of New York; and

WHEREAS, the said inactive hazardous waste disposal site is the subject of a certain Order on Consent (Index Nos. B9-0046-84-10 and B9-0047-91-02) issued by the Commissioner of the New York State Department of Environmental Conservation, according to law effective on September 27, 1994, a copy of which is attached to and made a part hereof as Exhibit "A", which directs the owner and other responsible parties to develop, implement, monitor and maintain a remedial program for the property, and is further subject to an Amendment to said Order on Consent, effective November 2, 1998, attached hereto as Exhibit "B"; and

WHEREAS, the requirements of the remedial program selected by the New York State Department of Environmental Conservation in accordance with the New York State Environmental Conservation Law, and consistent with the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980 (as amended by the Superfund Amendments and Reauthorization Act of 1986) were published in an Amended Record of Decision issued by the Department of Environmental Conservation on October 7, 1993, attached hereto as Exhibit "C".

NOW, THEREFORE, Notice is hereby given:

First, that the property affected by this Declaration of Covenants and Restrictions is part of a parcel conveyed by a deed dated July 20, 1970, a copy of which is attached hereto as Exhibit "D", between party of the first part CF&I Steel Corporation and party of the second part Niagara Mohawk Power Corporation, recorded in the Erie County Clerk's Office in Liber 7711 at page 302. The property affected hereby is described in Schedule A attached to the aforementioned deed (Liber 7711 at pages 305 and 306), but is specifically limited to that portion of the property conveyed thereby to Niagara Mohawk Power Corporation which is located to the WEST of River Road and, as described in Schedule A attached to the July 20, 1970 deed, specifically excludes from the property affected by this Declaration of Covenants and Restrictions "all that land formerly owned by the State of New York and used for Canal purposes, and now owned by the County of Erie". The location of the affected property is indicated on the survey document dated 7/10/70, attached hereto as Exhibit "E";

Second, that the aforesaid Order on Consent (Exhibit "A" and Exhibit "B" attached hereto) is binding upon Niagara Mohawk Power Corporation and its successors in interest;

Third, that this Declaration of Covenants and Restrictions shall run with the land and to the benefit of the New York State Department of Environmental Conservation, and shall be binding upon all future owners of the property affected by this Declaration, and upon each and every tenant, subtenant, invitee and licensee of the property, and cannot be modified without the consent of the Department of Environmental Conservation or any New York State Department, Bureau or other entity replacing the Department;

Fourth, that the affected property, having been listed by the Department of Environmental Conservation as a Classification "2" Site in the Registry of Inactive Hazardous Waste Disposal Sites in New York State, is subject to applicable restrictions on the use of such property including those specified by §375-1.2(e) of the Environmental Conservation regulations embodied in Title 6 of the New York Code of Rules and Regulations. Use of the affected property is thereby limited such that no person may engage in any activity:

a) that will, or that reasonably is anticipated to, prevent or interfere significantly with any proposed, ongoing or completed remedial program affecting the property, including any activity that will intrude into waste materials or will otherwise diminish the effectiveness of the remedy.

449 — 235.50
ANA - 74 - 1

The Following Image(s) are the Best Copy Available

BIEL'S

b) that will, or is reasonably likely to, expose the public health or the environment to a significantly increased threat of harm or damage to such property;

Fifth, that the use of the property may be further restricted by law and/or by other orders issued or to be issued according to law;

Sixth, that any deed of conveyance is subject to and encumbered by this Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, the undersigned has executed this instrument on this 22nd day of January, 1999.

NIAGARA MOHAWK POWER CORPORATION

Edward J. Dienst
Senior Vice President
Customer Delivery and Asset Management

STATE OF NEW YORK) SS.:
COUNTY OF ONONDAGA)

On the 22nd day of January, 1999, before me personally came Edward J. Dienst, to me known, who, being by me duly sworn, did depose and say that he resides in Skaneateles, New York; that he is the Senior Vice President-Customer Delivery and Asset Management of Niagara Mohawk Power Corporation, the corporation described in and which executed the above instrument; and that he signed his name thereto by authority of the board of directors of said corporation.

WILLIAM C. WEISS
Notary Public, State of New York
No. 4719825
Qualified in Onondaga County
My Commission Expires October 31, 2002

Ni-Mo Cherry Farm
Consent Order file

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of a Joint Remedial Program for Inactive Hazardous Waste Disposal Sites, Under Article 27, Title 13, and Article 71, Title 27 of the Environmental Conservation Law of the State of New York by

AMENDMENT TO ORDER ON CONSENT

INDEX #B9-0046-84-10
B9-0047-91-02

ALLIEDSIGNAL INC.
GENERAL MOTORS CORP.
NIAGARA MOHAWK POWER CORP.

Respondents.

Site Codes #915063 and #915031

Whereas,

1. The New York State Department of Environmental Conservation (the "Department") and certain parties (the "Cherry Farm Respondents and the River Road Respondents", collectively the "Respondents") entered into an Order on Consent (Index Numbers B9-0046-84-10 and B9-0047-91-02) dated September 27, 1994, (the "Order") relating to certain remedial design and remedial action ("RD/RA") activities related to the Cherry Farm Site Number 915063 and the River Road Site Number 915031 (collectively the "Sites"). The Order is attached to this Amendment as Appendix "A".

2. The Respondents are among the corporations and individuals the Department alleges to be potentially responsible parties with respect to the Sites.

3. The Respondents have, among other things, completed the Remedial Design and a majority of the Remedial Action for the Sites to the Department's satisfaction.

4. In accordance with the Record of Decision ("ROD") (as amended) for the Cherry Farm Site and the ROD for the River Road Site, Respondents developed and the Department approved a Scope of Work ("SOW") for the Sites which was attached to and incorporated into the Order.

5. In accordance with the SOW and the Order Respondents performed several phases of investigation of sediments in the Niagara River in the vicinity of the Sites, the scope and results of which were reviewed and approved by the Department.

6. As a result of the Department-approved investigations of the sediments the Department has concluded in accordance with Subparagraph III.J of the Order that further actions are necessary to address Niagara River sediments

7. Respondents have prepared a Final Remedial Design Report for Sediment Removal at Cherry Farm Site/River Road Site (the "Sediment RD") which defines the nature and extent of the remedial actions necessary for the sediments in a manner consistent with the Cherry Farm and River Road RODs and the reasonably anticipated future use of the Sites. The Sediment RD is dated May, 1998, is attached to and incorporated into this Amendment as Appendix "B", and is an addendum to the June 1995 Remedial Design Report for the Cherry Farm/River Road Site.

8 Concurrence and/or approval of the sediment removal described in the Sediment RD has been received from New York State Department of Health and the U.S. Army Corps of Engineers.

9 The Department and Respondents agree that the goal of this Amendment is to amend the Order on Consent to provide for the performance of certain remedial actions with respect to the sediments in accordance with the Sediment RD.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. The Department has reviewed and hereby approves the Sediment RD.

II. Respondents shall implement the Sediment RD in accordance with the schedule set forth therein.

III. Respondents have constructed an on-site cell (the "Cell") which shall be used for

placement of the sediments removed from the Niagara River (the "River") pursuant to the Sediment RD. Attached to and incorporated into this Amendment as Appendix "C" is a statement of the effective working capacity of the Cell prepared and certified by a licensed surveyor.

IV. The limits of sediment to be removed from the River are delineated in the Sediment RD (the "Limits"). Respondents have developed an estimate of the volume of sediments within the Limits which it anticipates will be removed from the River and which is presented in the Sediment RD.

V. In the event that the volume of sediments within the Limits and removed from the River pursuant to the Sediment RD reaches the capacity of the Cell Respondents shall either, in their sole discretion, (1) expand the Cell to the extent technically and economically practical and consistent with reasonably anticipated future use of the Sites, or, (2) otherwise provide for disposal of the excess sediments.

VI. In the event that the Department determines that sediments beyond the Limits presented in the Sediment RD should be removed to protect human health or the environment, Respondents agree to meet with the Department to consider removal of the additional sediments pursuant to this Amendment.

VII. A. Respondents shall pay to the Department a sum of money which shall represent reimbursement for the State's expenses incurred negotiating this Amendment, reviewing and revising submittals made pursuant to this Amendment, overseeing activities conducted pursuant to this Amendment, collecting and analyzing samples, and administrative costs associated with this Amendment. Reimbursements pursuant to Subparagraph VIII.B of the Consent Order and this Amendment shall not exceed $360,000.

B. The Department will periodically submit itemized invoices to Respondents

and within 60 days after receipt of an itemized invoice from the Department, such payment shall be made by certified check payable to the Department of Environmental Conservation. Payment shall be sent to the Bureau of Program Management, Division of Environmental Remediation, N.Y.S.D.E.C., 50 Wolf Road, Albany, New York 12233-7010. Itemization of the costs shall include an accounting of personal services indicating the employee name, title, biweekly salary, and time spent (in hours) on the project during the billing period, as identified by an assigned time and activity code. This information shall be documented by quarterly reports of Direct Personal Service. Approved agency fringe benefit and indirect cost rates shall be applied. Non-personal service costs shall be summarized by category of expense (e.g., supplies, materials, travel, contractual) and shall be documented by the New York State Office of the State Comptroller's quarterly expenditure reports.

VIII. This Amendment and Appendices shall be incorporated into and become a part of the Order on Consent between the Department and the Respondents dated September 27, 1994 and identified as Index #B9-0046-84-10 and B9-0047-91-02. The terms, provisions, conditions and requirements of the Order on Consent shall, to the extent consistent with this Amendment, remain in effect in its entirety as amended with the changes specified herein.

IX. The terms, conditions and modifications contained in this Amendment shall become effective on the date this Amendment is signed by the Commissioner or his designee.

Dated: 11/2, New York
1998

JOHN P. CAHILL
Commissioner
New York State Department
of Environmental Conservation
by: Michael J. O'Toole, Jr.

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Amendment, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Amendment.

GENERAL MOTORS CORPORATION

By: Don A Schiemann

Don A. Schiemann
(Type Name of Signer)

Title: Attorney

Date: September 4, 1998

STATE OF NEW YORK)
) s.s.:
COUNTY OF)

On this 4th day of September, 1998, before me personally came Don A. Schiemann, to me known, who, being by me duly sworn, did depose and say that he resides in Oakland County; that he is an Attorney of the General Motors Corporation, the corporation described in and which executed the foregoing instrument; and is authorized to sign this Amendment to Order On Consent on behalf of said corporation.

Carolyn E. Stoehr
Notary Public
CAROLYN E. STOEHR
Notary Public, Wayne County, MI
My Commission Expires July 9, 2000

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Amendment, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Amendment.

ALLIEDSIGNAL INC.

By: Robert J. Ford
Robert J. Ford

Law Dept 7/9/98

Title: Director, Remediation and Evaluation Services

Date: 7/9/98

STATE OF NEW JERSEY)
) s.s.:
COUNTY OF MORRIS)

On this 9th day of July, 1998, before me personally came Robert J. Ford, to me known, who, being by me duly sworn, did depose and say that he is the Director, Remediation and Evaluation Services of AlliedSignal Inc., the corporation described in and which executed the foregoing instrument; and that he has been duly authorized by the corporation to sign this Amendment.

Sandra L. Pappas
Notary Public

SANDRA L. PAPPAS
MY COMMISSION EXPIRES
FEBRUARY 14, 2000

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Amendment, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Amendment.

NIAGARA MOHAWK POWER CORPORATION

By: Thomas H. Baron

Thomas H. Baron
Vice President – Fossil/Hydro Generation
and Environmental Affairs

Date: Oct. 7, 1998

STATE OF NEW YORK)
) S.S.:
COUNTY OF ONONDAGA)

On this 7th day of October, 1998, before me personally came Thomas H. Baron, to me known, who, being by me duly sworn, did depose and say that he resides in Syracuse, New York; that he is the Vice President – Fossil/Hydro Generation and Environmental Affairs of Niagara Mohawk Power Corporation, the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by authorization of said corporation.

William C. Weiss

Notary Public

WILLIAM C. WEISS
Notary Public, State of New York
No. 4925
Qualified in Onondaga County
My Commission Expires October 31, 1998

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the
Development and Implementation
of a Joint Remedial Program for
Inactive Hazardous Waste Disposal
Sites, Under Article 27, Title 13,
and Article 71, Title 27 of the
Environmental Conservation Law
of the State of New York
by

THE PARTIES SET FORTH IN
APPENDIX "C"

Respondents.

ORDER
ON
CONSENT
INDEX # B9-0046-84-10
B9-0047-91-02

Site Codes #915063
and #915031

WHEREAS,

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of Article 27, Title 13 of the Environmental Conservation Law of the State of New York ("ECL"), entitled "Inactive Hazardous Waste Disposal Sites." This Order is entered into pursuant to the Department's authority under ECL Article 27, Title 13 and ECL 3-0301.

2. Certain of the Respondents ("Cherry Farm Respondents") are among the corporations or individuals which the Department alleges to be potentially responsible parties with respect to certain contamination which exists at a Site near 4000 River Road in the Town of Tonawanda, Erie County, New York, known as the Niagara Mohawk-Cherry Farm Site (the "Cherry Farm Site"). The Cherry Farm Site is further defined in the Site plan attached hereto as Appendix "A". A list of the Respondents to

FINAL REMEDIAL DESIGN REPORT

SEDIMENT REMOVAL AT CHERRY FARM SITE (NYSDEC SITE NO. 9-15-063) RIVER ROAD SITE (NYSDEC SITE NO. 9-15-031) Tonawanda New York

SUBMITTED TO

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS
WASTE REMEDIATION

SUBMITTED BY

CHERRY FARM / RIVER ROAD SITE PRP GROUP

PREPARED BY

PARSONS ENGINEERING SCIENCE, INC.
180 Lawrence Bell Drive, Suite 100
Williamsville, New York 14221
(716) 633-7074 FAX (716) 633-7195
Buffalo, New York

PARSONS
May 1998
C:\PROJECTS\CHERRYFM\CHERYCV3.ds4

Final Remedial Design Report For:

SEDIMENT REMOVAL AT CHERRY FARM SITE (NYSDEC SITE NO. 9-15-063) RIVER ROAD SITE (NYSDEC SITE NO. 9-15-031)

Tonawanda, New York

Submitted To:

New York State Department of Environmental Conservation Division of Hazardous Waste Remediation

Submitted By:

Cherry Farm/River Road Site Potentially Responsible Parties

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
180 Lawrence Bell Drive, Suite 100
Williamsville, New York 14221
Phone: (716) 633-7074
Fax: (716) 633-7195

MAY 1998

PARSONS

PARSONS ENGINEERING SCIENCE, INC.
180 Lawrence Bell Drive, Suite 100 • Williamsville, New York 14221 • (716) 633-7074 • Fax: (716) 633-7195

MEMORANDUM

July 7, 1998

To: Mr. Shive Mittal/NYSDEC

From: Mark Raybuck/Parsons Engineering Science, Inc. (MSR)

Subject: Cherry Farm/River Road Site Sediment Disposal Basin

This memorandum and the attached letter and survey drawings constitute Attachment C of the Cherry Farm River Road Sediment Removal Consent Order Amendment.

The May 1998 Final Design Report for Sediment Removal at the Cherry Farm/River Road Sites indicates that a berm will be constructed around the sediment disposal area (SDA) to an elevation of 587 feet. At this elevation, the capacity of the disposal area will be approximately 50,000 cubic yards (CY).

The attached survey drawings indicate that approximately 47,000 CY of material were excavated to created the SDA. The adddition of a berm to create a uniform elevation of 587 feet will increase the capacity to 50,000 CY, as mentioned above.

Based on the approved grading plan, the total in-place volume of sediment to be removed is 37,000 CY. With some allowable overdredging, and bulking due to the dredging operations, the capacity of the basin (with a berm at elevation 587 feet) is expected to be sufficient.

cc: PRP Group
W.J. Long
File (726673 #25f.3)

WENDEL

7405 CANAL ROAD
P.O. BOX 501
LOCKPORT, NEW YORK 14095
716/433-5993 or 625-8228
FAX 716/433-7604
e-mail: wendel@wendel-design.com

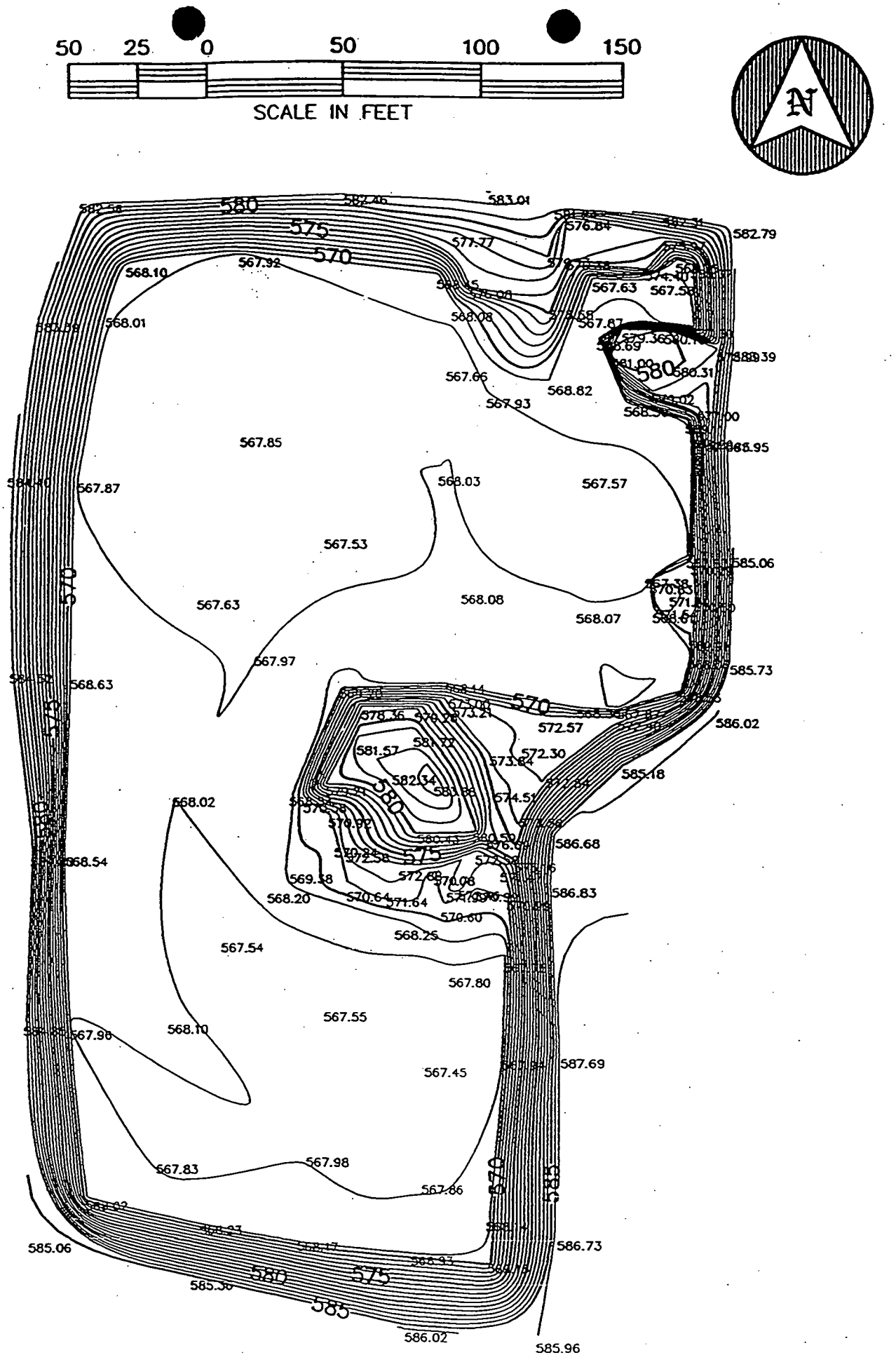
November 3, 1997

Mr. Todd Doty
The Haseley Companies
P.O. Box 212
10315 Lockport Road
Niagara Falls, N.Y. 14304

Top of subgrade at the River Road site was surveyed by Wendel on September 24,1997. Haseley Construction then excavated material and Wendel performed an asbuilt survey on October 31, 1997. Volumes were computed by Wendel on November 3, 1997 using 3D terrain models and comparing the original surface to the final surface. The volume of excavation was computed to be 47,015 cubic yards. Contour maps of these two surfaces are provided with this letter.
If you have any questions on this matter please call.

Sincerely,

Charles F. Bigelow, Jr., P.L.S.
Project Manager



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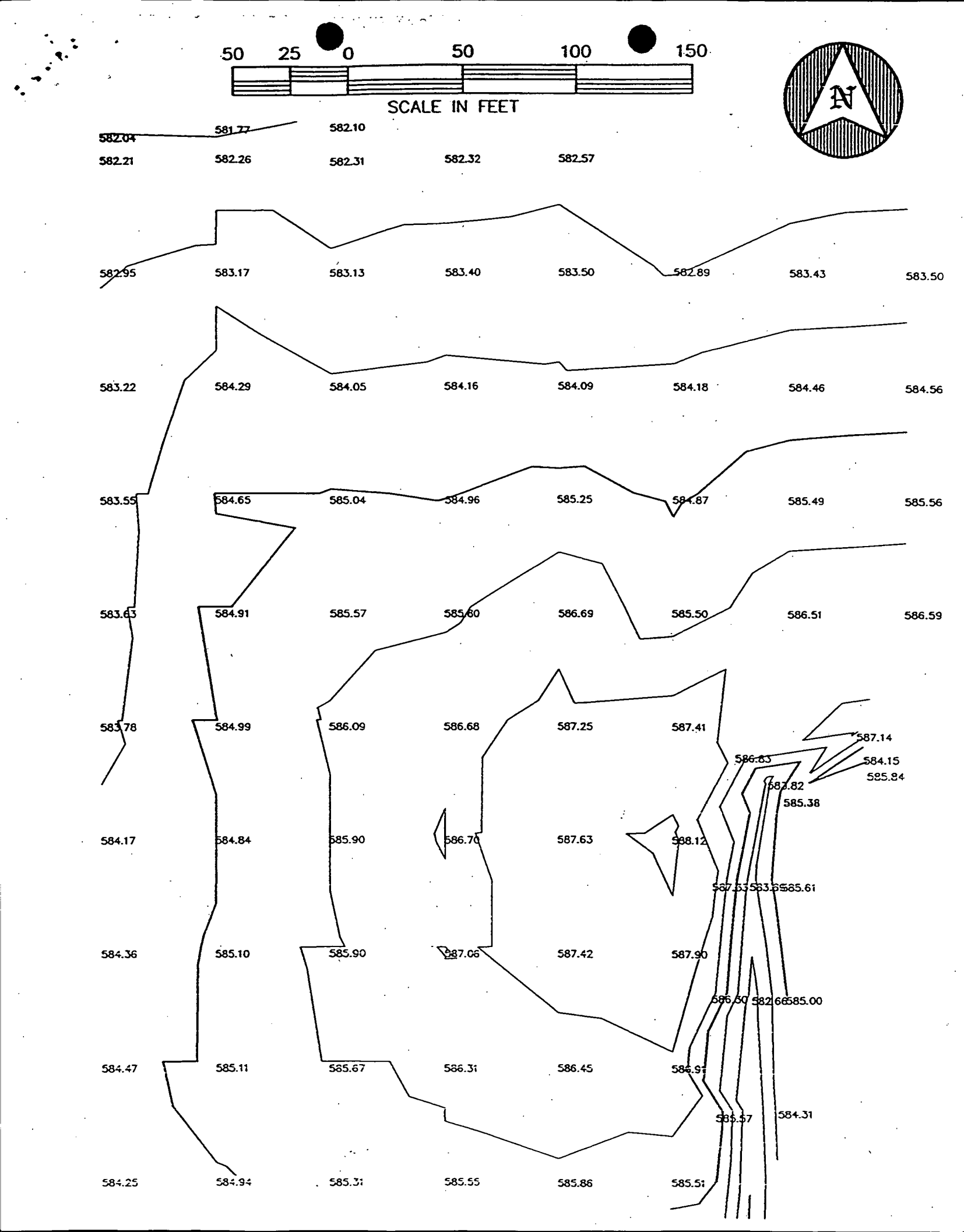
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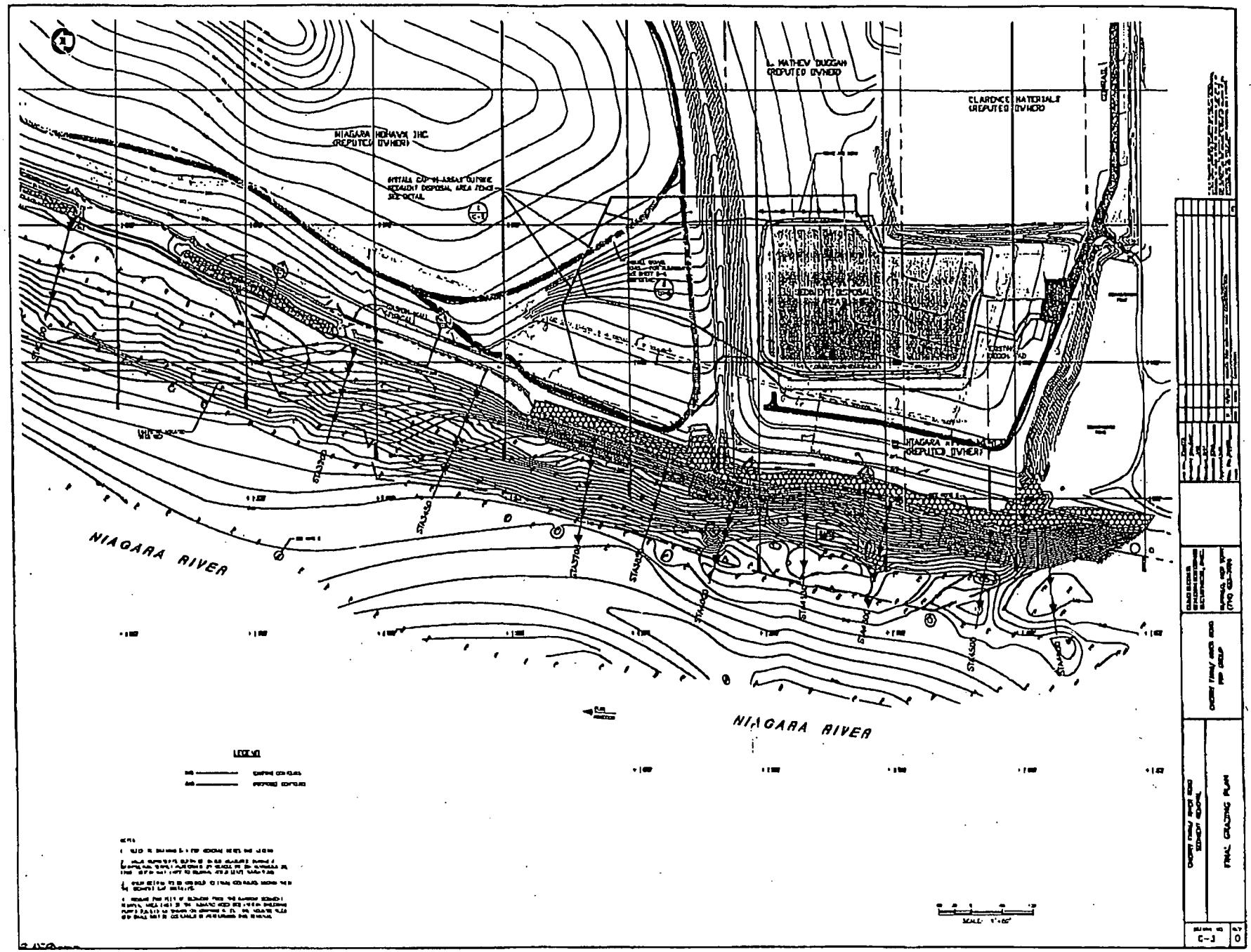
NIAGARA MOHAWK INC.
(REPUTED OWNER)
ST. MATHEW DUGGAN
(REPUTED OWNER)
CLARENCE MATERIALS
(REPUTED OWNER)
NIAGARA RIVER
NIAGARA RIVER
FINAL GRADING PLAN
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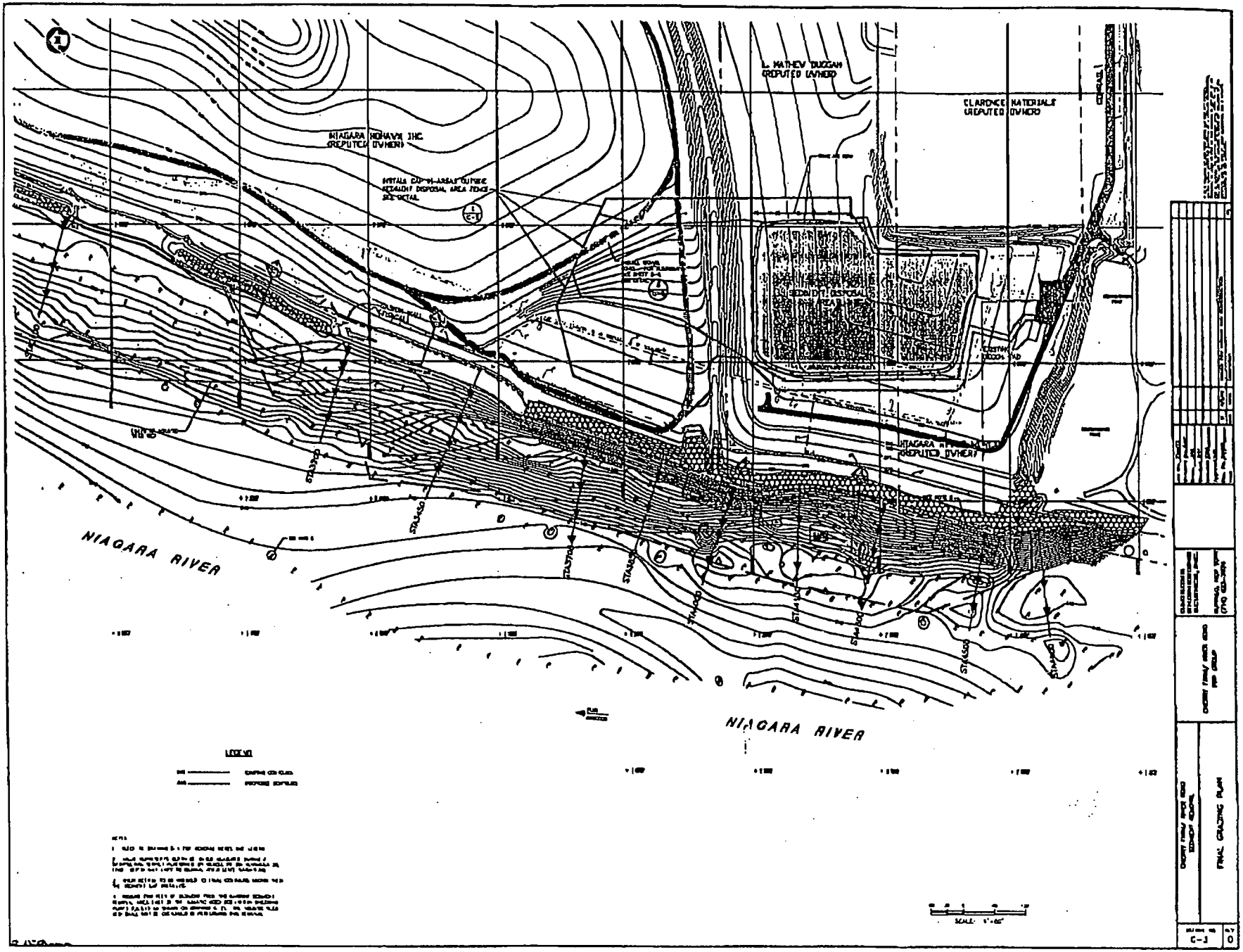
NIAGARA RIVER
NIAGARA RIVER
FINAL GRADING PLAN
C-1

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

MJH

John P. Cahill
Acting Commissioner

TRANSMITTAL MEMORANDUM

TO: Distribution Below

FROM: Shive R. Mittal
Remedial Section B, Bureau of Western Remedial Action
Division of Environmental Remediation

RE: Cherry Farm/River Road Site, Erie (C), NY , Site I. D. # 9-15-063&031

DATE: May 28, 1997

Please find attached the following document(s) regarding the subject site:

Scope of work for the sediment removal project, dated May 23, 1997, for the Cherry Farm/River Road Site. This scope of work will be an attachment to the amendment to existing Consent Order.

These are transmitted:

☐ For your review/approval. Please provide written comments by 06/03/97.

If you have any questions or need additional information, please call ☐ me or ☐ _____ at 518/457-0315 .

Remarks:

Attachment(s)

Distribution: D. King, Region-9
M. Desmond, Region-9
K. Roblee, DF&W Reg-9
C. Dowd, DF&W
A. English

cc w/o att. File
S. Mittal

PHILLIPS, LYTLE, HITCHCOCK, BLAINE & HUBER

ATTORNEYS AT LAW

3400 MARINE MIDLAND CENTER, BUFFALO, NEW YORK 14203

TELECOPIER (716) 852-6100

(716) 847-8400

DAVID P. FLYNN
PARTNER

WRITER'S DIRECT DIAL
(716) 847-5473

May 20, 1997

Maura C. Desmond, Esq.
Senior Attorney
Division of Environmental Enforcement
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999

Re: *Cherry Farm - River Road Sediment Removal Program*

Dear Maura:

As you know, the Department has requested that the Cherry Farm - River Road Site PRPs undertake a sediment removal action in the Niagara River adjacent to the Cherry Farm/River Road Sites. There have been a number of discussions regarding certain of the technical issues pertaining to the Department's request; it is my understanding that most, if not all, of the issues relating to the scope of the sediment removal action have been resolved. Accordingly, the PRPs have submitted a draft Sediment Removal Scope of Work for the Department's review and approval.

Enclosed are our proposed modifications to the existing Order on Consent to reflect the additional work which the Department has requested and the Respondents have agreed to perform. We feel these modifications, while modest, are necessary to ensure that the sediment removal activities are appropriate under this Order.

PHILLIPS, LYTLE, HITCHCOCK, BLAINE & HUBER

Please contact me to discuss these proposed modifications at your convenience. As you may know, it is imperative that the sediment removal activities start in July so that they can be completed within the ACOE-mandated window for sediment removal activities in the Niagara River.

I look forward to discussing this with you.

Very truly yours,

PHILLIPS, LYTLE, HITCHCOCK, BLAINE & HUBER

By
David P. Flynn

WAdma
417478
Enclosure

(Collectively the "Remedial SOWs")

for the River Road Site in a Record of Decision dated March 24, 1994. This Record of Decision is attached to and incorporated into this Order as Appendix "E" and shall be referred to in this Order as the "River Road ROD."

9. The Respondents have prepared, and the Department has approved, the Scope of Work ("SOW") and a Sediment Removal Action Scope of Work ("Sediment SOW") for the joint remedial program for both the Cherry Farm and River Road Sites which ~~is~~ are attached to and incorporated into this Order as Appendix "F".

10. The Department, the Cherry Farm Respondents and the River Road Respondents agree that the goals of this Order are for Respondents to (i) develop and implement, in accordance with the RODs and the Remedial SOWs a joint inactive hazardous waste disposal site remedial program ("Remedial Program") for the Sites that shall include design and implementation, and operation, maintenance and monitoring of the remedial alternative specified in the RODs and Remedial SOWs and (ii) reimburse the Department's past and future administrative costs as limited by Paragraph VIII of this Order.

11. Respondents, without the admission of any liability or of the veracity of any of the facts alleged herein, having waived Respondents' right to a hearing herein as provided by law, and having consented to the issuance and entry of this Order, agree to be bound by its terms. Respondents consent to and agree not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and agree not to contest the validity of this Order or its terms.

engineering report, and certification, the Department shall notify Respondents in writing whether the Department is satisfied that all construction activities have been completed in accordance with the approved Remedial Design.

I. If the Department determines that all construction activities at a Site have not been completed in accordance with the approved Remedial Design, Respondents for that Site shall be in violation of this Order and the ECL.

J. [Insert] K.

K. If the Department concludes or that any element of the Remedial Program at a Site fails to achieve the remedial objectives or goals set forth in the ROD for the site or otherwise fails to protect human health or the environment~~; or (2) that further actions are necessary to address Niagara River sediments~~ which have been ~~studied pursuant to this Order~~, the Department may seek to require Respondents for either or both sites, depending on the applicability of the Department's conclusions, to take whatever action the Department determines necessary to achieve those objectives or goals, to ensure that the Remedial Program otherwise protects human health and the environment~~, or to address sediments in the Niagara River which have been studied pursuant to this Order~~.

IV. Progress Reports

During the pendency of construction activities Respondents shall submit to the parties set forth in paragraph XII copies of joint written monthly progress reports that: (i) describe the actions which have been taken toward achieving

J. The Department has concluded, as a result of an investigation of sediments in the Niagara River performed by the Respondents and approved by the Department, that further actions are necessary with respect to certain of those sediments. The Department-approved Sediment SOW, which is attached as Exhibit F to this Order, defines the additional work which the Respondents have agreed to perform with respect to Niagara River sediments. Respondents shall implement the work set out in the Sediment SOW in accordance with the schedule set forth therein.

2. the Department's right to enforce this Order against Respondents and/or any of Respondents' successors and assigns if Respondents fail to satisfy any of the terms of this Order; or

3. the Department's right to bring any action or proceeding against Respondents and/or any of Respondents' successors and assigns with respect to claims for natural resources damages as a result of the release or threatened release of hazardous substances or constituents at or from the Sites;

4. the Department's right to gather information and enter and inspect property and premises.

B. If, after review, the Department accepts and approves the engineer's certification that construction of the Remedial Program was completed in accordance with the approved Remedial Design, then, unless a supplementary remedial program is determined to be necessary by the Department pursuant to Paragraph II.C.6, or determined to be necessary by the Department pursuant to Paragraph III.E, III. J and/or V.B, and except for the provisions of subparagraphs A and C of Paragraph IX, and the provisions of paragraph X; and except for the future Operation and Maintenance of the Sites, reimbursement of Department expenditures in accordance with Paragraph VIII, ~~and any Natural Resource Damage~~ claims that ~~may arise~~, such acceptance shall constitute a release for each and every claim, demand, remedy or action whatsoever against Respondents, their

successors and assigns, which the Department has or may have pursuant to Article 27, Title 13 of the ECL, CERCLA, or otherwise, relative to or arising from the disposal of hazardou wastes at the Sites; provided, however, that the Department specifically reserves all of its rights concerning, and any suc release and satisfaction shall not extend to, any investigatior or remediation the Department deems necessary due to:

(1) environmental conditions on-site or off-site which are related to the disposal of hazardous wastes at the Sites and were unknown to the Department at the time of its approval of the Remedial Design and the or Sedi S

(2) information received, in whole or in part, after the Department's approval of the Remedial Design and the Sediment SOW

and such unknown environmental conditions or information indicates that the Remedial Program is not protective of human health or the environment. The Department shall notify the Respondent of such environmental conditions or information and its basis for determining that the Remedial Program is not protective of human health and the environment.

This release shall inure only to the benefit of Respondents, their successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone

any report submitted pursuant to this Order, Respondents shall submit to the project manager a computer readable magnetic media copy of the approved report in American Standard Code for Information Interchange (ASCII) format.

D. Communication to be made from the Department to the Respondents shall be sent to the parties set forth in Appendix "C".

E. The Department and Respondents reserve the right to designate in writing additional or different addressees for communication or written notice to the other.

XIII. Miscellaneous

A. All activities and submittals required by this Order shall, consistent with the RODs and the SOW, address both on-Site contamination and off-Site contamination (to the extent off-Site conditions may be causally related to the on-Site disposal of hazardous waste) at either of the Sites resulting from the alleged disposal of hazardous waste at the Sites.

B. Respondents shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and data validators reasonably acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Order. A summary of the experience, capabilities, and qualifications of the firms or individuals selected by Respondents shall be submitted to the Department within 60 days after the effective date of this Order. The Department's

PARSONS ENGINEERING SCIENCE, INC.

180 Lawrence Bell Drive, Suite 100 • Williamsville, New York 14221 • (716) 633-7074 • Fax: (716) 633-7195

May 23, 1997

Mr. Shive Mittal
New York State Deparment of Environmental Conservation
50 Wolf Road, Room 222
Albany, New York 14203

RE: Cherry Farm/River Road Site Consent Order Amendment

Dear Mr. Mittal:

Attached is a revised summary of the Scope of Work for the Cherry Farm/River Road sediment removal project scheduled to begin in July 1997. This revised document is for your use in developing an amendment to the existing Cherry Farm/River Road Consent Order.

If you have any questions on the revisions, please give me a call at 633-7074.

Very truly yours,

PARSONS ENGINEERING SCIENCE, INC.

James H. Kyles
Project Manager

cc: Cherry Farm/River Road PRP Group
D.P. Flynn, Phillips, Lytle
M. Hinton, NYSDEC
T.L. Benson (Parsons ES)
S.L. Drozdowski (Parsons ES)
M.S. Raybuck (Parsons ES)
File (726673 13 z.7)

SCOPE OF WORK

SEDIMENT REMOVAL ACTION
CHERRY FARM/RIVER ROAD SITE

1. PROJECT DESCRIPTION AND BACKGROUND

The River Road and Cherry Farm Site adjoin each other, and are located in the Town of Tonawanda, Erie County, New York. In accordance with a New York State Department of Environmental Conservation (NYSDEC) Order-on-Consent for the Cherry Farm Site (Index No. B9-0046-84-10, NYSDEC Site No. 9-15-063), and the River Road Site (Index No. 89-0047-91-02, NYSDEC Site No. 9-15-031), the Potentially Responsible Parties (PRP) Group was required to sample and evaluate the hazards associated with Niagara River sediments adjacent to the Site.

Two phases of sediment sampling have been conducted in the Niagara River adjacent to the Site. The results of the two phases of sampling and analysis indicated that there was a need for remedial action. Sediment removal has been selected as the remedial action for this Site. The primary objectives of the sediment removal are to:

- Reduce potential human health risks related primarily to direct contact with sediment; and
- Reduce risks to benthic aquatic life and fish.

The following cleanup scenario and goals were agreed to by NYSDEC and the PRP Group in a meeting on April 25, 1997:

- 20 ppm total polycyclic aromatic hydrocarbons (PAHs) will be used to define the horizontal extent of removal in the shallow zone (top one foot) of the sediments.
- 50 ppm total PAHs will be used to define the vertical extent of removal in the deep zone (below one foot) of the sediments.
- An exception to this is the area of the weed bed between Stations 2600 and 3200. Only a 2-foot deep by 20-foot strip of the weed bed will be removed between Station 2900 and 2600 (as measured from the original shoreline). The 50 ppm total PAH contour line will define the horizontal and vertical extent of removal between Station 3200 and 2900. Figure 1 shows the approximate outer limits of removal agreed upon. No sediment will be excavated beyond the approximate limits depicted on Figure 1.
- Removed sediment will be managed onsite, and will be placed beneath the soil cover system being installed on the landfill.

- The sediment removed and placed on the Site must meet certain physical criteria for water content, and stability. These criteria are defined in the technical specifications presented in the "Preliminary Remedial Design Report, Sediment Removal at Cherry Farm Site (NYSDEC Site No. 9-15-063), River Road Site (NYSDEC Site No. 9-15-031), Tonawanda, New York", dated May 1997.
- A final grading plan showing contours for sediment disposal area shall be developed.

2. EXISTING SITE CHARACTERISTICS

2.1 Sediment Characterization

The first phase of sediment sampling was conducted in the Niagara River, adjacent to the Site, in October 1994. The results of the first sampling round were reported to the NYSDEC in the Phase I Sediment Data Assessment Report, April 1995 (Phase I Report). The results reported in the Phase I Report (Parsons ES, 1995a) indicated that concentrations of PAHs and metals were present in the sediments adjacent to the Site, in excess of background levels. In response to comments by the NYSDEC, a second phase of sediment sampling was completed in July 1996. The results of the second phase of sampling were reported in the Phase II Report (Parsons ES, 1996b).

Based on the results of the sampling completed to date, it was concluded that the sediments adjacent to the Site contain certain PAHs and metals in excess of the 95% upper confidence limit (UCL_{95}) which was used to define background concentrations. The highest concentrations of PAHs (above the UCL_{95}) and metals (above the severe effects level, [NYSDEC, 1993]) are located between Stations 3000 and 4600, at distances from the shoreline of up to 150 feet out from shore.

The river substrate material varies in size and composition throughout the investigation area. The investigation area, adjacent to the Cherry Farm/River Road Site, is generally a low-energy depositional environment characterized by medium to coarse-grained sand and finer-grained sediments. Immediately upstream and downstream of the Site, the river has been deepened by dredging to maintain an adequate depth for the mooring of commercial boat traffic. These areas are higher energy environments characterized by coarser substrates. Farther from shore, the fine-grained material grades to a coarse, washed gravel. In the near shore area between Stations 2000 and 3200, the finer-grained deposits provide a substrate capable of supporting a community of aquatic grasses. Based on samples collected in this area, the aquatic vegetation is comprised mainly of *Vallisneria americana* (wild celery), and to a lesser degree, *Myriophyllum spicata* (Eurasian watermilfoil).

2.2 Niagara River Characteristics

Along the western boundary of the Site, the Tonawanda Channel of the Niagara River flows to the north. The river in the vicinity of the Site has a width of approximately 1,700 to 2,000 feet. The main navigation channel is on the far side of the river from the Site

with a depth of approximately 21 feet (United States Army Corps of Engineers [USACE], 1994).

The eastern bank of the Niagara River, in the vicinity of the Site, is lined with industrial facilities including the former Roblin Steel facility to the south, with a concrete docking facility and a previously dredged channel for industrial shipping. To the south, between Roblin Steel and the River Road portion of the Site, are settling ponds for the Tonawanda Coke Corporation with an outfall to the Niagara River. The shoreline to the north of the site has native terrain, a bulk fuel unloading platform, and a recreational boating marina.

River velocity data was collected along three transects perpendicular to the shoreline (Stations 3200, 4000, and 4600). River velocities in the study area, immediately adjacent to the Site, ranged from 0.3 to 2.6 feet/second (fps), and increased with distance from shore. Typical river velocities, in the portion of the Niagara River near the Site, have been reported to be in the range of 5 to 7 fps (USACE, 1994). Traditionally, water levels in the Niagara River are not prone to large fluctuations. Monthly mean water levels recorded at the Huntley Station (upstream of the Site) range from 564 to 566 feet, International Great Lakes Datum (USACE, 1994).

3. REMEDIAL DESIGN

The selected remedy, based on the conceptual design presented in the Phase II Sediment Investigation and Remedial Alternative Scoping Report, November 1996 (Phase II Report), includes the following elements:

- Prior to dredging activities, additional measurements of the current velocity will be made in the vicinity of the weed bed to establish baseline hydraulic conditions;
- Installation of temporary turbidity control curtains in the vicinity of the weed bed, as needed, to minimize short-term impacts of sediment resuspension;
- Removal of approximately 27,000 cubic yards of sediment from the river bottom in the vicinity of the Site, and the incorporation of this material under the cap of the existing onsite landfill. Cable Arm^{tm} mechanical dredging, or equivelent, will be employed to remove impacted sediments;
- Gravity dewatering to remove excess water from dredged sediments;
- Solidification or equivalent, if necessary, to improve material handling of dewatered sediments; and
- Excavated sediments will be covered with the cap system being installed at the Site.

Based upon the work conducted on this project to-date, the following design criteria and requirements were established for each design element.

Removal of the Barge Wreck:

- The barge wreck and associated debris near Station 4000 must be removed;
- Removal must be completed prior to dredging the area; and
- Sediment resuspension must be controlled to minimize the turbidity during dredging.

Dredging Operations:

- Sediment excavation will be accomplished using a Cable Arm[tm] dredging bucket or equivalent;
- Moratorium on dredging from March 30 to July 15, 1997 requires using a dredging method that will complete removal within the proposed construction schedule;
- Sediment resuspension must be minimized;
- Solids content of dredge spoil must be high enough that gravity dewatering is adequate; and
- Subsequent river bottom grade must be less than or equal to 3:1 in order to prevent damage to the improved shoreline.

Turbidity Control Curtain:

- A curtain must be installed which is capable of use with a river current velocity approximately 2.5 fps in conjunction with wave action;
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Turbidity Monitoring:

- Must provide real-time turbidity results with a frequency of approximately 20 readings per hour at upstream, downstream and work zone locations.
- Turbidity levels at the downstream monitoring location must not exceed either of the following two levels, whichever is greater, for a sustained period of two hours:
  - 100% above turbidity levels at the upstream background monitoring station; or
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Oil Boom:

- An oil boom must be deployed around the immediate dredging area to contain accidental releases from dredging equipment; and

- The boom must be of sufficient size and composition for the containment of releases of oils and other debris within the immediate working area.

Transport/Dewatering/Disposal:

- Temporary facilities and equipment to be used must be capable of handling 500-1,000 cubic yards (cy) of material per day;
- Facilities with a capacity for gravity dewatering of 500-1,000 cy per day must be provided;
- In accordance with the technical specifications presented in the May 1997 Preliminary Remedial Design Report referenced in Section 1 of this Scope of Work, the dredged sediment must be sufficiently dry and structurally sound for the placement of the soil cover system. This will be accomplished by the decanting of free-standing water, natural dewatering, and, as necessary, mixing in of stabilization additives. The sediment will be compacted to achieve a satisfactory subgrade for the soil cover system.
- Final placement of material will be within the remaining open area of landfill; and
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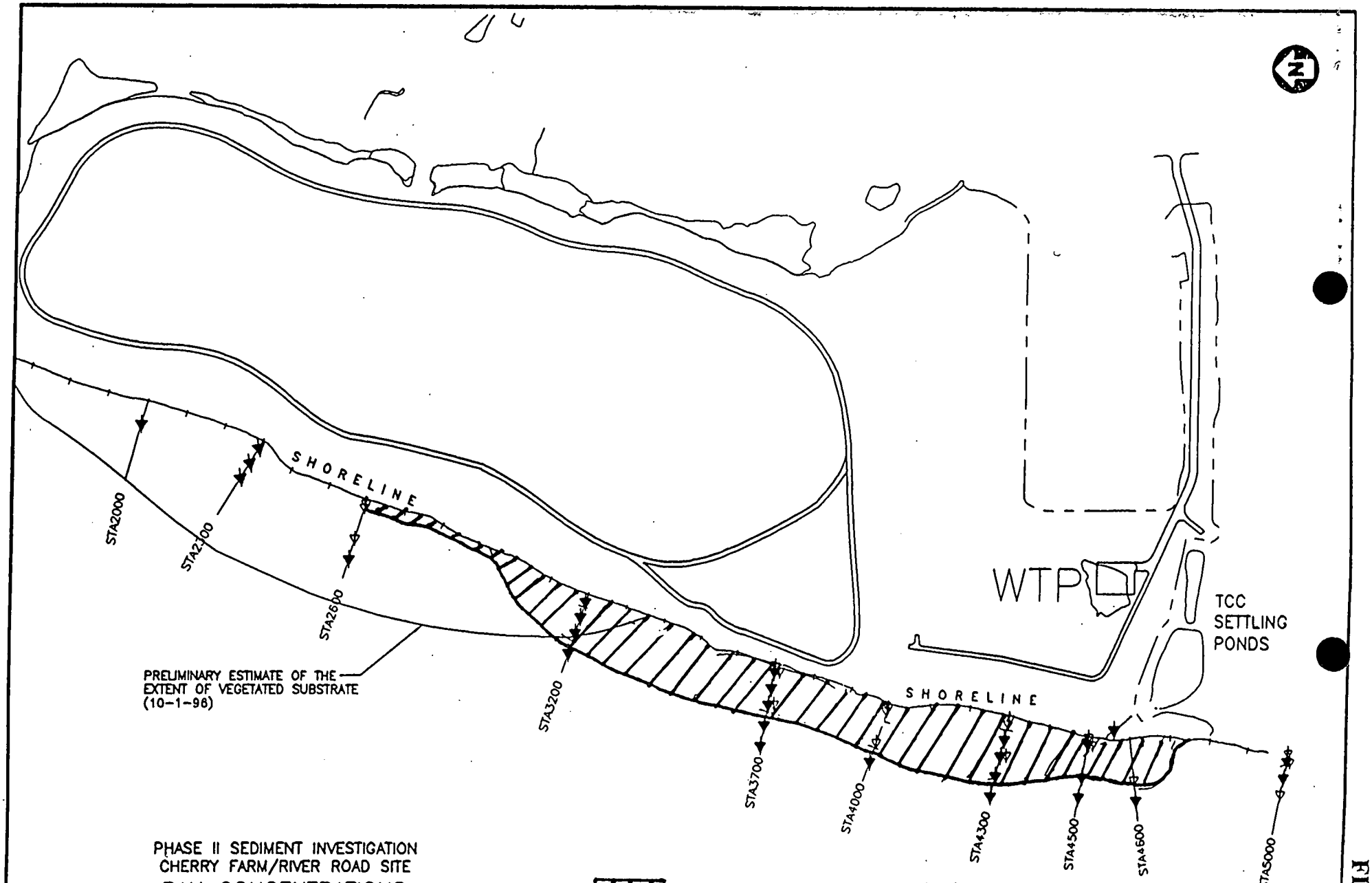
4. CONSTRUCTION SCHEDULE ISSUES

The primary constraints on the schedule are the moratorium to dredging imposed by the USACE, and the desire of the PRP Group to complete the onsite earthwork and capping during the 1997 construction season. The dredging moratorium restricts operations in the Niagara River between March 30 and July 15. To comply with these restrictions, major river work will not begin until July 16, 1997.

It is anticipated that all dredging and capping activities will be completed during 1997. Minor plantings and/or construction punch list items will be completed during the spring/summer of 1998.



PHASE II SEDIMENT INVESTIGATION
CHERRY FARM/RIVER ROAD SITE
PAH CONCENTRATIONS
IN THE SHALLOW ZONE (0–0.75 FEET)

Approximate outer limits of sediment removal agreed upon by NYSDEC on April 18, 1997.

NOT TO SCALE

FIGURE 1

PARSONS ENGINEERING SCIENCE, INC.
180 Lawrence Bell Drive, Suite 100 • Williamsville, New York 14221 • (716) 633-7074 • Fax: (716) 633-7195

MJH

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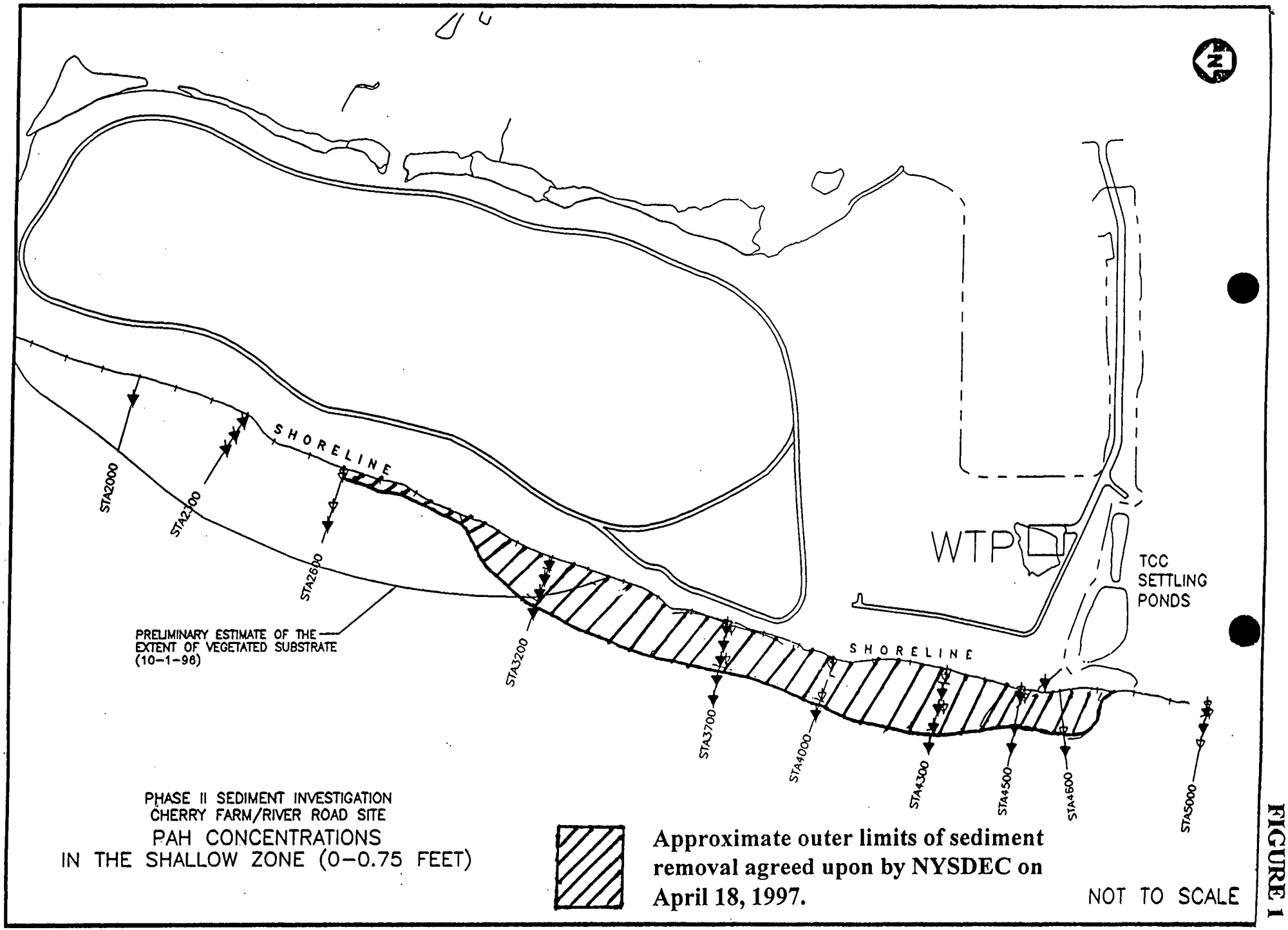


PHASE II SEDIMENT INVESTIGATION
CHERRY FARM/RIVER ROAD SITE
PAH CONCENTRATIONS
IN THE SHALLOW ZONE (0-0.75 FEET)

Approximate outer limits of sediment removal agreed upon by NYSDEC on April 18, 1997.

NOT TO SCALE

FIGURE 1

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the
Development and Implementation
of a Joint Remedial Program for
Inactive Hazardous Waste Disposal
Sites, Under Article 27, Title 13,
and Article 71, Title 27 of the
Environmental Conservation Law
of the State of New York
by

THE PARTIES SET FORTH IN
APPENDIX "C"

Respondents.

ORDER
ON
CONSENT
INDEX # B9-0046-84-10
B9-0047-91-02

Site Codes #915063
and #915031

WHEREAS,

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of Article 27, Title 13 of the Environmental Conservation Law of the State of New York ("ECL"), entitled "Inactive Hazardous Waste Disposal Sites." This Order is entered into pursuant to the Department's authority under ECL Article 27, Title 13 and ECL 3-0301.

2. Certain of the Respondents ("Cherry Farm Respondents") are among the corporations or individuals which the Department alleges to be potentially responsible parties with respect to certain contamination which exists at a Site near 4000 River Road in the Town of Tonawanda, Erie County, New York, known as the Niagara Mohawk-Cherry Farm Site (the "Cherry Farm Site"). The Cherry Farm Site is further defined in the Site plan attached hereto as Appendix "A". A list of the Respondents to

this Order is attached hereto as Appendix "C".

3. Certain of the Respondents ("River Road Respondents") are among the corporations or individuals which the Department alleges to be potentially responsible parties with respect to certain contamination which exists at a Site on River Road in the Town of Tonawanda, Erie County, New York known as the River Road Site (the "River Road Site"). The River Road Site is further defined in the Site Plan attached hereto as Appendix "B". A list of the Respondents to this Order is attached hereto as Appendix "C".

4. The Department alleges that each Site is an "inactive hazardous waste disposal Site," as that term is defined at ECL 27-1301.2, and presents a significant threat to the public health or environment. The Cherry Farm Site has been listed by the Department in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 915063. The River Road Site has been listed by the Department in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 915031. The Department has classified each Site as a Classification "2" pursuant to ECL 27-1305.4.b.

5. A. Pursuant to ECL 27-1313.3.a, whenever the Commissioner of Environmental Conservation (the "Commissioner") "finds that hazardous wastes at an inactive hazardous waste disposal site constitute a significant threat to the environment, he may order the owner of such site and/or any person responsible for the disposal of hazardous wastes at such

site (i) to develop an inactive hazardous waste disposal site remedial program, subject to the approval of the Department, at such site, and (ii) to implement such program within reasonable time limits specified in the order."

B. Any person under order pursuant to ECL 27-1313.3.a has a duty imposed by ECL Article 27, Title 13 to carry out the remedial program committed to under order. ECL 71-2705 provides that any person who fails to perform any duty imposed by ECL Article 27, Title 13 shall be liable for civil, administrative and/or criminal sanctions.

C. The Department also has the power, inter alia, to provide for the prevention and abatement of all water, land, and air pollution. See ECL 3-0301.1.i.

6. Cherry Farm Respondent Niagara Mohawk Power Corporation developed and implemented a Remedial Investigation and Feasibility Study for this Site pursuant to an Order on Consent executed by the Commissioner on April 27, 1988.

7. The Department selected a final remedial alternative for the Cherry Farm Site in a Record of Decision dated February 15, 1991. Following a period of public comment an Amended Record of Decision was signed by the Commissioner on October 7, 1993. The Amended Record of Decision which incorporates the February 15, 1991 Record of Decision is attached to and incorporated into this Order as Appendix "D" and shall be referred to in this Order as the " Cherry Farm ROD".

8. The Department selected a final remedial alternative

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. Within 60 days after the effective date of this Order, Respondents shall submit to the Department all data within their possession or control regarding environmental conditions on-Site and off-Site (to the extent off-Site conditions may be causally related to the on-Site disposal of hazardous waste at the Cherry Farm or River Road Site) to the extent that such data has not previously been provided to, or is not otherwise in the possession or control of, the Department.

Pursuant to applicable State laws and regulations, any Respondent may assert a confidentiality claim with respect to data required to be submitted pursuant to this Paragraph. In documents that are protected by attorney client privilege, are considered to be attorney work-product, or are otherwise protected by privilege, Respondents are hereby required to provide only technical information related to the Site. Where such information is contained in a document containing other material, provision of such information shall not be construed to waive any applicable disclosure exemption privilege that may exist with respect to such other material.

II. Remedial Design Contents

A. Within 45 days or less, after the effective date of this Order Respondents shall submit a work plan which addresses both Sites (the "Workplan") to the Department to implement the Remedial Program as identified in the RODs and the

SOW. The Workplan shall include a schedule for all future deliverables under this Order.

B. In accordance with the schedule set forth in the Work plan and the SOW, Respondents shall submit to the Department a joint remedial design to implement the Remedial Program for the Sites as set forth in the RODs and the SOW (the "Remedial Design"). The Remedial Design shall be prepared by and have the signature and seal of a professional engineer who shall certify that the Remedial Design was prepared in accordance with this Order.

C. The Remedial Design shall include the following:

1. A detailed description of the remedial objectives and goals and the means by which each essential element of the Remedial Program will be implemented to achieve those objectives and goals consistent with the RODs and the SOW, including, but not limited to:

a. the construction and operation of any structures;

b. the collection, destruction, treatment, and/or disposal of hazardous wastes and substances and their constituents and degradation products, and of any soil, sediments in drainage channels at the site or other materials contaminated thereby;

c. the collection, destruction, treatment, and/or disposal of contaminated groundwater, leachate, and air;

d. physical security and posting of the

for the River Road Site in a Record of Decision dated March 24, 1994. This Record of Decision is attached to and incorporated into this Order as Appendix "E" and shall be referred to in this Order as the "River Road ROD."

9. The Respondents have prepared, and the Department has approved, the Scope of Work ("SOW") for the joint remedial program for both the Cherry Farm and River Road Sites which is attached to and incorporated into this Order as Appendix "F".

10. The Department, the Cherry Farm Respondents and the River Road Respondents agree that the goals of this Order are for Respondents to (i) develop and implement, in accordance with the RODs and the SOW, a joint inactive hazardous waste disposal site remedial program ("Remedial Program") for the Sites that shall include design and implementation, and operation, maintenance and monitoring of the remedial alternative specified in the RODs and SOW; and (ii) reimburse the Department's past and future administrative costs as limited by Paragraph VIII of this Order.

11. Respondents, without the admission of any liability or of the veracity of any of the facts alleged herein, having waived Respondents' right to a hearing herein as provided by law, and having consented to the issuance and entry of this Order, agree to be bound by its terms. Respondents consent to and agree not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and agree not to contest the validity of this Order or its terms.

Site;

e. health and safety of persons living and/or working at or in the vicinity of the Sites;

f. quality control and quality assurance procedures and protocols to be applied during implementation of the Remedial Design; and

g. monitoring requirements during implementation of the Remedial Program.

2. "Biddable Quality" documents for the Remedial Design including, but not limited to, documents and specifications prepared, signed, and sealed by a professional engineer. These plans shall satisfy all applicable local, state and federal laws, rules and regulations;

3. A time schedule to implement the Remedial Design;

4. The parameters, conditions, procedures, and protocols to determine the effectiveness of the Remedial Design, including a schedule for periodic sampling of groundwater monitoring wells as may be required on-Site and off-Site;

5. A description of operation, maintenance, and monitoring activities to be undertaken after the Department has approved construction of the Remedial Design, including the number of years during which such activities will be performed;

6. A joint contingency plan describing organized, planned, and technically coordinated courses of action to be followed in case of emergency or other special

conditions, including but not limited to equipment breakdowns, fire, odor, explosion, spills, receipt or release of hazardous or toxic materials or substances, and other incidents that could threaten human health or safety or the environment;

7. A joint health and safety plan for the protection of persons at and in the vicinity of the Sites during construction and after completion of construction. This plan shall be prepared in accordance with 29 CFR 1910 by a certified health and safety professional; and

8. A joint citizen participation plan which incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, any subsequent revisions thereto, and 6 NYCRR Part 375.

III. Remedial Design Construction and Reporting

A. Within 30 days of the Department's approval of the Remedial Design, Respondents shall solicit bids for the implementation of the Remedial Design for the Sites.

B. Within 90 days of the Department's approval of the Remedial Design, Respondents shall award the construction contract. Respondents shall commence construction of the Remedial Design in accordance with the schedule in the Workplan and the Remedial Design.

C. Respondents shall implement the Remedial Design in accordance with the Department-approved Remedial Design.

D. During field activities associated with the

implementation of all construction activities identified in the Remedial Design, Respondents shall have on the Sites a full-time representative who is qualified to supervise the work done. Such representative may be an employee of a consultant or a contractor.

E. In the event during field activities at a Site a condition is discovered which poses a threat to human health or the environment, the Department may seek to require that Respondents for that Site modify the Scope of the Remedial Design and Remedial Construction to address the condition.

F. Within 60 days after completion of the construction activities identified in the Remedial Design, Respondents shall submit to the Department a detailed joint post-remedial operation and maintenance plan ("O & M Plan"); "as-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and a certification by a professional engineer that the Remedial Design was implemented and all construction activities were completed in accordance with the Department-approved Remedial Design. The O & M Plan, "as built" drawings, final engineering report, and certification must be prepared, signed, and sealed by a professional engineer.

G. Upon the Department's approval of the O & M Plan, Respondents shall implement the O & M Plan in accordance with the requirements of the Department-approved O & M Plan.

H. After receipt of the "as-built" drawings, final

engineering report, and certification, the Department shall notify Respondents in writing whether the Department is satisfied that all construction activities have been completed in accordance with the approved Remedial Design.

I. If the Department determines that all construction activities at a Site have not been completed in accordance with the approved Remedial Design, Respondents for that Site shall be in violation of this Order and the ECL.

J. If the Department concludes (1) that any element of the Remedial Program at a Site fails to achieve the remedial objectives or goals set forth in the ROD for the site or otherwise fails to protect human health or the environment; or (2) that further actions are necessary to address Niagara River sediments which have been studied pursuant to this Order, the Department may seek to require Respondents for either or both sites, depending on the applicability of the Department's conclusions, to take whatever action the Department determines necessary to achieve those objectives or goals, to ensure that the Remedial Program otherwise protects human health and the environment, or to address sediments in the Niagara River which have been studied pursuant to this Order.

IV. Progress Reports

During the pendency of construction activities Respondents shall submit to the parties set forth in paragraph XII copies of joint written monthly progress reports that: (i) describe the actions which have been taken toward achieving

compliance with this Order during the previous month; (ii) include all results of sampling and tests and all other data received or generated by Respondents or Respondents' contractors or agents in the previous month, as may be required by the Department, including quality assurance/quality control information; (iii) identify all work plans, reports, and other deliverables required by this Order that were completed and submitted during the previous month; (iv) describe all actions, including, but not limited to, data collection and implementation of work plans, that are scheduled for the next month and provide other information relating to the progress at the Sites; (v) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Respondents' obligations under the Order, and efforts made to mitigate those delays or anticipated delays; (vi) include any modifications to any work plans that Respondents have proposed to the Department or that the Department has approved; and (vii) describe all activities undertaken in support of the Citizen Participation Plan during the previous month and those to be undertaken in the next month. Respondents shall submit these progress reports to the Department by the fifteenth day of every month following the commencement of on-Site activities.

V. Review of Submittals

A. (1) The Department shall review each of the submittals Respondents make pursuant to this Order to determine

whether it was prepared, and whether the work done to generate the data and other information in the submittal was done, in accordance with this Order and generally accepted technical and scientific principles. The Department shall notify Respondents in writing of its approval or disapproval of the submittal, except for the submittals discussed in Paragraphs II.C.(7) and IV. All Department-approved submittals shall be incorporated into and become an enforceable part of this Order.

(2) (a) If the Department disapproves a submittal, it shall so notify Respondents in writing and shall specify the reasons for its disapproval. Within 30 days after receiving written notice that Respondents' submittal has been disapproved, or within such further time as the Department may provide, Respondents shall make a revised submittal to the Department that addresses all of the Department's stated reasons for disapproving the first submittal.

(b) After receipt of the revised submittal, the Department shall notify Respondents in writing of its approval or disapproval. If the Department disapproves the revised submittal, Respondents shall be in violation of this Order and the Department may take any action or pursue whatever rights it has pursuant to any provision of statutory or common law. If any disapproval of a revised submittal is based upon conditions existing at one of the two Sites, or is based upon any action or inaction on the part of the Respondents in connection with one of the Sites, then Respondents for the other

Site shall not be in violation of this Order. Such disapproval by the Department shall be considered final agency action for purposes of Article 78 of the CPLR. If the Department approves the revised submittal, it shall be incorporated into and become an enforceable part of this Order.

B. The Department may seek to require Respondents for a Site to modify and/or amplify and expand a submittal if the Department determines, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that further work at a Site is necessary.

VI. Penalties

A. Respondents' failure to comply with any term of this Order constitutes a violation of this Order and the ECL. A Respondent shall only be liable for any failure to comply which relates to the Site for which the Department alleges that Respondent to be a potentially responsible party.

B. Respondents shall not suffer any penalty under this Order or be subject to any proceeding or action if Respondents cannot comply with any requirement hereof because of war, riot, or other causes which are beyond the reasonable control of Respondents and which the exercise of ordinary human prudence could not have prevented. Respondents shall, within five business days of when they obtain knowledge of any such condition, notify the Department in writing. Respondents shall include in such notice the measures taken and to be taken by

Respondents to prevent or minimize any delays and shall request an appropriate extension or modification of this Order. Failure to give such notice within such five-day period constitutes a waiver of any claim that a delay is not subject to penalties. Respondents shall have the burden of proving that an event is a defense to compliance with this Order.

VII. Entry upon Site

A. Respondent Niagara Mohawk Power Corporation hereby consents to the entry upon the Cherry Farm Site or areas in the vicinity of the Site which may be under the control of Niagara Mohawk Power Corporation by any duly designated employee, consultant, contractor, or agent of the Department or any State agency for purposes of inspection, sampling, and testing and to ensure Respondents' compliance with this Order.

B. River Road Respondents, to the extent they are a party to this Order, hereby consent to the entry upon the River Road Site or areas in the vicinity of the River Road Site which may be under their control by any duly designated employee, consultant, contractor or agent of the Department or any State agency for purposes of inspection, sampling and testing and to ensure Respondents' compliance with this Order.

C. Respondents shall provide the Department, during the time on-Site offices are maintained by Respondents, with suitable office space at the Site, including access to a telephone, and shall permit the Department full access to all records relating to implementation of the Remedial Program.

Respondents also shall allow the Department to attend, and shall provide the Department at least seven days advance notice of, any of the following: prebid meetings, formal and/or regularly scheduled job progress meetings, substantial completion meeting and inspection, and final inspection and meeting.

VIII. Payment of State Costs

A. Within 60 days of the effective date of this Order, Respondents shall make payment to the Department in the amount of $649,074.00 which represents the past response costs incurred by the State of New York up to December 15, 1993, for the Sites. These costs are itemized as set forth in subparagraph VIII.B. Payment shall be made in the manner as set forth below.

B. Thereafter, the Department will periodically submit itemized invoices to Respondents and within 60 days after receipt of an itemized invoice from the Department, Respondents shall pay to the Department a sum of money which shall represent reimbursement for the State's expenses incurred negotiating this Order, reviewing and revising submittals made pursuant to this Order, overseeing activities conducted pursuant to this Order, collecting and analyzing samples, and administrative costs associated with this Order. Such reimbursements pursuant to subparagraph VIII.B., in total, shall not exceed $300,000. Such payment shall be made by certified check payable to the Department of Environmental Conservation. Payment shall be sent to the Bureau of Program Management, Division of Hazardous Waste

Remediation, N.Y.S.D.E.C., 50 Wolf Road, Albany, NY 12233-7010. Itemization of the costs shall include an accounting of personal services indicating the employee name, title, biweekly salary, and time spent (in hours) on the project during the billing period, as identified by an assigned time and activity code. This information shall be documented by quarterly reports of Direct Personal Service. Approved agency fringe benefit and indirect cost rates shall be applied. Non-personal service costs shall be summarized by category of expense (e.g., supplies, materials, travel, contractual) and shall be documented by the New York State Office of the State Comptroller's quarterly expenditure reports.

C. If the Department concludes that the total sum of money paid pursuant to this Paragraph VIII is insufficient to reimburse the State's costs, the Department may, at its option, in a separate proceeding, seek to recover additional reimbursement.

IX. Department Reservation of Rights

A. Except as provided in this Order, nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's rights including, but not limited to nor exemplified by, the following:

1. the Department's right to bring any action or proceeding against anyone other than Respondents and/or any of Respondents' successors and assigns;

2. the Department's right to enforce this Order against Respondents and/or any of Respondents' successors and assigns if Respondents fail to satisfy any of the terms of this Order; or

3. the Department's right to bring any action or proceeding against Respondents and/or any of Respondents' successors and assigns with respect to claims for natural resources damages as a result of the release or threatened release of hazardous substances or constituents at or from the Sites;

4. the Department's right to gather information and enter and inspect property and premises.

B. If, after review, the Department accepts and approves the engineer's certification that construction of the Remedial Program was completed in accordance with the approved Remedial Design, then, unless a supplementary remedial program is determined to be necessary by the Department pursuant to Paragraph II.C.6, or determined to be necessary by the Department pursuant to Paragraph III.E, III. J and/or V.B, and except for the provisions of subparagraphs A and C of Paragraph IX, and the provisions of paragraph X; and except for the future Operation and Maintenance of the Sites, reimbursement of Department expenditures in accordance with Paragraph VIII, and any Natural Resource Damage claims that may arise, such acceptance shall constitute a release for each and every claim, demand, remedy or action whatsoever against Respondents, their

successors and assigns, which the Department has or may have pursuant to Article 27, Title 13 of the ECL, CERCLA, or otherwise, relative to or arising from the disposal of hazardous wastes at the Sites; provided, however, that the Department specifically reserves all of its rights concerning, and any such release and satisfaction shall not extend to, any investigation or remediation the Department deems necessary due to:

(1) environmental conditions on-site or off-site which are related to the disposal of hazardous wastes at the Sites and were unknown to the Department at the time of its approval of the Remedial Design; or

(2) information received, in whole or in part, after the Department's approval of the Remedial Design,

and such unknown environmental conditions or information indicates that the Remedial Program is not protective of human health or the environment. The Department shall notify the Respondent of such environmental conditions or information and its basis for determining that the Remedial Program is not protective of human health and the environment.

This release shall inure only to the benefit of Respondents, their successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone

other than Respondents, their successors and assigns.

C. Nothing contained in this Order shall be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers.

X. Indemnification

Respondents shall indemnify and hold the Department, the State of New York, and their representatives and employees harmless for all claims, suits, actions, damages, and costs of every name and description arising out of or resulting from the fulfillment or attempted fulfillment of this Order by Respondents, and/or Respondents' directors, officers, employees, servants, agents, successors, and assigns. Respondents shall not indemnify the Department or the State of New York for unlawful, grossly negligent, willful or malicious acts or omissions on the part of the State, State agencies, or their officers, employees or agents.

XI. Public Notice

A. Within 30 days after the effective date of this Order, every Respondent who owns any portion of the Sites shall file a Declaration of Covenants and Restrictions with the Clerk of Erie County to give all parties who may acquire any interest in the Sites notice of this Order.

B. If any Respondent who owns any portion of the Sites proposes to convey the whole or any part of that Respondent's ownership interest in either of the Sites, that

Respondent shall, not fewer than 60 days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance and shall notify the transferee in writing, with a copy to the Department, of the applicability of this Order.

C. Within 30 days after Department approval of the "as-built" drawings every Respondent who owns any portion of the Sites shall file with the Clerk of Erie County a Notice of Restrictions of Use which shall refer to the Record of Decision and shall describe the remedy which is in place at the Sites, and to which shall be attached as an appendix the "as-built" drawings.

D. If any Respondent transfers the whole or any portion of its ownership interest in the either Site, that Respondent shall include restrictions in the property deed to specify that any future use of the property must be limited to activities and purposes which shall not interfere with remedial structures or equipment located upon or beneath that Site, or with activities required to be conducted in conjunction with the remedial action. Any such deed shall further specify that the restriction stated in 6 NYCRR § 375-1.2(e)(2) is applicable to the transferred property, by virtue of the property having been listed in the Registry of Inactive Hazardous Waste Sites, and shall specify that these restrictions are covenants which run with the land.

XII. Communications

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

Communication from Respondents shall be sent to:

1. Director, Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

2. Director, Bureau of Environmental Exposure Investigation
New York State Department of Health
2 University Place
Albany, New York 12203

3. Regional Engineer, Region 9, Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

4. Division of Environmental Enforcement
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

B. Copies of work plans and reports shall be submitted as follows:

1. Four copies (one unbound) to Division of Hazardous Waste Remediation.

2. Two copies to the Director, Bureau of Environmental Exposure Investigation.

3. One copy to Region 9

4. One copy to Buffalo Field Unit

C. Within 30 days of the Department's approval of

any report submitted pursuant to this Order, Respondents shall submit to the project manager a computer readable magnetic media copy of the approved report in American Standard Code for Information Interchange (ASCII) format.

D. Communication to be made from the Department to the Respondents shall be sent to the parties set forth in Appendix "C".

E. The Department and Respondents reserve the right to designate in writing additional or different addressees for communication or written notice to the other.

XIII. Miscellaneous

A. All activities and submittals required by this Order shall, consistent with the RODs and the SOW, address both on-Site contamination and off-Site contamination (to the extent off-Site conditions may be causally related to the on-Site disposal of hazardous waste) at either of the Sites resulting from the alleged disposal of hazardous waste at the Sites.

B. Respondents shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and data validators reasonably acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Order. A summary of the experience, capabilities, and qualifications of the firms or individuals selected by Respondents shall be submitted to the Department within 60 days after the effective date of this Order. The Department's

approval of these firms or individuals shall be obtained before the start of any activities for which the Respondents and such firms or individuals will be responsible. The responsibility for the performance of the professionals retained by Respondents shall rest solely with Respondents.

C. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Respondents. The Department also shall have the right to take its own samples and Respondents may obtain split samples of any such samples and the results of any Department sampling/analysis. Respondents shall make available to the Department the results of all sampling and/or tests or other data generated by Respondents with respect to implementation of this Order and shall submit these results in the progress reports required by this Order.

D. Respondents shall notify the Department at least 10 working days in advance of the commencement of any field activities to be conducted pursuant to this Order.

E. 1. Respondents shall obtain all permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations necessary to perform Respondents' obligations under this Order.

2. Respondents shall not be required to obtain permits for certain work conducted under this Order consistent with the criteria set forth in 6 NYCRR 375-1.7. Further, for purposes of implementing the Remedial Program, the Sites shall

constitute a single Site for purposes of 6 NYCRR 376.

3. In the event Respondents are unable to obtain the necessary authorizations required to perform the obligations under this Order, the Department shall, consistent with its legal authority, assist in obtaining all such authorizations Respondents were unable to obtain. If Respondents cannot obtain such authorizations on a timely basis, Respondents may request that the time for performance of any obligation dependent upon such authorization be appropriately extended. If Respondents cannot obtain such authorization, Respondents may request that this Order be appropriately modified.

F. This Order shall bind the Respondents, and any successors or assigns. Any change in ownership or corporate status of any Respondent including, but not limited to, any transfer of assets or real or personal property shall in no way alter Respondents' responsibilities under this Order.

G. Respondents shall provide a copy of this Order to each contractor hired to perform work required by this Order and to each person representing Respondents with respect to the Site and shall condition all contracts entered into in order to carry out the obligations identified in this Order upon performance in conformity with the terms of this Order. Respondents or Respondents' contractors shall provide written notice of this Order to all subcontractors hired to perform any portion of the work required by this Order. Respondents shall nonetheless be

responsible for ensuring that Respondents' contractors and subcontractors perform the work in satisfaction of the requirements of this Order.

H. All references to "professional engineer" in this Order are to an individual registered as a professional engineer in accordance with Article 145 of the New York State Education Law.

I. All references to "days" in this Order are to calendar days unless otherwise specified.

J. The section headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

K. Except as otherwise provided in this Order, the obligations of Respondents under this Order are joint and several. In the event of the insolvency or failure of any or more of Respondents to implement any obligation of this Order at a Site, the remaining Respondents for that Site shall complete all such obligations.

L. (1) The terms of this Order shall constitute the complete and entire Order between Respondents and the Department concerning the Sites. No term, condition, understanding, or agreement purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion, or comment by the Department regarding any report, proposal, plan,

specification, schedule, or any other submittal shall be construed as relieving Respondents of Respondents' obligation to obtain such formal approvals as may be required by this Order.

(2) If Respondents desire that any provision of this Order be changed, Respondents shall make timely written application, signed by the Respondents, to the Commissioner setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to the Department project manager for the Site and the Division of Environmental Enforcement, Buffalo offices.

M. The effective date of this Order shall be the date it is signed by the Commissioner or his designee.

N. The parties to this Order may sign the Order by counterpart.

DATED: Sept. 27, New York
, 1994

J. LANGDON MARSH
Commissioner
New York State Department
of Environmental Conservation

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

ALLIEDSIGNAL INC.

By: L Ray Taunton

L. Ray Taunton
(Type Name of Signer)

Title: Vice President, Operations

Date: August 30, 1994

STATE OF NEW JERSEY)
) s.s.:
COUNTY OF Morris)

On this 30th day of August, 1994, before me personally came L. Ray Taunton, to me known, who, being by me duly sworn, did depose and say that he resides in Morris Plains, New Jersey; that he is the Vice President, Operations of the AlliedSignal Inc., the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Cathleen Hannon
Notary Public
Comm Exp Sept 1, 1997

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

GENERAL MOTORS CORPORATION

By: Don A. Schiemann

DON A. SCHIEMANN
(Type Name of Signer)

Title: Attorney

Date: September 2, 1994

STATE OF MICHIGAN)
:SS
COUNTY OF Wayne)

On this 2nd day of September, 1994, before me personally came Don A. Schiemann, to me known, who, being by me duly sworn, did depose and say that he resides in Detroit, Michigan; that he is in the General Counsel's Office of General Motors Corporation, the corporation described in and which executed the foregoing instrument and that he has the authority to execute this instrument on behalf of General Motors Corporation.

Janet Maxwell
Notary Public

JANET MAXWELL
Notary Public, Wayne County, Michigan
My Commission Expires April 1, 1995

CONSENT BY RESPONDENT

Cherry Farm Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

NIAGARA MOHAWK POWER CORPORATION

By: _____ NCW

Thomas R. Fair
(Type Name of Signer)

Title: Vice President-Environmental Affairs

Date: August 24, 1994

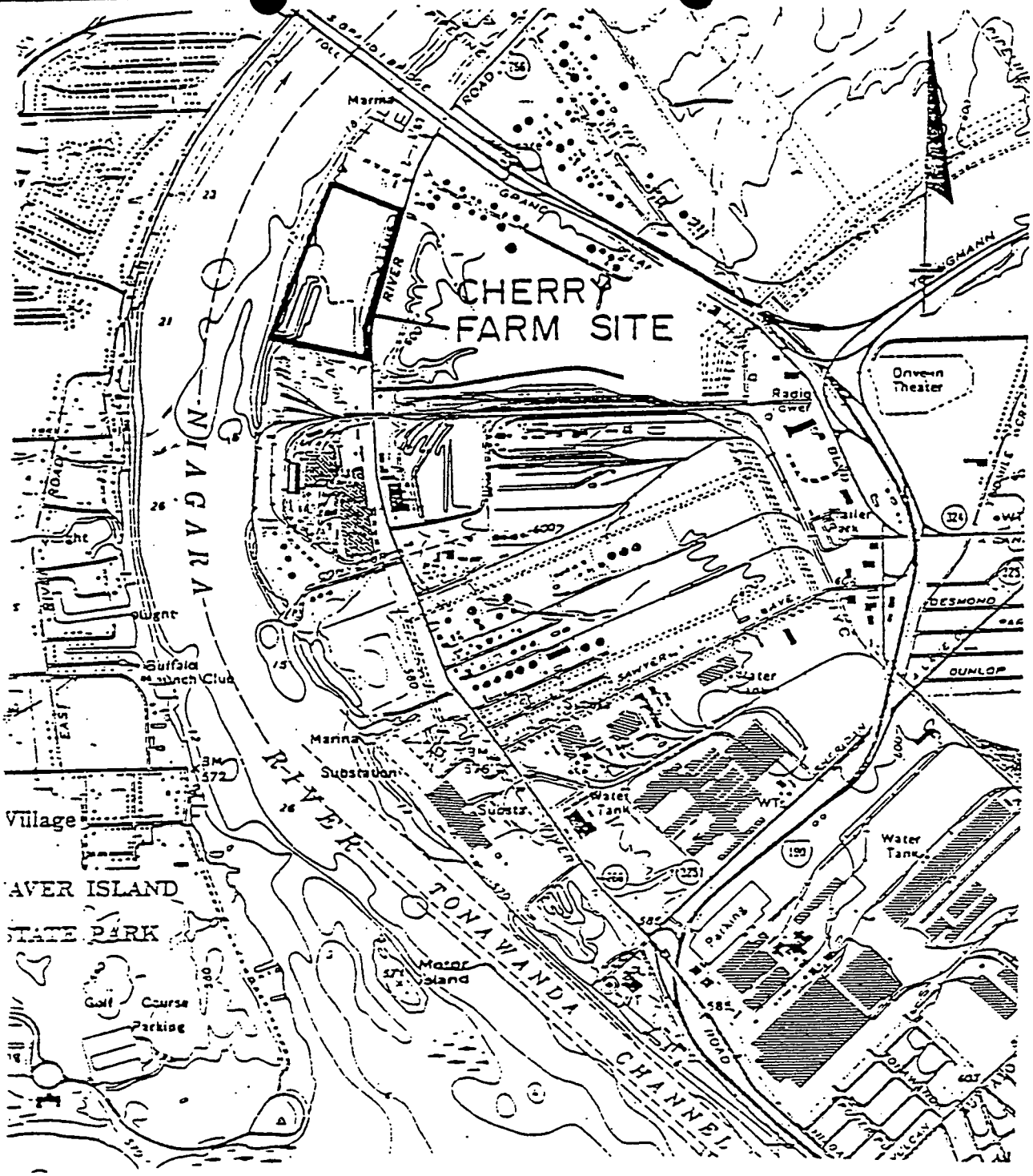
STATE OF NEW YORK)
) s.s.:
COUNTY OF ONONDAGA)

On this 24th day of August, 1994, before me personally came Thomas R. Fair, to me known, who, being by me duly sworn, did depose and say that he resides in Manlius, New York; that he is the Vice President-Environmental Affairs of the Niagara Mohawk Power Corp., the corporation described in and which executed the foregoing instrument; ~~that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation~~, and that he signed his name thereto ~~by like order.~~

_____
Notary Public

WILLIAM C. WEISS
Notary Public, State of New York
No. 4719925
Qualified in Onondaga County
My Commission Expires October 31, 1994

FIGURE-1



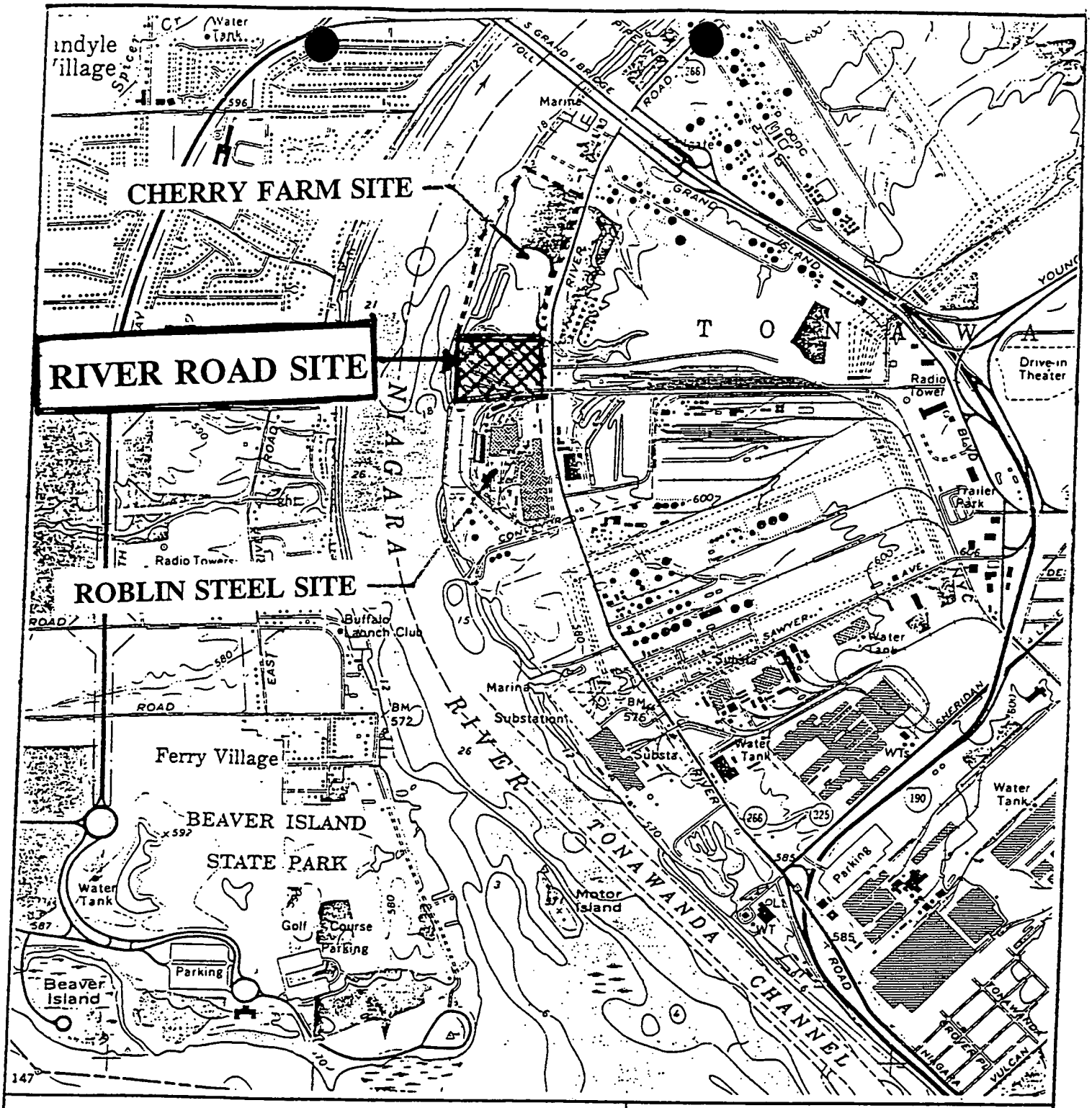
CHERRY FARM
SITE LOCATION MAP
NIAGARA MOHAWK POWER CORP.
TONAWANDA, NEW YORK

ADAPTED FROM U.S.G.S. (7.5 MIN.) BUFFALO NW N.Y.-ONTARIO QUADRANGLE 1965

SCALE 1" = 2,000'

O'BRIEN & GERE ENGINEERS INC.

APPENDIX "A"



SCALE, FEET

0 2000 4000

QUADRANGLE LOCATION

N

REFERENCE:

USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, BUFFALO NW, NEW YORK–ONTARIO, CANADA, 1965. SCALE 1:24000.

FIGURE 1

SITE LOCATION MAP

RIVER ROAD SITE

TONAWANDA, NEW YORK

APPENDIX "B"

APPENDIX C

LIST OF RESPONDENT COMPANIES TO ORDER ON CONSENT
INDEX # B9-0046-84-10
B9-0047-91-02

AlliedSignal Inc.

General Motors Corporation

Niagara Mohawk Power Corporation

Department of Environmental Conservation

Division of Hazardous Waste Remediation

Amended Record of Decision

Niagara Mohawk - Cherry Farm Site

I.D. Number 9-15-063

October 1993

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* THOMAS C. JORLING, *Commissioner*

APPENDIX "D"

DECLARATION STATEMENT - AMENDED RECORD OF DECISION

Niagara Mohawk - Cherry Farm Inactive Hazardous Waste Site
Town of Tonawanda, Erie County, New York
Site No. 9-15-063

STATEMENT OF BASIS AND PURPOSE

This amended Record of Decision (ROD) presents the selected remedial action for the Niagara Mohawk - Cherry Farm inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL), and consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Site and upon public comments received regarding the amended ROD. A listing of the documents that comprise the Administrative Record is included as Exhibit A.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Amended Record of Decision, may present a current or potential threat to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

Based upon the Remedial Investigation/Feasibility Study (RI/FS) for the Site, subsequent field investigations, and the criteria used to evaluate remedial alternatives, the NYSDEC has selected a remedy to contain site wastes and contaminated groundwater by installing a cover over the site and using groundwater extraction wells to recover groundwater and prevent its discharge to the Niagara River. The components of the selected remedy include:

- **Consolidation of wastes** to minimize the size of the final footprint of the site and to pull wastes back from the Niagara River shoreline and from the drainage channels on the north and south sides of the site.

- As a part of slope reconstruction, the **contaminated sediments from the ditches will be removed and consolidated** within the landfill material before installing the cover. Sampling and analysis of sediments in the Niagara River near the site will be conducted to determine if river sediments should be removed and consolidated on the site.

- Installation of a cobble (or equivalent) **barrier layer** over the site to prevent intrusion into wastes by people or wildlife.

- Installation of a **soil cover** to further separate potentially exposed people and wildlife and to serve as a vegetative support layer.

- Installation and operation of a series of **groundwater extraction wells** to eliminate the discharge of contaminated groundwater into the Niagara River.

- Discharge of groundwater to the local publicly owned treatment works after any necessary pretreatment.

- Take actions needed to obtain deed restrictions to prevent activities that would intrude into wastes or otherwise diminish the effectiveness of the remedy.

The elements of the selected remedy that differ from those in the original February 1991 ROD include:

- The cover design will not include an impermeable hydraulic barrier. The original ROD indicated that this change was being contemplated but that additional field studies were needed to demonstrate that this alternate design would function properly and be protective of human health and the environment.

- Collected groundwater will not be discharged into the Niagara River but shall be pretreated (if necessary) and discharged to a local water treatment plant.

- Fencing will not be installed around the site as part of the remedy. Since future plans for the site include making it compatible for use as a public recreation area or park and the cover will be designed to prevent contact with wastes, a fence is not necessary.

NEW YORK STATE DEPARTMENT OF HEALTH ACCEPTANCE

The New York State Department of Health concurs with the amended remedy selected for this site as being protective of human health.

DECLARATION

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. In accordance with the provisions of 6 NYCRR 360-1.7(c) and 373-1.1(e), the conditions at this site make it appropriate to grant a waiver to the standard landfill cover design. This will have no significant adverse impact on human health or the environment.

Because this remedy will not allow for unlimited use and unrestricted exposure within five years after commencement of remedial action, a five year policy review will be conducted. This evaluation will be conducted within five years after the components of the remedy have been constructed and thereafter as necessary to ensure that the remedy continues to provide adequate protection of human health and the environment.

Oct. 7, 1993
Date

Ann Hill DeBarbieri
Deputy Commissioner
Office of Environmental Remediation
New York State Department of Environmental Conservation

TABLE OF CONTENTS

Glossary of Acronyms

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
ECL: Environmental Conservation Law
IRM: Interim Remedial Measure
NAPL: Non-Aqueous Phase Liquid
ND: Not Detected
NYCRR: N.Y. Codes, Rules, and Regulations
NYSDEC: N.Y. State Department of Environmental Conservation
NYSDOH: N.Y. State Department of Health
O&M: Operation and Maintenance
PAHs: Polycyclic Aromatic Compounds
PCBs: Polychlorinated Biphenyls
PNAs: Poly Nuclear Aromatic Compounds
ppb: parts per billion
ppm: parts per million
PRAP: Proposed Remedial Action Plan
RI/FS: Remedial Investigation and Feasibility Study
ROD: Record of Decision
SARA: Superfund Amendments and Reauthorization Act
SCG: Standards, Criteria, and Guidance
SPDES: State Pollution Discharge Elimination System
VOC: Volatile Organic Compound
ug/kg: microgram per kilogram
mg/kg: milligram per kilogram
ug/l: microgram per liter

Notice

The mention of any trade names or commercial products in this document does not constitute any endorsement or recommendation for use by the New York State Department of Environmental Conservation.

AMENDED RECORD OF DECISION
NIAGARA MOHAWK-CHERRY FARM SITE
SITE ID NO. 9-15-063

1. INTRODUCTION

After completing a series of investigations culminating with a Remedial Investigation and Feasibility Study (RI/FS), a site remedy was selected consisting mainly of covering with an impermeable cap along with groundwater containment, collection, treatment, and disposal. This remedy, incorporated into a February 15, 1991 Record of Decision (ROD) produced by the New York State Department of Environmental Conservation (Department), is the subject of this ROD amendment.

The 1991 ROD contained a conceptual design of the remedy. It was noted that additional hydrogeological information was needed before the full scale design could be completed. This led to the performance of a pump test completed at the site during 1992. It was also noted that, "[t]he proposed capping system is also being viewed as a component of this recovery system to assist in the capture of the contaminated groundwater. The future design activities may reveal that the capping system design can be modified (ROD p. 18)."

The elements and results of the additional investigations completed in 1992 are summarized in Section 4.1 below. The major conclusions are that it is possible to construct and operate a groundwater containment system capable of preventing the discharge of contaminated groundwater to the Niagara River and that a permeable site cover may be substituted for an impermeable cover without reducing protectiveness to human health and the environment.

There are a number of site specific features that led to this conclusion. First, whether the cap is permeable or impermeable, all groundwater that currently discharges to the Niagara River will be intercepted. An impermeable cover would reduce the volume of groundwater to collect and treat but would not obviate the need for collection. Secondly, up to one-half of the wastes at the site are underneath the permanent water table. Therefore, the use of an impermeable cover would not significantly reduce the production of leachate from these already saturated soils. Third, the permeable cover system will provide a physical barrier to contact with contaminants much as the hydraulically impermeable system would. This addresses the threat to human health and the environment by the direct contact pathway. Lastly, it is possible that the "soil washing" that will occur by using a permeable cover may result in a faster attenuation of contaminants in the waste making the eventual shut-off of the groundwater containment system possible.

Although the changes in the site remedy documented by this ROD Amendment are not major, Department procedure does not currently provide a mechanism for making changes of this nature to the selected remedy. Therefore, the Department has prepared this formal Amendment to the 1991 Record of Decision and has made it available for public inspection and comment. To avoid duplication, the 1991 ROD is incorporated into this document as Exhibit B.

2. SITE LOCATION AND DESCRIPTION

The Cherry Farm Site is an inactive landfill located between River Road and the Niagara River in the Town of Tonawanda, New York (see Figure 1). The site encompasses approximately 56 acres, 80% of which is covered by various fill materials.

The fill material consists primarily of foundry sand, slag, and cinders. The surface of the fill is between 10 to 20 feet above the original surrounding land surface. The present topography of the filled area is essentially flat. The Site is accessible from River Road through a locked gate which leads to the fill entrance driveway.

The fill area is surrounded by intermittent surface water. A wetland designated as BW-6 by the NYSDEC is present on the eastern portion of the Site. This wetland drains into the drainage ditches which flow along the southern and northern boundaries of the property and ultimately discharge to the Niagara River which forms the western side of the Site (Figure 2).

3. SITE HISTORY AND ENFORCEMENT STATUS

Information provided to the NYSDEC by the Colorado Fuel and Iron Steel Corporation (CF&I) revealed that between 1945 and 1963, dust and slag from the CF&I blast and open hearth furnace operations were disposed of at the Site. Operations ceased in 1963. CF&I then entered into an agreement with INS Equipment Company (INS) which allowed INS to dispose of foundry sand and sandcast from a nearby Chevrolet Plant on the property.

The site was purchased by Niagara Mohawk Power Corporation (NMPC) in 1970. At the time of purchase, foundry sand was exposed at the surface of the fill area. To prevent erosion, the surface of the fill was capped with approximately six inches of clay and seeded. Several environmental investigations have been conducted at the site since 1978.

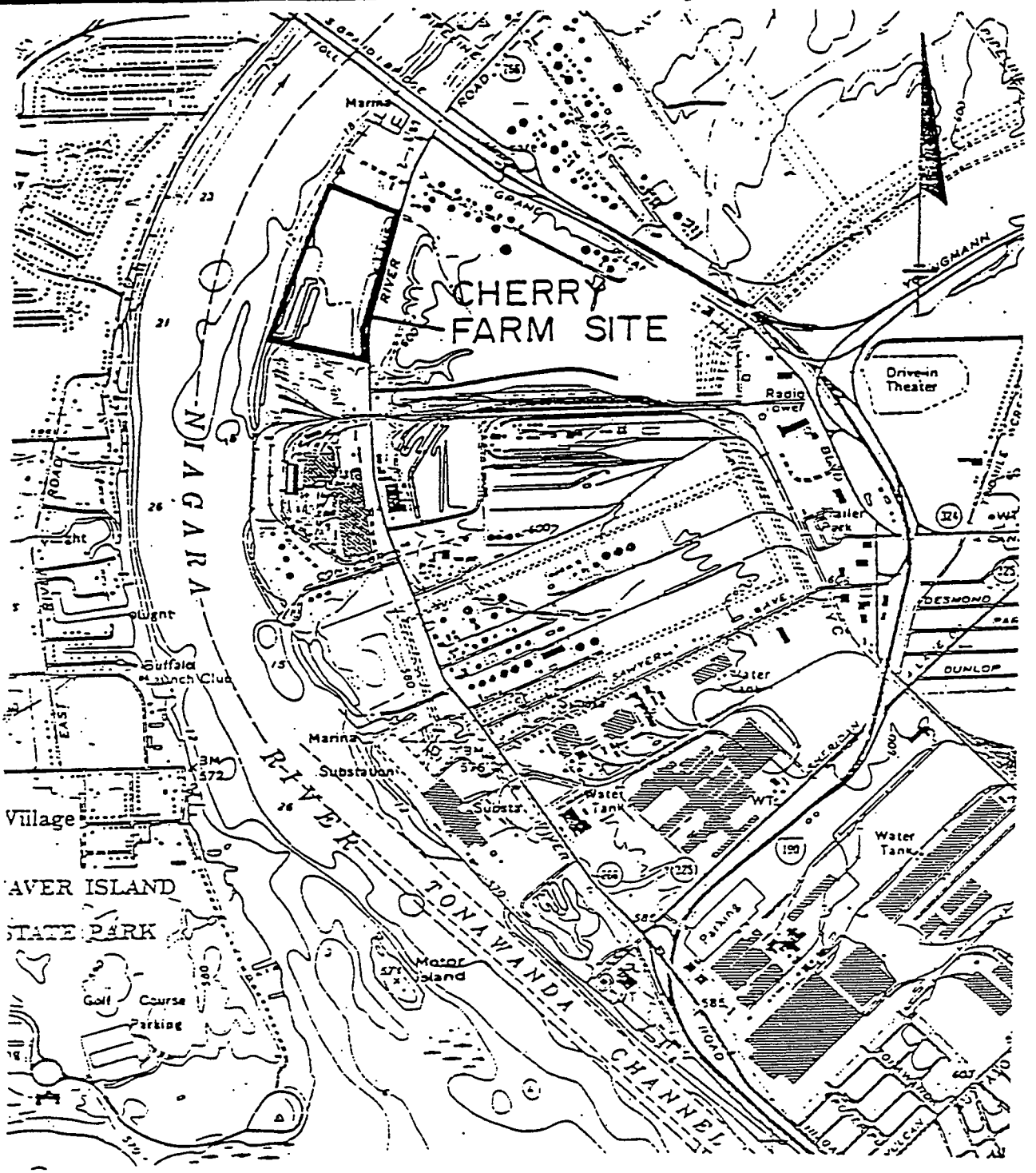
Previous Investigations

1. An initial investigation was performed between 1978 and 1980 as part of a State wide program conducted by the New York State Interagency Task Force on Hazardous Waste. These initial investigations indicated that various industries may have deposited waste materials, some of which may have been hazardous, at the site.

2. Phase I Investigation - June 1983, Engineering Science: The NYSDEC contracted with Engineering Science to perform a Phase I Study. Borings completed during the Phase I investigation indicate that the site is man made land. A shallow aquifer was found to exist within the fill material approximately 10 feet below the fill surface. Groundwater movement within this aquifer is towards the Niagara River.

3. Phase II Investigation - April 1986, O'Brien & Gere: In April 1985, Niagara Mohawk retained O'Brien and Gere Engineers to conduct a Phase II Investigation in accordance with NYSDEC guidelines. The Phase II investigation included a geophysical survey, installation of seven monitoring wells, completion of five soil borings and collection and analysis of soil, groundwater, surface water and sediment samples. According to the Phase II Study, the groundwater flow in both the upper perched and lower groundwater tables is generally towards the northeast in the direction of the Niagara River.

FIGURE-1



CHERRY FARM
SITE LOCATION MAP
NIAGARA MOHAWK POWER CORP.
TONAWANDA, NEW YORK

ADAPTED FROM U.S.G.S. (7.5 MIN.) BUFFALO NW N.Y.-
ONTARIO QUADRANGLE 1965

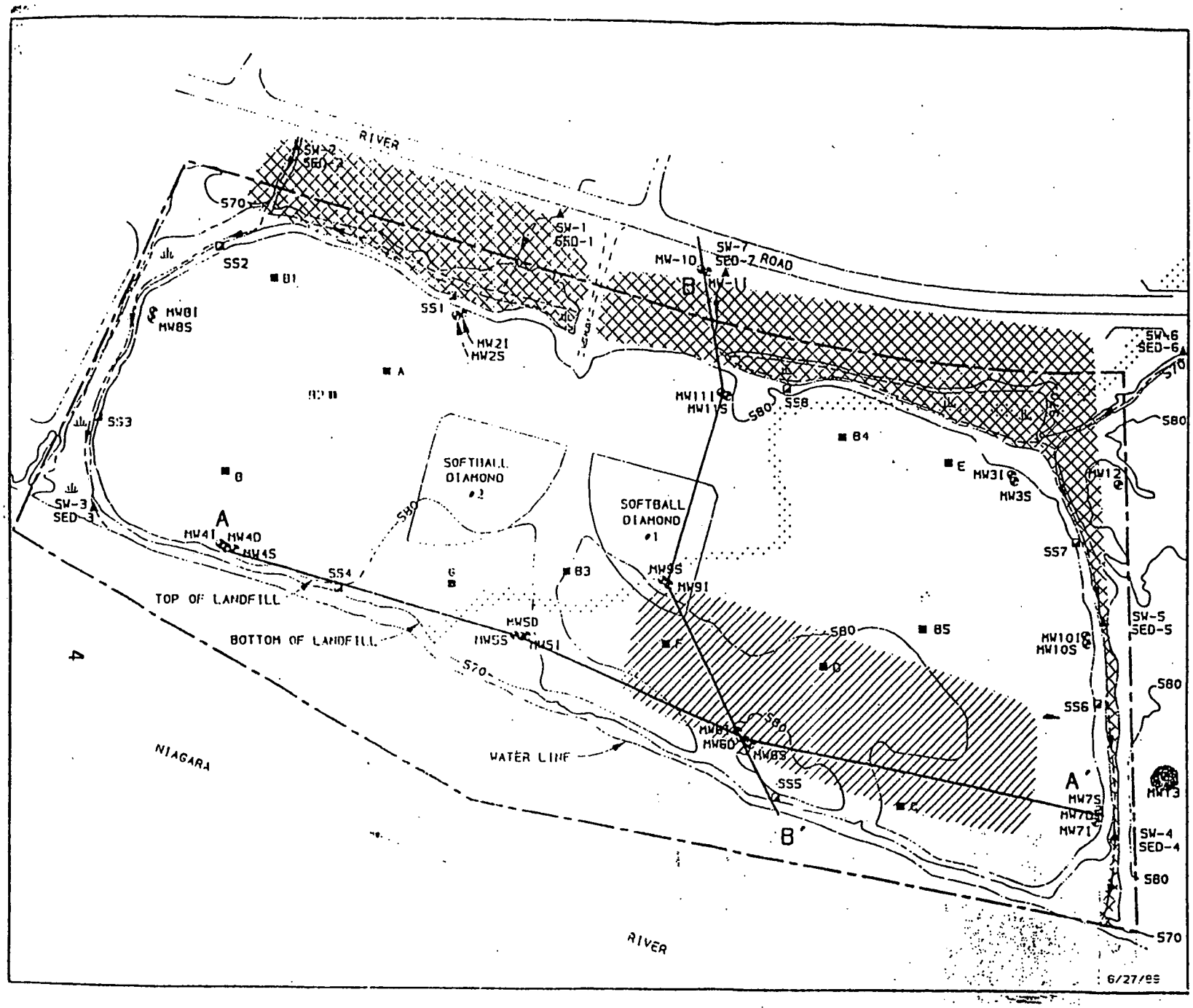
SCALE 1" = 2,000'

O'BRIEN & GERE ENGINEERS INC.

FIGURE 2

REMEDIAL / INVESTIGATI
CHERRY FARM SITE
TONAWANDA, NEW YORK

SITE MAP



LEGEND

- DRAINAGE DITCH
- APPROXIMATE PROPERT LINE
- GENERAL AREA OF FOR SETTLING PONDS
- FORMER STREAM CHANN
- MONITORING WELL
- LANDFILL FACE SAMPL
- SOIL BORING
- SURFACE WATER/SEDIM SAMPLING
- A-A' GEOLOGIC CROSS-SECT
- DESIGNATED WETLAND

0 200 4(

SCALE IN FEET

O'BRIEN & GE
ENGINEERS, INC.

The chemical analysis completed on the fill material revealed the presence of phenolic compounds, and polynuclear aromatic compounds (PNAs) in addition to a variety of metals. Additionally, polychlorinated biphenyls (PCBs) were detected in the soils. The metals were attributed to the abundance of foundry sand and furnace slag known to have been used as fill material. PCBs were once largely used in electrical switchgear and industrial machinery.

The results of groundwater analyses revealed trace levels of some metals, PNAs, and phthalates, all of which were found in the fill material. Elevated levels (up to 529 ug/l) of aromatic compounds (benzene, toluene and xylene) were found in one well.

The analysis of surface water and sediments samples revealed the presence of a number of metals, phenolics and PNA's.

Enforcement Status

A chronological review of the enforcement status is as follows:

1. NYSDEC entered into a Consent Order with Niagara Mohawk Power Corporation (NMPC) on December 3, 1985 for a Phase II Investigation.

2. Based on the Phase II Report, NYSDEC determined that a significant threat to the environment exists.

3. NMPC submitted a work plan for an RI/FS in October 1986.

4. NMPC submitted a revised work plan in September 1987.

5. January 1988: Administrative costs submitted.

6. April 1988: NMPC enters into an agreement (Consent Order) with NYSDEC to conduct an RI/FS.

7. July 1989: RI Report submitted.

8. August 1989: RI Report accepted by the NYSDEC.

9. October 1989: FS Report submitted.

10. May 1990: FS Report accepted by the NYSDEC.

11. The ROD was signed on February 15, 1991.

Of the Potentially Responsible Parties (PRPs) identified for this site, only NMPC entered into an order on consent to complete the RI/FS. Subsequent to the February 1991 ROD, other PRPs including Allied-Signal, Inc., General Motors, and TRW, Inc. joined NMPC to form a working group. This group is currently negotiating with the Department for a consent order for remediation of the site.

4. SUMMARY OF SITE CHARACTERISTICS

4.1 New Information

Subsequent to the signing of the Record of Decision (ROD), Remcor, on behalf of the PRP group, designed a hydrogeologic investigation of the site consisting of a pump test and sand delta evaluation.

In October 1991, Remcor collected a total of 18 sediment samples from the river near the two discharge points from the wetland located on the Cherry Farm Site. Three samples were obtained in the Niagara River upstream from the site in order to act as controls. Examination and classification of these samples detected no difference between the upstream controls and those from the area of the outlets. This led to the conclusion that no significant "sand delta" accumulations are present near the wetland outlets to the Niagara River.

Also in October, Remcor installed one recovery well and six observation wells to be used in the performance of the pump test. On October 31st, a step drawdown test was conducted to determine the performance range of the recovery well.

A three day constant rate pump test was conducted during November 1991. The test was preceded by several days of data collection to provide a static baseline. After the conclusion of the pump test, water levels were monitored until they reached 90% recovery.

The test results indicated that the combination of an interceptor trench and a series of eight recovery wells would control the migration of groundwater across the site preventing the discharge of contaminated water to the Niagara River. The interceptor trench would act to collect water from the shallow aquifer which is basically unaffected by deeper pumping wells. The eight recovery wells would induce an inward flow from the river in the intermediate and deep zones and capture the contaminated groundwater.

The pump test results indicate that hydraulic control of the site can be achieved without an impermeable cap. This allows for the use of soil cap over the site to prevent direct contact with fill materials.

4.2 Site Geology

The geology of the Cherry Farm site begins with a surface cover consisting of clay rich soil (~ 6" thick) emplaced in 1970. This layer covers the fill material across most of the site. The fill ranges from 15-20 feet in thickness and is primarily comprised of foundry sands, cinders, and pieces of slag. The fill is underlain by alluvial deposits ranging from 10-25 feet thick. The upper foot of this deposit consists of marsh sediments containing a significant organic fraction. A glacial till deposit four feet thick separates the alluvial from the underlying Camillus shale.

Groundwater flow in the shallow, intermediate, and deep zones all trend toward the Niagara River in a west-northwest direction. Groundwater is generally encountered between ten and fifteen feet below grade.

4.3 Media Specific Summary

Five classes of media were sampled at the site, groundwater, surface water, surface soils, subsurface soils, and sediment. All of the media show some degree of contamination. Selected results of the organic, inorganic, PCB, and pesticide analysis are summarized below. For complete results see Tables 5 through 15 in the February 1991 Record of Decision.

Groundwater

Two rounds of samples were taken for analysis. Among the volatile organic compounds detected, there was vinyl chloride (22-124 ppb), trichloroethene (11-14 ppb), toluene (12-140 ppb), xylene (7-170 ppb), and benzene (260-350 ppb).

Semi-volatiles detected include phenol (8-510 ppb), phenolic compounds (14-2500 ppb), naphthalene (1-38 ppb), 2-Methylnaphthalene (1-23 ppb), and various PAHs whose concentrations ranged as high as 90 ppb. Detected PCB concentrations ranged from 0.5 to 180 ppb.

Inorganics detected in excess of groundwater standards included aluminum (121-761 ppb), arsenic (5-48 ppb), iron (16-36,100 ppb), lead (7-28 ppb), manganese (2-2,150 ppb), and vanadium (4-112 ppb). These samples were filtered due to excessive turbidity. Additional metals detected in excess of standards in unfiltered samples include barium, beryllium, cadmium, chromium, cobalt, copper, mercury, nickel, silver, and zinc. For specific concentrations see Table 14 of the 1991 ROD.

Surface Water

Organic compounds which were detected in surface water collected from the ditches and wetland adjacent to the site include phenol (12,000 ppb), 2-chlorophenol (16 ppb), 4-chlorophenol (250 ppb), and bis (2-Ethythexyl) phthalate (24-27 ppb). PCBs (Aroclor 1242) were detected (18 ppb) in one surface water sample (SW-6) taken from the stream feeding into the wetland.

Inorganics detected above standards include aluminum (63-33,800 ppb), lead (8-124 ppb), iron (236-40,700 ppb), manganese (152-2,200 ppb), nickel (16-97 ppb), and vanadium (6-67 ppb).

Surface Soils

Organic compounds detected include naphthalene (150-770 ppb), bis (2-Ethylhexyl) phthalate (42-1900 ppb) and various PAHs as high as 1100 ppb. PCBs were detected at a maximum concentration of 44 ppm in soil sample SS-3 located on the north fill face of the site.

Inorganic constituents detected above the average for Eastern Soils include cadmium (2-22 ppm), chromium (6-633 ppm), copper (8-129 ppm), lead (2-499 ppm), magnesium (518-6,880 ppm), mercury (0.58 ppm), nickel (18-502 ppm), and zinc (9-2,390 ppm).

Subsurface Soils

Organic contamination includes phenol and phenolic compounds (410-5600 ppb), naphthalene (920-73000 ppb), and numerous PAHs ranging to a maximum level of 22,000 ppb.

PCBs were detected at concentrations ranging from 280-89000 ppb.

Inorganics detected above average for Eastern Soils include arsenic (2-44 ppm), beryllium (0.6-2 ppm), cadmium (2-6 ppm), chromium (7-155 ppm), copper (13-235 ppm), lead (15-651 ppm), magnesium (830-8,850 ppm), mercury (0.5-0.6 ppm), nickel (7-63 ppm), and zinc (29-2,950 ppm).

Sediment

In the drainage channels to the north and south of the site, PCBs were found in concentrations ranging from non-detect to one part-per-million (ppm).

Inorganics detected in excess of Aquatic Sediment Criteria include arsenic (8-77 ppm), cadmium (2.2-2.4 ppm), chromium (25-158 ppm), copper (24-53 ppm), lead (41-121 ppm), manganese (496-5,750 ppm), nickel (20-47 ppm), and zinc (88-3,970 ppm).

Sediments in the Niagara River adjacent to the site have not yet been characterized. Sampling and analysis of sediments upstream, adjacent to, and downstream of the site will be conducted early in the design phase of the remedy. If site related PCB contamination is found in these sediments at levels considered to present a significant threat to the environment, these sediments will be removed from the river and consolidated on site under the final cover.

Summary of Impacted Media

There are widespread contraventions of groundwater and surface water standards at the site.

Organic contaminants such as vinyl chloride, phenols, naphthalene, trichloroethane, benzene, and xylene are present at levels which exceed ambient water quality standards and guidance values for groundwater.

Metals exceeded surface and groundwater standards in numerous cases.

Aquatic Sediment criteria were exceeded for PCBs found in one sediment sample and metals exceeded these criteria in several samples.

A risk assessment was conducted during the Remedial Investigation which included an analysis of the impact of contaminated soils on human health. The site parameters used in the assessment were arsenic, cadmium, chromium, copper, lead, manganese, nickel, zinc, toluene, bis (2-ethylhexyl) phthalate, trichloroethene, PCBs, and benzo(a)pyrene. From this assessment it was determined that an elevated chronic human health risk was posed by direct contact with fill materials and contaminated soil.

5. REMEDIATION GOALS

The following general remedial objectives were identified for the Niagara Mohawk Cherry Farm site:

- Adequately protect against ingestion of, or contact with, contaminated soil;
- Minimize damage to and provide adequate protection of groundwater from contaminants migrating through soil;
- Adequately protect against the discharge of contaminated groundwater into the Niagara River;
- Adequately protect against ingestion of, or contact with, contaminated groundwater;
- Adequately protect against the erosion of the side slopes by precipitation runoff which could release contaminants to surface water; and
- Adequately protect against contaminated dust emissions into ambient air.

The amended alternative has been evaluated (see section 6.3 below) to determine its ability to achieve these goals.

6. CHANGES TO THE SELECTED REMEDY

6.1 Summary of the Original Remedy:

The original remedy as outlined in the Record of Decision (ROD) was selected based upon Alternative Number 3 described in the April 1990 Feasibility Study Report prepared by O'Brien & Gere for Niagara Mohawk Power Corporation. This alternative provides for the collection of groundwater utilizing extraction wells, physical/chemical treatment of contaminated groundwater utilizing precipitation and activated carbon, and containment of the landfill material, including contaminated ditch sediments, with a multi-layer impermeable clay cap. This alternative also includes groundwater monitoring, fencing, and land use deed restrictions.

The groundwater extraction and treatment system would collect site groundwater and treat it to meet or exceed the drinking water standards before discharging it to the nearest surface water body (on-site drainage channel or Niagara River). The treatment system would be designed to achieve effluent limitations established pursuant to the technical requirements of the State Pollution Discharge Elimination System (SPDES) Program. The groundwater treatment system would be operated until such time that the groundwater contaminant concentrations were at or below the effluent limitations. However, the groundwater extraction system would continue to operate until such time that groundwater contamination was at or below the ground water standards.

6.2 Changes to the Remedy:

The elements of the selected remedy that differ from those in the original February 1991 ROD include:

- The cover design will not include an impermeable hydraulic barrier. The original ROD indicated that this change was being contemplated but that additional field studies were needed to demonstrate that this alternate design would function properly and be protective of human health and the environment.

- Collected groundwater will not be discharged into the Niagara River but shall be pretreated (if necessary) and discharged to a local water treatment plant.

- Fencing will not be installed around the site as part of the remedy. Since future plans for the site include making it compatible for use as a public recreation area or park, and the cover will be designed to prevent contact with wastes, a fence is not necessary.

6.3 Comparative Analysis:

The remedial alternative selected for the site by the NYSDEC was developed in accordance with the New York State Environmental Conservation Law (ECL) and is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC Section 9601, et. seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The criteria used in evaluating the potential remedial alternatives can be summarized as follows:

Threshold Criteria - The first two criteria must be satisfied in order for an alternative to be eligible for selection.

1. Protection of Human Health and the Environment--This criterion is an overall and final evaluation of the health and environmental impacts to assess whether each alternative is protective. This evaluation is based upon a composite of factors assessed under other criteria, especially short/long-term effectiveness and compliance with SCGs (see below).

   The original remedy, Alternative 3 (groundwater extraction & treatment and containment of the landfill material with a multi-layer clay cap), would offer overall protection of human health and the environment by: (a) preventing ingestion and direct contact exposure to contaminants; (b) eliminating the potential for erosion of waste materials resulting in transport of the contaminants to surface water; (c) preventing the transport of contaminants with groundwater. The amended remedy (Alternative 3A, groundwater extraction & treatment and containment of the landfill material with a barrier layer and pervious soil cover), will offer the same overall protection of human health and the environment in a similar manner. The use of a permeable cover will make it necessary to collect larger amounts of groundwater to prevent contaminated groundwater from discharging to the Niagara River. This increased volume presents no significant additional operation and management problems. There may be a benefit of increased contaminant removal due to enhanced leaching through the waste.

2. Compliance with Standards, Criteria, and Guidance (SCGs)--Compliance with SCGs addresses whether or not a remedy will meet all Federal and State environmental laws, regulations, and policies, and if not, provides grounds for invoking a waiver.

The chemical-specific SCGs for the Niagara Mohawk Cherry Farm site are as follows: (a) For groundwater and surface water - 6NYCRR Parts 700-705, water quality regulations for surface water and groundwater; (b) For soils - Guidance values given in NYSDEC Division of Hazardous Waste Remediation Technical and Administrative Guidance Memorandum: "Determination of Soil Cleanup Objectives and Cleanup levels" (TAGM 92-4046); (c) For Sediments - Guidance values given in NYSDEC document entitled "Cleanup Criteria for Aquatic Sediments - December 1989).

The action specific ARARs for the Niagara Mohawk Cherry Farm site are given in Table 1.

The most significant of the SCGs at the site is the New York State groundwater standards. State regulations define the best usage of groundwater as a source of drinking water. Therefore, the assigned standards are stringent. Alternatives 3, and 3A include provisions for directly addressing groundwater contamination. These alternatives also address soil contamination as a source of contaminants to the groundwater by leaching.

Action-Specific SCGs include primarily the 6NYCRR Part 360 and Part 373-2 requirements for the closure of a landfill. The standard cover requirement includes an impermeable cover to minimize the amount of precipitation that can infiltrate into a landfill and result in the production of leachate and subsequently, contaminated groundwater. At this site, between 25% and 50% of the wastes are below the permanent water table. This in conjunction with the determination that a properly designed and operated groundwater collection system can prevent groundwater from migrating off-site into the Niagara River led to the conclusion that a waiver of the standard design criteria for this site was appropriate. Therefore, in accordance with the provisions of Sections 360-1.7(c) and 373-1.1(e), a variance is granted allowing for the use of an impermeable cover with the special condition that a groundwater collection and treatment system must be indefinetely operated and maintained that is capable of collecting all groundwater that would otherwise discharge into the Niagara River.

The location-specific SCGs identified for the Cherry Farm Site (namely, protection of wetlands) is satisfied under both Alternative 3 and 3A.

The State of New York has developed guidance values for evaluating sediment contamination. The concentration of several contaminants in ditch sediments at the site somewhat exceed these guidance values. Alternatives 3 and 3A would directly clean up sediments by removing the sediments from the contaminated ditch(es).

Primary Balancing Criteria - The next five "primary balancing criteria" are to be used to weigh major trade-offs among the different hazardous waste management strategies.

3. Short-term Impacts and Effectiveness--The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment is evaluated.

The length of time needed to achieve the remedial objectives is estimated and compared with other alternatives.

The time required to complete the construction under Alternatives 3A will be same or slightly less than that required for Alternative 3. Therefore the short term effectiveness will not be impacted by the amended remedy. Alternatives 3 and 3A would involve some soil excavations and handling which would expose remediation workers to the contaminated soils, vapor emissions, and contaminated particulates. Each of these potential short-term effects can be controlled by using proper engineering controls.

4. Long-term Effectiveness and Permanence--If wastes or residuals will remain at the site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude and nature of the risk presented by the remaining wastes; 2) the adequacy of the controls intended to limit the risk to protective levels; and 3) the reliability of these controls.

   Following completion of the remedial efforts, Alternatives 3 and 3A would provide very similar long-term effectiveness and permanence. The installation of a cap would prevent exposure to the contaminants under both alternatives. Groundwater extraction and treatment would be required indefinitely for these alternatives. This activity would prevent contaminants from leaving the site via groundwater, thus eliminating transport. Contaminated groundwater would be treated, resulting in no ingestion of contaminants. The quantity of contaminated groundwater extracted and treated under the amended remedy would be increased considerably as compared with the originally selected remedy. This would result in flushing the contaminants out of the soil more rapidly.

5. Reduction of Toxicity, Mobility, or Volume--Preference is given to alternatives that permanently and by treatment significantly reduce the toxicity, mobility, or volume of the wastes at the site. This includes assessing the fate of the residues generated from treating the wastes at the site.

   For Alternatives 3 and 3A, the mobility of contaminants would be reduced due to the provision of the cap and the collection of contaminated groundwater. For these alternatives, no reduction in volume of the waste would occur. The removal of the contaminated groundwater will result in reduction of the toxicity of some of the compounds in the waste material. Treatment of the groundwater would result in a permanent reduction in volume of contaminated water, contaminant mobility, and off-site migration.

6. Implementability--The technical and administrative feasibility of implementing the alternative is evaluated. Technically, this includes the difficulties associated with the construction and operation of the alternative, the reliability of the technology, and the ability to effectively monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining special permits, rights-of-way for construction, etc.

   Both Alternative 3 and 3A are easily implementable, are straightforward, and use standard construction equipment. Many vendors would be available to provide these services. A cap can be constructed relatively quickly if the ground is not frozen or saturated. Material for the cap is available locally. Liner material for Alternative 3 is

readily available from the manufacturers. Long-term monitoring and maintenance of the cap would be required.

7. Cost--Capital and operation and maintenance costs are estimated for the alternatives and compared on a present worth basis.

The total cost of remediation of Alternative 3 (1991 Remedy) is $17,150,000. The cost of remediation for the alternative 3A (Amended Remedy) is approximately $8,000,000. The comparison of the estimated capital cost, present worth cost, and the total project cost of the original and amended alternatives are as follows:

Costs:	Capital Cost	O&M(annual)	Total Present Worth
1991 Remedy	$12,397,000	310,000	$17,154,000
Amended Remedy*	$6,000,000	150,000	$ 8,000,000

* approximate

Modifying Criterion - This final criterion is taken into account after evaluation of those above. It is focused upon after public comments have been received.

8. Community Acceptance--Concerns of the community regarding the RI/FS Reports, the Proposed Remedial Action Plan, and in this case the amended remedy, are evaluated. The Responsiveness Summary (Exhibit C) for this project identifies those concerns and presents the agencies responses to those concerns.

7. AMENDED REMEDY

Based upon the Remedial Investigation/Feasibility Study (RI/FS) for the Site, subsequent field investigations, and the criteria used to evaluate remedial alternatives, the NYSDEC has selected a remedy to contain site wastes and contaminated groundwater by installing a cover over the site and using groundwater extraction wells to recover groundwater and prevent its discharge to the Niagara River. The components of the selected remedy include:

- **Consolidation of wastes** to minimize the size of the final footprint of the site and to pull wastes back from the Niagara River shoreline and from the drainage channels on the north and south sides of the site.

- As a part of slope reconstruction, the **contaminated sediments from the ditches will be removed and consolidated** within the landfill material before installing the cover. Sampling and analysis of sediments in the Niagara River near the site will be conducted to determine if river sediments should be removed and consolidated on the site.

- Installation of a **barrier layer** over the site to prevent intrusion into wastes by people or wildlife.

- Installation of a **soil cover** to further separate potentially exposed people and wildlife and to serve as a vegetative support layer.

- Installation and operation of a series of **groundwater extraction wells** to eliminate the

discharge of contaminated groundwater into the Niagara River.

- **Discharge of groundwater** to the local publicly owned treatment works after any necessary pretreatment.

- Take actions needed to obtain **deed restrictions** to prevent activities that would intrude into wastes or otherwise diminish the effectiveness of the remedy.

Operation and Maintenance (O&M), and monitoring will be an integral part of the amended remedy. The O&M and monitoring requirements will be finalized during the design phase. The site will be inspected periodically to verify the integrity of the cover system. This inspection will be done at least on a quarterly basis during the first two years, semi-annually for the next three years, and at least once every year thereafter. Additional inspections and corrective measures may be necessary during park development. To maintain the integrity of the cover system, access to the site will be restricted by maintaining a locked gate at the site entrance until the park is fully developed.

8. HIGHLIGHTS OF COMMUNITY PARTICIPATION

Concurrent with the investigations performed at the site, there has been significant community involvement and input into the project. Following the signing of the original Record of Decision, the following citizen participation activities took place:

- Notice to amend the ROD was sent to the interested citizens on the mailing list for this project on August 13, 1993.

- Documents relative to the amendment to the ROD were placed in the document repository on August 16, 1993.

- Public was given the opportunity to comment on the amended ROD and a public comment period was held from August 18, 1993 to September 20, 1993.

- A responsiveness summary was prepared and is included as Exhibit C.

TABLE 1

ACTION-SPECIFIC ARARS
CHERRY FARM SITE

ACTION	REQUIREMENTS	CITATION
Capping in place - hazardous materials	Cover must be designed and constructed to: - Provide long-term minimization of migration of liquids; - Function with minimum maintenance; - Promote drainage and minimize erosion or abrasion or abrasion of the cover; - Accomodate settling and subsisdence so that the cover's integrity is maintained; and - Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.	6 NYCRR 373-2.14(g)
	Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsisdence, erosion or other events.	
	Prevent run-on and run-off from eroding or otherwise damaging the final cover.	
	During construction or installation, cover systems must be inspected for uniformity, damage and imperfections.	
	Immediately after construction or installation soil-based and admixed liners and covers must be inspected for imperfections that may cause an increase in the permeability of the cover.	6 NYCRR 373-2.14(e)
	The owner or operator of the landfill must record: - On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and - The contents of each cell and the approximate location of each hazardous waste type within each cell.	6 NYCRR 373-2.14(f)
Deed Restrictions - hazardous waste unit	A survey plat indicating the location and dimensions of hazardous waste disposal units must be submitted to the local zoning authority, or the authority with jurisdiction over local land use, to the county clerk and to the commissioner. The plat filed with the local zoning authority or the authority with jurisdiction over land use must contain a note which state's the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit.	6 NYCRR 373-2.7(f)(3)
Disposal or decontamination of equipment, or soil - hazardous waste	During closure all contaminated equipment, structures and soils must be properly disposed of or decontaminated.	6 NYCRR 373-2.7(e)

TABLE)

ACTION-SPECIFIC ARARS
CHERRY FARM SITE

ACTION	REQUIREMENTS	CITATION
Ground water monitoring - hazardous waste unit	The owner or operator must establish a detection monitoring program for indicator parameters, waste constituents or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. This program must comply with general groundwater monitoring requirements contained in cited regulations.	6 NYCRR 373-2.6
Location Standards - hazardous materials	A facility located in a 100-year floodplain must be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood.	6 NYCRR 373-2.2(j)
Personnel Protection	A safety and health program; site characterization and analysis, site control; training program; medical surveillance; engineering controls, work practices and personal protective equipment; monitoring; informational program; proper material handling; decontamination provisions; emergency response capability; illumination; sanitation facilities; site excavation shoring or sloping; and procedures for informing contractors and sub-contractors of potential hazards must be provided.	29 CFR 1910.120
	Laborers performing construction work shall be instructed in recognition and avoidance of unsafe condtions, and provided with first aid services, medical care, personal protection equipment, and sanitary facilities. When excavation, trenching or shoring is conducted specified procedures must be complied with.	29 CFR 1926 Subparts C, D, E, and P
Post-closure care - hazardous waste unit	Post-closure care must begin after completion of closure and continue for at least 30 years and consist of maintenance and monitoring.	6 NYCRR 373-2.7(g)
Surface water discharge	The discharge shall meet effluent standards or prohibitions established under sections 301, 302, 303, 307 318, and 405 of the Clean Water Act. The discharge shall meet water quality standards established under sections 302 or 303 of the Clean Water Act and State requirements.	40 CFR 122.41 40 CFR 122.44 6 NYCRR 745.1

TABLE

ACTION-SPECIFIC ARARS
CHERRY FARM SITE

ACTION	CITATION	ALTERNATIVE 1	2	3	4	5	6
Capping in place - hazardous materials	6 NYCRR 373-2.14(g) 6 NYCRR 373-2.14(e) 6 NYCRR 373-2.14(f)	R	R	R	R	R	R
Deed Restrictions - hazardous waste unit	6 NYCRR 373-2.7(f)(2)	R	R	R	R	R	R
Disposal or decontamination of equipment, or soil - hazardous waste	6 NYCRR 373-2.7(e)		R	R	R	R	R
Ground water monitoring - hazardous waste unit	6 NYCRR 373-2.6	R	R	R	R	R	R
Location Standards - hazardous materials	6 NYCRR 373-2.2(j)	R	R	R	R	R	R
Personnel Protection	29 CFR 1910.120 29 CFR 1926 Subparts C, D, E, and P	R A	R A	R A	R A	R A	R A
Post-closure care - hazardous waste unit	6 NYCRR 373-2.7(g)	R	R	R	R	R	R
Surface water discharge	40 CFR 122.41 40 CFR 122.44 6 NYCRR 745.1	R	R	R	R	R	R

A = Applicable
R = Relevant and Appropriate

EXHIBIT A
Administrative Record

The administrative record consists of information upon which the Department bases its decision on selection of the requisite remedial technology. The following documents have been included as part of this administrative record:

1. Final RI and FS Reports (located in the document repository) prepared by O'Brien & Gere, dated July 1989 and April 1990, respectively.

2. Responsiveness Summary.

3. Proposed Remedial Action Plan.

4. Letter dated October 10, 1985 from A.R. Cooter, Esq. of CFI to Jeffrey T. Lacey, Esq. with all enclosures.

5. Letter dated July 3, 1986 from A.R. Cooter, Esq. of CFI to Jeffrey T. Lacey, Esq. with all enclosures thereto.

6. Letter dated September 5, 1986 from A.R. Cooter, Esq. of CFI to Jeffrey T. Lacey, Esq. with all enclosures thereto.

7. Letter dated October 16, 1987 from Joseph J. Zedrosser, Esq. for CFI to Maura Desmond, Esq.

8. Letter dated December 7, 1989 from William C. Robb, Esq. for CFI to Maura Desmond, Esq.

9. Letter dated December 13, 1989 from Maura Desmond, Esq. to William C. Robb, Esq. for CFI.

10. Letter dated December 15, 1989 from M.J. Brinkman, P.E. to Michael Sherman, Niagara Mohawk Power Corporation.

11. Letter dated January 25, 1990 from James Mickam, V.P., O'Brien and Gere to Michael Sherman, Niagara Mohawk Power Corporation.

12. Letter dated February 1, 1990 from John S. Cowan, Esq. for CFI to Records Access Officer (FOIL Request).

13. Letter dated February 6, 1990 from William Weiss, Esq. Niagara Mohawk Power Corporation to Maura Desmond, Esq.

14. Letter dated February 26, 1990 from M.J. Brinkman, P.E. to William Weiss, Esq., Niagara Mohawk Power Corporation.

15. Letter dated March 12, 1990 from Carl Calebrese, Councilman, Town of Tonawanda to Timothy Spellman, Niagara Mohawk Power Corporation.

16. Letter dated April 19, 1990 from William Robb, Esq., CFI to Maura Desmond, Esq. and the Remcor Report as enclosure.

17. Letter dated April 25, 1990 from Cheryl Peterson, Esq. to William Robb, Esq. for CFI.

18. Letter dated May 2, 1990 from William Robb, Esq. for CFI to Cheryl Peterson, Esq.

19. Letter dated May 2, 1990 from William Robb, Esq. for CFI to Cheryl Peterson, Esq.

20. Letter dated May 16, 1990 from Cheryl Peterson, Esq. to William Weiss, Esq., Niagara Mohawk Power Corporation.

21. Letter dated June 1, 1990 from William Weiss, Esq., Niagara Mohawk Power Corporation to Cheryl Peterson, Esq.

22. Letter dated June 5, 1990 from James Mickam, O'Brien and Gere to Michael Sherman, Niagara Mohawk Power Corporation.

23. Letter dated June 21, 1990 from Cheryl Peterson, Esq. to William Weiss, Esq., Niagara Mohawk Power Corporation.

24. Letter dated June 28, 1990 from John Cowan, Esq., CFI to Cheryl Peterson, Esq.

25. Letter dated June 29, 1990 from David P. Flynn, Esq. for Allied Signal, Inc. to Cheryl Peterson, Esq.

26. Letter dated June 29, 1990 from R. William Stephens, Esq., General Motors Corporation to Cheryl Peterson, Esq.

27. Letter dated July 3, 1990 from William Weiss, Esq., Niagara Mohawk Power Corporation to Cheryl Peterson, Esq.

28. Letter dated July 10, 1990 from William Weiss, Esq., Niagara Mohawk Power Corporation to Cheryl Peterson, Esq.

29. Letter dated September 11, 1990 from Maura Desmond, Esq. to William Weiss, Esq., Niagara Mohawk Power Corporation.

30. Letter dated September 12, 1990 from Ronald Molene, Town Supervisor, Town of Tonawanda to M.J. Brinkman, P.E.

31. Letter dated September 13, 1990 from Leo Brausch, Remcor to Michael Cruden, Esq., CFI.

32. Letter dated September 14, 1990 from William Robb, Esq., CFI to M.J. Brinkman, P.E.

33. Letter dated September 18, 1990 from David P. Flynn, Esq., for Allied Signal, Inc. to M.J. Brinkman, P.E. including attachments.

34. Report to Congress on Special Wastes from Mineral Processing Volume II: Methods and

Analyses, Office of Solid Waste, USEPA, July 1990.

35. Preliminary Master Plan for Cherry Farm prepared by Wendel Engineers for the Town of Tonawanda, dated September 1992.

36. The Record of Decision (ROD) for the Cherry Farm Site, prepared by the NYSDEC, dated February 15, 1991.

37. Predesign Evaluation Report (Remcor, February 1992).

38. Phase I Investigation, Niagara Mohawk/Cherry Farm, prepared by Engineering Science, dated April 1983.

39. Phase II Investigation, Niagara Mohawk/Cherry Farm, prepared by O'Brien and Gere, dated October 1986.

40. The Amended Record of Decision

EXHIBIT B

NIAGARA MOHAWK / CHERRY FARM

RECORD OF DECISION

FEBRUARY 1991

The Record of Decision (ROD) for the Cherry Farm Site, prepared by the NYSDEC, dated February 15, 1991 can be found in the Administrative Record for this site.

EXHIBIT C
RESPONSIVENESS SUMMARY
AMENDED RECORD OF DECISION
NIAGARA MOHAWK - CHERRY FARM SITE
SITE No. 9-15-063

The Record of Decision (ROD) for the Niagara Mohawk - Cherry Farm site was signed by New York State Department of Environmental Conservation (NYSDEC) on February 15, 1991. Based on additional investigations completed in 1992, it was proposed to change certain elements of the selected remedy. Therefore, an amendment to the ROD was prepared and presented to the public. A public comment period was held from August 18, 1993 to September 20, 1993. The purpose of the comment period was to receive written comments on the proposed amendment for consideration during the final amendment and selection of the remedy. The information below summarizes the comments and questions received and the Department's (NYSDEC's) responses to those comments.

The selected remedy addresses the principal threats posed by the site by installation of a soil cover to prevent contact with the waste material by people or wildlife and by removing contaminants from the groundwater.

The major elements of the selected remedy include:

- **Consolidation of wastes** to minimize the size of the final footprint of the site and to pull wastes back from the Niagara River shoreline and from the drainage channels on the north and south sides of the site.

- As a part of slope reconstruction, the **contaminated sediments from the ditches will be removed and consolidated** within the landfill material before installing the cover. Sampling and analysis of sediments in the Niagara River near the site will be conducted to determine if river sediments should be removed and consolidated on the site.

- Installation of a cobble (or equivalent) **barrier layer** over the site to prevent intrusion into wastes by people or wildlife.

- Installation of a **soil cover** to further separate potentially exposed people and wildlife and to serve as a vegetative support layer.

- Installation and operation of a series of **groundwater extraction wells** to eliminate the discharge of contaminated groundwater into the Niagara River.

- **Discharge of groundwater** to the local publicly owned treatment works after any necessary pretreatment.

- Take actions needed to obtain **deed restrictions** to prevent activities that would intrude into wastes or otherwise diminish the effectiveness of the remedy.

The elements of the selected remedy that differ from those in the original February

1991 ROD include:

- o The cover design will not include an impermeable hydraulic barrier. The original ROD indicated that this change was being contemplated but that additional field studies were needed to demonstrate that this alternate design would function properly and be protective of human health and the environment.

- o Collected groundwater will not be discharged into the Niagara River but shall be pretreated (if necessary) and discharged to a local water treatment plant.

- o Fencing will not be installed around the site as part of the remedy. Since future plans for the site include making it compatible for use as a public recreation area or park and the cover will be designed to prevent contact with wastes, a fence is not necessary.

I. QUESTIONS/COMMENTS RAISED IN WRITTEN LETTERS

The following comments were submitted to the Department in a letter from REMCOR, the consultant for some of the Potentially Responsible Parties (PRPs).

Letter: The Draft Amended Record of Decision (ROD) (September 1993) for the Niagara Mohawk - Cherry Farm Site includes the following statements:

> "Sediments in the Niagara River adjacent to the site have not yet been characterized. Sampling and analysis of sediments upstream, adjacent to, and downstream of the site will be conducted early in the design phase of the remedy. If site-related polychlorinated biphenyl (PCB) contamination is found in these sediments at levels considered to present a significant threat to the environment, these sediments will be removed from the river and consolidated on site under the final cover."

During the development of the Scope of Work (SOW) for the voluntary Predesign Evaluations conducted at the Site, there were a number of conversations on this issue between the New York State Department of Environmental Conservation (NYSDEC) personnel, representatives of some of the Potentially Responsible Parties (PRPs) (Allied Signal Inc., CF&I Steel Corporation, General Motors Corporation, INS, Inc., Niagara Mohawk Power Corporation, and TRW, Inc.), and the consultant (Remcor, Inc.). The discussions focused on a number of interrelated issues associated with the sediments in this area:

- During the public meeting for the Proposed Remedial Action Plan (PRAP), there were a number of concerns raised that this part of the Niagara River was an important spawning ground and that there should be no disturbance to this area.

- This area is, and has been, heavily industrialized. The detection of any constituent, including PCBs, could have dozens of sources that are not related to Cherry Farm.

- The proposed remedial action includes removal of materials from the river bank and subsequent stabilization of that bank.

- There is general agreement that the materials on the river bottom as far as 100 feet into the river are similar, even at the southern end of the site. It is unlikely, considering the river current, that materials from Cherry Farm would have migrated cross-current to these locations.

There was agreement among all parties that the issue associated with the sediments in the river was to be evaluated during the 1991 Predesign Evaluations by collecting and visually classifying samples upstream of the site and at the confluence of each of the surface drainage channels with the Niagara River (Figure 2 of the Predesign Evaluations Report).[1] This work was conducted in accordance with that agreement, and the results were presented in Chapter 4.0 of the Report. The results indicated that the river bottom was relatively hard (sampling with a ponar dredge was not successful), there was a small localized accumulation of material at the discharge of the southern drainage channel, and that there was no discernable difference between the materials sampled upstream of the site from those collected at the confluence of the drainage channels.

In summary, we feel that this issue has been addressed and that there has been no significant impact to the Niagara River directly, or solely attributable to the Cherry Farm Site. The PRPs believe that any requirement in the amended ROD pertaining to sediments in the River has been addressed as a result of the study performed in conjunction with the Pumping Test. Please contact us if this is not acceptable to NYSDEC.

*****

Issue: "During the public meeting for the Proposed Remedial Action Plan (PRAP), there were a number of concerns raised that this part of the Niagara River was an important spawning ground and that there should be no disturbance to this area."

Response: The Department recognizes that depending upon the nature and level of contamination in the sediments, the benefits of avoiding damage to the existing habitat could outweigh the benefits of active remediation.

Issue: "This area is, and has been, heavily industrialized. The detection of any constituent, including PCBs, could have dozens of sources that are not related to Cherry Farm."

Response: The detection of any constituent, including PCBs, can have other sources that are not related to Cherry Farm. However, it is evident that there is a reasonable potential for the erosion of contaminated soil from the Cherry Farm site into the Niagara River. The visual identification provided in Table 3, chapter 4.0 (Sand Delta Evaluation) of the "Predesign Evaluation Report," Cherry Farm Site, Tonawanda, New York, indicates the presence of trace metal fragments and cinder/slag fragments which can be contributed to the site. As such, it is necessary to collect additional samples for chemical analysis to characterize the sediments.

Issue: "The proposed remedial action includes removal of materials from the river bank and subsequent stabilization of that bank."

Response: The proposed remedial action which includes removal of materials from the river bank and subsequent stabilization of that bank will result in removing/isolating contaminated materials from the river bank. However, the extent of such remediation (including sediments below the low water level) is not known at this time.

Issue: "There is general agreement that the materials on the river bottom as far as 100 feet into the river are similar, even at the southern end of the site. It is unlikely, considering the river current, that materials from Cherry Farm would have migrated cross-current to these locations."

Response: The similarity of the materials on the river bottom based on visual identification will be confirmed by chemical analysis. Moreover, the upstream location where the samples were collected during sand delta evaluation falls within the southern outlet and may not represent the true upstream location. It will be necessary to collect upstream samples further south of the southern outlet.

A potential exists for the migration of contaminants from the site. Therefore, the Department will collect and analyze sediment samples from Niagara River from upstream, near site, and downstream locations. The extent of the proposed remedial action along the river bank will be based on the results of the sediment samples.

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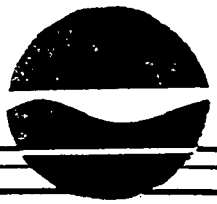
[1]Remcor, Inc., February 12, 1993, "Predesign Evaluations Report," Cherry Farm Site, Tonawanda, New York, prepared for the Cherry Farm Pump Test Potentially Responsible Parties, Project No. 91135.



Department of Environmental Conservation

Division of Hazardous Waste Remediation

Record of Decision

River Road Site

Town of Tonawanda, Erie County

I.D. Number 9-15-031

March 1994

New York State Department of Environmental Conservation

MARIO M. CUOMO, *Governor* LANGDON MARSH, *Acting Commissioner*

APPENDIX "E"

DECLARATION STATEMENT - RECORD OF DECISION

River Road Inactive Hazardous Waste Site
Town of Tonawanda, Erie County, New York
Site No. 9-15-031

Statement of Purpose and Basis

This Record of Decision (ROD) presents the selected remedial action for the River Road inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40 CFR 300).

This decision is based upon the current Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the River Road Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, may present a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the River Road site and the criteria identified for evaluation of alternatives the NYSDEC has selected a remedy to contain the site wastes by installing a cover over the site and using groundwater extraction wells to recover contaminated groundwater and prevent its discharge to Niagara River. The selected remedy will also include recovery and disposal of Light Nonaqueous Phase Liquids (LNAPL).

The major elements of the selected remedy include:

- **River bank stabilization** by grading slopes and installing an erosion resistant layer along the shoreline of the Niagara River.

- Additional sampling of **Niagara River sediments** to determine if significant levels of site-related contamination exists in the sediments, and sediment removal by consolidation on-site or disposal off-site, if sediment removal is warranted by additional sampling results.

- **Grading and installation of a clean earth cover** (partly permeable and partly low permeability) over the entire site. The low permeability cover will be installed in the north-west area, where LNAPL was identified.

- Installation and operation of a series of **groundwater extraction wells** to eliminate the discharge of contaminated groundwater and/or LNAPL into the Niagara River. The system will include **recovery and disposal of LNAPL**, and **discharge of groundwater** to the local publicly owned treatment works after any necessary pretreatment.

- Actions needed to obtain **deed restrictions** to prevent activities that would intrude into wastes or otherwise diminish the effectiveness of the remedy.

- Institute **operation and maintenance** (O&M), and **monitoring** program for the site.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedial action selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. In accordance with the provisions of 6NYCRR 360-1.7(c) and 373-1.1(e), the conditions at this site make it appropriate to grant a waiver to the standard landfill cover design. This will have no significant adverse impact on human health and environment.

March 24, 1994
Date

Ann Hill DeBarbieri
Deputy Commissioner
Office of Environmental Remediation
New York State Department of Environmental Conservation

TABLE OF CONTENTS

Glossary of Acronyms

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
ECL: Environmental Conservation Law
HBA: Habitat Based Assessment
LCS: Leachate Collection System
NAPL: Non-Aqueous Phase Liquids
NA: Not Available
NCP: National Contingency Plan
ND: Not Detected
NIOSH: National Institute for Occupational Safety and Health
NYCRR: N.Y. Codes, Rules, and Regulations
NYSDEC: N.Y. State Department of Environmental Conservation
NYSDOH: N.Y. State Department of Health
O&M: Operation and Maintenance
PAHs: Polycyclic Aromatic Compounds
PCBs: Polychlorinated Biphenyls
ppb: parts per billion
ppm: parts per million
PRAP: Proposed Remedial Action Plan
REL: Recommended Exposure Limit
RI/FS: Remedial Investigation and Feasibility Study
ROD: Record of Decision
SCG: Standards, Criteria, and Guidance
SPDES: State Pollution Discharge Elimination System
TWA Time-Weighted Average
VC: Vinyl Chloride
VOC: Volatile Organic Compound
ug/kg: microgram per kilogram
mg/kg: milligram per kilogram
ug/l: microgram per liter

Notice

The mention of any trade names or commercial products in this document does not constitute any endorsement or recommendation for use by the New York State Department of Environmental Conservation.

RECORD OF DECISION
RIVER ROAD SITE
SITE ID NO. 9-15-031

1.0 SITE DESCRIPTION

The River Road site (the site) is located in the Town of Tonawanda in Erie County, New York (see Figures 1 and 2). The site occupies an approximately 23 acre rectangular parcel in an industrial area on the west side of River Road, approximately 3,500 feet south of the Grand Island Bridge (south). The River Road site comprises parcels owned by Mr. Matthew Duggan of Amherst, New York (northern half of the site), Niagara River World, Inc., and the Clarence Materials Corporation (southern portion of the site). The Tonawanda Coke Corporation owns and operates two retention ponds on property adjoining the site's southern boundary in the southwestern quadrant. The Niagara River flows in a northerly direction along the western edge of the site. An unnamed drainage channel is located immediately north of the northern boundary and flows into the Niagara River.

Access to the site is from River Road. The western portion of the site was previously part of Rattlesnake Island prior to filling Rattlesnake Creek. Part of the Erie Barge Canal, filled between 1936 and 1939 during canal closure activities, passes through the eastern portion of the site.

The site is closely associated with the Cherry Farm site (Site No. 9-15-063) which is located on the parcel north of the site. The Cherry Farm site has a history of industrial use as a landfill between 1951 and 1963. The three distinct units at the Cherry Farm site include the slag disposal area which represents an extension of the River Road site, settling basins, and the Foundry Sand Disposal Area. The RI/FS for the Cherry Farm site was completed by the current owner Niagara Mohawk Power Corporation and a Record of Decision (ROD) has been issued by NYSDEC. An order on consent for the remedial design and construction is currently being negotiated by NYSDEC with the Cherry Farm site Potentially Responsible Parties (PRPs). The Roblin Steel site (9-15-056)is located immediately south of the site.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The River Road site was originally a wetland area used to dispose of refuse, construction rubble, flyash, bottom ash, foundry sand, slag, and liquid boiler cleaning waste. The fill activities at the site dates back to the 1930s, when a portion of the Erie Barge Canal passing through the site was closed. Wickwire-Spencer Steel Company owned and operated the River Road site from 1908 to 1945. The site was used to dispose of an undetermined amount of slag material from their steel manufacturing process. CF&I purchased the River Road site from Wickwire-Spencer during 1945 and used it for slag handling and disposal until the steel mill closed in 1963. The slag (six to 25 feet deep) covers most of the site. The Lake Erie Rolling Mills/Roblin Industries Inc. purchased the old Wickwire Spencer steel plant from CF&I in 1966 and used the adjacent parcel (now the River Road site) for disposal of approximately one million gallons of spent sulfuric acid pickle liquor between 1969 and 1970. The pickle liquor was spilled into slag-filled depressions with the intent of neutralizing the acid liquor.

INS Equipment Company, Inc. leased the River Road site from Roblin Industries between 1964 and 1970. Foundry sands, probably originating from the GM's Chevrolet plant in Tonawanda, was disposed of on the River Road site and the Cherry Farm site between 1964 and 1970. GM generated between 250,000 and 400,000 tons of sand per year. J.H. Williams division of TRW, Inc. used INS to dispose of paint skimmings and other wastes during the period INS was operating at the River Road site. The two settling ponds located south of the site (adjoining the southwestern property line) were originally owned and constructed by Allied Chemical Company (currently Allied Signal). The Tonawanda Coke Corporation owns and operates these ponds since 1978. The sludge (coke fines) that is periodically removed from these ponds is reportedly stored on the River Road site before returning to the plant for recycling.

This disposal activity has resulted in contamination of the site groundwater, soils and sediments above environmental standards and guidelines. The contaminants of concern are polycyclic aromatic hydrocarbons (PAHs), Polychlorinated (PCBs), metals, cyanide and NAPL. There is a potential for contaminants to migrate into the Niagara River.

Consolidated Rail Corporation (Conrail) owned and operated rail lines onto the River Road site. These lines were used to transport slag to River Road site. Rail spurs existed on the western half of the site.

Clarence Materials purchased a portion of the River Road site for construction and operation of the existing active concrete batch plant during March of 1980. Batch plant cleaning, excess concrete, and debris from Clarence Materials plant have been disposed of at the site. Mathew Duggan, Jr. purchased approximately 10 acres along the north side of the River Road site in 1981 from Roblin. Niagara River World purchased, out of the Roblin bankruptcy proceeding, the remaining portion of the River Road site in 1989.

2.2: Remedial History

In 1980, Troutman Associates prepared a report regarding groundwater quality at the River Road site at the request of Roblin Steel. A black oily substance with a strong odor was observed in one of the well borings. The United States Geological Survey (USGS), in conjunction with the NYSDEC, conducted a preliminary soil sampling program in August 1982. The results have indicated the exceedance in the concentration of heavy metals including chromium, lead, and mercury above background levels.

A Phase I Investigation report of the site was prepared by Engineering Science in September 1984, for NYSDEC. A Phase II Investigation was conducted by Engineering Science for NYSDEC from October 1984 to September 1986. The field investigation for the Phase II study included a geophysical survey to provide subsurface stratigraphic data along with sediment, groundwater, and surface water sampling and analysis. The surface water at the site is a drainage channel running parallel to and north of the northern boundary line. The concentrations of phenolic compounds were detected in groundwater and surface water exceeding standards. Phenolics and several Polycyclic Aromatic Hydrocarbons (PAHs) were detected in sediment samples. It was concluded that further investigations would be needed to determine the extent of contamination.

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and the environment, the NYSDEC has recently completed a Remedial Investigation/Feasibility Study (RI/FS).

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted in two phases. The first phase field work was conducted during March/April, 1992 and the second phase fieldwork was conducted between October/December, 1992. A report entitled Phase I/Phase II Remedial Investigation Report, Qualitative Health Risk Assessment and Preliminary Feasibility Study (September 1993) has been prepared describing the field activities and findings of the RI in detail. A summary of the RI follows:

The RI activities consisted of the following:

- Aerial Photography and survey to prepare the topographic maps and locate physical features.
- Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions. Collection and analysis of sediment samples from the drainage channel. Collection and analysis of NAPL samples.
- Excavation of test pits to locate drums, waste, and underground drainage/leach fields.
- A habitat assessment to identify fish and wildlife resources that may be affected by site-related contaminants.
- Qualitative Health Risk Assessment (HRA).

To determine which media (soil, groundwater, etc.) contains contamination at levels of concern, the analytical data obtained from the RI was compared to environmental Standards, Criteria, and Guidance (SCGs, defined in Section 6.2 below). Groundwater, drinking water and surface water SCGs identified for the River Road site were based on NYSDEC Ambient Water Quality Standards and Guidance Values. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Site geology: The stratigraphic units at the site include fill material, alluviaal/lacustrine sediments, and till. The fill material mainly consists of slag, foundry sand, and other wastes, and varies in thickness from several feet to 25 feet. Alluvial/lacustrine sediments vary in thickness from 15 feet to 34 feet. The gray till varies in thickness from 2 feet in the western portion of the site to 16 feet in the eastern portion. The bedrock is approximately 55 feet below the surface. Two hydrogeologic formations exist which are separated by low permeability lacustrine sediments. The groundwater flow is generally toward the west to the Niagara River.

Nature and extent of contamination: The four classes of media sampled during remedial investigation activities at the site are groundwater, sediments, surface soils, and subsurface soils. The investigation has indicated the presence of various chemicals in different media at the site above SCGs or background concentrations. The areas of concern are identified on Figure 3.

Surface Soil and Waste Piles

Results of sampling and analysis of site surface soils and waste piles indicate the presence of primarily Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated biphenyls (PCBs), and lead above background and/or guidance values. The concentrations of PAHs ranged from 0.04 mg/kg to 413.3 mg/kg (guidance value 100 mg/kg), of PCBs from Non-detect to 1.6 mg/kg (guidance value 1 mg/kg) and that of lead ranged from 4 mg/kg to 724 mg/kg (guidance value 500 mg/kg). The volume of the waste material in the waste piles has been estimated to be 6,000 cubic yards. Concentration of those chemicals which exceeded guidance values are given in Figure 4.

Subsurface/Soil Fill/Buried Waste

Subsurface soil samples were collected and analyzed from test trenches, soil borings, and borehole locations. The analytical results indicated the presence of Volatile Organic Compounds (VOCs), PAHs, PCBs, and lead above guidance values. The concentration of VOCs ranged from non-detect to 20.75 mg/kg (guidance value 1 mg/kg), that of PAHs ranged from non-detect to 228.7 mg/kg (guidance value 100 mg/kg), of carcinogenic PAHs ranged from non-detect to 27.3 mg/kg (guidance value 1 mg/kg), of PCBs ranged from non-detect to 21 mg/kg (guidance value 10 mg/kg for subsurface soils) and that of lead ranged from 11.3 mg/kg to 7,740 mg/kg (guidance value 500 mg/kg). The concentration of those compounds which exceeded the soil remediation guidance values are shown in Figure 5.

Sediments

The sediment samples collected from the unnamed Creek on the north during the RI indicated the presence of PAHs (range 0.27 mg/kg to 5.57 mg/kg), PCBs (range 0.35 mg/kg to 0.65 mg/kg), and lead (range 31 mg/kg to 314 mg/kg). The Creek is located within the Cherry Farm site boundary and will be remediated under the Cherry Farm site remediation.

Four sediment samples collected during November 1993 from the Niagara River adjacent to the River Road site contained PAHs and metals at concentrations above sediment criteria. Some of the compounds which were found at elevated levels include acenapthene at 44 to 8,800 ppb (sediment criteria = 1,400 ppb), fluoranthene at 1,200 ppb to 40,000 ppb (sediment criteria = 10,200 ppb), phenanthrene at 500 ppb to 36,000 ppb (sediment criteria

= 1,200 ppb). Metals such as lead at 66 ppm to 152 ppm (sediment criteria, severe effect level = 110 ppm) and iron at 3.3% to 16% (sediment criteria, severe effect level = 4%) were also found. Additional sampling and analyses are needed to characterize the river sediments, determine if the contamination is related to the site, and to help identify the best alternative for addressing site related contamination. These studies will be completed in 1994.

Groundwater

Twenty six groundwater samples were collected and analyzed from eighteen wells. The results indicated the presence of VOCs, SVOCs, PCBs, Metals, cyanide and LNAPL. The concentration of a number of individual parameters exceeded the groundwater standards. The maximum concentration of Phenols was found in well MW-9S at 650 ug/l (groundwater standard 1 ug/l). The maximum concentration of PCB was detected in well MW-8S at 23.6 ug/l (standard 0.1 ug/l). The maximum concentration of lead was identified in well MW-4S at 160 ug/l in excess of the groundwater standard of 25 ug/l. The maximum concentration of cyanide was detected in well MW-5S at 5,530 ug/l in excess of the groundwater standard of 100 ug/l. Figure 6 indicates the concentration of the chemicals in groundwater exceeding groundwater standards/guidelines. The results of the LNAPL are shown in Figure 7.

Contaminant fate and transport: The transport and fate of the contaminants from a source are dependent upon the physical and chemical properties of the waste constituents and characteristics of the environmental media. The migration pathways at the River Road site appear to be surface water run-off and leaching of the chemicals in the groundwater to the Niagara River.

3.2 Summary of Human Health Risk Assessment:

Based on the results of the RI, a Human Health Risk Assessment (HRA) was conducted to estimate the risks associated with current site conditions. The approach used to perform the HRA was to identify contaminants of concern at the site, define routes of exposures of these site contaminants, define migration pathways, identify potential receptors, and prepare a qualitative assessment of contaminant risk associated with the River Road site. An exposure pathway is the process by which an individual comes into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways which are known to or may exist at the site include:

- Ingestion of surface water, groundwater, sediments and/or contaminated soil containing dissolved or particulate-bound contaminants;
- Inhalation of airborne volatile or particulate-bound contaminants;
- Ingestion of biota (e.g., fish) that have bioaccumulated contaminants; and
- Dermal absorption of contaminants via direct contact with waste, LNAPL, contaminated soil, surface water and sediment.

Although a quantitative HRA was not performed for this site, based upon the overall evaluation of sample concentration and exposure routes, and comparison with Cherry Farm site risk assessment, it is determined that chronic exposure to exposed surficial soils contaminated with PAHs, CPAHs, LNAPL, and lead would pose an unacceptable health risk.

A more detailed discussion of the health risks can be found in Section 6.0 of the RI Report.

3.3 Summary of Environmental Exposure Risks:

A habitat assessment was completed for the River Road site. The purpose of this assessment is to describe the existing ecology at the site, including a site specific description of the major habitat types and associated fish and wildlife populations, as well as the identification of any significant on-site resources. There are no significant habitats or rare species located on or immediately adjacent to the River Road site. The contaminated media at the River Road site may lead to significant exposure to plants and wildlife. The exposure pathways which are known to or may exist at the site include contaminated groundwater (ingestion by wildlife and discharge to Niagara River), surface soils (direct contact and erosion into the River) and subsurface soils (burrowing animals and plants). Although a detailed evaluation of risks to fish and wildlife was not completed, the presence of site related contaminants in soils, sediments, and groundwater above SCGs indicates the potential for environmental damage. The habitat assessment can be found in Section 3.4 of the RI report.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs failed to implement the RI/FS at the site when requested by the NYSDEC. Therefore, NYSDEC completed the RI/FS under the State Superfund program. However, the NYSDEC and some of the PRPs (Allied Signal Corporation, TRW Inc., Clarence Material Corporation, Consolidation Rail Corporation and L. Matthew Duggan, Jr.) entered into a Consent Order (Index No. B9-0046-84-10) on September 15, 1992. Under the terms of this Consent Order, these PRPs agreed to pay a portion of the state funded Phase I Remedial Investigation.

After the ROD is signed, all the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will take actions to complete the remediation of the site using public monies from the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the overall goal of protecting human health and the environment and meeting all Standards, Criteria, and Guidance (SCGs).

At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Control by containment the contamination present within the soils/waste on-site.
- Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Prevent, to the extent practicable, migration of contaminants in the landfill to groundwater.
- Prevent, to the extent practicable, migration of the LNAPL to groundwater and Niagara River.
- Provide for attainment of SCGs for groundwater quality at the limits of the site.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the River Road site were identified, screened and evaluated in a three-phase Feasibility Study. The identification and screening of the potentially applicable remedial technologies is presented in Section 7.0 of the Preliminary Feasibility Study of the RI report. The detailed evaluation of the potential remedial alternatives is presented in the report entitled Phase III Feasibility Study Report, River Road Site. A summary of the detailed analysis follows.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils, groundwater, and LNAPL at the site. The area occupied by the Clarence Materials active concrete plant was not investigated and is not a part of remediation. The well located at the Clarence Material was sampled and is recommended for closure.

Alternative 1: No Action

Total Project Costs:	**$ 154,000**
Capital Cost:	**0**
Present Worth of O&M:	**$ 154,000**
Annual O&M cost:	**Varies**
Construction Time	**0**

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state.

This is an unacceptable alternative as the site would remain in its present condition, and human health and the environment would not be adequately protected. In this alternative, the contaminated LNAPL/groundwater would not be remediated and would be free to migrate to the Niagara River. The dermal contact with the exposed contaminated soils, and inhalation of contaminants released from the waste would continue.

Alternative 2: **Institutional Actions, LNAPL removal, Groundwater Extraction and Treatment, and placement of Cover**

Total Project Costs:	**$ 5,446,000**
Capital Cost:	**$ 3,145,000**
Present Worth of O&M:	**$ 2,301,000**
Annual O&M Costs:	**Varies**
Construction Time	**6 months - 1 year**

This alternative includes institutional actions (restrictions to site use and development, partial fence to control site access); extraction and off-site disposal of LNAPL; extraction and treatment of site groundwater; disposal of treated groundwater to the local water treatment plant; river bank stabilization by grading of slopes and installation of an erosion resistant layer; grading of the site; and installation of a clean earth cover (partly permeable and partly low permeability) over the entire site. For approximately two years, the LNAPL would be removed. Groundwater extraction in the western half of the site would follow until such time that no significant benefit is achieved. For cost estimation purposes, a period of 15 years is assumed for extraction of LNAPL and groundwater. The permeable clean earth cover as described in Feasibility Study report consists of 12" of biotic barrier (cobbles used as a barrier to plant roots and burrowing animals); 18" of clean earth; 6" of top soil and will be placed over the entire site except in the area of the LNAPL plume. The LNAPL area includes a low permeability cover comprising of clay with a permeability of less than 10^{-7} cm/sec covered by protective drainage layer and top soil. Long-term monitoring (30 years) and O&M would also be performed under this alternative.

Alternative 3: **Institutional Actions, LNAPL/ Groundwater Extraction and Treatment, Extensive Consolidation of Site Soils and Placement of Low Permeability Cover**

Total Project Costs:	**$ 7,829,000**
Capital Cost:	**$ 5,436,000**
Present Worth of O&M	**$ 2,393,000**
Annual O&M Costs:	**Varies**
Construction Time	**6 months - 1 year**

This alternative includes institutional actions; extraction and off-site disposal of LNAPL; extraction and treatment of site groundwater; disposal of treated groundwater to the local water treatment plant; and river bank stabilization by grading of slopes and installation of an erosion resistant layer as discussed in Alternative 2. This alternative also includes extensive consolidation of soils (70,000 cy) from the eastern area to the western area; placement of a

low permeability cover (geomembrane) over the western portion of the site; and backfill and grading of the eastern area. The intent of the extensive consolidation is to prevent direct contact with the subsurface materials exceeding the remediation guidelines which can be readily excavated. The low permeability cover would consist of a geomembrane; a layer of up to 24" of protective soil; 6" of topsoil and vegetation. Long-term monitoring (30 years) and O&M would also be performed under this alternative.

Alternative 4: **Institutional Actions, LNAPL/ Groundwater Extraction and Treatment, Grading and placement of Low Permeability Cover**

Total Project Costs:	**$ 6,395,000**
Capital Cost:	**$ 3,802,000**
Present Worth of O&M:	**$ 2,593,000**
Annual O&M Costs:	**Varies**
Construction Time	**6 months - 1 year**

This alternative also includes institutional actions; extraction and off-site disposal of LNAPL; extraction and treatment of site groundwater; disposal of treated groundwater to the local water treatment plant; and river bank stabilization by grading of slopes and installation of an erosion resistant layer as discussed in Alternative 2. Under this alternative the entire site would be graded and covered with a low permeability cover as discussed in Alternative 3. Long-term monitoring (30 years) and O&M would also be performed under this alternative.

Alternative 5: **LNAPL and Groundwater Extraction and Treatment, Extensive Excavation and off-site Disposal of Site Soils and Construction of a Slurry Wall**

Total Project Costs:	**$ 47,484,000**
Capital Cost:	**$ 45,291,000**
Present Worth of O&M:	**$ 2,193,000**
Annual O&M Costs:	**Varies**
Construction Time:	**1 year - 2 years**

This alternative also includes extraction and off-site disposal of LNAPL; extraction and treatment of site groundwater; disposal of treated groundwater to the local sewer authorities water treatment plant; and river bank stabilization by grading of slopes and installation of an erosion resistant layer as discussed in Alternative 2. This alternative provides for complete remediation of the site to allow unrestricted site use in the future. Under this alternative site soils exceeding criteria established for the protection of groundwater would be excavated up to the top of the hard slag and treated and/or disposed of off-site. The estimated quantity of this material is 156,000 cubic yards. Clean material would be backfilled to replace excavated materials. A slurry wall would be constructed along the Niagara River as a more aggressive method to prevent contaminated groundwater from entering the river and to prevent intrusion of river water during groundwater extraction. It is assumed under this alternative that two years would be necessary to recover the LNAPL at the site, and extraction of the groundwater would continue until such time that no further significant benefit is achieved. For estimation purposes, a period of 15 years have been assumed for pump and treat.

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Remediation of the River Road site by implementing the selected alternatives, except for the no action alternative, would provide for protection of human health and the environment by preventing ingestion of and dermal contact with the groundwater or soil/waste, and inhalation of contaminants released from the soil/waste to varying degrees. The protective cover installed under Alternatives 2, 3, and 4 would eliminate exposure pathways based upon exposure to site surface and subsurface soils. The permeable cover proposed under Alternative 2 would allow earthworms to move between contaminated soil and clean earth. The earthworms would be available as a contaminated food source in the food web. Some residual risk to terrestrial wildlife would remain at the site following remediation under Alternative 2. However, added cost for providing a low permeability cap would be significantly more and even a low permeability cap as a barrier against earthworms is uncertain. Additionally, a permeable cap would allow for the potential use of the site like above grade buildings and parking lot etc. which will limit any such residual risks. Alternative 5 is the most protective of human health and the environment because the soil (above hard slag) exceeding SCGs would be removed off-site and groundwater would be treated. Alternative 1, No Action, would not offer adequate protection to human health or the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Chemical-specific ARARs are not met by the No Action alternative. Chemical-specific ARARs for groundwater are assumed to be satisfied by Alternatives 2 through 5 which include long-term extraction and treatment of groundwater. It is believed that the most significant portion of the contaminated groundwater plume would be remediated under these alternatives. Alternative 5 would likely achieve SCGs for the soils. Alternatives 2, 3 and 4 would achieve SCGs for site soils for protection of health, but not necessarily for the protection of groundwater. This is because soils that could theoretically leach contaminants into the groundwater would be left behind. However, except for where NAPL is present, existing conditions indicate that contaminants are leaching out of the soils at a rate significantly less than theory would predict.

Action-Specific SCGs: All of the alternatives would be designed and implemented to comply with action specific SCGs at the site. Action specific SCGs are identified in the Phase III FS report and include, for example, transportation and cover design requirements; substantive

requirements of the State Pollution Discharge Elimination System (SPDES), pretreatment requirements of the POTW (Publicly Owned Treatment Works) for discharge of groundwater, and requirements for bank stabilization work.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

Alternative 1 would require no activity, therefore, there would be no short-term impacts due to construction under the no action alternative. Alternatives 2 and 3 provide the least disturbance of site soils and therefore the least short-term impacts followed by Alternative 4. Alternative 4 involves transportation of contaminated materials from the eastern portion to the western portion of the site. The construction time (estimated to be between 6 and 12 months) for Alternatives 2, 3 and 4 is same. Alternative 5, which involves off-site transportation of contaminated materials, poses some risk to the community and workers during handling and transportation operations. The construction time for Alternative 5 is estimated to be between 1 and 2 years. Each of the potential short-term effects can be controlled using proper engineering practices.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 1 (No Action) is not considered reliable for the long-term due to the continued presence of contaminants above health-based levels on-site. Treatment proposed for LNAPL/groundwater at the site (Alternatives 2, 3, 4 & 5) would be a permanent remedy for the contaminants in the water. Additional groundwater contamination is somewhat less likely with Alternatives 3 and 4 which provide a low permeability cap over the contaminated soils as compared to Alternative 2 which would place a low permeability cap over the NAPL area and a permeable cap over the rest of the site. Contaminants that leach from the soil into the groundwater would be collected by the groundwater containment system. Alternatives 2, 3, and 4, involves on-site containment with permeable and/or low permeability cover. None of these alternatives treat any of the contaminated soils/wastes. Alternatives 2, 3, and 4, provide increasing degrees of prevention of leaching of contaminants to groundwater. Since most of the contaminated soils would be removed off-site under Alternative 5, this alternative has a greater degree of permanence compared to other remaining alternatives. Alternatives 2, 3, and 4 would require maintenance of the permeable and low permeability covers. Alternatives 2 through 5 would require maintenance of the groundwater extraction and treatment system. Groundwater monitoring would be required for all alternatives.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

On-site containment (Alternatives 2, 3, and 4) and off-site land disposal (Alternative 5) would not reduce the toxicity of the hazardous wastes and contaminated soil. Groundwater recovery and treatment (Alternatives 2, 3, 4 & 5) would reduce the toxicity, mobility and volume of the contaminated groundwater and is likely to have at least a minor beneficial impact on soils due to flushing action of the groundwater. Alternative 2, with a permeable cover, is likely to be better at allowing the flushing of contaminants. On-site containment with a low permeability cover (Alternatives 3 and 4) and off-site disposal (Alternative 5) would result in reducing the mobility of the contaminants in soil through isolation. However, no reduction in volume results. For Alternative 2, the mobility would be reduced due to the provision of the permeable cap, but to a lesser degree. The inclusion of a groundwater containment system (Alternatives 2-5) significantly reduces the mobility of contaminants. Alternative 1 (No Action) would not result in the reduction of the toxicity, mobility, or volume of contaminants.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Alternative 1 is easily implementable and results in no change in the existing conditions. Next, Alternative 2 most likely represents the most readily implementable alternative due to the limited amount of soil consolidation and the relatively easy constructability of the permeable cover. Based on volumes of materials to be excavated, Alternatives 4, 3 and 5, respectively, would be more difficult to implement. Many vendors would be available to provide the construction services for Alternatives 2 through 5. Construction of a cap (Alternatives 2, 3 and 4) can be implemented using standard construction equipment. A cap can be constructed relatively quickly if the ground is not frozen or saturated. Material for the cap is available locally. Geomembrane is readily available from the manufacturers. Long-term monitoring and maintenance of the cap would be required. Landfill capacity for Alternative 5 which would require disposal of approximately 156,000 cubic yards of waste material in the area, is available.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision.

The total cost of remediation varies from $154,000 for the No Action alternative to $47,484,000 for off-site disposal.

The costs for each alternative are:

Alternative	Capital Cost	Total Present Worth of O&M	Total Cost
1	$ 0	$ 154,000	$ 154,000
2	$ 3,145,000	$ 2,301,000	$ 5,446,000
3	$ 5,436,000	$ 2,393,000	$ 7,829,000
4	$ 3,802,000	$ 2,593,000	$ 6,395,000
5	$45,291,000	$ 2,193,000	$47,484,000

This final modifying criterion is taken into account after evaluating the threshold and balancing criteria. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - This criterion evaluates the concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan.

The Responsiveness Summary (Appendix "A") for this project identifies those concerns and presents the Department's responses to those comments. The community concerns centered around the potential future productive use of the property and the valuable waterfront resources, and public access to shoreline.

SECTION 7: SUMMARY OF THE SELECTED ALTERNATIVE

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC has selected Alternative 2 (Institutional Actions, LNAPL removal, Groundwater Extraction and Treatment, and placement of Cover) to remediate the site.

The New York State Department of Health (NYSDOH) concurs with the selected remedy.

This selection is based upon the detailed evaluation and comparative analysis of various alternatives. Alternative 1 (No Action) is not adequately protective of human health and the environment and therefore, is not acceptable. Although Alternative 5 (off-site disposal) offers the most protection of the human health and the environment, this alternative ranked lowest when evaluated for short-term impacts, implementability, and cost. Alternative 2 ranked highest when evaluated for long-term effectiveness, reduction in toxicity, implementability, and cost against the remaining Alternatives 3 and 4. The protective cover installed under Alternatives 2, 3 and 4 would eliminate exposure pathways and would offer almost the same protection to human health. Since a low permeability cover would be placed where groundwater contamination is significant (NAPL contaminated area), and a significant portion of the contaminants are already below the permanent water table, placing a low permeability cover over the entire area of contamination (Alternatives 3 and 4) would not provide a significant increase in protection. The permeable cover proposed under Alternative 2 would allow earthworms to move between contaminated soil and clean earth. The earthworms would be concentrating contaminants in their body tissues and would be available as a contaminated food source in the food web. This would allow a residual risk to terrestrial wildlife to remain at the site following remediation. However, mitigating such risk by installing an impermeable cover is not warranted due to the significant extra costs and restriction to future land use. The shallower grades made possible by a permeable cover may enhance the options for the future use of the site. Therefore Alternative 2 is the preferred alternative for this site.

In accordance with the provisions of 6NYCRR 360-1.7(c) and 373-1.1(e), the conditions at this site make it appropriate to grant a waiver to the standard landfill cover design. This would have no significant adverse impact on human health and environment.

The total estimated present worth cost to implement the remedy is $5,446,000. The cost to construct the remedy is estimated to be $3,145,000 and the present worth of operation and maintenance cost $ 2,301,000. The plan and cross section of the selected remedy are shown in Figures 8 and 9.

The elements of the selected remedy are as follows:

1. A **remedial design program** to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the RI/FS will be resolved.

2. **River bank stabilization** by grading slopes and installing an erosion resistant layer along the shoreline of the Niagara River. Prior to beginning construction at the site, additional sampling of Niagara River sediments will be performed to determine if significant levels of site-related contamination exists in the sediments. If it is determined that releases of contaminants from the site into the river have caused significant sediment contamination in the river warranting sediment removal, a decision would then be made as to whether the removed sediments should be consolidated on-site or disposed off-site.

3. **Grading and installation of a clean earth cover** (partly permeable and partly low permeability) over the entire site. The permeable clean earth cover which will cover the entire site except the north-west LNAPL area, will consist of a biotic barrier and visual indication layer; a layer of clean earth cover; top soil, and vegetation. The biotic barrier is a layer of large stones (cobbles) used to prevent wildlife intrusion into the waste and to serve as a visual indication of the limit of the cover system during excavation or erosion. The use of biotic barrier or other substitution will be further evaluated during design phase. A low permeability cover in the LNAPL area will include a clay layer (10^{-7} cm/sec or less) in place of the biotic barrier, and a slope of 4% or greater.

4. Installation and operation of a series of **groundwater extraction wells** to eliminate the discharge of contaminated groundwater and/or LNAPL into the Niagara River. The extraction system would be designed to recover the LNAPL initially without spreading the NAPL contamination.

5. **Recovery and disposal of LNAPL.**

6. **Discharge of groundwater** to the local publicly owned treatment works after any necessary pretreatment.

7. Actions needed to obtain **deed restrictions** to prevent activities that would intrude into wastes or otherwise diminish the effectiveness of the remedy. Action needed to close the wash well located on Clarence property.

8. **Operation and maintenance** (O&M) program for the site.

9. Since the remedy results in hazardous waste remaining untreated at the site, a **long-term monitoring program** will be instituted. This program will allow the effectiveness of the selected remedy to be monitored. This long-term monitoring and review program will be a component of the operations and maintenance plan for the site. The monitoring program will also allow for evaluation of the need for the continued groundwater containment and treatment beyond the current estimate of 15 years.

7.1: Documentation of Significant Changes:

The proposed remedy as identified in the PRAP included a three foot thick permeable cap consisting of 12" of biotic barrier (cobbles), 18" of permeable soil cover and 6" of top soil. The purpose of the biotic barrier is to minimize penetration by burrowing animals if rocks are of adequate size. The cobbles also serve as a visual indication of the limit of cap during any construction activity or erosion. At this site, concern from the large burrowing animals appears to be not significant. Therefore, the design will have the flexibility to substitute the cobbles with clean earth if justified by additional investigation and/or literature search. The clean earth cover must be designed and installed to provide adequate protection against erosion. A provision must also be made for the visual indication of the limit of the cap. The actual thickness of the various components of the capping system will be finalized during design phase in accordance with applicable regulations and/or standard practices.

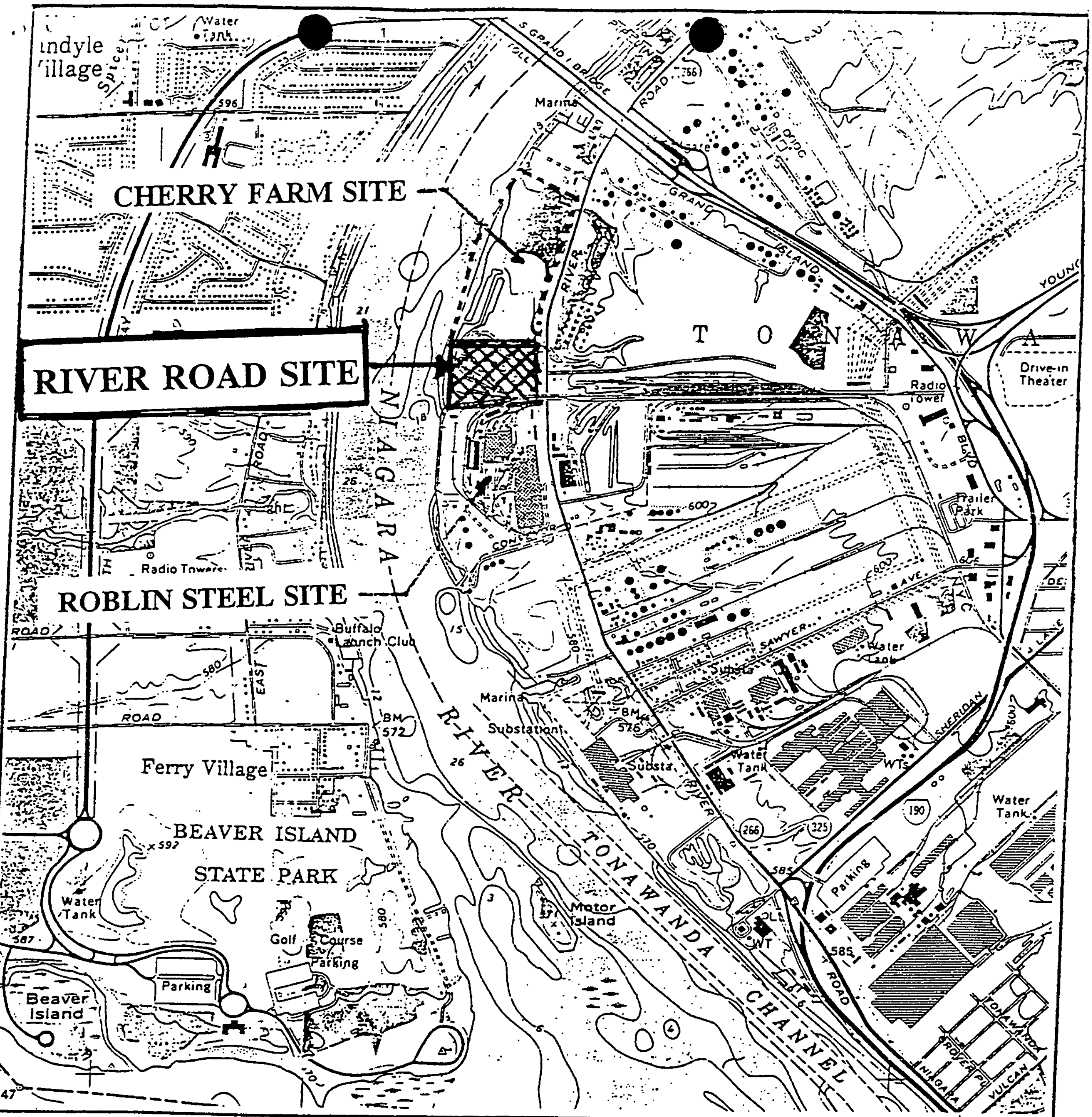
The design will also take into consideration the closure of the existing contaminated well located at the Clarence Materials property and grading and covering the portions of the site immediately south and west of Clarence Materials property.

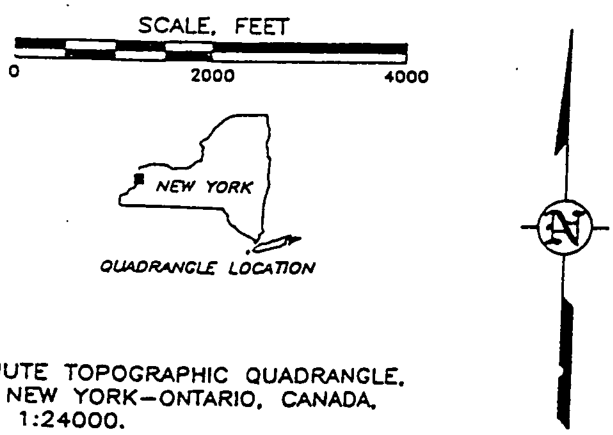
The design will also take into consideration any potential future use of the site to the extent practicable. The factors to be considered may include the locations of the extraction wells, final grading and bank stabilization.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

Concurrent with the investigations performed at the site, there has been significant community involvement and input into the project. A site specific Citizen Participation Plan (CPP) was developed and released to the public in July 1993. As a part of the plan, a public contact list was developed and used to disseminate fact sheets, meeting announcements and other information. A local information repository was established at the Parkside Village Library, 169 Seridan Parkside Drive, Tonawanda, New York (716/876-6929). Pertinent documents were placed in the repository. A fact sheet was issued to the public in August, 1993 to announce the availability of the documents in the repositories.

A notice of the availability of the final drafts of the RI/FS Reports and the Proposed Remedial Action Plan (Proposed Plan) was published on February 2, 1994 in a local newspaper. The RI/FS reports, the Proposed Plan, and other pertinent documents were placed into the repository. A formal public meeting was held on February 15, 1994 to present the Proposed Plan and seek public comments. A public comment period was held from February 2, 1994 to March 4, 1994. A responsiveness summary has been prepared containing NYSDEC's responses to the comments received during the public meeting, and comment period (Appendix A).





REFERENCE:

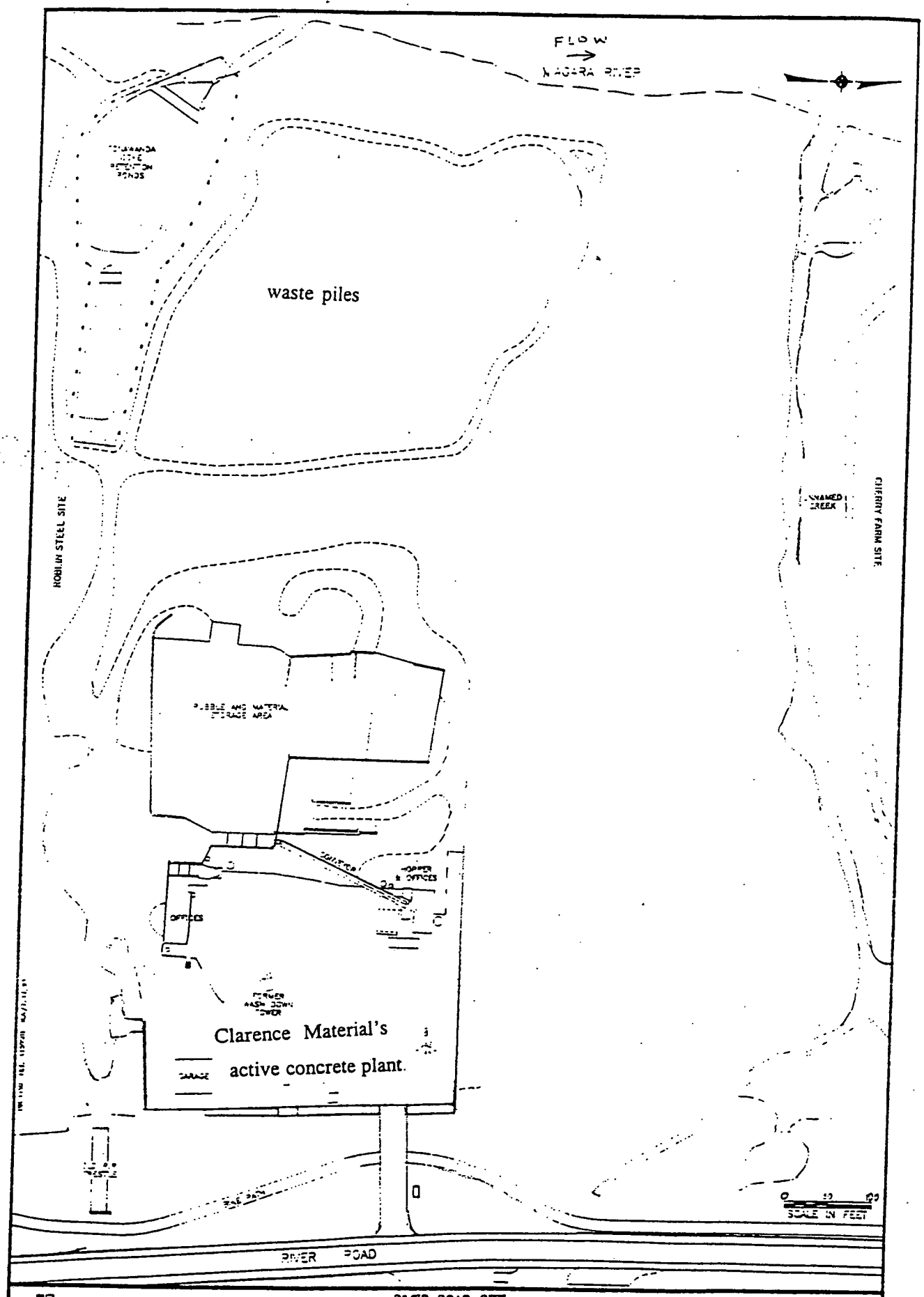
USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, BUFFALO NW, NEW YORK-ONTARIO, CANADA, 1965. SCALE 1:24000.

FIGURE 1

SITE LOCATION MAP

RIVER ROAD SITE

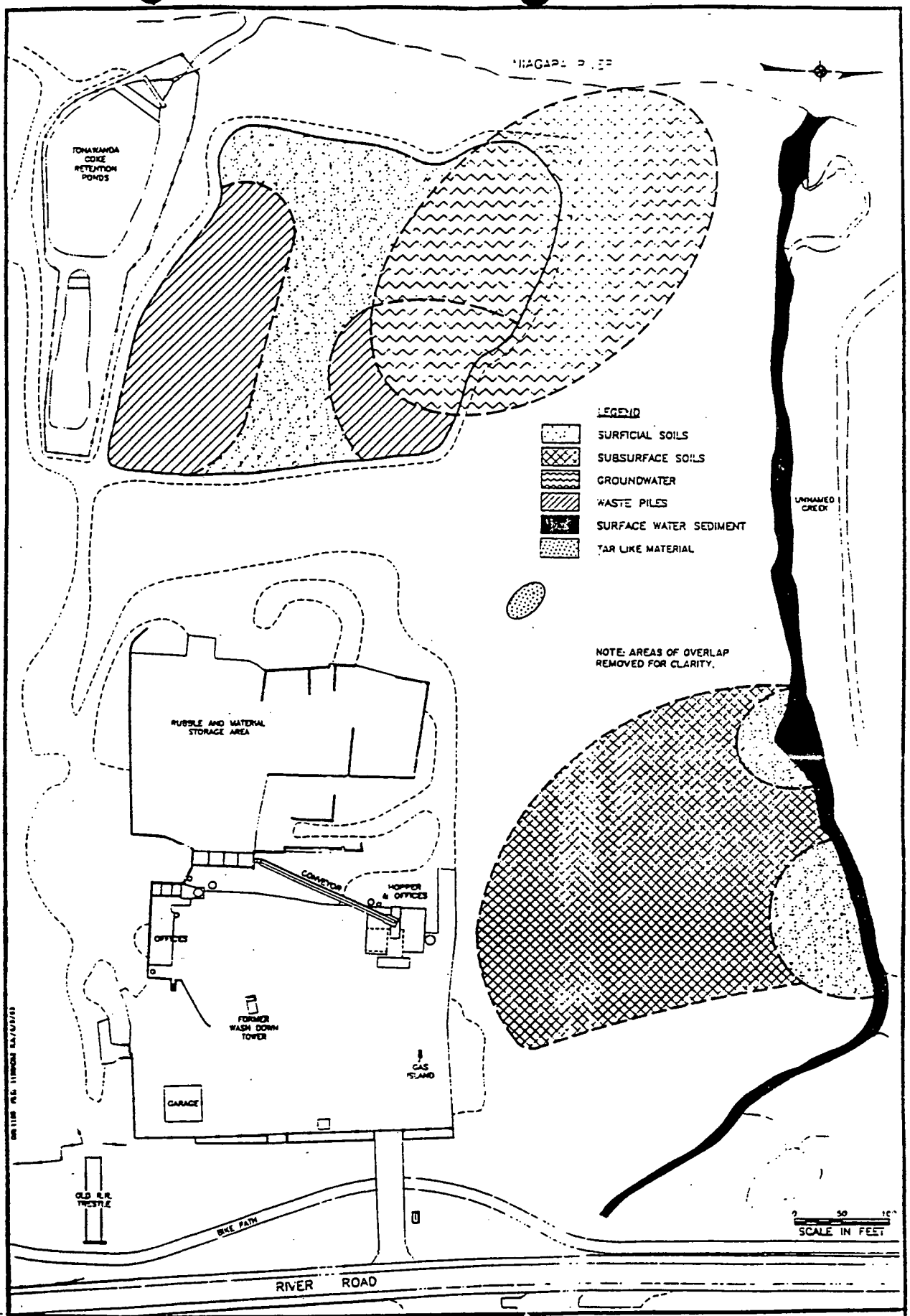
TONAWANDA, NEW YORK



RIVER ROAD SITE
PHASE I/II REMEDIAL INVESTIGATION/FEASIBILITY STUDY
TONAWANDA, NEW YORK
SITE MAP

Dvirka and Bartilucci Consulting Engineers

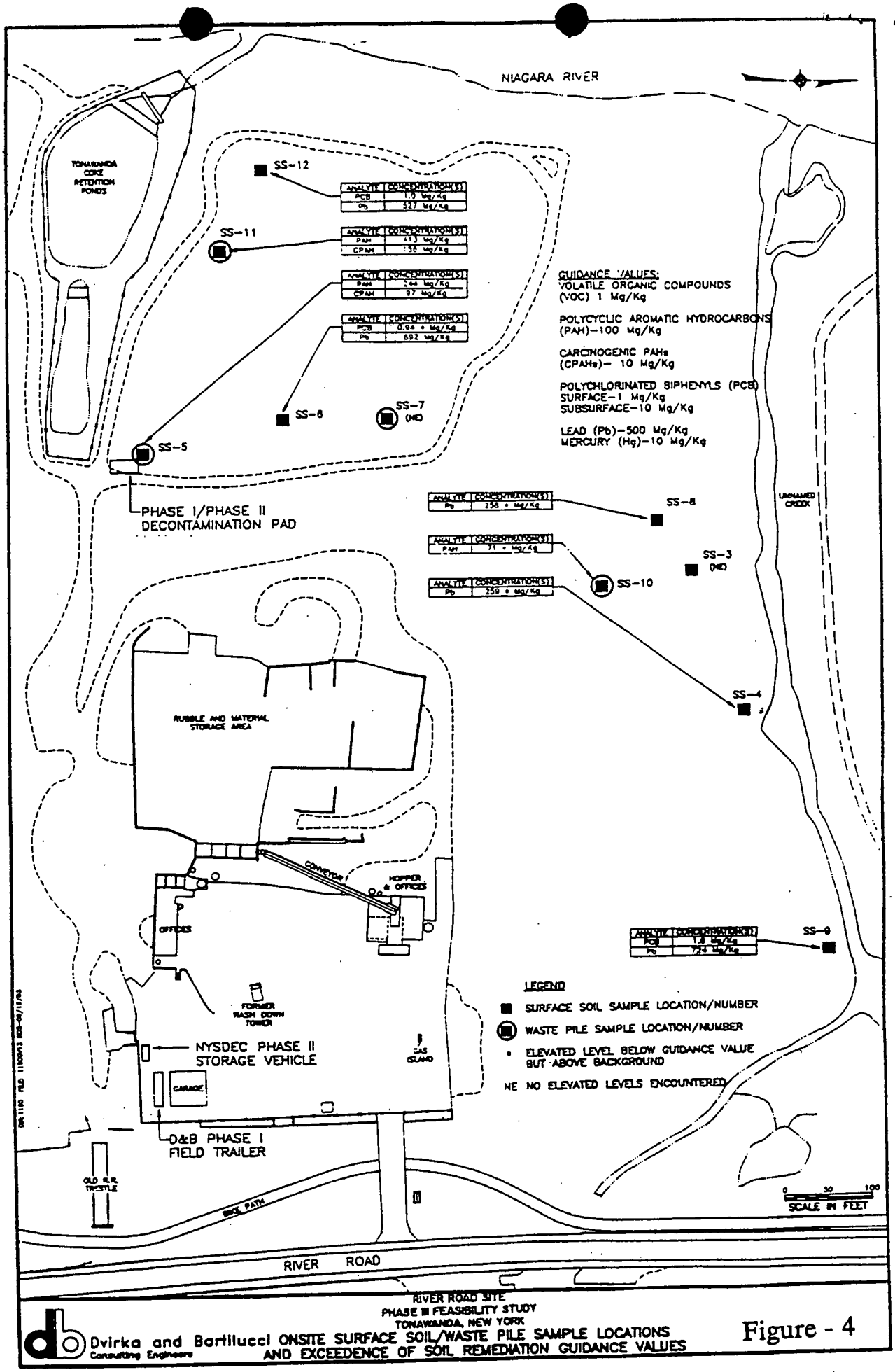
Figure - 2



Dvirka and Bartilucci Consulting Engineers

RIVER ROAD SITE
PHASE III FEASIBILITY STUDY
TONAWANDA, NEW YORK
AREAS OF CONCERN

Figure - 3

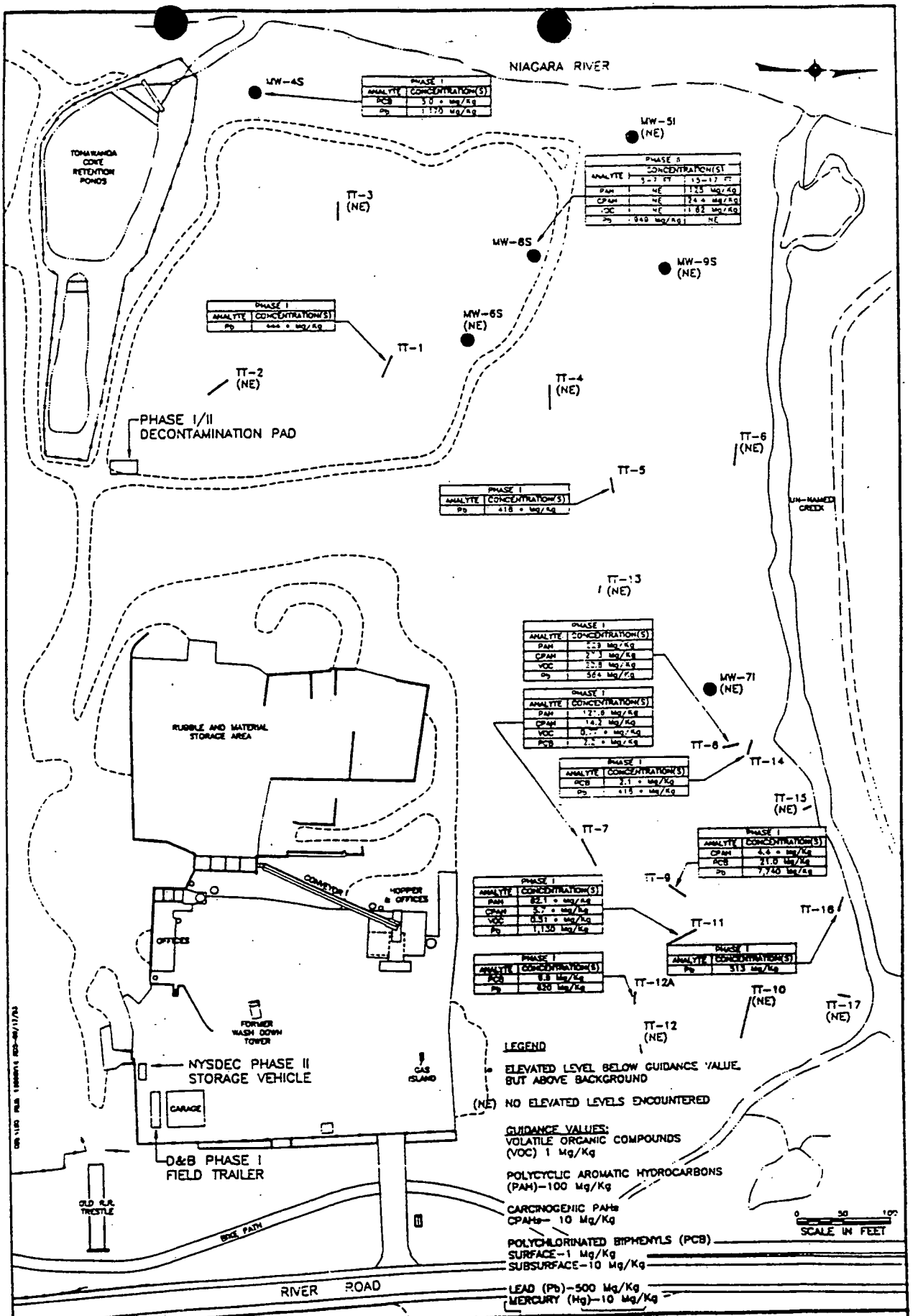


RIVER ROAD SITE
PHASE III FEASIBILITY STUDY
TONAWANDA, NEW YORK

Dvirka and Bartilucci Consulting Engineers

ONSITE SURFACE SOIL/WASTE PILE SAMPLE LOCATIONS AND EXCEEDENCE OF SOIL REMEDIATION GUIDANCE VALUES

Figure - 4

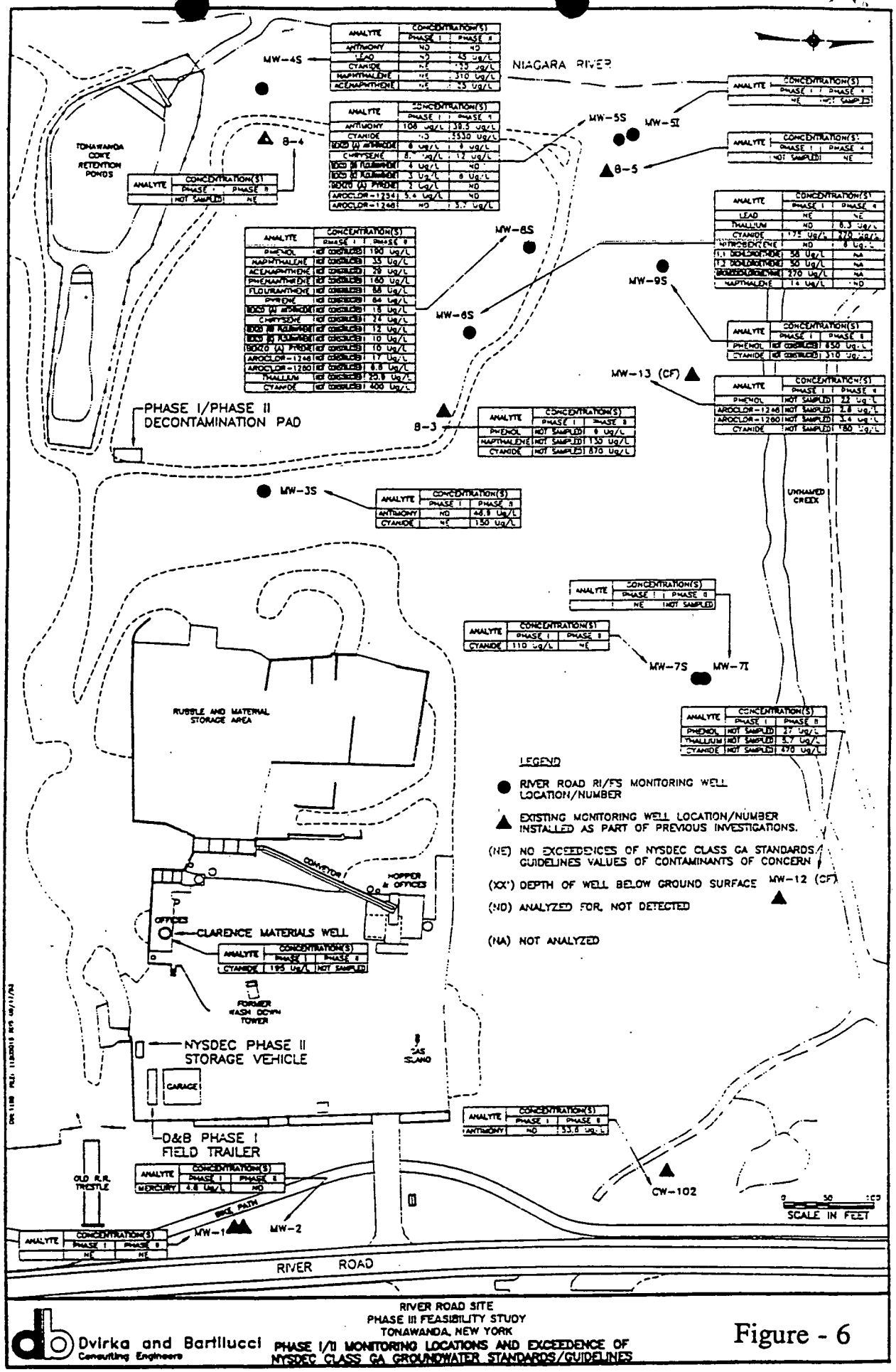


RIVER ROAD SITE
PHASE III FEASIBILITY STUDY
TONAWANDA, NEW YORK

Dvirka and Bartilucci Consulting Engineers

PHASE I/II SUBSURFACE SOIL SAMPLE LOCATIONS AND EXCEEDENCE OF SOIL REMEDIATION GUIDANCE VALUES

Figure - 5

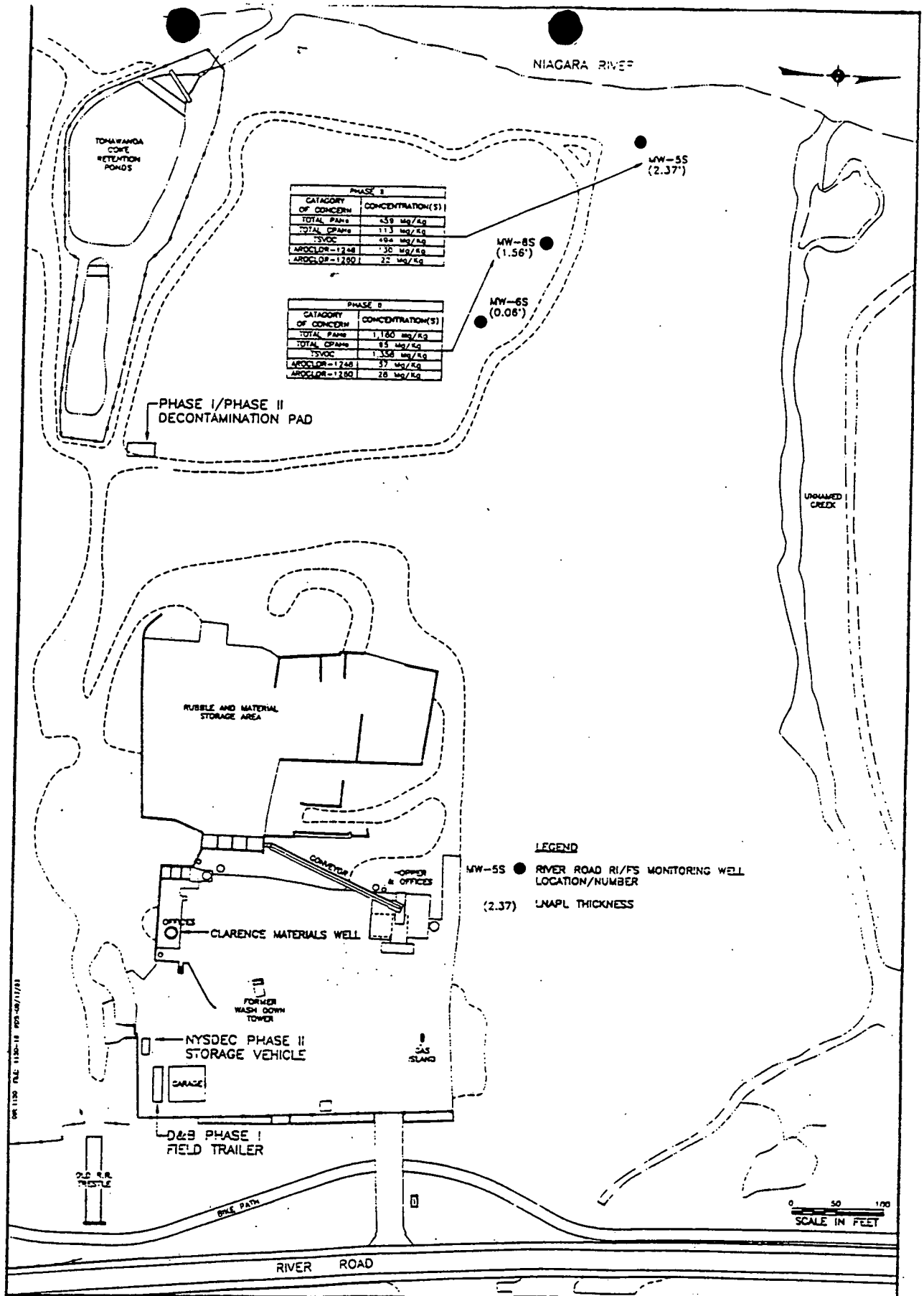


RIVER ROAD SITE
PHASE III FEASIBILITY STUDY
TONAWANDA, NEW YORK

Dvirka and Bartilucci Consulting Engineers

PHASE I/II MONITORING LOCATIONS AND EXCEEDENCE OF NYSDEC CLASS GA GROUNDWATER STANDARDS/GUIDELINES

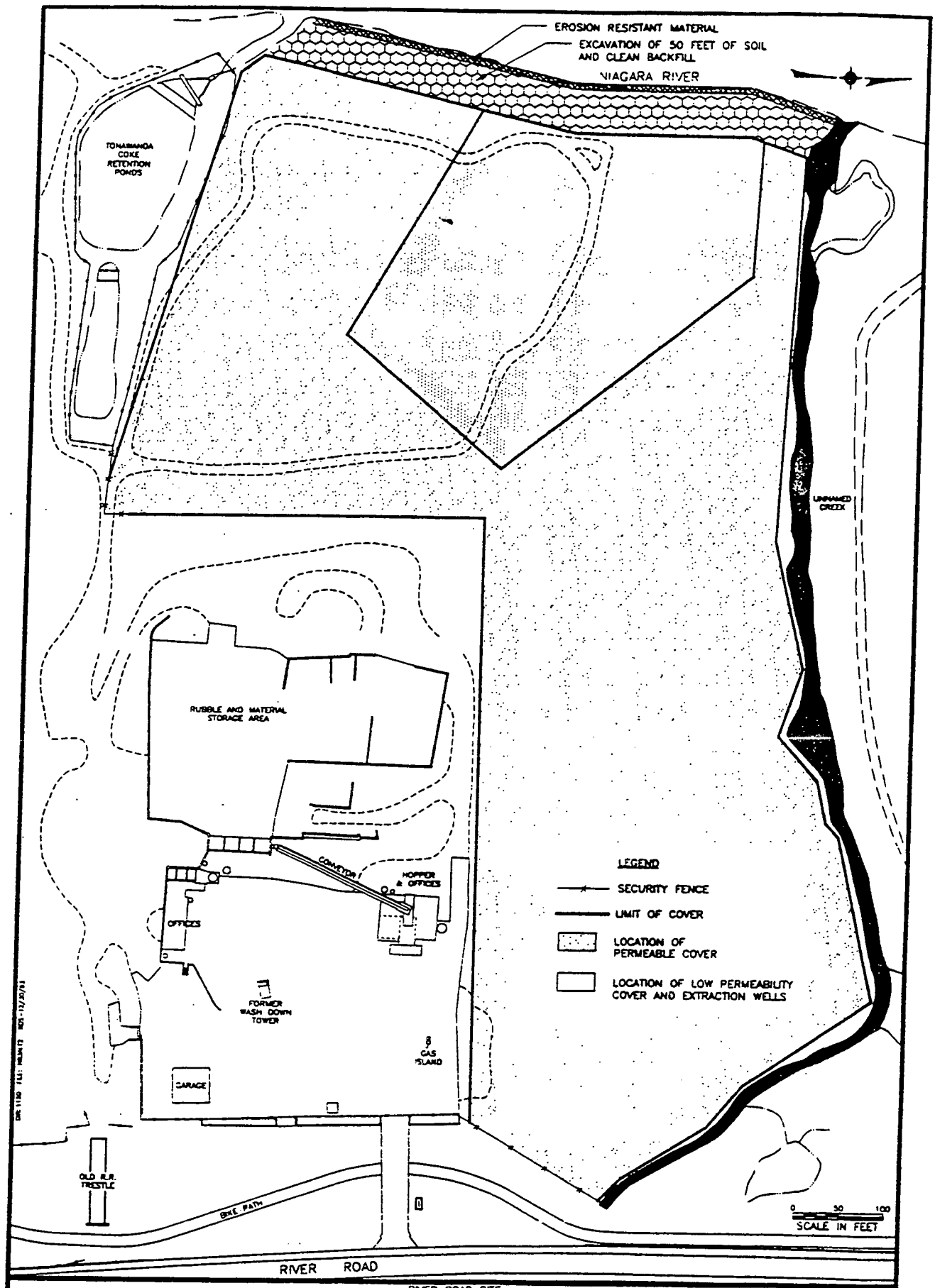
Figure - 6



Dvirka and Bartilucci Consulting Engineers

RIVER ROAD SITE
PHASE III FEASIBILITY STUDY
TONAWANDA, NEW YORK
PHASE II RESULTS OF LIGHT NONAQUEOUS PHASE LIQUID ANALYSIS

Figure - 7



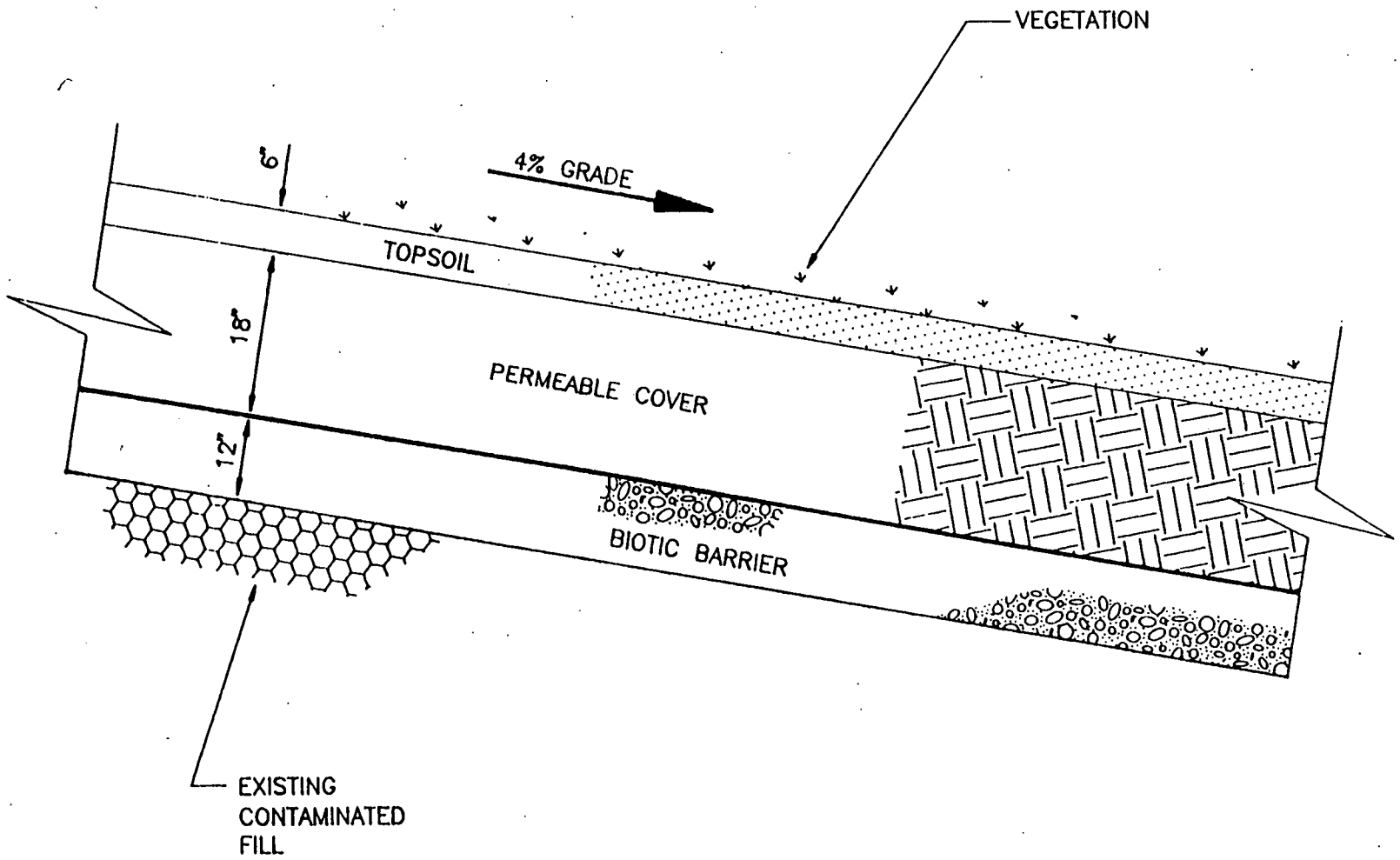
RIVER ROAD SITE
TONAWANDA, NEW YORK
PHASE III FEASIBILITY STUDY

ALTERNATIVE 2

INSTITUTIONAL ACTIONS, LNAPL/GROUNDWATER RECOVERY AND TREATEMENT, PLACEMENT OF PERMEABLE COVER OVER MAJORITY OF SITE AND LOW PERMEABILITY COVER OVER LNAPL AREA, AND EXCAVATION OF SOIL WITHIN 50 FEET OF NIAGARA RIVER AND PLACEMENT OF EROSION RESISTANT MATERIAL ALONG RIVER BANK

Dvirka and Bartilucci Consulting Engineers

Figure - 8



DIRECTORY: 1150
FILE NAME: PERMCOV
DATE: RDS-01/06/94

RIVER ROAD SITE
TONAWANDA, NEW YORK
PHASE III FEASIBILITY STUDY

PERMEABLE COVER SECTION

Figure - 9

Dvirka and Bartilucci
Consulting Engineers

APPENDIX A
RESPONSIVENESS SUMMARY
PROPOSED REMEDIAL ACTION PLAN
RIVER ROAD SITE
SITE No. 9-15-031

The issues addressed below were raised during a public meeting held on February 15, 1994 at the Parkside Village Community Building in Tonawanda, New York. The purpose of the meeting was to present the Proposed Remedial Action Plan (PRAP) for the site and receive comments on the PRAP for consideration during the final selection of a remedy. The public comment period on the PRAP was held from February 2, 1994 to March 4, 1994. The information below summarizes the comments and questions received and the Department's (NYSDEC's) responses to those comments.

The selected remedy addresses the principal threats posed by the site by capping the site and by extracting and treating the contaminated groundwater.

The major elements of the selected remedy include:

- **River bank stabilization** by grading slopes and installing an erosion resistant layer along the shoreline of the Niagara River.
- Additional sampling of **Niagara River sediments** to determine if significant levels of site-related contamination exists in the sediments, and sediment removal by consolidation on-site or disposal off-site, if sediment removal is warranted by additional sampling results.
- **Grading and installation of a clean earth cover** (partly permeable and partly low permeability) over the entire site. The low permeability cover will be installed in the north-west area, where LNAPL was identified.
- Installation and operation of a series of **groundwater extraction wells** to eliminate the discharge of contaminated groundwater and/or LNAPL into the Niagara River. The system will include **recovery and disposal of LNAPL**, and **discharge of groundwater** to the local publicly owned treatment works after any necessary pretreatment.
- Actions needed to obtain **deed restrictions** to prevent activities that would intrude into wastes or otherwise diminish the effectiveness of the remedy.
- Institute **operation and maintenance** (O&M), and **monitoring** program for the site.

The information given below is summarized from the minutes of the February 15, 1994 meeting and written letters received during the comment period. The comments have been grouped into the following categories:

A. Issues Regarding the Proposed Remedy
B. Issues regarding the Protection of Human Health and Environment
C. Issues Regarding Site Contamination & Cleanup Levels
D. General Site Issues
E. Issues raised in Letter from Town of Tonawanda Environmental Commission
F. Issues raised in letter from Ms. Weber
G. Issues raised in letter from Mr. G. Melrose

QUESTIONS/COMMENTS RECEIVED DURING THE PUBLIC MEETING

A. <u>Issues Regarding the Proposed Remedy</u>

Issue A1: How much and to what depth will contaminated material be removed under the proposed remedy? Will the material removed be uniform in depth? Will the site be fenced under the proposed remedy? Will the proposed remedy increase the height of the site by 3 feet?

Response: Approximately 6,000 cubic yards of material from the waste piles and another 8,000 cubic yards of material from river bank will be excavated and consolidated on-site during grading operations under the remedy. The depth of material to be excavated will not be uniform and will depend upon final grading. A partial fence to limit site access is included under this remedy. The site will be graded to achieve designed slopes. This will result in increase and/or decrease in the existing levels at different areas of the site.

Issue A2: How and from what area will the groundwater and the NAPL be collected? How deep is the groundwater in the area of the NAPL? How will capping help problems associated with NAPL?

Response: The contaminated groundwater will be removed from the western portion of the site from upper and intermediate depth zones. The groundwater will be extracted through a series of extraction wells. The extraction system will be designed to reverse the groundwater gradients at the site and prevent/minimize contaminated groundwater at the site from reaching the Niagara River. The NAPL is confined in north-west area of the site. The NAPL depths of 2.3 feet, 1.56 feet and 0.06 feet were observed in wells MW-5S, MW-8S and MW-6S respectively. The extraction

system will be designed to recover NAPL initially to the extent practicable before pumping groundwater. The depth of the water table in the NAPL area is approximately 15 feet. The low permeability cap proposed for the NAPL area will reduce the infiltration of precipitation through residual NAPL, in soil thereby preventing significant contaminant transport to groundwater.

Issue A3: At what rate will groundwater be recovered and how will it be disposed of? Will any pretreatment be required?

Response: It is estimated that approximately thirteen million gallons of contaminated groundwater will be pumped each year. A pump test will be conducted during the design phase to confirm this. The groundwater will be discharged to the local Publicly Owned Treatment Works (POTW). Pretreatment may be required to meet the standards of the local POTW.

Issue A4: After remediation, will there be public access to the site as a park? Why would planting trees on the cap cause problems? What kind of restrictions would there be on various planting? How deep would you be able to dig into the cap to plant things?

Response: Presently, there is no proposal to develop the site into a park. To maintain the integrity of the cap, access to the site will be restricted. Deep rooted trees/plants can damage the cap and will be restricted. Generally, digging into the cap will not be allowed unless approved.

Issue A5: Will pumping allow migration of contaminated groundwater between Cherry Farm and River Road sites and result in cross contamination?

Response: The main objective of the groundwater extraction system at both these sites is to reverse groundwater gradients and prevent contaminated groundwater from reaching the Niagara River. For this reason most of the extraction wells will be located along the bank of the river. With a properly designed extraction system, migration of groundwater between the two sites will be minimal.

Issue A6: Will any on-site treatment of the waste be required?

Response: The proposed remedy does not include any on-site treatment of the waste material. The groundwater may be subject to pretreatment depending upon local Public Owned Treatment Works (POTW) requirements. It is proposed to send the the NAPL off-site for disposal.

Issue A7: Is the O&M cost included in the cost of the remedy?

Response: The total estimated cost of the proposed remedy is $5,446,000. This cost consists of a capital cost in the amount of $3,145,000 and a present worth of all the O&M cost in the amount of $2,301,000. The present worth of the O&M cost is based on the assumption that NAPL removal will continue for two years, groundwater extraction and treatment will continue for 15 years and routine maintenance will continue for a period of 30 years.

B. Issues Regarding Protection of Human Health & Environment

Issue B1: What type of dangers are posed by the River Road site to humans?

Response: Contaminants present in the soil at the River Road site suggests that chronic exposure to exposed surficial soils at the site may pose an unacceptable health risk.

C. Issues Regarding Contaminants and Cleanup Levels

Issue C1: How deep and how thick is the layer of NAPL below the ground? What is happening to the layer of the NAPL at this time? What is the source of NAPL?

Response: The NAPL was discovered in 3 wells in the north-west area of the site about 15 feet below the ground surface. For thickness of NAPL, see response to issue A2 above. The NAPL encountered at this site is light in nature, meaning that it is floating on the water table. Some fraction of the NAPL has the potential to dissolve in the groundwater over time and may find its way to the Niagara River. The NAPL appears to be the result of past waste oil disposal practices at the site.

Issue C2: How is this site different from the Cherry Farm site? The analytical results of the surface soil samples collected from the adjoining Cherry Farm site did not exceed the guidance values. Is the situation the same for the River Road site?

Response: A comparison of the River Road site with adjoining Cherry Farm (CF) site was made and is presented in section 4.4 of the RI report. The bulk of the wastes at the two sites appears to be similar in nature. The main difference appears to be the presence of NAPL at the River Road site. Niagara Mohawk Power Corporation (NMPC) purchased the Cherry Farm site from CF&I in 1970 and covered the exposed foundry sand with approximately six inches of clean fill to prevent wind erosion and reduce human exposure. For this reason the analytical results

of the surface soil samples collected from CF site did not exceed the guidance values. The analytical results of the surface soil samples collected from the River Road site exceeded the guidance values at several places. It should be noted that there is no clean soil cover at the River Road site. Presently, the CF site is used for recreational purposes by NMPC.

Issue C3: How do the results of the 1980 and mid 1980's water studies for this site compare to the current data? Has the level of contamination gone down or gotten worse since the early studies?

Response: Between 1980 and the mid-1980's, groundwater samples were analyzed for limited parameters from a few wells. The results are given in Section IV of the Phase II report. Twenty six wells were sampled for groundwater quality in 1992 as a part of the RI. The results of this investigation are given in section 4 of the RI report. Only four metals (mercury, lead, cadmium and chromium) were tested during 1985-86 studies and none were detected in that study. Lead, thallium and antimony were detected in 1992 groundwater sampling above NYSDEC class GA groundwater standards. The phenols were detected at lower concentration in wells B-3 and B-5 during 1992 sampling event as compared to 1985-86 sampling event. Benzene was detected during 1985-86 sampling, but was not detected during 1992 sampling. Additional organics were detected in newly installed wells (particularly in the NAPL area) during 1992 groundwater sampling event.

Issue C4: How much of the eastern portion of the site is contaminated? How deep is the subsurface contamination?

Response The eastern portion of the site immediately north of the Clarence Materials property is approximately 350'x700' in size. The surface contamination on this portion of the site was limited to a small area close to the creek. However, most of the subsurface soil in the area is contaminated. The thickness of the waste material is about seven feet. The volume of the waste material in the eastern portion of the site is estimated to be approximately 70,000 cubic yards. PAHs, CPAHs, VOCs, PCBs and lead were found above background values or soil guidance values in subsurface soils in the eastern portion of the site. A slag layer exists below the waste material.

D. General Site Issues

Issue D1: What is the size of the site?

Response: The site is approximately 23 acres in size including Clarence Materials active plant area of approximately six acres.

Issue D2: Was any investigation done at the Clarence Materials property? Is there the possibility of future construction requiring deeper foundations on the Clarence Materials property?

Response: The only investigation done at the Clarence Material property was to analyze a groundwater sample from a private well located on the property. The groundwater analysis indicated low levels of contamination. This well is recommended for closure. Any future construction on this property will require close monitoring and may include a preconstruction investigation for suitability, handling of excavated material, and health and safety.

Issue D3: Will there be any deed restrictions for this site in the ROD? What is meant by deed restrictions being part of negotiations? What are some examples of deed restrictions? Where will the issue of deed restrictions be addressed?

Response: NYSDEC does not have the direct authority to impose deed restrictions but has control over the new use of sites under 6 NYCRR Part 375-1.6. Examples of appropriate restrictions may include prohibitions against any activities that would intrude into waste or contaminated soil or would otherwise diminish the effectiveness of the remedy. Deed restrictions are intended to prohibit site activities such as construction of foundations or regrading of the property which could jeopardize the integrity of remediation controls and allow potential exposure to site contaminants. Deed restriction would also include prohibition against installation of wells and use of site groundwater. The NYSDEC will negotiate with the property owners to obtain appropriate restrictions. Care will be taken to avoid unnecessary restrictions that would inhibit future use of the site.

Issue D4: Will the potential future land use be known in advance? Will the proposed remediation preclude major construction? Will post closure uses include only those uses that don't invade the cap? How deep can a building foundation be under the proposed remedy? Will the ROD include a discussion of future land uses for each area of the site?

Response: A discussion of the potential future land use for each area of the site will not be included in the ROD. The

main concern at the site is the direct contact with the exposed waste at the site. For this reason the proposed remedy includes installation of a clean earth cover (permeable) over the entire site except for the NAPL area where a low permeability cover is proposed. Limited future land use like a park, parking areas, above grade buildings with shallow foundations etc. may be possible with some restrictions. Any proposed future land use will have to be evaluated on a case by case basis.

Issue D5: Who are the PRP's? What constitutes a PRP? Is General Motors one of the PRP's?

Response: All current owners, operators and past generators, haulers etc. are considered potentially responsible parties. Clarence Materials, L. M. Duggan, and Niagara River World are the current owners of the site. Allied Signal, TRW Inc., Consolidated Rail Corporation, and General Motors being past generators and/or haulers, are also considered PRPs.

Issue D6: What is the cost of the RI/FS? How much did the PRPs pay?

Response: The contractual cost of the Phase I/Phase II RI/FS is approximately $460,000 not including State oversight expenses. The RI/FS was conducted using State Superfund money. Some of the PRPs identified in response D5 above have agreed to pay part of the Phase I RI/FS expense, amounting to $130,025 under the terms of a September 1992 consent order.

Issue D7: What is the likelihood that the PRPs will take over the cost for the reminder of this remediation? Has there been, or will there be, a proportional division of the cost assessed against each PRP?

Response: Once the ROD is signed, the Department will again give the PRPs an opportunity to remediate the site. If within a reasonable period of time the PRPs do not consent to the remediation of the site, steps will be taken to remediate the with state superfund money. After the remediation, further necessary steps will be taken for cost recovery from the PRPs. If the PRPs agree to remediate the site, the state will enter into an order on consent with the PRP(s) for the remedial design and construction. Any division of the costs will have to be worked out among PRPs themselves.

Issue D8: What is the source of funds if the PRPs don't do, or pay, for the remediation? Will those funds be available?

Response: If the PRPs do not agree to remediate the site or contribute towards it's cleanup, the NYSDEC will remediate the site using the State Superfund money.

Issue D9: What is the current construction schedule? Can the various Town of Tonawanda agencies help in expediting this remediation process?

Response: The ROD is expected to be signed during March 1994. It generally takes 3 to 6 months to negotiate for remediation of the site with the PRPs. The design process will take about one year. The construction will take another year to complete. The Town of Tonawanda agencies can be helpful in expediting the approval of the discharge of the groundwater to the local POTW.

Issue D10 Are the coke settling ponds on the site? What are they used for? Do the coke settling ponds discharge directly into the Niagara River?

Response: Tonawanda Coke owns and operates two settling ponds located along the southern boundry of the site in the south-western quadrant. The ponds are used to settle coke fines from their coke operation prior to release to the Niagara River under a State Pollutant Discharge Elimination System (SPDES) permit.

Issue D11 Is the creek considered a wetland?

Response: Wetland BW-8 is a NYSDEC regulated wetland located along the northern boundry of the site. A portion of the creek running along the northern boundry of the River Road site is a part of this wetland.

Issue D12 Is there any possibility that both Cherry Farm and River Road sites can be remediated at the same time?

Response: The Cherry Farm site will be remediated by a group of PRPs under the terms of a consent order. The consent order for the Cherry Farm site is at the final stage of negotiations. The negotiations for the River Road site can begin in earnest only after the remedy is selected. Still, it is possible that both sites can be remediated at the same time.

QUESTIONS/COMMENTS RAISED IN WRITTEN LETTERS

E. <u>Letter Dated 2/12/94 Received from Mr. George B. Melrose</u>

The following comments were submitted to the department (NYSDEC) in a letter received from Mr. George B. Melrose, CAC Chairman, Town of Tonawanda.

Issue E1: What physical construction is proposed at the site? Will uses of the shore and/or inland be restricted in any way after closure? If so, how? Have any post closure uses been identified?

Response: The major elements of the remedy are listed on page 1 of this responsiveness summary. The physical construction will include installation of a capping system, stabilization of river bank, and installation of extraction wells. A pretreatment building to treat the contaminated groundwater may be built, if needed. See response to issue D4 for future land use.

Issue E2: Is handling of extracted groundwater by the Town acceptable to the Town regarding composition and quantity? To our knowledge Mr. Evans, Town treatment official, has not been contacted.

Response: Town officials were contacted by our consultant on several occasions (08/25/93, 10/01/93 and 11/29/93) regarding disposal of the groundwater (with pretreatment if necessary) from the River Road site to the town sewer system. We were told that the Town of Tonawanda treatment plant has the capacity to handle the groundwater from the River Road site, and will accept the discharge if treatment plant standards are met. The estimated quantity of the discharge is approximately thirteen million gallons per year. The cost figures were also discussed and were considered in preparing the cost estimates of various alternatives.

Issue E3: The quoted schedule indicates completion of construction in 1996. Is that attainable? Are any actions by the town or the Environment Commission desirable or necessary to effect remediation?

Response: See response to issue D9 above.

Issue E4: Did PRPs pay for the RI/FS? If not, how funded? Is it likely that PRPs will pay for Design and Construction? If not, what is the source and availability of funds?

Response: See response to items D6, D7 and D8 above.

F. Letter Received from Ms. Jennifer Weber

The following comments were submitted to the department (NYSDEC) in a letter received from Ms. Jennifer Weber, of Williamsville, New York.

Issue F1: Ms. Weber supports the proposal and states that the proposed plan to stabilize the river bank and install a soil cover to protect the area along the River Road is a very good idea. She further states that two years specified for the remediation of the site is a long time, the remediation should be done as soon as possible.

Response: No response is needed. Please refer to the response above under item D9 for construction schedule.

G. Letter of March 3, 1994 Received from Mr. George B. Melrose

Issue G1: Primary emphasis should be place on the future productive uses of this attractive and valuable waterfront resource. Such uses, with full recognition of health issues, should be the cornerstone upon which the remedial program is based.

Response: Alternative 2 makes use of a permeable cap. A permeable cap can be installed with a slope less than 4% (a minimum slope of 4% is required for a low permeability cap). Therefore, proposed alternative 2 offers greater potential for future productive use of the site. Also see response to item D4 above.

Issue G2: The delisting or elimination of deed restrictions on the eastern half of the site (including Clarence Materials) should be examined thus making it suitable for construction of residential or commercial buildings.

Response: Construction of any residential buildings on the site is not recommended since the waste material will remain on site. See response to items D3 & D4 above.

Issue G3: The shoreline of this site is most valuable and plans for public access include a waterfront trail, fishing and boating. The conduct of remediation in a manner permissive of these activities should receive major attention. Modification of the rip rap slope is suggested.

Response: The Remedial Action Plan (RAP) for the Niagara River recommends a 50 feet setback for public access to the shoreline wherever possible or a smaller setback where 50 feet is unreasonable. Therefore, a 50 feet pull back of the shoreline to the extent practicable and slope stabilization has been recommended under the proposed remedy. The shoreline at the River Road site contains very large blocks of hard slag like material and/or rocks which may restrict the 50 feet setback.

Issue G4: There was talk at the public meeting of restricting construction of foundations on the permeable compacted soil portion of the remediated site. We offer that such restrictions appear insupportable and that footings and piling necessary to permit substantial structures should be allowed. Inhabited basements could be restricted. The use of slab and other above-frost-line foundations are costly and severely limit effective usage.

Response: Potential future use of the site is possible under the proposed remedy. However, some restriction may apply and any proposed future use of the site will need to be evaluated on a case-by-case basis.

Issue G5: The $7.6 million remedial cost estimate appears high for this 23 acre site when compared to the similar figure for the 55 acre adjacent Cherry Farm site which has similar contaminants. Are some of the remediation methods use for the revised Cherry Farm ROD applicable - at lower cost?

Response: The total estimated cost of the proposed remedy (alternative 2) for the River Road site is $ 5,446,000. This estimate consists of $3,145,000 for capital cost and $2,301,000 for the O&M cost as a present worth. The total estimated cost of the amended Cherry Farm remedy is $8,000,000 consisting of $6,000,000 in capital cost and $150,000 per year in O&M costs. The estimate for the Cherry Farm site was provided by the PRPs. The capital cost figures for the two sites appear to be comparable. The River Road site includes remediation for the NAPL. The estimate for O&M for the Cherry Farm site may be low.

Issue G6: The possibility of disposition of extracted fluids to the Town STP should be reviewed with the Town treatment official, Charles Evans, regarding necessary pre-treatment, composition, quantities and costs.

Response: See response to item E2 above.

Issue G7: Emphasis should be placed in the Design Phase that remediation be physically conducted to accommodate future development with regard to topography, shoreline treatment, and the location and installation of extraction wells/piping/etc.

Response: Design of the proposed remedy will take into consideration the potential future use of the site, to the extent practicable.

APPENDIX B
ADMINISTRATIVE RECORD INDEX
RIVER ROAD SITE
SITE ID NUMBER 9-15-031

1. **Orders On Consent**

   a. Order On Consent No. B9-0046-84-10 signed September 15, 1992.

2. **Investigation Reports**

   a. "Groundwater Study of Lake Erie Rolling Mill Inc.; prepared by Troutman Associates, October 1980.

   b. "Roblin Steel Company Phase I Report - September 6, 1983, prepared by RECRA Research Inc., for NYSDEC. The Report covers the River Road Site.

   c. "Phase I Report - INS Equipment Site, Erie County, New York (Now River Road Site) September 1984, prepared by Engineering-Science for NYSDEC.

   d. "Phase II Investigation Report - INS Equipment Site (Now River Road Site), Erie County, New York, September 1986, prepared by Engineering-Science for NYSDEC.

   e. "Phase I/Phase II Remedial Investigation Report, Qualitative Health Risk Assessment and Preliminary Feasibility Study Report" for the River Road Site Volume I and II", Dated September 1993, prepared by Consulting Engineers Dvirka and Bartilucci, for NYSDEC.

   f. "Preliminary Evaluation of Chemical Migration to Groundwater and Niagara River from selected waste disposal sites - Pages 243 through 247 - Soil Sampling Program August 1982" prepared by U.S.Geological Survey in cooperation with NYSDEC for the USEPA.

3. **Community Relations**

   a. "Citizen Participation Plan River Road Site, Site no. 9-15-031, Erie County, New York" issued July 1993, prepared by NYSDEC.

b. Site Information Sheet River Road Site, issued March, 1992, prepared by NYSDEC.

c. Site Information Sheet River Road Site, issued August 1993, prepared by NYSDEC.

4. **Miscellaneous Reports and Correspondences**

a. "Remedial Investigation and Feasibility Study - Work Plan" River Road Site, dated January 1992, prepared by Consulting Engineers Dvirka and Bartilucci, for NYSDEC.

b. "Work Plan Addendum I, dated December 1992 and Work Plan Addendum II, dated September 1993 for the River Road Site", prepared by Dvirka and Bartilucci.

5. **Feasibility Study Report**

a. "Phase III Feasibility Study Report for the River Road Site" dated January 1994, prepared by Consulting Engineers Dvirka and Bartilucci, for NYSDEC.

6. **Proposed Plan**

a. "Proposed Remedial Action Plan for the River Road Site," dated January 1994, prepared by NYSDEC.

b. Public Notice of the availability of the administrative records, Public meeting, and of the opportunity to comment on the Proposed Plan, dated January 28, 1994.

c. Responsiveness Summary, included as Appendix A of the Record of Decision.

Note: Literatures, guidance documents and correspondence referenced in various documents mentioned above are part of the Administrative Records.

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the
Development and Implementation
of a Joint Remedial Program for
Inactive Hazardous Waste Disposal
Sites, Under Article 27, Title 13,
and Article 71, Title 27 of the
Environmental Conservation Law
of the State of New York
by

THE PARTIES SET FORTH IN
APPENDIX "C"

Respondents.

ORDER
ON
CONSENT
INDEX # B9-0046-84-10
B9-0047-91-02

Site Codes #915063
and #915031

WHEREAS,

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of Article 27, Title 13 of the Environmental Conservation Law of the State of New York ("ECL"), entitled "Inactive Hazardous Waste Disposal Sites." This Order is entered into pursuant to the Department's authority under ECL Article 27, Title 13 and ECL 3-0301.

2. Certain of the Respondents ("Cherry Farm Respondents") are among the corporations or individuals which the Department alleges to be potentially responsible parties with respect to certain contamination which exists at a Site near 4000 River Road in the Town of Tonawanda, Erie County, New York, known as the Niagara Mohawk-Cherry Farm Site (the "Cherry Farm Site"). The Cherry Farm Site is further defined in the Site plan attached hereto as Appendix "A". A list of the Respondents to

Jack,

Executed Order for file.

River Rd./Cherry Farm.

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this Order is attached hereto as Appendix "C".

3. Certain of the Respondents ("River Road Respondents") are among the corporations or individuals which the Department alleges to be potentially responsible parties with respect to certain contamination which exists at a Site on River Road in the Town of Tonawanda, Erie County, New York known as the River Road Site (the "River Road Site"). The River Road Site is further defined in the Site Plan attached hereto as Appendix "B". A list of the Respondents to this Order is attached hereto as Appendix "C".

4. The Department alleges that each Site is an "inactive hazardous waste disposal Site," as that term is defined at ECL 27-1301.2, and presents a significant threat to the public health or environment. The Cherry Farm Site has been listed by the Department in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 915063. The River Road Site has been listed by the Department in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 915031. The Department has classified each Site as a Classification "2" pursuant to ECL 27-1305.4.b.

5. A. Pursuant to ECL 27-1313.3.a, whenever the Commissioner of Environmental Conservation (the "Commissioner") "finds that hazardous wastes at an inactive hazardous waste disposal site constitute a significant threat to the environment, he may order the owner of such site and/or any person responsible for the disposal of hazardous wastes at such

site (i) to develop an inactive hazardous waste disposal site remedial program, subject to the approval of the Department, at such site, and (ii) to implement such program within reasonable time limits specified in the order."

B. Any person under order pursuant to ECL 27-1313.3.a has a duty imposed by ECL Article 27, Title 13 to carry out the remedial program committed to under order. ECL 71-2705 provides that any person who fails to perform any duty imposed by ECL Article 27, Title 13 shall be liable for civil, administrative and/or criminal sanctions.

C. The Department also has the power, inter alia, to provide for the prevention and abatement of all water, land, and air pollution. See ECL 3-0301.1.i.

6. Cherry Farm Respondent Niagara Mohawk Power Corporation developed and implemented a Remedial Investigation and Feasibility Study for this Site pursuant to an Order on Consent executed by the Commissioner on April 27, 1988.

7. The Department selected a final remedial alternative for the Cherry Farm Site in a Record of Decision dated February 15, 1991. Following a period of public comment an Amended Record of Decision was signed by the Commissioner on October 7, 1993. The Amended Record of Decision which incorporates the February 15, 1991 Record of Decision is attached to and incorporated into this Order as Appendix "D" and shall be referred to in this Order as the " Cherry Farm ROD".

8. The Department selected a final remedial alternative

for the River Road Site in a Record of Decision dated March 24, 1994. This Record of Decision is attached to and incorporated into this Order as Appendix "E" and shall be referred to in this Order as the "River Road ROD."

9. The Respondents have prepared, and the Department has approved, the Scope of Work ("SOW") for the joint remedial program for both the Cherry Farm and River Road Sites which is attached to and incorporated into this Order as Appendix "F".

10. The Department, the Cherry Farm Respondents and the River Road Respondents agree that the goals of this Order are for Respondents to (i) develop and implement, in accordance with the RODs and the SOW, a joint inactive hazardous waste disposal site remedial program ("Remedial Program") for the Sites that shall include design and implementation, and operation, maintenance and monitoring of the remedial alternative specified in the RODs and SOW; and (ii) reimburse the Department's past and future administrative costs as limited by Paragraph VIII of this Order.

11. Respondents, without the admission of any liability or of the veracity of any of the facts alleged herein, having waived Respondents' right to a hearing herein as provided by law, and having consented to the issuance and entry of this Order, agree to be bound by its terms. Respondents consent to and agree not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and agree not to contest the validity of this Order or its terms.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. Within 60 days after the effective date of this Order, Respondents shall submit to the Department all data within their possession or control regarding environmental conditions on-Site and off-Site (to the extent off-Site conditions may be causally related to the on-Site disposal of hazardous waste at the Cherry Farm or River Road Site) to the extent that such data has not previously been provided to, or is not otherwise in the possession or control of, the Department.

Pursuant to applicable State laws and regulations, any Respondent may assert a confidentiality claim with respect to data required to be submitted pursuant to this Paragraph. In documents that are protected by attorney client privilege, are considered to be attorney work-product, or are otherwise protected by privilege, Respondents are hereby required to provide only technical information related to the Site. Where such information is contained in a document containing other material, provision of such information shall not be construed to waive any applicable disclosure exemption privilege that may exist with respect to such other material.

II. Remedial Design Contents

A. Within 45 days or less, after the effective date of this Order Respondents shall submit a work plan which addresses both Sites (the "Workplan") to the Department to implement the Remedial Program as identified in the RODs and the

SOW. The Workplan shall include a schedule for all future deliverables under this Order.

B. In accordance with the schedule set forth in the Work plan and the SOW, Respondents shall submit to the Department a joint remedial design to implement the Remedial Program for the Sites as set forth in the RODs and the SOW (the "Remedial Design"). The Remedial Design shall be prepared by and have the signature and seal of a professional engineer who shall certify that the Remedial Design was prepared in accordance with this Order.

C. The Remedial Design shall include the following:

1. A detailed description of the remedial objectives and goals and the means by which each essential element of the Remedial Program will be implemented to achieve those objectives and goals consistent with the RODs and the SOW, including, but not limited to:

a. the construction and operation of any structures;

b. the collection, destruction, treatment, and/or disposal of hazardous wastes and substances and their constituents and degradation products, and of any soil, sediments in drainage channels at the site or other materials contaminated thereby;

c. the collection, destruction, treatment, and/or disposal of contaminated groundwater, leachate, and air;

d. physical security and posting of the

Site;

e. health and safety of persons living and/or working at or in the vicinity of the Sites;

f. quality control and quality assurance procedures and protocols to be applied during implementation of the Remedial Design; and

g. monitoring requirements during implementation of the Remedial Program.

2. "Biddable Quality" documents for the Remedial Design including, but not limited to, documents and specifications prepared, signed, and sealed by a professional engineer. These plans shall satisfy all applicable local, state and federal laws, rules and regulations;

3. A time schedule to implement the Remedial Design;

4. The parameters, conditions, procedures, and protocols to determine the effectiveness of the Remedial Design, including a schedule for periodic sampling of groundwater monitoring wells as may be required on-Site and off-Site;

5. A description of operation, maintenance, and monitoring activities to be undertaken after the Department has approved construction of the Remedial Design, including the number of years during which such activities will be performed;

6. A joint contingency plan describing organized, planned, and technically coordinated courses of action to be followed in case of emergency or other special

conditions, including but not limited to equipment breakdowns, fire, odor, explosion, spills, receipt or release of hazardous or toxic materials or substances, and other incidents that could threaten human health or safety or the environment;

7. A joint health and safety plan for the protection of persons at and in the vicinity of the Sites during construction and after completion of construction. This plan shall be prepared in accordance with 29 CFR 1910 by a certified health and safety professional; and

8. A joint citizen participation plan which incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, any subsequent revisions thereto, and 6 NYCRR Part 375.

III. Remedial Design Construction and Reporting

A. Within 30 days of the Department's approval of the Remedial Design, Respondents shall solicit bids for the implementation of the Remedial Design for the Sites.

B. Within 90 days of the Department's approval of the Remedial Design, Respondents shall award the construction contract. Respondents shall commence construction of the Remedial Design in accordance with the schedule in the Workplan and the Remedial Design.

C. Respondents shall implement the Remedial Design in accordance with the Department-approved Remedial Design.

D. During field activities associated with the

implementation of all construction activities identified in the Remedial Design, Respondents shall have on the Sites a full-time representative who is qualified to supervise the work done. Such representative may be an employee of a consultant or a contractor.

E. In the event during field activities at a Site a condition is discovered which poses a threat to human health or the environment, the Department may seek to require that Respondents for that Site modify the Scope of the Remedial Design and Remedial Construction to address the condition.

F. Within 60 days after completion of the construction activities identified in the Remedial Design, Respondents shall submit to the Department a detailed joint post-remedial operation and maintenance plan ("O & M Plan"); "as-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and a certification by a professional engineer that the Remedial Design was implemented and all construction activities were completed in accordance with the Department-approved Remedial Design. The O & M Plan, "as built" drawings, final engineering report, and certification must be prepared, signed, and sealed by a professional engineer.

G. Upon the Department's approval of the O & M Plan, Respondents shall implement the O & M Plan in accordance with the requirements of the Department-approved O & M Plan.

H. After receipt of the "as-built" drawings, final

engineering report, and certification, the Department shall notify Respondents in writing whether the Department is satisfied that all construction activities have been completed in accordance with the approved Remedial Design.

I. If the Department determines that all construction activities at a Site have not been completed in accordance with the approved Remedial Design, Respondents for that Site shall be in violation of this Order and the ECL.

J. If the Department concludes (1) that any element of the Remedial Program at a Site fails to achieve the remedial objectives or goals set forth in the ROD for the site or otherwise fails to protect human health or the environment; or (2) that further actions are necessary to address Niagara River sediments which have been studied pursuant to this Order, the Department may seek to require Respondents for either or both sites, depending on the applicability of the Department's conclusions, to take whatever action the Department determines necessary to achieve those objectives or goals, to ensure that the Remedial Program otherwise protects human health and the environment, or to address sediments in the Niagara River which have been studied pursuant to this Order.

IV. Progress Reports

During the pendency of construction activities Respondents shall submit to the parties set forth in paragraph XII copies of joint written monthly progress reports that: (i) describe the actions which have been taken toward achieving

compliance with this Order during the previous month; (ii) include all results of sampling and tests and all other data received or generated by Respondents or Respondents' contractors or agents in the previous month, as may be required by the Department, including quality assurance/quality control information; (iii) identify all work plans, reports, and other deliverables required by this Order that were completed and submitted during the previous month; (iv) describe all actions, including, but not limited to, data collection and implementation of work plans, that are scheduled for the next month and provide other information relating to the progress at the Sites; (v) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Respondents' obligations under the Order, and efforts made to mitigate those delays or anticipated delays; (vi) include any modifications to any work plans that Respondents have proposed to the Department or that the Department has approved; and (vii) describe all activities undertaken in support of the Citizen Participation Plan during the previous month and those to be undertaken in the next month. Respondents shall submit these progress reports to the Department by the fifteenth day of every month following the commencement of on-Site activities.

V. Review of Submittals

A. (1) The Department shall review each of the submittals Respondents make pursuant to this Order to determine

whether it was prepared, and whether the work done to generate the data and other information in the submittal was done, in accordance with this Order and generally accepted technical and scientific principles. The Department shall notify Respondents in writing of its approval or disapproval of the submittal, except for the submittals discussed in Paragraphs II.C.(7) and IV. All Department-approved submittals shall be incorporated into and become an enforceable part of this Order.

(2) (a) If the Department disapproves a submittal, it shall so notify Respondents in writing and shall specify the reasons for its disapproval. Within 30 days after receiving written notice that Respondents' submittal has been disapproved, or within such further time as the Department may provide, Respondents shall make a revised submittal to the Department that addresses all of the Department's stated reasons for disapproving the first submittal.

(b) After receipt of the revised submittal, the Department shall notify Respondents in writing of its approval or disapproval. If the Department disapproves the revised submittal, Respondents shall be in violation of this Order and the Department may take any action or pursue whatever rights it has pursuant to any provision of statutory or common law. If any disapproval of a revised submittal is based upon conditions existing at one of the two Sites, or is based upon any action or inaction on the part of the Respondents in connection with one of the Sites, then Respondents for the other

Site shall not be in violation of this Order. Such disapproval by the Department shall be considered final agency action for purposes of Article 78 of the CPLR. If the Department approves the revised submittal, it shall be incorporated into and become an enforceable part of this Order.

B. The Department may seek to require Respondents for a Site to modify and/or amplify and expand a submittal if the Department determines, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that further work at a Site is necessary.

VI. Penalties

A. Respondents' failure to comply with any term of this Order constitutes a violation of this Order and the ECL. A Respondent shall only be liable for any failure to comply which relates to the Site for which the Department alleges that Respondent to be a potentially responsible party.

B. Respondents shall not suffer any penalty under this Order or be subject to any proceeding or action if Respondents cannot comply with any requirement hereof because of war, riot, or other causes which are beyond the reasonable control of Respondents and which the exercise of ordinary human prudence could not have prevented. Respondents shall, within five business days of when they obtain knowledge of any such condition, notify the Department in writing. Respondents shall include in such notice the measures taken and to be taken by

Respondents to prevent or minimize any delays and shall request an appropriate extension or modification of this Order. Failure to give such notice within such five-day period constitutes a waiver of any claim that a delay is not subject to penalties. Respondents shall have the burden of proving that an event is a defense to compliance with this Order.

VII. Entry upon Site

A. Respondent Niagara Mohawk Power Corporation hereby consents to the entry upon the Cherry Farm Site or areas in the vicinity of the Site which may be under the control of Niagara Mohawk Power Corporation by any duly designated employee, consultant, contractor, or agent of the Department or any State agency for purposes of inspection, sampling, and testing and to ensure Respondents' compliance with this Order.

B. River Road Respondents, to the extent they are a party to this Order, hereby consent to the entry upon the River Road Site or areas in the vicinity of the River Road Site which may be under their control by any duly designated employee, consultant, contractor or agent of the Department or any State agency for purposes of inspection, sampling and testing and to ensure Respondents' compliance with this Order.

C. Respondents shall provide the Department, during the time on-Site offices are maintained by Respondents, with suitable office space at the Site, including access to a telephone, and shall permit the Department full access to all records relating to implementation of the Remedial Program.

Respondents also shall allow the Department to attend, and shall provide the Department at least seven days advance notice of, any of the following: prebid meetings, formal and/or regularly scheduled job progress meetings, substantial completion meeting and inspection, and final inspection and meeting.

VIII. Payment of State Costs

A. Within 60 days of the effective date of this Order, Respondents shall make payment to the Department in the amount of $649,074.00 which represents the past response costs incurred by the State of New York up to December 15, 1993, for the Sites. These costs are itemized as set forth in subparagraph VIII.B. Payment shall be made in the manner as set forth below.

B. Thereafter, the Department will periodically submit itemized invoices to Respondents and within 60 days after receipt of an itemized invoice from the Department, Respondents shall pay to the Department a sum of money which shall represent reimbursement for the State's expenses incurred negotiating this Order, reviewing and revising submittals made pursuant to this Order, overseeing activities conducted pursuant to this Order, collecting and analyzing samples, and administrative costs associated with this Order. Such reimbursements pursuant to subparagraph VIII.B., in total, shall not exceed $300,000. Such payment shall be made by certified check payable to the Department of Environmental Conservation. Payment shall be sent to the Bureau of Program Management, Division of Hazardous Waste

Remediation, N.Y.S.D.E.C., 50 Wolf Road, Albany, NY 12233-7010. Itemization of the costs shall include an accounting of personal services indicating the employee name, title, biweekly salary, and time spent (in hours) on the project during the billing period, as identified by an assigned time and activity code. This information shall be documented by quarterly reports of Direct Personal Service. Approved agency fringe benefit and indirect cost rates shall be applied. Non-personal service costs shall be summarized by category of expense (e.g., supplies, materials, travel, contractual) and shall be documented by the New York State Office of the State Comptroller's quarterly expenditure reports.

C. If the Department concludes that the total sum of money paid pursuant to this Paragraph VIII is insufficient to reimburse the State's costs, the Department may, at its option, in a separate proceeding, seek to recover additional reimbursement.

IX. Department Reservation of Rights

A. Except as provided in this Order, nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's rights including, but not limited to nor exemplified by, the following:

1. the Department's right to bring any action or proceeding against anyone other than Respondents and/or any of Respondents' successors and assigns;

2. the Department's right to enforce this Order against Respondents and/or any of Respondents' successors and assigns if Respondents fail to satisfy any of the terms of this Order; or

3. the Department's right to bring any action or proceeding against Respondents and/or any of Respondents' successors and assigns with respect to claims for natural resources damages as a result of the release or threatened release of hazardous substances or constituents at or from the Sites;

4. the Department's right to gather information and enter and inspect property and premises.

B. If, after review, the Department accepts and approves the engineer's certification that construction of the Remedial Program was completed in accordance with the approved Remedial Design, then, unless a supplementary remedial program is determined to be necessary by the Department pursuant to Paragraph II.C.6, or determined to be necessary by the Department pursuant to Paragraph III.E, III. J and/or V.B, and except for the provisions of subparagraphs A and C of Paragraph IX, and the provisions of paragraph X; and except for the future Operation and Maintenance of the Sites, reimbursement of Department expenditures in accordance with Paragraph VIII, and any Natural Resource Damage claims that may arise, such acceptance shall constitute a release for each and every claim, demand, remedy or action whatsoever against Respondents, their

successors and assigns, which the Department has or may have pursuant to Article 27, Title 13 of the ECL, CERCLA, or otherwise, relative to or arising from the disposal of hazardous wastes at the Sites; provided, however, that the Department specifically reserves all of its rights concerning, and any such release and satisfaction shall not extend to, any investigation or remediation the Department deems necessary due to:

(1) environmental conditions on-site or off-site which are related to the disposal of hazardous wastes at the Sites and were unknown to the Department at the time of its approval of the Remedial Design; or

(2) information received, in whole or in part, after the Department's approval of the Remedial Design,

and such unknown environmental conditions or information indicates that the Remedial Program is not protective of human health or the environment. The Department shall notify the Respondent of such environmental conditions or information and its basis for determining that the Remedial Program is not protective of human health and the environment.

This release shall inure only to the benefit of Respondents, their successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone

other than Respondents, their successors and assigns.

C. Nothing contained in this Order shall be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers.

X. Indemnification

Respondents shall indemnify and hold the Department, the State of New York, and their representatives and employees harmless for all claims, suits, actions, damages, and costs of every name and description arising out of or resulting from the fulfillment or attempted fulfillment of this Order by Respondents, and/or Respondents' directors, officers, employees, servants, agents, successors, and assigns. Respondents shall not indemnify the Department or the State of New York for unlawful, grossly negligent, willful or malicious acts or omissions on the part of the State, State agencies, or their officers, employees or agents.

XI. Public Notice

A. Within 30 days after the effective date of this Order, every Respondent who owns any portion of the Sites shall file a Declaration of Covenants and Restrictions with the Clerk of Erie County to give all parties who may acquire any interest in the Sites notice of this Order.

B. If any Respondent who owns any portion of the Sites proposes to convey the whole or any part of that Respondent's ownership interest in either of the Sites, that

Respondent shall, not fewer than 60 days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance and shall notify the transferee in writing, with a copy to the Department, of the applicability of this Order.

C. Within 30 days after Department approval of the "as-built" drawings every Respondent who owns any portion of the Sites shall file with the Clerk of Erie County a Notice of Restrictions of Use which shall refer to the Record of Decision and shall describe the remedy which is in place at the Sites, and to which shall be attached as an appendix the "as-built" drawings.

D. If any Respondent transfers the whole or any portion of its ownership interest in the either Site, that Respondent shall include restrictions in the property deed to specify that any future use of the property must be limited to activities and purposes which shall not interfere with remedial structures or equipment located upon or beneath that Site, or with activities required to be conducted in conjunction with the remedial action. Any such deed shall further specify that the restriction stated in 6 NYCRR § 375-1.2(e)(2) is applicable to the transferred property, by virtue of the property having been listed in the Registry of Inactive Hazardous Waste Sites, and shall specify that these restrictions are covenants which run with the land.

XII. Communications

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

Communication from Respondents shall be sent to:

1. Director, Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

2. Director, Bureau of Environmental Exposure Investigation
New York State Department of Health
2 University Place
Albany, New York 12203

3. Regional Engineer, Region 9, Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

4. Division of Environmental Enforcement
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

B. Copies of work plans and reports shall be submitted as follows:

1. Four copies (one unbound) to Division of Hazardous Waste Remediation.

2. Two copies to the Director, Bureau of Environmental Exposure Investigation.

3. One copy to Region 9

4. One copy to Buffalo Field Unit

C. Within 30 days of the Department's approval of

any report submitted pursuant to this Order, Respondents shall submit to the project manager a computer readable magnetic media copy of the approved report in American Standard Code for Information Interchange (ASCII) format.

D. Communication to be made from the Department to the Respondents shall be sent to the parties set forth in Appendix "C".

E. The Department and Respondents reserve the right to designate in writing additional or different addressees for communication or written notice to the other.

XIII. Miscellaneous

A. All activities and submittals required by this Order shall, consistent with the RODs and the SOW, address both on-Site contamination and off-Site contamination (to the extent off-Site conditions may be causally related to the on-Site disposal of hazardous waste) at either of the Sites resulting from the alleged disposal of hazardous waste at the Sites.

B. Respondents shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and data validators reasonably acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Order. A summary of the experience, capabilities, and qualifications of the firms or individuals selected by Respondents shall be submitted to the Department within 60 days after the effective date of this Order. The Department's

approval of these firms or individuals shall be obtained before the start of any activities for which the Respondents and such firms or individuals will be responsible. The responsibility for the performance of the professionals retained by Respondents shall rest solely with Respondents.

C. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Respondents. The Department also shall have the right to take its own samples and Respondents may obtain split samples of any such samples and the results of any Department sampling/analysis. Respondents shall make available to the Department the results of all sampling and/or tests or other data generated by Respondents with respect to implementation of this Order and shall submit these results in the progress reports required by this Order.

D. Respondents shall notify the Department at least 10 working days in advance of the commencement of any field activities to be conducted pursuant to this Order.

E. 1. Respondents shall obtain all permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations necessary to perform Respondents' obligations under this Order.

2. Respondents shall not be required to obtain permits for certain work conducted under this Order consistent with the criteria set forth in 6 NYCRR 375-1.7. Further, for purposes of implementing the Remedial Program, the Sites shall

constitute a single Site for purposes of 6 NYCRR 376.

3. In the event Respondents are unable to obtain the necessary authorizations required to perform the obligations under this Order, the Department shall, consistent with its legal authority, assist in obtaining all such authorizations Respondents were unable to obtain. If Respondents cannot obtain such authorizations on a timely basis, Respondents may request that the time for performance of any obligation dependent upon such authorization be appropriately extended. If Respondents cannot obtain such authorization, Respondents may request that this Order be appropriately modified.

F. This Order shall bind the Respondents, and any successors or assigns. Any change in ownership or corporate status of any Respondent including, but not limited to, any transfer of assets or real or personal property shall in no way alter Respondents' responsibilities under this Order.

G. Respondents shall provide a copy of this Order to each contractor hired to perform work required by this Order and to each person representing Respondents with respect to the Site and shall condition all contracts entered into in order to carry out the obligations identified in this Order upon performance in conformity with the terms of this Order. Respondents or Respondents' contractors shall provide written notice of this Order to all subcontractors hired to perform any portion of the work required by this Order. Respondents shall nonetheless be

responsible for ensuring that Respondents' contractors and subcontractors perform the work in satisfaction of the requirements of this Order.

H. All references to "professional engineer" in this Order are to an individual registered as a professional engineer in accordance with Article 145 of the New York State Education Law.

I. All references to "days" in this Order are to calendar days unless otherwise specified.

J. The section headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

K. Except as otherwise provided in this Order, the obligations of Respondents under this Order are joint and several. In the event of the insolvency or failure of any or more of Respondents to implement any obligation of this Order at a Site, the remaining Respondents for that Site shall complete all such obligations.

L. (1) The terms of this Order shall constitute the complete and entire Order between Respondents and the Department concerning the Sites. No term, condition, understanding, or agreement purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion, or comment by the Department regarding any report, proposal, plan,

specification, schedule, or any other submittal shall be construed as relieving Respondents of Respondents' obligation to obtain such formal approvals as may be required by this Order.

(2) If Respondents desire that any provision of this Order be changed, Respondents shall make timely written application, signed by the Respondents, to the Commissioner setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to the Department project manager for the Site and the Division of Environmental Enforcement, Buffalo offices.

M. The effective date of this Order shall be the date it is signed by the Commissioner or his designee.

N. The parties to this Order may sign the Order by counterpart.

DATED: Sept. 27, New York
, 1994

J. LANGDON MARSH
Commissioner
New York State Department
of Environmental Conservation

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

ALLIEDSIGNAL INC.

By: L Ray Taunton

L. Ray Taunton
(Type Name of Signer)

Title: Vice President, Operations

Date: August 30, 1994

STATE OF NEW JERSEY)
) s.s.:
COUNTY OF Morris)

On this 30th day of August, 1994, before me personally came L. Ray Taunton, to me known, who, being by me duly sworn, did depose and say that he resides in Morris Plains, New Jersey; that he is the Vice President, Operations of the AlliedSignal Inc., the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Cathleen Storgum
Notary Public
Comm Exp Sept 1, 1997

CONSENT BY RESPONDENT

Cherry Farm and River Road Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

GENERAL MOTORS CORPORATION

By: Don A. Schiemann

DON A. SCHIEMANN
(Type Name of Signer)

Title: Attorney

Date: September 2, 1994

STATE OF MICHIGAN)
:SS
COUNTY OF Wayne)

On this 2nd day of September, 1994, before me personally came Don A. Schiemann, to me known, who, being by me duly sworn, did depose and say that he resides in Detroit, Michigan; that he is in the General Counsel's Office of General Motors Corporation, the corporation described in and which executed the foregoing instrument and that he has the authority to execute this instrument on behalf of General Motors Corporation.

Janet Maxwell
Notary Public

JANET MAXWELL
Notary Public, Wayne County, Michigan
My Commission Expires April 1, 1995

CONSENT BY RESPONDENT

Cherry Farm Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

NIAGARA MOHAWK POWER CORPORATION

By: _____ MCW

Thomas R. Fair
(Type Name of Signer)

Title: Vice President-Environmental Affairs

Date: August 24, 1994

STATE OF NEW YORK)
) s.s.:
COUNTY OF ONONDAGA)

On this 24th day of August, 1994, before me personally came Thomas R. Fair, to me known, who, being by me duly sworn, did depose and say that he resides in Manlius, New York; that he is the Vice President-Environmental Affairs of the Niagara Mohawk Power Corp., the corporation described in and which executed the foregoing instrument; ~~that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation~~, and that he signed his name thereto ~~by like order.~~

_____
Notary Public

WILLIAM C. WEISS
Notary Public, State of New York
No. 4719925
Qualified in Onondaga County
My Commission Expires October 31, 1994