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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

UNITED STATES OF AMERICA

Plaintiff,

v.

USX CORPORATION, et al.

Defendants.

CIVIL ACTION NO. 98 C 6389

The Honorable Harry D. Leinenweber

**PARTIAL CONSENT DECREE
RELATING TO REMEDIAL DESIGN/REMEDIAL ACTION**

TABLE OF CONTENTS

I.	<u>BACKGROUND</u>	1
II.	<u>JURISDICTION</u>	4
III.	<u>PARTIES BOUND</u>	4
IV.	<u>DEFINITIONS</u>	5
V.	<u>GENERAL PROVISIONS</u>	10
VI.	<u>PERFORMANCE OF THE WORK BY SETTLING WORK DEFENDANTS</u>	13
VII.	<u>REMEDY REVIEW</u>	21
VIII.	<u>QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS</u>	22
IX.	<u>ACCESS AND INSTITUTIONAL CONTROLS</u>	24
X.	<u>REPORTING REQUIREMENTS</u>	28
XI.	<u>EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS</u>	30
XII.	<u>PROJECT COORDINATORS</u>	32
XIII.	<u>ASSURANCE OF ABILITY TO COMPLETE WORK</u>	33
XIV.	<u>CERTIFICATION OF COMPLETION</u>	34
XV.	<u>EMERGENCY RESPONSE</u>	38
XVI.	<u>REIMBURSEMENT OF RESPONSE COSTS</u>	39
XVII.	<u>YEOMAN CREEK ESCROW ACCOUNT</u>	43
XVIII.	<u>INDEMNIFICATION AND INSURANCE</u>	46
XIX.	<u>FORCE MAJEURE</u>	47
XX.	<u>DISPUTE RESOLUTION</u>	49
XXI.	<u>STIPULATED PENALTIES</u>	52
XXII.	<u>COVENANTS BY PLAINTIFF</u>	56
XXIII.	<u>COVENANTS BY SETTLING DEFENDANTS</u> <u>AND SETTLING FEDERAL AGENCIES</u>	62
XXIV.	<u>EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION</u>	64
XXV.	<u>ACCESS TO INFORMATION</u>	65
XXVI.	<u>RETENTION OF RECORDS</u>	67
XXVII.	<u>NOTICES AND SUBMISSIONS</u>	68
XXVIII.	<u>EFFECTIVE DATE</u>	70
XXIX.	<u>RETENTION OF JURISDICTION</u>	70
XXX.	<u>APPENDICES</u>	70
XXXI.	<u>COMMUNITY RELATIONS</u>	71
XXXII.	<u>MODIFICATION</u>	71
XXXIII.	<u>LODGING AND OPPORTUNITY FOR PUBLIC COMMENT</u>	72
XXXIV.	<u>SIGNATORIES/SERVICE</u>	72
XXXIV.	<u>FINAL JUDGMENT</u>	73

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I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint and an amended complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. Sections 9606 and 9607.

B. The United States in its amended complaint seeks, inter alia: (1) reimbursement of costs incurred by EPA and the Department of Justice for response actions at and relating to the Yeoman Creek Landfill Superfund Site in Waukegan, Illinois (the "Site") with accrued interest; and (2) performance of response actions by the defendants at and relating to the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP").

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. Section 9621(f)(1)(F), EPA has notified the State of Illinois (the "State") of negotiations with potentially responsible parties regarding the implementation of the remedial design and remedial

action for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. Section 9622(j)(1), EPA has notified the Federal natural resource trustee of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Consent Decree.

E. The defendants that have entered into this Consent Decree ("Settling Defendants") do not admit any liability arising out of the transactions or occurrences alleged in the amended complaint, nor do they acknowledge that the release or threatened release of hazardous substances at or from the Site constitutes an imminent or substantial endangerment to the public health or welfare or the environment. The Settling Federal Agencies do not admit any liability arising out of the transactions or occurrences alleged in any counterclaim asserted by the Settling Defendants.

F. Pursuant to Section 105 of CERCLA, 42 U.S.C. Section 9605, EPA placed the Yeoman Creek Landfill on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 31, 1989, 54 Fed. Reg. 13296 (March 31, 1989).

G. In response to EPA's finding of a release or a substantial threat of a release of a hazardous substance(s) at or from the Site, certain Settling Defendants entered into an Administrative Order on Consent with EPA under which they commenced in 1991 a Remedial Investigation and Feasibility Study ("RI/FS") for the Site pursuant to 40 C.F.R. Section 300.430.

H. Certain Settling Defendants completed a Remedial Investigation ("RI") Report and a Feasibility Study ("FS") Report on February 28, 1995.

I. Pursuant to Section 117 of CERCLA, 42 U.S.C. Section 9617, EPA published notice of the completion of the FS and of the proposed plan for remedial action at the Site on May 15, 1995, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy

of the transcript of the public meeting is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

J. The decision by EPA on the remedial action to be implemented at the Site is embodied in a final Record of Decision ("ROD"), executed on September 30, 1996, to which the State has given its concurrence. The ROD includes EPA's explanation for any significant differences between the final plan and the proposed plan as well as a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

K. Based on the information presently available to EPA, EPA believes that the Work (as defined herein) will be properly and promptly conducted by the Settling Work Defendants (as defined herein) if conducted in accordance with the requirements of this Consent Decree and its appendices.

L. Solely for the purposes of Section 113(j) of CERCLA, the Remedial Action selected by the ROD and the Work to be performed by the Settling Work Defendants shall constitute a response action taken or ordered by the President.

M. This Consent Decree is not intended to alter or otherwise affect certain Settling Defendants' obligations under a pre-existing Second Amended Administrative Order on Consent ("AOC") and Unilateral Administrative Order ("UAO") relating to the Site. The AOC and UAO require implementation of certain interim measures designed to address migration and threatened migration of combustible gas and gaseous hazardous substances into buildings at and near the Site.

N. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and implementation of this Consent Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. Sections 1331 and 1345, and 42 U.S.C. Sections 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Decree and the underlying amended complaint, Settling Defendants waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Defendants shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the United States and upon Settling Defendants and their heirs, successors and assigns. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Settling Defendant's responsibilities under this Consent Decree.

3. Settling Work Defendants shall provide a copy of this Consent Decree to each contractor hired to perform the Work required by this Consent Decree and to each person representing any Settling Work Defendant with respect to the Site or the Work and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. Settling Work Defendants or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Settling Work Defendants shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Settling Work Defendants within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. Section 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Decree or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

“Administrative Order by Consent” or “AOC” shall mean the Second Amendment to the Administrative Order by Consent relating to the Site executed by EPA on October 17, 1994.

“CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. Section 9601 et seq.

“Consent Decree” shall mean this Partial Consent Decree and all appendices attached hereto (listed in Section XXX). In the event of conflict between the language in this Partial Consent Decree and any appendix, this Partial Consent Decree shall control.

“Day” shall mean a calendar day unless expressly stated to be a working day. “Working day” shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

“EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

“Future Oversight Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs after the date of lodging of this Consent Decree for reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, and laboratory costs; provided, however, that Future Oversight Costs shall not include the costs incurred pursuant to Sections VII, IX (including, but not limited to, the cost of attorney time and any monies paid to secure

access and/or to secure or implement institutional controls including, but not limited to, the amount of just compensation), XV, and Paragraph 90 of Section XXII.

“Future Response Costs” shall mean the sum of all “Future Oversight Costs” and all costs incurred pursuant to Sections VII, IX (including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement institutional controls including, but not limited to, the amount of just compensation), XV, and Paragraph 90 of Section XXII.

“Interest” shall mean interest at the rate specified for interest on investments of the Hazardous Substance Superfund established under Subchapter A of Chapter 98 of Title 26 of the U.S. Code, compounded on October 1 of each year, in accordance with 42 U.S.C. Section 9607(a).

“Municipal Solid Waste” shall mean all waste materials generated by households, including single and multi-family residences, and hotels and motels. The term also includes waste materials generated by commercial, institutional, and industrial sources, to the extent such wastes (1) are essentially the same as waste normally generated by households, or (2) are collected and disposed of with other municipal solid waste or sewage sludge as part of normal municipal solid waste collection services and, regardless of when generated, would be considered conditionally exempt small quantity generator waste under regulations issued pursuant to Section 3001(d)(4) of the Solid Waste Disposal Act (42 U.S.C. Section 6921(d)(4)). Examples of Municipal Solid Waste include food and yard waste, paper, clothing, appliances, consumer product packaging, disposable diapers, office supplies, cosmetics, glass and metal food containers, elementary or secondary school science laboratory waste, and household hazardous waste. The term does not include combustion ash generated by resource recovery facilities or municipal incinerators, or waste from manufacturing or processing (including pollution control) operations not essentially the same as waste normally generated by households.

“National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. Section 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

"Operation and Maintenance" or "O & M" shall mean all activities required to maintain the effectiveness of the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to this Consent Decree and the Statement of Work (SOW). The terms "Operation and Maintenance," "O&M," and "Remedial Action" are specially defined in this Consent Decree for drafting convenience only. Although "Operation and Maintenance" or "O&M" are not included as part of the definition of "Remedial Action" in this Consent Decree, these separate definitions are not intended to change the character of operation and maintenance activities or otherwise exclude such activities from the scope of remedial action as envisioned in the NCP or CERCLA.

"Owner, Operator, or Lessee of Residential Property" shall mean a person who owns, operates, manages, or leases Residential Property and who uses or allows the use of the Residential Property exclusively for residential purposes.

"Paragraph" shall mean a portion of this Consent Decree identified by an arabic numeral or an upper case letter.

"Parties" shall mean the United States and the Settling Defendants.

"Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States has paid at or in connection with the Site through the date of lodging of this Consent Decree, plus Interest on all such costs which has accrued and will accrue pursuant to 42 U.S.C. Section 9607(a).

"Performance Standards" shall mean the cleanup standards and other measures of achievement of the goals of the Remedial Action, set forth in the ROD and in Attachment 3 to the SOW (Performance Standards Summary).

"Plaintiff" shall mean the United States.

"RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. Sections 6901 et seq. (also known as the Resource Conservation and Recovery Act).

"Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to the Yeoman Creek Landfill signed on September 30, 1996, by the authorized delegate of the

Regional Administrator, EPA Region 5 and all attachments thereto. The ROD is attached as Appendix A.

“Remedial Action” shall mean those activities, except for Operation and Maintenance, to be undertaken by the Settling Work Defendants to implement the ROD, in accordance with the SOW and the final Remedial Design and Remedial Action Work Plans and other plans approved by EPA.

“Remedial Action Work Plan” shall mean the document developed pursuant to Paragraph 12 of this Consent Decree and approved by EPA, and any amendments thereto.

“Remedial Design” shall mean those activities to be undertaken by the Settling Work Defendants to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

“Remedial Design Work Plan” shall mean the document developed pursuant to Paragraph 11 of this Consent Decree and approved by EPA, and any amendments thereto.

“Residential Property” shall mean single or multi-family residences, including accessory land, buildings, or improvements incidental to such dwellings, which are exclusively for residential use.

“Section” shall mean a portion of this Consent Decree identified by a roman numeral.

“Settling Defendants” shall mean those Parties identified in Appendix D. “Settling Work Defendants” shall mean those Settling Defendants identified in Appendix D.1 (Settling Work Defendants). “Settling Cash Defendants” shall mean those Settling Defendants identified in Appendix D.2 (Settling Cash Defendants).

“Settling Federal Agencies” shall mean the following departments, agencies, and instrumentalities of the United States, which are resolving any claims which have been or could be asserted against them with regard to this Site as provided in this Consent Decree: (i) the Department of the Navy, and (ii) the Department of Veterans Affairs.

“Sewage Sludge” means solid, semisolid, or liquid residue removed during the treatment of municipal waste water, domestic sewage, or other waste water at or by publicly owned or federally owned treatment works.

“Site” shall mean the Yeoman Creek Landfill Superfund Site, encompassing approximately 60 acres, located between Sunset Avenue and Golf Road to the north, Glen Flora Avenue to the south, Lewis Avenue to the west, and Western Avenue to the east, in the City of Waukegan, Lake County, Illinois, and depicted generally on the map attached as Appendix C. The Site shall include the areas that have been referred to at various times as the Yeoman Creek Landfill(s), the Edwards Field Landfill, and the Arthur Rubloff Landfill. The Site shall encompass both the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.

“Small Business” shall mean any business entity that employs no more than 100 individuals and is a “small business concern” as defined under the Small Business Act (15 U.S.C. Section 631 et seq.).

“Small Nonprofit Organization” shall mean any organization that does not distribute any part of its income or profit to its members, directors, or officers, employs no more than 100 paid individuals at the involved chapter, office, or department, and was recognized as a nonprofit organization under Section 501(c)(3) of the Internal Revenue Code of 1986.

“State” shall mean the State of Illinois.

“Statement of Work” or “SOW” shall mean the statement of work for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance at the Site, as set forth in Appendix B to this Consent Decree and any modifications made in accordance with this Consent Decree.

“Subparagraph” shall mean a portion of this Consent Decree identified by a lower case letter.

"Supervising Contractor" shall mean the principal contractor or Settling Work Defendant retained or designated by the Settling Work Defendants to supervise and direct the implementation of part or all of the Work under this Consent Decree.

"Unilateral Administrative Order" or "UAO" shall mean the Unilateral Administrative Order relating to the Site dated April 28, 1998.

"United States" shall mean the United States of America, including all of its departments, agencies, and instrumentalities, which includes without limitation EPA, the Settling Federal Agencies and any federal natural resources trustee.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. Section 9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. Section 6903(27).

"Work" shall mean all activities Settling Work Defendants are required to perform under this Consent Decree, except those required by Section XXVI (Retention of Records).

V. GENERAL PROVISIONS

5. Objectives of the Parties. The objectives of the Parties in entering into this Consent Decree are to protect public health or welfare or the environment at the Site by the design and implementation of response actions at the Site by the Settling Work Defendants, to provide for the payment of certain funds paid by other alleged responsible parties to the Settling Work Defendants to implement the Work, to reimburse certain response costs of the Plaintiff, to resolve the claims of Plaintiff against Settling Defendants and the claims of the Settling Defendants which have been or could have been asserted against the United States with regard to the Site as provided in this Consent Decree, and to afford Settling Defendants and the Settling Federal Agencies protection from contribution actions or claims as provided by CERCLA and this Consent Decree.

6. Commitments by Settling Defendants and Settling Federal Agencies

a. The Settling Cash Defendants and Settling Federal Agencies shall cause certain sums specified herein to be paid to the Settling Work Defendants, with all such funds to be used by the Settling Work Defendants for implementing the Work and satisfying related obligations under this Consent Decree.

b. Settling Work Defendants shall finance and perform the Work in accordance with this Consent Decree, the ROD, the SOW, and all work plans and other plans, standards, specifications, and schedules set forth herein or developed by Settling Work Defendants and approved by EPA pursuant to this Consent Decree. Settling Work Defendants shall use all funds paid to them by the Settling Cash Defendants for implementing the Work and satisfying related obligations under this Consent Decree. Settling Work Defendants shall also reimburse the United States for certain Future Response Costs as provided in this Consent Decree.

c. The obligations of Settling Work Defendants to finance and perform the Work and to pay amounts owed the United States under this Consent Decree are joint and several. In the event of the insolvency or other failure of any one or more Settling Work Defendants to implement the requirements of this Consent Decree, the remaining Settling Work Defendants shall complete all such requirements.

7. Compliance With Applicable Law. All activities undertaken by Settling Work Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. Settling Work Defendants must also comply with all applicable or relevant and appropriate requirements of all Federal and state environmental laws identified as such in the ROD and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be considered to be consistent with the NCP.

8. Permits

a. As provided in Section 121(e) of CERCLA and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e.,

within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Work Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. The Settling Work Defendants may seek relief under the provisions of Section XIX (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit required for the Work.

c. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

9. Notice to Successors-in-Title

a. With respect to any property owned or controlled by any Settling Defendant that is located within the Site, within 15 days after the entry of this Consent Decree, such Settling Defendant shall submit to EPA for review and approval a notice to be filed with the Recorder of Deeds Office for Lake County, Illinois, which shall provide notice to all successors-in-title that the property is part of the Site, that EPA selected a remedy for the Site in a Record of Decision executed on September 30, 1996, and that potentially responsible parties have entered into a Consent Decree requiring implementation of the remedy. Such notices shall identify the United States District Court in which the Consent Decree was filed, the name and civil action number of this case, and the date the Consent Decree was entered by the Court. The Settling Defendant owning such property shall record the notices within 10 days of EPA's approval of the notices. The Settling Defendants shall provide EPA with a certified copy of the recorded notices within 10 days of recording such notices.

b. At least 30 days prior to the conveyance of any interest in property located within the Site and owned by any Settling Defendant, including, but not limited to, fee interests, leasehold interests, and mortgage interests, the Settling Defendant conveying the interest shall give the grantee written notice of (1) this Consent Decree, (2) any instrument by which an interest in real property has been conveyed that confers a right of access to the Site (hereinafter referred to as "access easements") pursuant to Section IX (Access and Institutional Controls), and

(3) any instrument by which an interest in real property has been conveyed that confers a right to enforce restrictions on the use of such property (hereinafter referred to as "restrictive easements") pursuant to Section IX (Access and Institutional Controls). At least 30 days prior to such conveyance, the Settling Defendant conveying the interest shall also give written notice to EPA and the State of the proposed conveyance, including the name and address of the grantee, and the date on which notice of the Consent Decree, access easements, and/or restrictive easements was given to the grantee.

c. In the event of any such conveyance, such Settling Defendant's obligations under this Consent Decree, including, but not limited to, its obligation to provide or secure access and institutional controls, as well as to abide by such institutional controls, pursuant to Section IX (Access and Institutional Controls) of this Consent Decree, shall continue to be met by such Settling Defendant. In no event shall the conveyance release or otherwise affect the liability of that Settling Defendant to comply with all provisions of this Consent Decree, absent the prior written consent of EPA. If the United States approves, the grantee may perform some or all of the Work under this Consent Decree.

VI. PERFORMANCE OF THE WORK BY SETTLING WORK DEFENDANTS

10. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by Settling Work Defendants pursuant to Sections VI (Performance of the Work by Settling Work Defendants), VII (Remedy Review), VIII (Quality Assurance, Sampling and Data Analysis), and XV (Emergency Response) of this Consent Decree shall be under the direction and supervision of the Supervising Contractor, the selection of which shall be subject to disapproval by EPA. Within 30 days after Settling Work Defendants are notified in writing of the lodging of this Consent Decree, Settling Work Defendants shall notify EPA and the State in writing of the name, title, and qualifications of any contractor proposed to be the Supervising Contractor. EPA will issue a notice of disapproval or an authorization to proceed. If at any time thereafter, Settling Work Defendants propose to change a Supervising Contractor, Settling Work Defendants shall give such notice to EPA and must obtain an authorization to proceed from EPA before the new Supervising Contractor performs, directs, or supervises any Work under this Consent Decree.

b. If EPA disapproves a proposed Supervising Contractor, EPA will notify Settling Work Defendants in writing. Settling Work Defendants shall submit to EPA a list of alternative contractors, including the qualifications of each contractor, that would be acceptable to them within 30 days of receipt of EPA's disapproval of the contractor previously proposed. EPA will provide written notice of the names of any proposed alternative contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. Settling Work Defendants may select any contractor from among the proposed alternative contractors that is not disapproved and shall notify EPA of the name of the contractor selected within 21 days of EPA's authorization to proceed. Any dispute regarding EPA's disapproval of a proposed Supervising Contractor shall be resolved pursuant to Section XX (Dispute Resolution) of this Consent Decree.

c. If EPA fails to provide written notice of its authorization to proceed or disapproval as provided in this Paragraph and this failure prevents the Settling Work Defendants from meeting one or more deadlines in a plan approved by the EPA pursuant to this Consent Decree, Settling Work Defendants may seek relief under the provisions of Section XIX (Force Majeure) hereof.

11. Remedial Design.

a. Within 30 days after the Settling Work Defendants' receipt of EPA's issuance of an authorization to proceed pursuant to Paragraph 10, Settling Work Defendants shall submit to EPA and the State a Pre-Design Data Collection Work Plan ("PDDC Work Plan"). The PDDC Work Plan shall describe a sampling/monitoring program to be initiated during the pre-design phase sufficient to fully establish the current distribution of contaminants in the ground water, surface water, wetlands, and creek sediments at the Site, and the groundwater flow conditions. The PDDC Work Plan shall also establish a schedule for Settling Work Defendants' submission to EPA of the Remedial Design Work Plan. Upon its approval by EPA, the PDDC Work Plan shall be incorporated into and become enforceable under this Consent Decree. At the time they are required to submit the PDDC Work Plan, the Settling Work Defendants shall also submit to EPA and the State a Health and Safety Plan for field activities required by the PDDC

Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. Section 1910.120.

b. Upon approval of the PDDC Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submittal of the Health and Safety Plan for all field activities to EPA and the State, Settling Work Defendants shall implement the PDDC Work Plan. The Settling Work Defendants shall submit to EPA and the State all plans, submittals and other deliverables required under the approved PDDC Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Work Defendants shall not commence further Pre-Design Data Collection activities at the Site prior to approval of the PDDC Work Plan.

c. Settling Work Defendants shall submit to EPA and the State a Remedial Design Work Plan in accordance with the schedule established in the approved PDDC Work Plan. The Remedial Design Work Plan shall provide for design of the remedy set forth in the ROD, in accordance with the SOW and for achievement of the Performance Standards and other requirements set forth in the ROD, this Consent Decree and/or the SOW. Consolidation of wastes and contaminated media under the final cover shall be considered in the design of the remedy, as provided in the ROD. Upon its approval by EPA, the Remedial Design Work Plan and shall be incorporated into and become enforceable under this Consent Decree. At the time they are required to submit the Remedial Design Work Plan, the Settling Work Defendants shall also submit to EPA and the State a Health and Safety Plan for field activities required by the Remedial Design Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. Section 1910.120.

d. The Remedial Design Work Plan shall include plans and schedules for implementation of all remedial design tasks identified in the SOW, including, but not limited to, plans and schedules for the completion of: (1) a design sampling and analysis plan (including, but not limited to, a Remedial Design Quality Assurance Project Plan (RD QAPP) in accordance with Section VIII (Quality Assurance, Sampling and Data Analysis)); (2) a preliminary design submittal; (3) an intermediate design meeting; (4) a pre-final/final design submittal; (5) a

Construction Quality Assurance Plan; and (6) a flood way/floodplain control plan. In addition, the Remedial Design Work Plan shall include a schedule for completion of the Remedial Action Work Plan.

e. Upon approval of the Remedial Design Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submittal of the Health and Safety Plan for all field activities to EPA and the State, Settling Work Defendants shall implement the Remedial Design Work Plan. The Settling Work Defendants shall submit to EPA and the State all plans, submittals and other deliverables required under the approved Remedial Design Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Work Defendants shall not commence further Remedial Design activities at the Site prior to approval of the Remedial Design Work Plan.

f. The preliminary design submittal shall include, at a minimum, the following: (1) design criteria; (2) results of treatability studies, if any; (3) results of additional field sampling and pre-design work; (4) project delivery strategy; (5) preliminary plans, drawings and sketches; (6) required specifications in outline form; and (7) preliminary construction schedule. The preliminary design submittal may propose beneficial end uses of some or all of the Site.

g. The intermediate design meeting shall provide information developed through the continuation and expansion of the preliminary design.

h. The pre-final/final design submittals shall include, at a minimum, the following: (1) final plans and specifications; (2) a draft Operation and Maintenance Plan; (3) Construction Quality Assurance Project Plan (CQAPP); (4) Field Sampling Plan (directed at measuring progress towards meeting Performance Standards); and (5) Contingency Plan. The CQAPP, which shall detail the approach to quality assurance during construction activities at the Site, shall specify a quality assurance official ("QA Official"), independent of the Supervising Contractor, to conduct a quality assurance program during the construction phase of the project.

12. Remedial Action.

a. Within 60 days after the Settling Work Defendants' receipt of the approval of the final design submittal and notice of authorization to proceed with the Remedial Action, Settling Work Defendants shall award contract(s) for the performance of the Remedial Action, and shall so notify EPA and the State.

b. Within 30 day after Settling Defendants' award of contracts for the performance of the Remedial Action, Settling Work Defendants shall submit to EPA and the State a work plan for the performance of the Remedial Action at the Site ("Remedial Action Work Plan"). The Remedial Action Work Plan shall provide for construction and implementation of the remedy set forth in the ROD and achievement of the Performance Standards, in accordance with this Consent Decree, the ROD, the SOW, and the design plans and specifications developed in accordance with the Remedial Design Work Plan and approved by EPA. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Consent Decree. At the time they are required to submit the Remedial Action Work Plan, Settling Work Defendants shall also submit to EPA and the State a Health and Safety Plan for field activities required by the Remedial Action Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. Section 1910.120.

c. The Remedial Action Work Plan shall include the following: (1) the schedule for completion of the Remedial Action; (2) a generalized description of the method used for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action plans; (4) methodology for implementation of the Construction Quality Assurance Plan; (5) surface water, groundwater, and landfill gas monitoring plans; (6) methods for satisfying off-Site permitting requirements, if any; (7) methodology for implementation of the Contingency Plan; (8) tentative formulation of the Remedial Action team; (9) construction quality control plan (by contractor); and (10) procedures and plans for the decontamination of equipment and the disposal of contaminated materials. The Remedial Action Work Plan also shall include a schedule for implementation of all Remedial Action tasks identified in the final

design submittal and shall identify the initial formulation of the Settling Work Defendants' Remedial Action Project Team (including, but not limited to, the Supervising Contractor).

d. Upon approval of the Remedial Action Work Plan by EPA, after a reasonable opportunity for review and comment by the State, Settling Work Defendants shall implement the activities required under the Remedial Action Work Plan. The Settling Work Defendants shall submit to EPA and the State all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Work Defendants shall not commence physical Remedial Action activities at the Site prior to EPA's written approval of the Remedial Action Work Plan.

e. Before the pre-final construction inspection required by the SOW, Settling Work Defendants shall submit to EPA and the State an Operation and Maintenance Plan ("O&M Plan") addressing both implementation and long term maintenance of the Remedial Action. The O&M Plan shall conform to the requirements for such a plan specified in the SOW. Upon its approval by EPA, the O&M Plan shall be incorporated into and become enforceable under this Consent Decree.

f. Upon approval of the O&M Plan by EPA, after a reasonable opportunity for review and comment by the State, Settling Work Defendants shall implement the activities required under the O&M Plan. The Settling Work Defendants shall submit to EPA and the State all plans, submittals, or other deliverables required under the approved O&M Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions).

g. In the event that certain Action Levels specified in ROD Section X.B (The Selected Remedy) and the SOW are exceeded for a specified number of sampling events (to be determined by EPA after construction of the Site cap), the ROD and the SOW require construction and operation of a leachate collection system along Yeoman Creek adjacent to the Yeoman Creek Landfill portion of the Site to prevent leachate and leachate contaminated ground water from entering or seeping into Yeoman Creek. If EPA determines that the construction and

operation of a leachate collection system is required pursuant to the SOW and so notifies Settling Work Defendants, Settling Work Defendants shall submit a Remedial Action Work Plan Supplement setting forth a plan for construction and operation within 60 days following notification from EPA that a leachate collection system is required. Upon approval of the Remedial Action Work Plan Supplement by EPA under Section XI (EPA Approval of Plans and Other Submissions) of this Consent Decree, Settling Work Defendants shall implement the activities required under the Remedial Action Work Plan Supplement.

13. The Settling Work Defendants shall continue to implement the Remedial Action and O&M until the Performance Standards are achieved and for so long thereafter as is otherwise required under this Consent Decree.

14. Modification of the SOW or Related Work Plans.

a. If EPA determines that modification to the work specified in the SOW and/or in work plans developed pursuant to the SOW is necessary to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, EPA shall notify Settling Work Defendants in writing and may require that such modification be incorporated in the SOW and/or such work plans; provided, however, that a modification may only be required pursuant to this Paragraph to the extent that it is consistent with the scope of the remedy selected in the ROD.

b. For the purposes of this Paragraph 14 and Paragraphs 49 and 50 only, the "scope of the remedy selected in the ROD" is: containment of landfill wastes, excavation and on-site containment of contaminated soils and sediments, recovery and treatment of landfill gases, and, if required pursuant to the ROD, the collection and treatment of leachate entering or seeping into Yeoman Creek. Implementation of these remedies may also require development of floodway and flood plain controls, compensatory storage, and wetland mitigation activities.

c. If Settling Work Defendants object to any modification determined by EPA to be necessary pursuant to this Paragraph, they may seek dispute resolution pursuant to Section XX (Dispute Resolution), Paragraph 72 (record review). The SOW and/or related work plans shall be modified in accordance with final resolution of the dispute.

d. Settling Work Defendants shall implement any work required by any modifications incorporated in the SOW and/or in work plans developed pursuant to the SOW in accordance with this Paragraph.

e. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this Consent Decree.

15. Settling Defendants acknowledge and agree that nothing in this Consent Decree, the SOW, or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by Plaintiff that compliance with the work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

16. Settling Work Defendants shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator of such shipment of Waste Material. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

a. The Settling Work Defendants shall include in the written notification the following information, where available: (1) the name and location of the facility to which the Waste Material are to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. The Settling Work Defendants shall notify the state in which the planned receiving facility is located of a change in such information.

b. The identity of the receiving facility and state will be determined by the Settling Work Defendants following the award of the contract for Remedial Action construction. The Settling Work Defendants shall provide the information required by Paragraph 16.a as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

VII. REMEDY REVIEW

17. Periodic Review. Settling Work Defendants shall conduct any studies and investigations as requested by EPA, in order to permit EPA to conduct reviews of whether the Remedial Action is protective of human health and the environment at least every five years as required by Section 121(c) of CERCLA and any applicable regulations.

18. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

19. Opportunity To Comment. Settling Defendants and, if required by Sections 113(k)(2) or 117 of CERCLA, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA and to submit written comments for the record during the comment period.

20. Further Response Actions.

a. Notwithstanding Paragraph E of Section I (Background), Settling Work Defendants hereby agree and covenant that the United States shall not have to prove and that Settling Work Defendants shall not contest their liability relating to the Site under CERCLA Section 107(a), 42 U.S.C. § 9607(a), in response to any administrative order or in any judicial proceeding relating to any further response action EPA selects for the Site to the extent the reopener conditions in Paragraph 86 or Paragraph 87 (United States' reservations of liability based on unknown conditions or new information) are satisfied; provided, however, that in responding to any such administrative order or judicial proceeding, each Settling Work Defendant expressly reserves any legally cognizable affirmative defense of divisibility of harm and/or apportionment of liability it may have relating to geographic portions of the Site other than the Yeoman Creek landfill portion of the Site. The United States expressly reserves the right to contest any putative defense of divisibility of harm and/or apportionment of liability so asserted by any Settling Work Defendant.

b. Notwithstanding Paragraph E of Section I (Background), Settling Work Defendants hereby agree and covenant that the United States shall not have to prove and that Settling Work Defendants shall not contest their status as covered persons with respect to the Site under CERCLA Section 107(a)(1)-(a)(4), 42 U.S.C. § 9607(a)(1)-(a)(4), in response to any administrative order or in any judicial proceeding relating to any further response action EPA selects for the Site which is covered by Paragraph 89.a.(8), even if the reopener conditions in Paragraph 87 (United States' reservations of liability based on unknown conditions or new information) are not satisfied.

VIII. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

21. Settling Work Defendants shall use quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operation," (EPA QA/R5; "Preparing Perfect Project Plans," (EPA /600/9-88/087)), and subsequent amendments to such guidelines upon notification by EPA to Settling Work Defendants of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Consent Decree, Settling Work Defendants shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan ("QAPP") that is consistent with the SOW, the NCP and applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Decree. Settling Work Defendants shall ensure that EPA personnel and authorized representatives are allowed access for auditing purposes at reasonable times to all laboratories utilized by Settling Work Defendants in implementing this Consent Decree. In addition, Settling Work Defendants shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. To the extent an approved work plan requires the use of CLP procedures, Settling Work Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Decree perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic

Analysis" and the "Contract Lab Program Statement of Work for Organic Analysis." dated February 1988, and any amendments made thereto during the course of the implementation of this Decree. Settling Work Defendants shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program. Settling Work Defendants shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Decree will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

22. Upon request, the Settling Work Defendants shall allow split or duplicate samples to be taken by EPA or its authorized representatives. Settling Work Defendants shall notify EPA and the State not less than 21 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow the Settling Work Defendants to take split or duplicate samples of any samples they take as part of the Plaintiff's oversight of the Settling Work Defendants' implementation of the Work and shall provide Settling Work Defendants with copies of all sampling data.

23. Settling Work Defendants shall submit to EPA and the State five (5) copies (3 to EPA and 2 to the State) of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Work Defendants with respect to the Site and/or the implementation of this Consent Decree unless EPA agrees or the approved QAPP provides otherwise. At the request of EPA's Project Coordinator, the Settling Work Defendants also shall transmit an electronic copy of such results, in a form and manner agreed to by EPA's Project Coordinator and the Settling Work Defendants.

24. Notwithstanding any provision of this Consent Decree, the United States and the State hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS

25. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Decree, is owned or controlled by any of the Settling Defendants, such Settling Defendants shall:

a. commencing on the date of lodging of this Consent Decree, provide the Settling Work Defendants, the United States, the State, and their representatives, including EPA and its contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Consent Decree including, but not limited to, the following activities:

- (1) Monitoring the Work;
- (2) Verifying any data or information submitted to the United States or the State;
- (3) Conducting investigations relating to contamination at or near the Site, including but not limited to the surface or subsurface erection or placement of physical or mechanical objects necessary to those investigations;
- (4) Obtaining samples, including but not limited to samples of soils, fill material, solid waste, surface water, groundwater, air or vegetation on, in, or under the Site;
- (5) Assessing the need for, planning, or implementing additional response actions at or near the Site;
- (6) Implementing the Work pursuant to the conditions set forth in Paragraph 88 of this Consent Decree;
- (7) Long-term operation and maintenance of the remedy, including but not limited to installing and maintaining wells, blowers, fences, piping, monitoring stations, and cover materials or vegetation;

(8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents, consistent with Section XXV (Access to Information);

(9) Assessing Settling Defendants' compliance with this Consent Decree; and

(10) Determining whether the Site or any other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Decree;

b. commencing on the date of lodging of this Consent Decree, refrain from using the Site (specifically including the land and water at the Site), or such other property, in any manner that would interfere with or adversely affect the integrity or protectiveness of the remedial measures to be implemented pursuant to this Consent Decree; and

c. execute and record in the Recorder of Deeds Office for Lake County, Illinois, an easement, running with the land, that (1) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 25.a of this Consent Decree, and (2) grants the right to enforce the land/water use restrictions listed in Paragraph 25.b of this Consent Decree, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree. Such Settling Defendants shall grant the access rights and the rights to enforce the land/water use restrictions to (1) the United States, on behalf of EPA, and its representatives, (2) the State and its representatives, (3) the other Settling Defendants and their representatives, and/or (4) other appropriate grantees identified by EPA. Such Settling Defendants shall, within 45 days of entry of this Consent Decree, submit to EPA for review and approval with respect to such property:

(1) a draft easement that is enforceable under the laws of the State of Illinois, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. Section 255; and

(2) a current title commitment or report prepared in accordance with the U.S. Department of Justice Standards for the Preparation of Title Evidence in Land Acquisitions by the United States (1970) (the "Standards").

Within 15 days of EPA's approval and acceptance of the easement, such Settling Defendants shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, record the easement with the Recorder of Deeds Office for Lake County, Illinois. Within 30 days of recording the easement, such Settling Defendants shall provide EPA with final title evidence acceptable under the Standards, and a certified copy of the original recorded easement showing the clerk's recording stamps.

26. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Decree, is owned or controlled by persons other than any of the Settling Defendants, Settling Work Defendants shall use best efforts (not including any payment by Settling Work Defendants to such persons of money or other valuable consideration) to secure from such persons:

a. an agreement to provide access thereto for Settling Work Defendants, as well as for the United States on behalf of EPA, and the State, as well as their representatives (including contractors), for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 25.a of this Consent Decree; and

b. an agreement, enforceable by the Settling Work Defendants and the United States, to abide by the obligations and restrictions established by Paragraph 25.b of this Consent Decree, or that are otherwise necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree; and/or

c. the execution and recordation in the Recorder of Deeds Office for Lake County, Illinois, of an easement, running with the land, that (1) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 25.a of this Consent Decree, and (2) grants the right to enforce the land/water use restrictions listed in Paragraph 25.b of this Consent Decree, or other

restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree. The access rights and/or rights to enforce land/water use restrictions shall be granted to (1) the United States, on behalf of EPA, and its representatives, (2) the State and its representatives, (3) the Settling Work Defendants and their representatives, and/or (4) other appropriate grantees identified by EPA. If EPA so requests, within 45 days after notice of such a request, Settling Work Defendants shall submit to EPA for review and approval with respect to such property:

(1) a draft easement that is enforceable under the laws of the State of Illinois, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. Section 255; and

(2) a current title commitment or report prepared in accordance with the U.S. Department of Justice Standards for the Preparation of Title Evidence in Land Acquisitions by the United States (1970) (the "Standards").

Within 15 days of EPA's approval and acceptance of the easement, Settling Work Defendants shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, the easement shall be recorded with the Recorder of Deeds Office for Lake County, Illinois. Within 30 days of the recording of the easement, Settling Work Defendants shall provide EPA with final title evidence acceptable under the Standards, and a certified copy of the original recorded easement showing the clerk's recording stamps.

27. If any access or land/water use restriction agreements required by Paragraphs 26.a or 26.b of this Consent Decree are not obtained within 45 days of the date of entry of this Consent Decree, or any access easements or restrictive easements required by Paragraph 26.c of this Consent Decree are not submitted to EPA in draft form within 45 days of a request by EPA, Settling Work Defendants shall promptly notify the United States in writing, and shall include in that notification a summary of the steps that Settling Work Defendants have taken to attempt to comply with Paragraph 26 of this Consent Decree. The United States may, as it deems

appropriate, assist Settling Work Defendants in obtaining access or land/water use restrictions, either in the form of contractual agreements or in the form of easements running with the land. All costs incurred, direct or indirect, by the United States in obtaining such access and/or land/water use restrictions including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation shall be deemed Future Response Costs and shall be reimbursed by the Settling Work Defendants as required by Section XVI (Reimbursement of Response Costs) .

28. If EPA determines that land/water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls are needed to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, Settling Defendants shall cooperate with EPA's and the State's efforts to secure such governmental controls.

29. Notwithstanding any provision of this Consent Decree, the United States and the State retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

30. In addition to any other requirement of this Consent Decree, Settling Work Defendants shall submit to EPA and the State 5 copies (3 to EPA and 2 to the State) of written monthly progress reports that: (1) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous month; (2) include a summary of all results of sampling and tests and all other data received or generated by Settling Work Defendants or their contractors or agents in the previous month required to be reported pursuant to the approved QAPP; (3) identify all work plans, plans and other deliverables required by this Consent Decree completed and submitted during the previous month; (4) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next month and provide other information relating to the progress of construction, including, if requested by EPA, critical path diagrams, Gantt charts and/or Pert charts; (5) include information regarding percentage of completion, unresolved delays

encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; (6) include any modifications to the work plans or other schedules that Settling Work Defendants have proposed to EPA or that have been approved by EPA; and (7) describe all activities undertaken in support of the Community Relations Plan during the previous month and those to be undertaken in the next six weeks. Settling Work Defendants shall submit these progress reports to EPA and the State on or before the twentieth day of every month following the lodging of this Consent Decree until EPA notifies the Settling Work Defendants pursuant to Paragraph 49.b of Section XIV (Certification of Completion), and thereafter as required by the EPA-approved Operation and Maintenance Plan. If requested by EPA or the State, Settling Work Defendants shall also provide briefings for EPA and/or the State to discuss the progress of the Work.

31. The Settling Work Defendants shall notify EPA of any change in the schedule described in the monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven days prior to the performance of the activity.

32. Upon the occurrence of any event during performance of the Work that Settling Work Defendants are required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), Settling Work Defendants shall within 24 hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), or, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Emergency Response Section, Region 5, United States Environmental Protection Agency. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

33. Within 20 days of the onset of such an event, Settling Work Defendants shall furnish to Plaintiff and the State a written report, signed by the Settling Work Defendants' Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 days of the conclusion of such an event, Settling Work Defendants shall submit a report to Plaintiff and the State setting forth all actions taken in response thereto.

34. Settling Work Defendants shall submit 3 copies of all plans, reports, and data required by the SOW, the Remedial Design Work Plan, the Remedial Action Work Plan, or any other approved plans to EPA in accordance with the schedules set forth in such plans. Settling Work Defendants shall simultaneously submit 2 copies of all such plans, reports and data to the State.

35. All reports and other documents submitted by Settling Defendants to EPA (other than the monthly progress reports referred to above) which purport to document Settling Defendants' compliance with the terms of this Consent Decree shall be signed by an authorized representative of the Settling Defendants.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

36. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, EPA, after reasonable opportunity for review and comment by the State, shall in writing: (1) approve, in whole or in part, the submission; (2) approve the submission upon specified conditions; (3) modify the submission to cure the deficiencies; (4) disapprove, in whole or in part, the submission, directing that the Settling Work Defendants modify the submission; or (5) any combination of the above. However, EPA shall not modify a submission without first providing Settling Work Defendants at least one notice of deficiency and an opportunity to cure within 10 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and the deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

37. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 36(1), (2), or (3), Settling Work Defendants shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 36(3) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XXI (Stipulated Penalties).

38. a. Upon receipt of a notice of disapproval pursuant to Paragraph 36(4). Settling Work Defendants shall, within 10 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XXI (Stipulated Penalties), shall accrue during the 10-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 39 and 40.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 36(4), Settling Work Defendants shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Settling Work Defendants of any liability for stipulated penalties under Section XXI (Stipulated Penalties).

39. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Work Defendants to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item to correct the deficiencies. Settling Work Defendants shall implement any such plan, report, or item as modified or developed by EPA, subject only to their right to invoke the procedures set forth in Section XX (Dispute Resolution).

40. If upon resubmission, a plan, report, or item is disapproved or modified by EPA due to a material defect, Settling Work Defendants shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Settling Work Defendants invoke the dispute resolution procedures set forth in Section XX (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XX (Dispute Resolution) and Section XXI (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XXI (Stipulated Penalties).

41. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon approval or modification by EPA, be enforceable under this Consent

Decree. In the event EPA approves or modifies a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT COORDINATORS

42. Within 20 days after Settling Work Defendants receive written notice of the lodging of this Consent Decree, Settling Work Defendants, EPA, and the State (as requested of the State by EPA) will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators' and Alternate Project Coordinators. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least 5 working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Work Defendants' Project Coordinator shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. The Settling Work Defendants' Project Coordinator shall not be an attorney for any of the Settling Work Defendants in this matter. He or she may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of daily operations during remedial activities.

43. Plaintiff may designate other representatives, including, but not limited to, EPA and State employees, and federal and State contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Decree. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager (RPM) and an On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the National Contingency Plan, to halt any Work required by this Consent Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to release or threatened release of Waste Material.

44. EPA's Project Coordinator and Settling Work Defendants' Project Coordinator will meet as requested by EPA's Project Coordinator.

XIII. ASSURANCE OF ABILITY TO COMPLETE WORK

45. Within 30 days of entry of this Consent Decree, Settling Work Defendants shall establish and maintain financial security in amounts aggregating \$26,300,000 in one or more of the following forms:

- a. A surety bond guaranteeing performance of the Work;
- b. One or more irrevocable letters of credit equaling the total estimated cost of the Work;
- c. A trust fund;
- d. A guarantee to perform the Work by one or more parent corporations or subsidiaries, or by one or more unrelated corporations that have a substantial business relationship with at least one of the Settling Work Defendants;
- e. A demonstration that one or more of the Settling Work Defendants satisfy the requirements of 40 C.F.R. Part 264.143(f); or
- f. For any Settling Work Defendant that is a governmental entity, a demonstration satisfying the requirements of 40 C.F.R. § 258.74(f) (Local Government Financial Test).

46. If the Settling Work Defendants seek to demonstrate the ability to complete the Work through a guarantee by a third party pursuant to Paragraph 45.d of this Consent Decree, Settling Work Defendants shall demonstrate that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f). If Settling Work Defendants seek to demonstrate their ability to complete the Work by means of the financial test or the corporate guarantee pursuant to Paragraph 45.d or 45.e, they shall resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the effective date of this Consent Decree. In the event that EPA determines at any time that the financial assurances provided

pursuant to this Section are inadequate. Settling Work Defendants shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 45 of this Consent Decree. Settling Work Defendants' inability to demonstrate financial ability to complete the Work shall not excuse performance of any activities required under this Consent Decree.

47. If Settling Work Defendants can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 45 above after entry of this Consent Decree, Settling Work Defendants may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining work to be performed. Settling Work Defendants shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security upon approval by EPA. In the event of a dispute, Settling Work Defendants may reduce the amount of the security in accordance with the final administrative or judicial decision resolving the dispute.

48. Settling Work Defendants may change the form of financial assurance provided under this Section at any time, upon notice to and approval by EPA, provided that the new form of assurance meets the requirements of this Section. In the event of a dispute, Settling Work Defendants may change the form of the financial assurance only in accordance with the final administrative or judicial decision resolving the dispute.

XIV. CERTIFICATION OF COMPLETION

49. Completion of the Remedial Action

a. Within 90 days after Settling Work Defendants conclude that any one of the following four conditions (hereinafter the "Certification Conditions") has been met:

(1) the Remedial Action has been fully performed (without constructing and operating the leachate collection and treatment system specified in the ROD and addressed in Paragraph 12.g of this Consent Decree), the Performance Standards have been attained (other than Performance Standards for groundwater quality and Performance Standards relating to the leachate collection and treatment system), and

relevant long term monitoring results indicate no exceedances of any of the Action Levels in the ROD and the SOW relevant to the leachate collection and treatment system:

(2) the Remedial Action has been fully performed (without constructing and operating the leachate collection and treatment system specified in the ROD and addressed in Paragraph 12.g of this Consent Decree), the Performance Standards have been attained (other than Performance Standards for groundwater quality and Performance Standards relating to the leachate collection and treatment system); and two years have elapsed since completion of construction of the site cap without EPA having notified Settling Work Defendants that construction and operation of the leachate collection and treatment system is required pursuant to Paragraph 13.g of this Consent Decree;

(3) the Remedial Action has been fully performed (including construction of the leachate collection and treatment system specified in the ROD and addressed in Paragraph 12.g of this Consent Decree) and the Performance Standards have been attained (other than Performance Standards for groundwater quality, but including the Performance Standards relating to the leachate collection and treatment system); or

(4) the Remedial Action has been fully performed (with or without constructing and operating the leachate collection and treatment system specified in the ROD and addressed in Paragraph 12.g of this Consent Decree) and the Performance Standards have been attained

Settling Work Defendants shall schedule and conduct a pre-certification inspection to be attended by EPA and Settling Work Defendants' Project Coordinator, and a representative of Settling Work Defendants' Supervising Contractor (and any subcontractors requested by EPA). The State shall be given notice of and an opportunity to attend the pre-certification inspection. If, after the pre-certification inspection, the Settling Work Defendants still believe that the Certification Conditions have been met, they shall submit a written report requesting certification to EPA for approval, with a copy to the State, pursuant to Section XI (EPA Approval of Plans and Other Submissions) within 30 days of the inspection. In the report, a registered professional engineer and the Settling Work Defendants' Project Coordinator shall state that the Certification

Conditions have been met in full satisfaction of the requirements of this Consent Decree. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendant or the Settling Work Defendants' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that the Certification Conditions have not been met, EPA will notify Settling Work Defendants in writing of the activities that must be undertaken by Settling Work Defendants pursuant to this Consent Decree to complete the Remedial Action and otherwise meet the Certification Conditions. Provided, however, that EPA may only require Settling Work Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 14.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Work Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Work Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to their right to invoke the dispute resolution procedures set forth in Section XX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion and after a reasonable opportunity for review and comment by the State, that the Certification Conditions have been met, EPA will so certify in writing to Settling Defendants. This certification shall constitute the Certification of Completion of the Remedial Action for purposes of this Consent Decree, including, but not limited to, Section XXII (Covenants Not to Sue by Plaintiff). Certification of Completion of the Remedial Action shall not affect Settling Work Defendants' obligations under this Consent Decree.

c. If EPA issues a Certification of Completion of the Remedial Action based on satisfaction of the Certification Condition set forth in either Subparagraph a.(1) or a.(2) of this Paragraph 49, Settling Work Defendants shall nonetheless remain obligated under the Consent Decree to implement the contingent leachate collection and treatment remedy specified by the ROD and the SOW (and to attain all Performance Standards relating to the leachate collection and treatment system) if required pursuant to the ROD, the SOW, and Paragraph 12.g of this Consent Decree.

50. Completion of the Work

a. Within 90 days after Settling Work Defendants conclude that all phases of the Work (including O & M) have been fully performed, Settling Work Defendants shall schedule and conduct a pre-certification inspection to be attended by EPA and Settling Work Defendants' Project Coordinator, and a representative of Settling Work Defendants' Supervising Contractor. The State shall be given notice of and an opportunity to attend the pre-certification inspection. If, after the pre-certification inspection, the Settling Work Defendants still believe that the Work has been fully performed, Settling Work Defendants shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendant or the Settling Work Defendants' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify Settling Work Defendants in writing of the activities that must be undertaken by Settling Work Defendants pursuant to this Consent Decree to complete the Work. Provided, however, that EPA may only require Settling Work Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the

"scope of the remedy selected in the ROD," as that term is defined in Paragraph 14.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Work Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Work Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right to invoke the dispute resolution procedures set forth in Section XX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Work Defendants and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with this Consent Decree, EPA will so notify the Settling Work Defendants in writing.

XV. EMERGENCY RESPONSE

51. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Work Defendants shall, subject to Paragraph 52, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator. If neither of these persons is available, the Settling Work Defendants shall notify the EPA Emergency Response Unit, Region 5. Settling Work Defendants shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW. In the event that Settling Work Defendants fail to take appropriate response action as required by this Section, and EPA takes such action instead, all costs of the response action not inconsistent with the NCP shall be deemed Future Response Costs and shall be reimbursed by Settling Work Defendants as required by Section XVI (Reimbursement of Response Costs).

52. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, (1) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or (2) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, subject to Section XXII (Covenants Not to Sue by Plaintiff).

XVI. REIMBURSEMENT OF RESPONSE COSTS

53. Payments by Settling Cash Defendants.

a. Except as otherwise provided by Appendix D.2 to this Consent Decree, no later than 10 days after the lodging of this Consent Decree, each Settling Cash Defendant which has not already done so shall deposit the amount listed beside its name on Appendix D.2 (Settling Cash Defendants) in an escrow account established by a mutual arrangement between the Settling Cash Defendants and the Settling Work Defendants.

b. Except as otherwise provided by Appendix D.2 to this Consent Decree, no later than 10 days after the entry of this Consent Decree, each Settling Cash Defendant shall cause the amount listed beside its name on Appendix D.2 (Settling Cash Defendants), plus any accrued escrow account interest on such amount, to be disbursed from the above-described escrow account and paid to the Settling Work Defendants, in accordance with payment arrangements established by mutual agreement of the Settling Cash Defendant and the Settling Work Defendants. At the time such payment is made by any Settling Cash Defendant to the Settling Work Defendants, the Settling Cash Defendant shall give written notice that the payment was made, together with evidence of the payment, to the United States as specified in Section XXVII (Notices and Submissions).

c. The amounts to be paid by the Settling Cash Defendants represent, inter alia, such Parties' contributions toward past response costs incurred by the Settling Work Defendants and the costs associated with the Work and the related obligations of the Settling Work Defendants under this Consent Decree.

54. Payments by Settling Federal Agencies.

a. As soon as reasonably practicable after the effective date of this Consent Decree, the United States, on behalf of the Settling Federal Agencies, shall pay to the Settling Work Defendants \$400,000.00 in reimbursement of the Settling Defendants' past response costs and future response costs in the form of a check or checks made payable to the Yeoman Creek Remedial Group or by an Electronic Funds Transfer in accordance with instructions to be provided by the Settling Work Defendants and to be agreed upon by the Settling Federal Agencies.

b. In the event that the payment required by the preceding Subparagraph is not made within 90 days of the effective date of this Consent Decree, Interest on the unpaid balance shall be paid at a rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the effective date of this Consent Decree and accruing through the date of payment.

c. The Parties to this Consent recognize and acknowledge that the payment obligations of the Settling Federal Agencies under this Consent Decree can only be paid from appropriated funds legally available for such purposes. Nothing in this Consent Decree shall be interpreted or construed as a commitment or requirement that any Settling Federal Agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable provision of law.

55. Payment of Certain Future Response Costs by Settling Work Defendants. Settling Work Defendants shall reimburse the EPA Hazardous Substance Superfund for unreimbursed Future Response Costs not inconsistent with the National Contingency Plan as follows:

a. Settling Work Defendants shall reimburse the EPA Hazardous Substance Superfund for unreimbursed Future Oversight Costs not inconsistent with the National Contingency Plan to the extent such costs exceed \$1,841,000.00.

b. Settling Work Defendants shall reimburse the EPA Hazardous Substance Superfund for all unreimbursed Future Response Costs other than Future Oversight Costs not inconsistent with the National Contingency Plan.

c. The United States will send Settling Work Defendants a bill requiring payment of Future Response Costs (including Future Oversight Costs) that includes an EPA Itemized Cost Summary, and a Department of Justice cost summary, on a periodic basis. Settling Work Defendants shall make all payments within 30 days of Settling Work Defendants' receipt of each bill requiring payment, except as otherwise provided in Paragraph 56. The Settling Work Defendants shall make all payments required by this Paragraph in the form of a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund" and referencing the EPA Region and Site/Spill ID #5Z26, and the DOJ case number 90-11-2-1315, and the name and address of the party making payment. The Settling Work Defendants shall send the check(s) to:

United States Environmental Protection Agency, Region 5
Superfund Accounting
P.O. Box 70753
Chicago, Illinois 60673

and shall send copies of the check(s) to the United States as specified in Section XXVII (Notices and Submissions).

56. Settling Work Defendants may contest payment of any Future Response Costs under Paragraph 55 if they determine that the United States has made an accounting error or if they allege that a cost item that is included represents costs that are not Future Response Costs or that are inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the United States pursuant to Section XXVII (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, the Settling Work Defendants shall within the 30 day period pay all uncontested Future Response Costs to the United States in the manner described in Paragraph 55. Simultaneously, the Settling Work Defendants shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of Illinois and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. The Settling Work Defendants shall send to the United States, as provided in Section XXVII (Notices and Submissions), a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes

and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, the Settling Work Defendants shall initiate the Dispute Resolution procedures in Section XX (Dispute Resolution). If the United States prevails in the dispute, within 5 days of the resolution of the dispute, the Settling Work Defendants shall pay the sums due (with accrued interest) to the United States in the manner described in Paragraph 55. If the Settling Work Defendants prevail concerning any aspect of the contested costs, the Settling Work Defendants shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States in the manner described in Paragraph 55; Settling Work Defendants shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Work Defendants' obligation to reimburse the United States for its Future Response Costs.

57. In the event that the payments required by Paragraph 53 are not made within the time specified by Paragraph 53 (or by Appendix D.2 to this Consent Decree), Settling Cash Defendants shall pay the Settling Work Defendants Interest on the unpaid balance. In the event that the payments required by Paragraph 55 are not made within 30 days of the Settling Work Defendants' receipt of the bill, Settling Work Defendants shall pay the United States Interest on the unpaid balance. The Interest to be paid on payments by Settling Cash Defendants under this Paragraph shall begin to accrue on the date payment is due under Paragraph 53 (or under Appendix D.2 to this Consent Decree). The Interest on Future Response Costs shall begin to accrue on the date of the bill. The Interest shall accrue through the date of the Settling Defendant's payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiff by virtue of Settling Defendants' failure to make timely payments under this Section. The Settling Work Defendants shall make all payments required by this Paragraph in the manner described in Paragraph 55.

XVII. YEOMAN CREEK ESCROW ACCOUNT

58. Disposition of Proceeds of Prior Settlements. The Parties acknowledge that certain proceeds of a separate settlement relating to the Site and settlement of certain contribution claims for the Site, as memorialized in a "Consent Decree Relating to De Minimis and other Settling Defendants" lodged with this Court in Cause No. 98 C 6389 (the "De Minimis Decree"), have been deposited in the so-called Yeoman Creek Escrow Account (the "Account"), which was established by certain parties to this Consent Decree, and which is administered by Old Kent Bank under a written Yeoman Creek Escrow Agreement.

59. Disposition of Proceeds of Certain Potential Future De Minimis Settlements.

a. If the United States, on behalf of EPA, and any or all of the potentially responsible parties listed in Appendix G of this Consent Decree — all of which were provided Special Notice relating to the Site pursuant to CERCLA Section 122(e) — enter into any de minimis settlements relating to the Site under CERCLA Section 122(g), such settlement shall provide that the proceeds of such de minimis settlements (excluding any monetary penalties) not exceeding \$500,000.00 in the aggregate shall be paid into the Yeoman Creek Escrow Account, and commingled with the amounts paid into the Account under the De Minimis Decree, and all proceeds of such de minimis settlements exceeding \$500,000.00 in the aggregate (and any monetary penalties) shall be paid into the EPA Hazardous Substances Superfund (or into a Yeoman Creek Landfill Special Account within the EPA Hazardous Substances Superfund).

b. Nothing in this Paragraph shall be construed as an agreement on the part of the United States to settle with any person for any particular terms. Nothing in this Paragraph shall be construed to prohibit the United States from settling with any person at any time on any terms the United States deems appropriate. The United States shall retain its unreviewable discretion to accept or reject settlement terms offered to the United States by any person at any time.

60. Administration of Escrow Account. In connection with the establishment of the Yeoman Creek Escrow Account, the Yeoman Creek Escrow Agreement (hereinafter the "Escrow Agreement") was provided to the United States for approval primarily to ensure that the

escrowed funds will be handled in accordance with the De Minimis Decree, and the Escrow Agreement has been so approved. Consistent with the relevant provisions of the De Minimis Decree and the Escrow Agreement, the Yeoman Creek Escrow Account shall be administered as follows:

- a. The escrow manager shall apply, retain, or use the funds in the Yeoman Creek Escrow Account as requested and approved by EPA in order to finance response actions taken or to be taken at or in connection with the Site, such as for payment of past response costs, future oversight costs, and/or future costs of conducting the response action.
- b. The escrow manager shall prepare and submit to EPA and to other persons designated by EPA statements every two months detailing money received and disbursed in the preceding two month period, and the balance in the account on the date of the statement.
- c. Other funds may be added to the Yeoman Creek Escrow Account to be applied, retained, or used to finance response actions taken or to be taken at or in connection with the Site.
- d. Interest earned on all funds in the Yeoman Creek Escrow Account shall be paid into the Account and shall first be applied to defray any account fees; any remaining net interest shall be applied, retained, or used in the same manner as other funds in the Account, except as otherwise specified by the De Minimis Decree, the Escrow Agreement, and this Consent Decree.

61. Disbursement of Escrow Account Funds. Subject to the terms and conditions of the De Minimis Decree, the Escrow Agreement, and this Consent Decree, the funds in the Yeoman Creek Escrow Account shall be applied, retained, and used as requested and approved by EPA, as follows:

- a. Consistent with Subparagraph 5.a.(4) of the De Minimis Decree, within 60 days after receiving notice of entry of an Order of the Court dismissing with prejudice all claims in Cause No. 92 C 7592 asserted against any and all of the parties to the De Minimis Decree named as defendants in Cause No. 92 C 7592, EPA shall approve the disbursement of all funds paid into the Yeoman Creek Escrow Account under the De Minimis Decree representing

contributions toward past response costs incurred in connection with the Site by the plaintiffs in Cause No. 92 C 7592, which shall amount to disbursement of no more than \$139,090.00.

b. Consistent with Subparagraph 5.a.(5) of the De Minimis Decree, all remaining funds paid into the Yeoman Creek Escrow Account, excluding the funds described in the preceding Subparagraph but including all net interest on all funds in the Account, (hereinafter the "remaining funds") shall be held in the Account and disbursed as follows to finance response actions taken or to be taken at or in connection with the Site:

(1) Within 60 days after EPA's approval of the Remedial Design Work Plan required under Section VI (Performance of Work By Settling Work Defendants) of this Consent Decree (but in no event earlier than 60 days after entry of this Consent Decree) EPA shall approve payment from the Yeoman Creek Escrow Account to the Settling Work Defendants of approximately one-third (1/3) of the remaining funds in the Account at that time.

(2) Within 60 days after EPA's approval of the Settling Work Defendants' final design submittal required under Section VI (Performance of Work By Settling Work Defendants) of this Consent Decree (but in no event earlier than 60 days after entry of this Consent Decree) EPA shall approve payment from the Yeoman Creek Escrow Account to the Settling Work Defendants of approximately one-half (1/2) of the remaining funds in the Account at that time.

(3) Within 60 days after Settling Work Defendants Initiate Construction of the Remedial Action as provided by Section V of the SOW (but in no event earlier than 60 days after entry of this Consent Decree) EPA shall approve payment from the Yeoman Creek Escrow Account to the Settling Work Defendants of all remaining funds in the Account.

(4) In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 90 of Section XXII (Covenants Not to Sue by Plaintiff) of this Consent Decree, all remaining funds in the Yeoman Creek Escrow Account at that time shall be disbursed to the EPA Hazardous Substances Superfund (or to a Yeoman

Creek Landfill Special Account within the EPA Hazardous Substances Superfund) to defray any otherwise unreimbursed Past Response Costs and/or Future Response Costs.

XVIII. INDEMNIFICATION AND INSURANCE

62. a. The United States does not assume any liability by entering into this agreement or by virtue of any designation of Settling Work Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Settling Work Defendants shall indemnify, save and hold harmless the United States and its officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Work Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree, including, but not limited to, any claims arising from any designation of Settling Work Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Work Defendants agree to pay the United States all costs it incurs including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Settling Work Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree. Neither the United States nor the State shall be held out as a party to any contract entered into by or on behalf of Settling Work Defendants in carrying out activities pursuant to this Consent Decree. Neither the Settling Work Defendants nor any such contractor shall be considered an agent of the United States or the State.

b. The United States shall give Settling Work Defendants notice of any claim for which the United States plans to seek indemnification pursuant to Paragraph 62, and shall consult with Settling Work Defendants prior to settling such claim.

63. Settling Defendants waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including,

but not limited to, claims on account of construction delays. In addition, Settling Work Defendants shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

64. No later than 15 days before commencing any on-site Work, Settling Work Defendants shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Action pursuant to Paragraph 49.b of Section XIV (Certification of Completion) comprehensive general liability insurance with limits of 10 million dollars, combined single limit, and automobile liability insurance with limits of 2 million dollars, combined single limit, naming the United States as an additional insured. In addition, for the duration of this Consent Decree, Settling Work Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Work Defendants in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, Settling Work Defendants shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Work Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the effective date of this Consent Decree. If Settling Work Defendants demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Work Defendants need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XIX. FORCE MAJEURE

65. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Work Defendants, of any entity controlled by Settling Work Defendants, or of Settling Work Defendants' contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Work

Defendants' best efforts to fulfill the obligation. The requirement that the Settling Work Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards.

66. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Settling Work Defendants shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Director of the Superfund Division, EPA Region 5, within twenty-four hours of when Settling Work Defendants first knew that the event might cause a delay. Within 20 days thereafter, Settling Work Defendants shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Work Defendants' rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to whether, in the opinion of the Settling Work Defendants, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Work Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude Settling Work Defendants from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Settling Work Defendants shall be deemed to know of any circumstance of which Settling Work Defendants, any entity controlled by Settling Work Defendants, or Settling Work Defendants' contractors knew or should have known.

67. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force

majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the Settling Work Defendants in writing of its decision. If EPA agrees that the delay is attributable to a force majeure event, EPA will notify the Settling Work Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

68. If the Settling Work Defendants elect to invoke the dispute resolution procedures set forth in Section XX (Dispute Resolution), they shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Settling Work Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Work Defendants complied with the requirements of Paragraphs 65 and 66, above. If Settling Work Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Settling Work Defendants of the affected obligation of this Consent Decree identified to EPA and the Court.

XX. DISPUTE RESOLUTION

69. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of the Settling Defendants that have not been disputed in accordance with this Section.

70. Any dispute which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

71. a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within 30 days after the conclusion of the informal negotiation period, Settling Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States and the State a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Defendants. The Statement of Position shall specify the Settling Defendants' position as to whether formal dispute resolution should proceed under Paragraph 72 or Paragraph 73.

b. Within 20 days after receipt of Settling Defendants' Statement of Position, EPA will serve on Settling Defendants its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 72 or 73. Within 20 days after receipt of EPA's Statement of Position, Settling Defendants may submit a Reply. In their Reply, the Settling Defendants may request a meeting between the Director of the Superfund Division, EPA Region 5, and the Settling Defendants to discuss the contested issues.

c. If there is disagreement between EPA and the Settling Defendants as to whether dispute resolution should proceed under Paragraph 72 or 73, the parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if the Settling Defendants ultimately appeal to the Court to resolve the dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 72 and 73.

72. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and

(2) the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by Settling Defendants regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Director of the Superfund Division, EPA Region 5, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 72.a. This decision shall be binding upon the Settling Defendants, subject only to the right to seek judicial review pursuant to Paragraph 72.c. and d.

c. Any administrative decision made by EPA pursuant to Paragraph 72.b. shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the Settling Defendants with the Court and served on all Parties within 10 days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to Settling Defendants' motion.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendants shall have the burden of demonstrating that the decision of the Superfund Division Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 72.a.

73. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Defendants' Statement of Position submitted pursuant to Paragraph 71, the Director of the Superfund Division, EPA Region 5, will issue a final decision resolving the dispute. The Superfund Division Director's decision shall be binding

on the Settling Defendants unless, within 10 days of receipt of the decision, the Settling Defendants file with the Court and serve on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Defendants' motion.

b. Notwithstanding Paragraph L of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

74. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Defendants under this Consent Decree, not directly in dispute, unless EPA or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 82. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the Settling Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XXI (Stipulated Penalties), unless EPA agrees in writing or the Court rules otherwise.

XXI. STIPULATED PENALTIES

75. Settling Defendants shall be liable for stipulated penalties in the amounts set forth in Paragraph 76 to the United States for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section XIX (Force Majeure) or Section XX (Dispute Resolution). "Compliance" by Settling Work Defendants shall include completion of the activities under this Consent Decree or any work plan or other plan approved under this Consent Decree identified below in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.

76. a. The following stipulated penalties shall accrue and shall be payable by the Settling Work Defendants per violation per day for any noncompliance identified below:

<u>VIOLATION</u>	<u>PENALTY</u>		
	<u>UP TO 10 DAYS</u>	<u>11-30 DAYS</u>	<u>OVER 30 DAYS</u>
Failure to submit any progress report required by Section X in a timely manner and adequate form:	\$500	\$1,000	\$2,500
Failure to submit any other report (in draft or final form) required by the SOW in a timely manner and adequate form:	\$1,000	\$2,000	\$5,000
Failure to submit any of the following plans (in draft or final form) in a timely manner and adequate form:			
Health and Safety Plans, PDDC Work Plan, Remedial Design Work Plan, Remedial Action Work Plan, or Supplemental Remedial Action Work Plan:	\$1,000	\$2,000	\$5,000
Design Plans for Preliminary Design, 95% Design, or Final Design	\$1,000	\$2,000	\$5,000
Failure to complete the following components of remedial action as scheduled:			
Award RA Contract(s)	\$1,000	\$2,000	\$5,000
Initiate any phase of construction	\$1,000	\$3,000	\$10,000
Complete any phase of construction	\$1,000	\$3,000	\$10,000
Failure to conduct any inspection, meeting, or briefing required by the SOW:	\$1,000	\$2,000	\$5,000
Failure to comply with notice requirements of the following provisions:			
Notice of a release	\$2,000	\$5,000	\$10,000
Notice of a delay	\$1,000	\$2,500	\$5,000
Failure to take action to abate an endangerment under Section XV:	\$2,500	\$5,000	\$10,000

b. A stipulated penalty of \$1000.00 per day per violation shall accrue and shall be payable to the United States by any Settling Cash Defendant for its failure to make timely payment of the amount payable by such Settling Cash Defendants under Section XVI (Reimbursement of Response Costs) of this Consent Decree, in addition to any Interest on such amounts and such other remedies or sanctions available to Plaintiff.

77. In the event that EPA assumes performance of a substantial portion or all of the Work pursuant to Paragraph 90 of Section XXII (Covenants Not to Sue by Plaintiff), Settling Work Defendants shall be liable for a stipulated penalty in the amount of \$200,000.00.

78. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Work Defendants of any deficiency; (2) with respect to a decision by the Director of the Superfund Division, EPA Region 5, under Paragraph 72.b or 73.a of Section XX (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that Settling Work Defendants' reply to EPA's Statement of Position is received until the date that the Director issues a final decision regarding such dispute; or (3) with respect to judicial review by this Court of any dispute under Section XX (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

79. Following EPA's determination that Settling Defendants have failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendants written notification of the same and describe the noncompliance. EPA may send the Settling Defendants a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified the Settling Defendants of a violation.

80. All penalties accruing under this Section shall be due and payable to the United States within 30 days of the Settling Defendants' receipt from EPA of a demand for payment of the penalties, unless Settling Defendants invoke the Dispute Resolution procedures under Section XX (Dispute Resolution). All payments to the United States under this Section shall be paid by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund," shall indicate that the payment is for stipulated penalties, shall reference the EPA Region and Site/Spill ID #5Z26, the DOJ Case Number 90-11-2-1315, and the name and address of the party making payment, and shall be mailed to:

United States Environmental Protection Agency, Region 5
Superfund Accounting
P.O. Box 70753
Chicago, Illinois 60673

Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to the United States as provided in Section XXVII (Notices and Submissions), and to the Director, Superfund Division (S-6J), U.S. EPA, Region 5, and the Comptroller Branch Chief (5-PMD), Superfund Division, U.S. EPA, Region 5, both located at 77 West Jackson Blvd., Chicago, Illinois 60604.

81. The payment of penalties shall not alter in any way Settling Work Defendants' obligation to complete the performance of the Work required under this Consent Decree.

82. Penalties shall continue to accrue as provided in Paragraph 78 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA within 15 days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Defendants shall pay all accrued penalties determined by the Court to be owed to EPA within 60 days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the District Court's decision is appealed by any Party, Settling Defendants shall pay all accrued penalties determined by the District Court to be owing to the United States into an interest-bearing escrow account within 60 days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every 60 days. Within 15 days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to Settling Defendants to the extent that they prevail, or as otherwise directed by the Court.

83. a. If Settling Defendants fail to pay stipulated penalties when due, the United States may institute proceedings to collect the penalties, as well as Interest. Settling Defendants shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 80.

b. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States or the State to seek any other remedies or sanctions available by virtue of Settling Defendants' violation of this Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA; provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of the Consent Decree.

84. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, defer or waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

XXII. COVENANTS BY PLAINTIFF

85. a. Settling Work Defendants. In consideration of the actions that will be performed and the payments that will be made by the Settling Work Defendants under the terms of the Consent Decree, and except as specifically provided in Paragraphs 86, 87, and 89.a of this Section, the United States covenants not to sue or to take administrative action against Settling Work Defendants pursuant to Sections 106 and 107(a) of CERCLA relating to the Site. Except with respect to future liability, these covenants not to sue shall take effect upon the entry of this

Consent Decree. With respect to future liability, these covenants not to sue shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 49.b of Section XIV (Certification of Completion). These covenants not to sue are conditioned upon the satisfactory performance by Settling Work Defendants of their obligations under this Consent Decree. These covenants not to sue extend only to the Settling Work Defendants and do not extend to any other person; provided, however, that these covenants not to sue (and reservations thereto) shall also apply to Settling Work Defendants' officers, directors, employees, successors and assigns, but only to the extent that the alleged liability of the officer, director, employee, successor or assign is based on its status and in its capacity as a Settling Work Defendant's officer, director, employee, successor, or assign, and not to the extent the alleged liability arose independently of the alleged liability of the Settling Work Defendants.

b. Settling Cash Defendants. In consideration of the payments that will be made by the Settling Cash Defendants under the terms of the Consent Decree, and except as specifically provided in Paragraphs 86, 87, and 89.b of this Section, the United States covenants not to sue or to take administrative action against Settling Cash Defendants pursuant to Sections 106 and 107(a) of CERCLA relating to the Site. Except with respect to future liability, these covenants not to sue shall take effect upon the entry of this Consent Decree. With respect to future liability, these covenants not to sue shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 49.b of Section XIV (Certification of Completion). These covenants not to sue are conditioned upon the satisfactory performance by Settling Cash Defendants of their obligations under this Consent Decree. These covenants not to sue extend only to the Settling Cash Defendants and do not extend to any other person; provided, however, that these covenants not to sue (and reservations thereto) shall also apply to Settling Cash Defendants' officers, directors, employees, successors and assigns, but only to the extent that the alleged liability of the officer, director, employee, successor or assign is based on its status and in its capacity as a Settling Cash Defendant's officer, director, employee, successor, or assign, and not to the extent the alleged liability arose independently of the alleged liability of the Settling Cash Defendants.

c. Settling Federal Agencies. In consideration of the payments that will be made by the Settling Federal Agencies under the terms of this Consent Decree, and except as

specifically provided in Paragraphs 86, 87, and 89.b of this Section, EPA covenants not to take administrative action against the Settling Federal Agencies pursuant to Sections 106 and 107(a) of CERCLA relating to the Site. Except with respect to future liability, EPA's covenant shall take effect upon entry of this Consent Decree. With respect to future liability, these covenants not to sue shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 49.b of Section XIV (Certification of Completion). EPA's covenant is conditioned upon the satisfactory performance by Settling Federal Agencies of their obligations under this Consent Decree. EPA's covenant extends only to the Settling Federal Agencies and does not extend to any other person.

86. United States' Pre-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Defendants, and EPA reserves the right to issue an administrative order seeking to compel the Settling Federal Agencies

a. to perform further response actions relating to the Site or

b. to reimburse the United States for additional costs of response if, prior to Certification of Completion of the Remedial Action:

- (1) conditions at the Site, previously unknown to EPA, are discovered,
- or
- (2) information, previously unknown to EPA, is received, in whole or in part,

and these previously unknown conditions or information together with any other relevant information indicates that the Remedial Action is not protective of human health or the environment.

87. United States' Post-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an

administrative order seeking to compel Settling Defendants, and EPA reserves the right to issue an administrative order seeking to compel the Settling Federal Agencies

- a. to perform further response actions relating to the Site or
- b. to reimburse the United States for additional costs of response if, subsequent to Certification of Completion of the Remedial Action:

- (1) conditions at the Site, previously unknown to EPA, are discovered.

or

- (2) information, previously unknown to EPA, is received, in whole or in part,

and these previously unknown conditions or this information together with other relevant information indicate that the Remedial Action is not protective of human health or the environment.

88. For purposes of Paragraph 86, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date the ROD was signed and set forth in the Record of Decision for the Site and the administrative record supporting the Record of Decision. For purposes of Paragraph 87, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action and set forth in the Record of Decision, the administrative record supporting the Record of Decision, the post-ROD administrative record, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to Certification of Completion of the Remedial Action.

89. a. General Reservations of Rights as to Settling Work Defendants. The covenants set forth above do not pertain to any matters other than those expressly specified in Paragraph 85.a. The United States reserves, and this Consent Decree is without prejudice to, all rights against Settling Work Defendants with respect to all other matters, including but not limited to, the following:

- (1) claims based on a failure by Settling Work Defendants to meet a requirement of this Consent Decree;
- (2) liability arising from the past, present, or future disposal, release, or threat of release of Waste Materials outside of the Site;
- (3) liability for future disposal of Waste Material at the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA;
- (4) liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- (5) criminal liability;
- (6) liability for violations of federal or state law which occur during or after the Remedial Design or the implementation of the Remedial Action;
- (7) liability, prior to Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 14 (Modification of the SOW or Related Work Plans);
- (8) liability, after Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards for groundwater quality, whether or not such response actions can be required pursuant to Paragraph 14 (Modification of the SOW or Related Work Plans);
- (9) liability, after Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards for the leachate collection and treatment system, whether or not such response actions can be required pursuant to Paragraph 14 (Modification of the SOW or Related Work Plans); and
- (10) claims based on a failure to meet a requirement of the AOC or UAO.

b. General Reservations of Rights as to Settling Cash Defendants and Settling Federal Agencies. The covenants set forth above do not pertain to any matters other than those expressly specified in Paragraph 85.b (with respect to the Settling Cash Defendants) and 85.c (with respect to the Settling Federal Agencies). The United States reserves, and this Consent Decree is without prejudice to, all rights against Settling Cash Defendants, and EPA and the federal natural resources trustees reserve, and this Consent Decree is without prejudice to, all rights against the Settling Federal Agencies, with respect to all other matters, including but not limited to, the following:

- (1) claims based on a failure to meet one of their respective obligations under this Consent Decree;
- (2) liability arising from the past, present, or future disposal, release, or threat of release of Waste Materials outside of the Site;
- (3) liability of any Settling Cash Defendant or a Settling Federal Agency for its future disposal of Waste Material at the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA;
- (4) liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments; and
- (5) criminal liability.

90. Work Takeover In the event EPA determines that Settling Work Defendants have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portions of the Work as EPA determines necessary. Settling Work Defendants may invoke the procedures set forth in Section XX (Dispute Resolution), Paragraph 72, to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by the United States in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Settling Work Defendants shall pay as required by Section XVI (Reimbursement of Response Costs).

91. Notwithstanding any other provision of this Consent Decree, the United States retains all authority and reserves all rights to take any and all response actions authorized by law.

XXIII. COVENANTS BY SETTLING DEFENDANTS AND
SETTLING FEDERAL AGENCIES

92. a. Covenants Not to Sue By Settling Defendants. Subject to the reservations in Paragraph 93, Settling Defendants hereby covenant not to sue and agree not to assert any claims or causes of action against the United States with respect to the Site or this Consent Decree, including, but not limited to:

(1) any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. Section 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law, including but not limited to any claim relating to the performance of the Work and/or the performance of obligations under the AOC or UAO;

(2) any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Site;

(3) any claims arising out of response activities at the Site, including claims based on EPA's selection of response actions, oversight of response activities or approval of plans for such activities; or

(4) any claim for reimbursement from the Yeoman Creek Escrow Account.

b. Covenant By Settling Federal Agencies. Settling Federal Agencies hereby agree not to assert any direct or indirect claim for reimbursement from the Hazardous Substances Superfund (established pursuant to Internal Revenue Code Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law with respect to the Site or this Consent Decree. This covenant does not preclude demand for reimbursement from the Superfund of costs incurred by a Settling

Federal Agency in the performance of its duties (other than pursuant to this Consent Decree) as lead or support agency under the National Contingency Plan (40 C.F.R. Part 300).

93. The Settling Defendants reserve, and this Consent Decree is without prejudice to:

a. claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. Section 2671; nor shall any such claim include a claim based on EPA's selection of response actions, or the oversight or approval of the Settling Defendants' plans or activities. The foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA; and

b. contribution claims against the Settling Federal Agencies in the event any claim is asserted by the United States against the Settling Defendants under the authority of or under Paragraphs 86, 87, 89.a.(2)-(4), 89.a.(7), 89.a.(8), 89.a.(9), or 89.b.(2)-(4) of Section XXII (Covenants by Plaintiffs), but only to the extent and for the same matters, transactions, or occurrences as are raised in the claim of the United States against Settling Defendants.

94. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. Section 9611, or 40 C.F.R. Section 300.700(d).

95. Settling Defendants agree to waive all claims or causes of action that they may have for all matters relating to the Site, including for contribution, against the following persons:

a. any person (i) whose liability to Settling Defendants with respect to the Site is based solely on CERCLA Section 107(a)(3) or (4), (ii) who arranged for the disposal, treatment, or transport for disposal or treatment, or accepted for transport for disposal or

treatment, of only Municipal Solid Waste or Sewage Sludge owned by such person, and (iii) who is a Small Business, a Small Non-profit Organization, or the Owner, Operator, or Lessee of Residential Property;

b. any person (i) whose liability to Settling Defendants with respect to the Site is based solely on CERCLA Section 107(a)(3) or (4), and (ii) who arranged for the disposal, treatment, or transport for disposal or treatment, or accepted for transport for disposal or treatment, of 55 gallons or less of liquid materials containing hazardous substances, or 100 pounds or less of solid materials containing hazardous substances, except where EPA has determined that such material contributed or could contribute significantly to the costs of response at the Site; and

c. any person whose liability with respect to the Site has been resolved in a separate Consent Decree with the United States.

XXIV. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

96. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this decree may have under applicable law. Except as provided in the preceding Paragraph, each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

97. The Parties agree, and by entering this Consent Decree this Court finds, that the Settling Defendants and the Settling Federal Agencies are entitled, as of the effective date of this Consent Decree, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. Section 9613(f)(2) for matters addressed in this Consent Decree. For the purpose of this Section XXIII (Effect of Settlement; Contribution Protection), the "matters addressed" in this settlement are all response actions taken and to be taken and all response costs incurred or to be incurred by the United States (including Past Response Costs and

Future Response Costs) or by any other person (other than the State) with respect to the Site. The "matters addressed" in this settlement do not include those response actions or response costs as to which the United States has reserved its rights under this Consent Decree (except for claims for failure to comply with this Consent Decree), in the event that the United States asserts rights against Settling Defendants coming within the scope of such reservations.

98. The Settling Defendants agree that with respect to any suit or claim for contribution brought by them for matters related to this Consent Decree they will notify the United States in writing no later than 60 days prior to the initiation of such suit or claim.

99. The Settling Defendants also agree that with respect to any suit or claim for contribution brought against them for matters related to this Consent Decree they will notify in writing the United States within 10 working days of service of the complaint on them. In addition, Settling Defendants shall notify the United States within 10 working days of service or receipt of any Motion for Summary Judgment and within 10 working days of receipt of any order from a court setting a case for trial.

100. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXII (Covenants by Plaintiff).

XXV. ACCESS TO INFORMATION

101. Settling Defendants shall provide to EPA and the State, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the

Work. Settling Defendants shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work. Nothing in this Section XXV (Access to Information) shall be construed to (i) apply to any so-called "Shared Information" covered by a "Stipulation and Agreed Order for the Protection and Exchange of Confidential Information" entered by the Court in Cause No. 92 C 7592 (a copy of which is attached hereto as Appendix E), (ii) waive any claim of confidentiality or privilege applicable to any such Shared Information, (iii) require that Settling Defendants provide EPA or the State access to such Shared Information pursuant to this Consent Decree, or (iv) limit any independent legal authority of the United States or the State to otherwise obtain such Shared Information, including but not limited to any such authority under Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. Sections 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. Section 6927.

102. a. Settling Defendants may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiff under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. Section 9604(e)(7), and 40 C.F.R. Section 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA, or if EPA has notified Settling Defendants that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA, the public may be given access to such documents or information without further notice to Settling Defendants.

b. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege in lieu of providing documents, they shall provide the Plaintiff with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other

information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

103. No confidentiality claim shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XXVI. RETENTION OF RECORDS

104. Until 10 years after the Settling Defendants' receipt of EPA's notification pursuant to Paragraph 50 of Section XIV (Certification of Completion of the Work), each Settling Defendant shall preserve and retain all records and documents now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or liability of any person for response actions conducted and to be conducted at the Site, regardless of any corporate retention policy to the contrary. Until 10 years after the Settling Defendants' receipt of EPA's notification pursuant to Paragraph 50 of Section XIV (Certification of Completion of the Work), Settling Defendants shall also instruct their contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to the performance of the Work.

105. At the conclusion of this document retention period, Settling Defendants shall notify the United States and the State at least 90 days prior to the destruction of any such records or documents, and, upon request by the United States or the State, Settling Defendants shall deliver any such records or documents to EPA or the State. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege, they shall provide the Plaintiff or the State, as the case may be, with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no

documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

106. Each Settling Defendant hereby certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. Sections 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. Section 6927, and that it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents, or other information relating to its potential liability regarding the Site discovered in responding to such requests for information or in any subsequent investigation.

107. The United States acknowledges that each Settling Federal Agency (a) is subject to all applicable Federal record retention laws, regulations, and policies; and (b) has certified that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. Sections 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. Section 6927.

XXVII. NOTICES AND SUBMISSIONS

108. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, the State, and the Settling Defendants, respectively.

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Re: DJ # 90-11-2-1315
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611

and

Chief, Environmental Defense Section
U.S. Department of Justice
Re: DJ # 90-11-6-05228
P.O. Box 23986
Washington, DC 20026-3986

As to EPA:

Director, Superfund Division
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

and

Matthew Ohl
EPA Project Coordinator
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604
ohl.matthew@epamail.epa.gov

As to the State:

Greg Ratliff
State Project Coordinator
Illinois Environmental Protection Agency
220 Churchill Road
Springfield, Illinois 62794-9276

As to the Settling Work Defendants:

William G. Beck
Lathrop & Gage
2345 Grand Boulevard
Kansas City, MO 64108

and

The person duly designated as Settling Work Defendants' Project Coordinator pursuant to Section XII of this Consent Decree.

As to the Settling Cash Defendants:

The persons identified as designated agents for service of process for each Settling Cash Defendant on the corresponding signature page to this Consent Decree.

XXVIII. EFFECTIVE DATE

109. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court, except as otherwise provided herein.

XXIX. RETENTION OF JURISDICTION

110. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Settling Defendants for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XX (Dispute Resolution) herein.

XXX. APPENDICES

111. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is the ROD.

"Appendix B" is the SOW.

"Appendix C" is a map generally depicting the Site.

"Appendix D" is the complete list of the Settling Defendants.

"Appendix E" is the "Stipulation and Agreed Order for the Protection and Exchange of Confidential Information" entered by the Court in Cause No. 92 C 7592.

"Appendix F" is the Settlement Agreement among the Settling Work Defendants. By its incorporation herein, Appendix F shall be fully enforceable among the Settling Work Defendants by a motion for enforcement filed with the Court by any Settling Work Defendant, but Appendix F shall in no way limit or modify any rights of the United States against the Settling Defendants, or any individual or collective obligations of the Settling Defendants under this Consent Decree (including but not limited to the joint and several obligations of Settling Work Defendants to comply with Settling Work Defendants' obligations under this Consent Decree).

"Appendix G" is a list of certain recipients of Special Notice pursuant to CERCLA Section 122(e) relating to the Site.

XXXI. COMMUNITY RELATIONS

112. Settling Work Defendants shall propose to EPA and the State their participation in the community relations plan to be developed by EPA. EPA will determine the appropriate role for the Settling Work Defendants under the Plan. Settling Work Defendants shall also cooperate with EPA and the State in providing information regarding the Work to the public. As requested by EPA or the State, Settling Work Defendants shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA or the State to explain activities at or relating to the Site.

XXXII. MODIFICATION

113. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of EPA and the Settling Work Defendants. All such modifications shall be made in writing.

114. Except as provided in Paragraph 14 ("Modification of the SOW or related Work Plans"), no material modifications shall be made to the SOW without written notification to and written approval of the United States, Settling Work Defendants, and the Court. Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the SOW that do not materially alter that document may be made by written agreement between EPA, after providing the State with a reasonable opportunity to review and comment on the proposed modification, and the Settling Work Defendants.

115. Nothing in this Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

XXXIII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

116. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. Section 9622(d)(2), and 28 C.F.R. Section 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Defendants consent to the entry of this Consent Decree without further notice.

117. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation whether or not between the Parties.

XXXIV. SIGNATORIES/SERVICE

118. Each undersigned representative of a Settling Defendant to this Consent Decree and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such Party to this document.

119. Each Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Defendants in writing that it no longer supports entry of the Consent Decree.

120. Each Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree. Settling Defendants hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons.

XXXIV. FINAL JUDGMENT

121. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States and the Settling Defendants. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54.

SO ORDERED THIS __ DAY OF _____, 19__.

United States District Judge

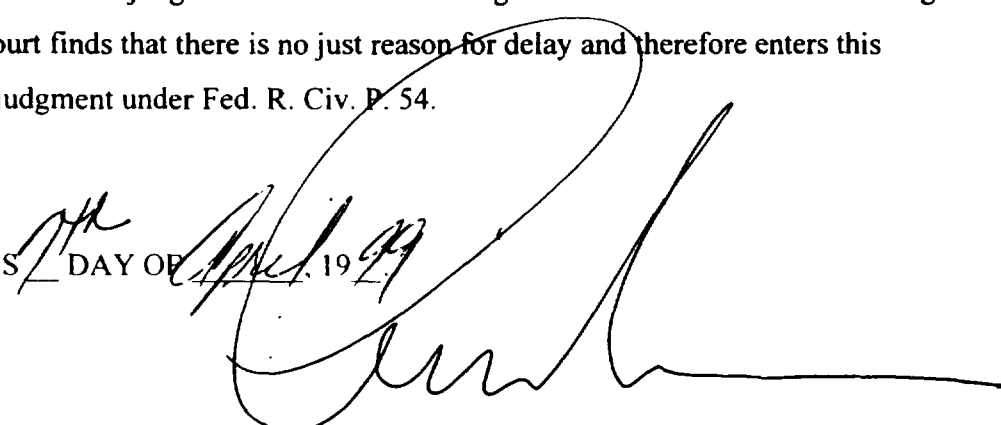
119. Each Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Defendants in writing that it no longer supports entry of the Consent Decree.

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121. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States and the Settling Defendants. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54.

SO ORDERED THIS 7th DAY OF April, 1999




United States District Judge


THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR THE UNITED STATES OF AMERICA

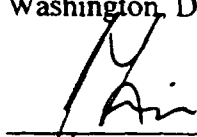
Date: 1/6/99


LOIS J. SCHIFFER
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

Date: 1/25/99


RANDALL M. STONE
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044

Date: 1/13/99


JON LIPSHULTZ
Trial Attorney
Environmental Defense Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 23986
Washington, D.C. 20026-3986

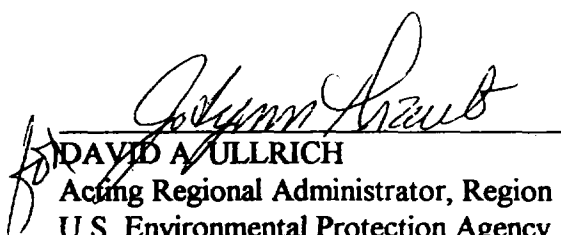
SCOTT R. LASSAR
United States Attorney

LINDA WAWZENSKI
Assistant United States Attorney
Northern District of Illinois
219 S. Dearborn Street — 5th Floor
Chicago, IL 60604

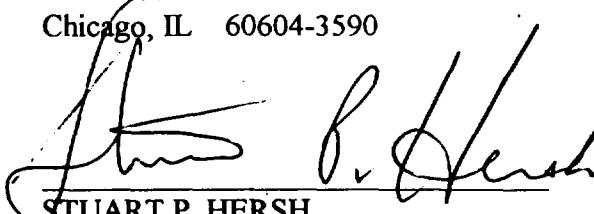
THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Date: 1/21/99


DAVID A. ULLRICH
Acting Regional Administrator, Region 5
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3590

Date: 1/21/98


STUART P. HERSH
Associate Regional Counsel
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard, C-14J
Chicago, IL 60604-3590

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

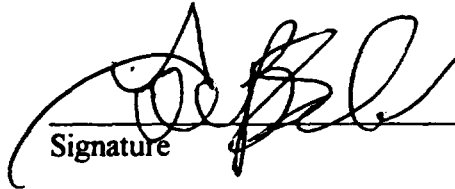
FOR SETTLING DEFENDANTS

BROWNING FERRIS INDUSTRIES, INC. and
BROWNING FERRIS INDUSTRIES OF ILLINOIS, INC.

Date:

12/15/98

Signature



Eileen B. Schuler

Typed Name

Assistant Secretary,
Browning-Ferris Industries, Inc.

Title

Vice President, Browning-Ferris

Address

Industries of Illinois,
Inc.

757 North Eldridge

Houston, TX 77079

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

Bill Beck

Title:

Counsel

Address:

Lathrop & Gage

Suite 2800

2345 Grand Avenue

~~Kansas City, MO 64108~~

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

WAUKEGAN COMMUNITY SCHOOL DISTRICT NO. 60

Date: 12-15-98

Thomas A. Morris Jr.
Signature

Thomas A. Morris, Jr.
Typed Name

Attorney
Title

Hinshaw & Culbertson
Address

222 North LaSalle Street

Suite 300

Chicago, IL 60601-1081

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Thomas A. Morris Jr.

Title: Attorney

Address: Hinshaw & Culbertson

222 N. LaSalle St., Suite 300

Chicago, IL 60601-1081

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

THE GOODYEAR TIRE & RUBBER COMPANY

Date: 12/14/98

C. Thomas Harvie
Signature

C. Thomas Harvie
Typed Name

Vice President
Title

1144 East Market Street
Address

Akron, OH 44316-0001

Attest: P. A. Kempf
P. A. Kempf, Assistant Secretary

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Neal T. Rountree

Title: Attorney

Address: 1144 East Market Street

Akron, OH 44316-0001

phone: 330-796-3737

fax: 330-796-8836

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

THE DEXTER CORPORATION

Date: November 23, 1998



Signature

Pierre C. Talbert

Typed Name

One of the Dexter Corporation's attorneys

Title

Katz Randall & Weinberg

Address

333 W. Wacker Drive, Suite 1800

Chicago, IL 60606

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Pierre C. Talbert, Esq.

Title: One of the Dexter Corporation's attorneys

Address: Katz, Randall & Weinberg

333 W. Wacker, Suite 1800

Chicago, IL 60606

312/807-3800

312/807-3903 (FAX)

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

OUTBOARD MARINE CORPORATION

Date: 12-9-98



Signature

Robert S. Romano

Typed Name

Vice President, General Counsel and Secretary

Title

Outboard Marine Corporation

Address

100 Sea Horse Drive

Waukegan, IL 60085

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Joseph S. Moran

Title: Senior Counsel

Address: Outboard Marine Corporation

100 Sea Horse Drive

Waukegan, IL 60085

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

CITY OF WAUKEGAN, ILLINOIS

Date:

11/25/98

Signature



William F. Durkin
Typed Name

Mayor
Title

City of Waukegan
Address

410 Sabonjian Place

Waukegan, IL 60085

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: City Clerk

Title: Attn: Corporation Counsel

Address: City of Waukegan

410 Sabonjian Place

Waukegan, IL 60085

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al. concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

FANSTEEL, INC.

Date: 12-3-98


Signature

Michael J. Mocniak
Typed Name

Vice President, General Counsel and
Title Secretary

One Tantalum Place
Address North Chicago, IL 60064

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael J. Mocniak

Title: Vice President, General Counsel and
Secretary

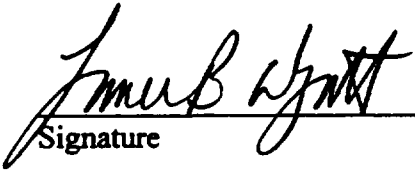
Address: One Tantalum Place
North Chicago, IL 60064

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site

FOR SETTLING DEFENDANT

ABBOTT LABORATORIES

Date: 30 November 98


Signature

Lance B. Wyatt

Typed Name

Vice President, Corporate Engineering
Title

Abbott Laboratories
Address

Dept. 500, Bldg. AP52

100 Abbott Park Road

Abbott Park, Illinois 60064-3500

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Jose M. de Lasa
Senior Vice President
Title: Secretary and General Counsel


Address: Abbott Laboratories
Dept. 364, Bldg. AP6D
100 Abbott Park Road

Abbott Park, Illinois 60064-3500

THE UNDERSIGNED PARTIES enter into this Partial Consent Decree Relating to Remedial Design/Remedial Action in the matter of United States v. USX Corporation, et al., concerning the Yeoman Creek Landfill Superfund Site.

FOR SETTLING DEFENDANT
CITY OF NORTH CHICAGO

Date: 12/15/98


Signature

Jerry L. Johnson
Typed Name

Mayor
Title

1850 S. Lewis Avenue
Address

North Chicago, IL 60064

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: William G. Rosing

Title: Counsel to the City of North Chicago

Address: One North County Street

Waukegan, IL 60085

Appendix A to Consent Decree: Record of Decision

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Yeoman Creek Landfill
Waukegan, Illinois

STATEMENT OF BASIS AND PURPOSE

This decision document represents the selected Final Remedial Action for the Yeoman Creek Landfill Site in Waukegan, Illinois. This action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, with the National Oil and Hazardous Substances Contingency Plan (NCP). The decisions contained herein are based on information contained in the administrative record for this site.

The State of Illinois concurs with the selected remedy. The concurrence letter is attached to this Declaration.

ASSESSMENT OF THE REMEDY

Actual or threatened releases of hazardous substances from the site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE REMEDY

This remedy is intended to be the final action for this site. This final action includes containment of landfilled wastes, excavation and on-site containment of contaminated soils and sediments, collection and treatment of leachate entering Yeoman Creek, and recovery and treatment of landfill gases. This final action addresses the following migration pathways from the Site: releases of leachate to ground water, surface water, surface sediments, and wetlands; and release of landfill gases to air

within adjacent buildings and to the ambient air.

The major components of the selected remedy include:

- construction of a new cover over the landfill to minimize infiltration of precipitation through the landfill, consisting of the following components: a 3 foot frost protection layer including a top vegetated layer;
- a geosynthetic drainage layer overlain by a protective geonet providing a hydraulic conductivity of 28 cm/sec, a barrier layer consisting of a 3 feet Compacted Clay Liner which meets Illinois Solid Waste Landfill closure standards, or an equivalent primary barrier layer such as a primary barrier layer consisting of a 40 mil very low density polyethylene liner (or equivalent), a secondary barrier layer consisting of a Geosynthetic Clay Liner or a Compacted Clay Liner which meets Illinois Solid Waste Landfill closure regulations, a gas ventilation layer, and a grading layer to provide a 2% slope after settlement;
- implementation of a long term monitoring system which shall include sampling for leachate/ground water along Yeoman Creek, surface water and creek sediments, and leachate sampling within the landfill. In the event action levels are exceeded, post operation of the cap, construction and operation of a leachate collection system will be required. If determined necessary, the leachate collection system would be constructed along both sides of Yeoman Creek adjacent to the northern portion of the landfill to prevent leachate and contaminated groundwater from entering or seeping into Yeoman Creek along the northern portion of the landfill;
- construction and operation of an active perimeter landfill gas collection and treatment system;
- excavation and consolidation under the new cover of contaminated sediments in Yeoman Creek and possibly of limited wetland areas and non-wetland soils that exceed cleanup action levels defined in the Record of Decision Summary;
- actions, including investigations, modeling, alternative evaluation, and implementation, necessary to comply with the

Illinois Department of Transportation and Lake County Storm Water Management Commission regulation of development within floodways and flood plains, which may include: creation of compensatory storage for lost flood plain storage; use of artificial channels combined with detention facilities or other technologies to maintain stream capacity without increasing the average velocity through the Site; excavation of landfill wastes and soils at the Site out of the floodway and flood plain and consolidation on-site for containment under the new Site cover; and approval of a variance or variances from the floodway and flood plain regulations by the regulatory Agencies;

- Actions to minimize the destruction, loss, or degradation of wetlands, including compensation for wetlands that will be lost or adversely affected by the selected remedial action;
- Enclosing Yeoman Creek in a corrugated steel semi-arch pipe, as necessary for construction of the site cover;
- Rerouting and sealing storm drains that go through the Yeoman Creek and Edwards Creek portion of the landfill;
- Continuation of interim measures to address landfill gas entry into buildings near the Site until the active gas collection system is installed and demonstrated to be effective, including monitoring for landfill gas entry into certain buildings north of the Site, and operation and maintenance of the ventilation system in a building north of the Site;
- Additional investigation to define the extent of ground water contamination, the extent of sediment excavation, the extent of contaminated soil excavation, and baseline wetland conditions;
- Long term monitoring of ground water, surface water, surface sediments, and wetland conditions to verify the effectiveness of the remedial action;
- Imposition of deed restrictions prohibiting future usage of the Site for purposes that are inconsistent with the selected remedy;

- Implementation of access restrictions, including enclosing the entire Site in a fence and posting warning signs.
- Long term maintenance and post closure care.

STATUTORY DETERMINATIONS

This Final Remedial Action is protective of human health and the environment, complies with Federal and State applicable or relevant and appropriate requirements and is cost-effective. The selected remedial action utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. However, due to the large volume and heterogeneous distribution of waste at the Site, treatment as a principle element is not considered practicable at the Site. Thus, this remedy does not satisfy the statutory preference for treatment that reduces toxicity, mobility, or volume as a principal element. However, treatment is a secondary element in that landfill gases will be treated resulting in destruction of hazardous substances.

A review will be conducted to ensure that the remedy continues to provide adequate protection of human health and the environment within five years after commencement of the remedial action.

September 30, 1996
Date

David A. Ullrich
for Valdas V. Adamkus
Regional Administrator

RECORD OF DECISION SUMMARY

YEOMAN CREEK LANDFILL SITE, WAUKEGAN, ILLINOIS

I. SITE NAME, LOCATION, AND DESCRIPTION

The Yeoman Creek Landfill (Landfill) Site (Site) is located between Sunset Ave./Golf Road on the north, Glen Flora Avenue on the south, Lewis Avenue on the west, and Western Avenue on the east, in the City of Waukegan, Illinois (see Figure 1). The landfilled area covers approximately 60 acres. The Site is adjacent to a large wetland, and residential and commercial developments, including single family residences, apartment buildings, a nursing home, a doctor's office, a shopping center, and restaurants. Yeoman Creek flows through the Site and into the Waukegan River 1.75 miles downstream from the Site. The Waukegan River flows into Lake Michigan approximately 2.25 miles downstream from the Site.

The landfill was largely constructed within wetlands and also within the flood plain of Yeoman Creek. The landfill is still partially within the floodway and flood plain of Yeoman Creek. The landfill is fairly shallow with an estimated maximum depth of 19 feet. The total volume of landfilled waste has been estimated to be over one million cubic yards.

The Site can be divided into two discontinuous portions. The portion north of the power lines and Greenwood Avenue (see Figures 1 and 2) will be referred to as the Yeoman Creek Landfill portion of the Site, and the portion south of the power lines and Greenwood Avenue will be referred to as the Edwards Field Landfill portion of the Site. The Yeoman Creek landfill portion includes an estimated 49.2 acres of landfilled area, and the Edwards Field Landfill portion includes an estimated 11.9 acres of landfilled area. These portions of the Site had the same owner, operator, and operational procedures, as well as being in close proximity to each other.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Site was operated as a municipal landfill from 1958 through 1969. The Edwards Field Landfill portion operated as a landfill from 1958 through 1963, and the Yeoman Creek Landfill portion from 1962 through 1969. Some landfiling also occurred south of Edwards Field after 1962 and is considered part of the Site.

The Illinois Environmental Protection Agency (IEPA) inspected both portions of the landfill periodically during the 1970s. IEPA repeatedly reported violations of IEPA regulations due to discharge of leachate to Yeoman Creek and inadequate cover thickness at the Yeoman Creek Landfill portion.

As a result, IEPA eventually initiated an enforcement action against the City of Waukegan. In 1981, additional cover was placed over the Yeoman Creek Landfill portion, which generally provided a two foot cover over the entire landfill. According to a draft IEPA report, this action reduced the amount of leachate discharge. Leachate discharges were also reported by IEPA for the Edwards Field portion of the Site prior to 1975.

From 1978 through 1981, IEPA conducted a more thorough investigation of the Yeoman Creek Landfill portion of the Site (but not the Edwards Field portion), including conducting leachate, ground water, surface water, and stream sediment sampling. The result of most concern was that PCBs were detected in the leachate, stream sediment, and ground water. Later sampling by U.S. EPA during the 1980s confirmed the detection of PCBs in the stream sediments, and leachate at the Yeoman Creek Landfill portion. Based on this information, U.S. EPA added the Yeoman Creek Landfill Site to the National Priorities List, which made the Site eligible for a federally funded investigation and cleanup. Later it was realized that the Edwards Field Landfill portion should be part of the Site since it is in the vicinity of the Yeoman Creek Landfill portion, and had the same owner, operator, and operational procedures.

U.S. EPA identified potentially responsible parties (PRPs) for the Site. In December 1989, U.S. EPA and IEPA entered an Administrative Order by Consent (Order) with a number of PRPs requiring the PRPs to conduct a Remedial Investigation/Feasibility Study under U.S. EPA and IEPA oversight, and to conduct certain interim remedial measures including implementing erosion control measures and fencing the Site. U.S. EPA had the lead in providing oversight. The first action completed under this order was fencing the known landfill boundaries to restrict access, which was completed in 1990. Erosion control actions were also completed in 1990.

The agreement between U.S. EPA and IEPA, and the PRPs was amended

in 1991 to add the Edwards Field area to the Site. Subsequently, use of this area for baseball playing was discontinued and the area was enclosed in a fence.

Sampling for the Remedial Investigation was conducted from 1991-1993. This included conducting soil borings to define the extent of the landfill, a hydrogeological investigation, ground water sampling, surface water sampling, sediment sampling, soil sampling and landfill gas sampling.

In October 1992, landfill gas sampling appeared to indicate that landfill gases were migrating off-site and entering the basement of an adjacent building.

During 1993 and 1994, under an amendment to the Order, PRPs implemented interim measures to attempt to address this situation, including blocking gas entry through footing drains and cracks in the floor, construction and operation of a basement ventilation system, and regular monitoring.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

A kickoff meeting for the Remedial Investigation/Feasibility Study was held in October 1991. News releases were provided to the public in August 1992 and October 1992 regarding the detection of landfill gases off-site and possibly entering an adjacent building. In addition, an availability session was held by U.S. EPA regarding the landfill gas concerns and the general progress of the investigation in July 1993. In July 1994, U.S. EPA met with officials from the City of Waukegan, the Waukegan Park District, and Waukegan School District #60, who are potentially responsible parties, to listen to their concerns.

The public participation requirements of CERCLA section 113(k)(2)(B)(i-v) and 117 were addressed when a Proposed Plan was published by U.S. EPA in May 1995. U.S. EPA provided a public comment period on the Proposed Plan from May 15, 1995 through July 15, 1995, and conducted a public meeting on the Proposed Plan on June 1, 1995. U.S. EPA also met again with officials from the City of Waukegan, the Waukegan Park District and Waukegan School District #60 in August 1995. U.S. EPA's response to the public comments received are summarized in the attached Responsiveness Summary, which is part of this Record of Decision.

IV. SCOPE OF THE SELECTED REMEDY

Under the existing Order, interim measures have already been taken to mitigate threats due to potential entry of landfill gases into an adjacent building, to restrict access to the Site by construction of a fence around the Site, and to stabilize the Site by implementation of erosion control measures. The PRPs have also imposed deed restrictions over most of the Site property.

The purpose of this Record of Decision (ROD) is to select the final remedial actions for the Site. This final remedy is a source control remedy, which contains or controls the landfill, contaminated soils and sediments from the landfill, and releases of leachate and landfill gas from the landfill. The remedy addresses all media and migration pathways that are considered to present an unacceptable risk, including landfilled wastes; contaminated soil and sediment; and releases to surface water, to ambient air, to air within adjacent buildings, to ground water, to surface sediments, and to wetlands.

This remedy does not include treatment that reduces toxicity, mobility, or volume as a principal element. Because of the size of the landfill (over one million cubic yards), the costs for excavation and treatment of the entire landfill would be prohibitive. In addition, excavation and treatment of the entire landfill would entail significant public health and environmental risks. Therefore, alternatives for excavation and treatment of the entire landfill were not evaluated. Available information on the landfill operations indicates that it would not be worthwhile to attempt to locate concentrated areas of hazardous substance disposal (hot spots). Therefore, alternatives were not evaluated for location and treatment or removal of hot spots in the landfill. In addition, because the amount of ground water contamination is limited, the remedy does not include direct ground water treatment.

V. SUMMARY OF SITE CHARACTERISTICS

Based on information available to U.S. EPA, it appears that wastes deposited at the Site were predominantly typical, putrescible municipal solid wastes, but wastes from industrial and commercial facilities in the area were also disposed of at

the Site. Information available to U.S. EPA indicates that wastes from industrial and commercial sources included waste oil that was likely contaminated with high concentrations of polychlorinated biphenyls (PCBs), spent solvent, paint wastes, resin wastes, foundry sand, waste inks, uncured rubber, and auto and truck repair wastes.¹ U.S. EPA has no firm evidence that hazardous wastes as defined by RCRA were disposed of at the Site. Samples of the landfilled wastes were not collected, but leachate concentrations were well below the regulatory levels for hazardous substances by characteristic under RCRA. Evidence from depositions of persons using and operating the landfill, indicate that hazardous or drummed wastes were not segregated on the Site, but were deposited and compacted along with other wastes that were being buried at the time of disposal.

The soil borings were conducted along the perimeter of the landfill to determine the areal extent of the landfilling. This investigation indicated that the landfilled area extends north of the expected property boundaries along the north boundary of the Yeoman Creek Landfill portion, and south of the expected property boundary of the Edwards Field Landfill portion (see Figure 2).

Borings were conducted to investigate the existing site cover characteristics. The existing cover is very flat over almost all of the Site. The cover is from 2-4 feet thick, and generally consists of low plasticity clays. Samples of the cap produced laboratory hydraulic conductivity values of from 1.7×10^{-5} to 6.3×10^{-9} cm/sec, although the site cover also had desiccation cracks.

The hydrogeological and ground water investigation included 32 borings and monitoring wells into the outwash, and two borings and monitoring wells into bedrock. The results indicate that the geology is complex and locally variable (see Figure 3 for a cross section). The shallow upper outwash unit is discontinuous at the Site and may be only locally interconnected to the shallow ground

There is firm evidence that waste oil likely containing high concentrations of PCBs was disposed of at the Yeoman Creek Landfill portion of the Site, but firm evidence for disposal of waste oil likely containing PCBs is not available for the Edwards Field portion of the Site.

water unit at the Site, which the Remedial Investigation consultant designated as the fluviolacustrine unit. A lower outwash unit is continuous within the study area. The bedrock units are isolated from the shallower flow systems by more than 30 feet of till. The shallow outwash, fluviolacustrine sands and lower outwash meet the requirements for Class I aquifers pursuant to 35 IAC 620.

The hydrogeological investigation showed that the landfill is connected to permeable portions of the shallow ground water, that shallow permeable formations are connected to the deeper outwash aquifer at the Site, and that most of the landfill leachate either seeps into lower outwash aquifer or into Yeoman Creek. The shallow aquifer is discontinuous at the Site; so there may be little communication between the shallow aquifer and the contaminated shallow ground water at the Site. The flow direction in the shallow and deep outwash is primarily to the east toward Lake Michigan. A horizontal flow direction in the fluviolocustrine sands could not be determined. The distribution of chloride concentrations at the Site appears to confirm that the Site is impacting the fluviolacustrine sands and the deep outwash aquifer.

It is estimated that 88 percent of the Yeoman Creek Landfill and 69 percent of the Edwards Field Landfill is presently under the water table. Capping the Site may reduce the percentage of waste below the water table to 37 percent at the Yeoman Creek Landfill and 46 percent of the Edwards Field Landfill.

Ground water is not used in the vicinity of the Site, and a City of Waukegan ordinance requires use of the municipal system for residential water within the City. The ground water is used for residential purposes in Beach Park approximately two miles from the Site. Based on available information, it does not appear that ground water from the Site has the potential to affect these residential wells.

According to Golder Associates, Yeoman Creek is a gaining stream along the Yeoman Creek Landfill portion, but appears to be a losing stream south of the Yeoman Creek Landfill portion (see p. 48 of the Remedial Investigation Report, Yeoman Creek/Edwards Field Landfills, Waukegan, Illinois, February 1995 by Golder Associates). Landfilled wastes are present within a few feet of

Yeoman Creek along the Yeoman Creek Landfill portion, including within approximately 10 feet of Yeoman Creek along an estimated 600 feet of the total of 3200 feet of the Yeoman Creek Landfill portion bordering Yeoman Creek. At the Edwards Field portion, there is at least a 30 foot buffer between the landfilled wastes and Yeoman Creek.

PCBs were detected in wetland soils, stream sediments, stream water, and leachate, but were not detected in the ground water. The highest concentration of PCBs detected in surface soils outside the fenced area was 2 mg/kg, the highest concentration in stream sediments was 82 mg/kg, and PCBs were only detected in one surface water sample at a concentration of 0.5 ug/l. The PCB concentrations in stream sediments were highest adjacent to the Yeoman Creek Landfill portion, and dropped off to non-detect concentrations past the Edwards Field Landfill portion (see Figure 4). PCBs were detected in all three of the leachate seep samples at the Yeoman Creek Landfill portion with a maximum concentration of 71 ug/l. PCBs were detected in all four leachate seep soil samples at the Yeoman Creek Landfill portion at a maximum concentration of 90 mg/kg. PCBs were detected in all four leachate well samples at the Yeoman Creek Landfill portion at a maximum concentration of 190 ug/l. However, no PCBs were detected in the four leachate seep soil samples collected at the Edwards Field Landfill portion (no liquid seep samples could be collected at the Edwards Field Landfill portion). PCBs were only detected in one out of the three leachate well samples collected in the Edwards Field Landfill portion at a concentration of only 0.5 ug/l. In addition, no PCBs were detected in the wetland soil samples south of the Edwards Field Landfill portion.

Other contaminants and characteristics of concern and their maximum detected levels include:

In landfill gas:

- explosivity (100% LEL);
- benzene (1.2 mg/m³);
- trichloroethylene (0.087 mg/m³);
- tetrachloroethylene (0.051 mg/m³);
- vinyl chloride (not detected in landfill gas but detected in gas entering an adjacent building at 52 ppbv).

In ground water;

arsenic (284 ug/l);
beryllium (3.8 ug/l);
lead (103 ug/l);
manganese (2860 ug/l);
vinyl chloride (3 ug/l);
benzene (20 ug/l);
pentachlorophenol (2 ug/l);
bis(2-ethylhexyl)phthalate (10 ug/l).

In surface water:

acetone (19,000 ug/l);
cyanide (20.7 ug/l).

In wetland soils located east of Yeoman Creek and south of the Yeoman Creek Landfill portion:

benzo(a)pyrene (0.82 mg/kg);
lead (209 mg/kg);
zinc (307 mg/kg);
polyaromatic hydrocarbons (PAHs) (4.9 mg/kg).

In wetland soils south of the Edwards Field portion:

benzo(a)pyrene (8.2 mg/kg);
lead (1100 mg/kg);
zinc (874 mg/kg);
PAHs (88 mg/kg).

In Yeoman Creek sediments:

benzo(a)pyrene (1.6 mg/kg);
lead (257 mg/kg);
zinc (1770 mg/kg);
PAHs (24 mg/kg);

In leachate seeps in Yeoman Creek Landfill portion:

acetone (11 ug/l);
cyanide (234 ug/l);
lead (135 ug/l);

zinc (351 ug/l).

In seep soils in the Yeoman Creek Landfill portion:

acetone (0.1 mg/kg);
cyanide (1.3 mg/kg);
lead (127 mg/kg);
zinc (176 mg/kg);
PAHs (72 mg/kg).

In seep soils in the Edwards Field Landfill portion:

acetone (not detected);
cyanide (not detected);
benzo(a)pyrene (1.8 mg/kg);
lead (427 mg/kg);
zinc (451 mg/kg);
PAHs (42 mg/kg).

In leachate wells in the Yeoman Creek Landfill portion:

arsenic (27.6 ug/l);
beryllium (1.6 ug/l);
lead (953 ug/l);
manganese (1120 ug/l);
benzene (21 ug/l);
bis(2-ethylhexyl)phthalate (67 ug/l);
acetone (320 ug/l);
zinc (1460 ug/l).

Leachate wells in the Edwards Field Landfill portion:

arsenic (9.6 ug/l);
lead (132 ug/l);
manganese (327 ug/l);
trichloroethylene (3 ug/l);
tetrachloroethylene (3 ug/l);
1,2-dichloroethylene (3 ug/l);
1,2-dichloroethane (3 ug/l);
benzene (21 ug/l);
bis(2-ethylhexyl)phthalate (22 ug/l);
acetone (34 ug/l);
zinc (466 ug/l).

VI. SUMMARY OF SITE RISKS

A. ESTIMATED HUMAN HEALTH AND ECOLOGICAL RISKS IF CURRENT SITE CONDITIONS CONTINUE IN THE FUTURE:

At this time the ground water in the vicinity of the Site is unused, and it appears that it is unlikely to be developed in the future since a City of Waukegan ordinance requires use of municipal water for residential purposes.

The municipal water supply is from Lake Michigan. There are residential ground water users approximately two-miles downgradient from the Site in Beach Park, although it is unclear whether ground water from the Site can affect these wells. The Site is fenced, and deed restrictions have been placed over most of the Site.

The deed restrictions placed reportedly permanently prohibit future development. As a result, risks to human health if current Site conditions continue in the future are limited.

For adjacent residents the incremental lifetime cancer risk (ICR) was estimated to be 3.1×10^{-6} using average exposure assumptions (average), and 2.5×10^{-5} using reasonable maximum exposure assumptions (RME). A large portion of this risk is due to potential for landfill gas migration into adjacent buildings. Presently, this risk is being addressed by monitoring in adjacent buildings north of the Yeoman Creek portion of the Site, and operation of a ventilation system in one building. The remainder of the estimated risk is primarily due to potential for direct contact with PCBs and benzo(a)pyrene in surface soils, and surface water in the vicinity of the Site.

The risks to ecologic receptors was evaluated using potential effects on nesting red-winged black birds, and to mink. The risk to ecological receptors if current conditions continue in the future appears to be substantial. The evaluation indicated that risks due to potential contact with soil and sediments associated with the site that are contaminated with PCBs, lead, polyaromatic hydrocarbons, lead, and zinc, and surface water contaminated with cyanide and acetone may have a detrimental impact on some ecological receptors.

B. ESTIMATED RISKS IF GROUND WATER IS DEVELOPED FOR RESIDENTIAL PURPOSES IN THE FUTURE:

As stated previously the ground water in the vicinity of the Site is currently unused. However, if the ground water in the vicinity of the Site is developed in the future, the human health risks would be unacceptable. Existing information indicates that the shallow ground water is unlikely to be useable for residential purposes, but that the deeper outwash aquifer most likely could be developed for usage by a limited number of residences. The distribution of chloride concentrations appears to indicate that the landfill has impacted both the shallow and deep outwash formations. Hazardous substances of concern detected in ground water near the Site include arsenic, beryllium, manganese, lead, benzene, bis(2-ethylhexyl)phthalate, pentachlorophenol, and vinyl chloride. For lifetime residential usage of the shallow aquifer ground water, the ICR is estimated to be 8.7×10^{-5} and non-carcinogenic hazard index (HI) 6.3 (average), and 4.6×10^{-4} and 16 (RME).

For lifetime residential usage of the deeper aquifer, the ICR is estimated to be 5.1×10^{-5} and the HI 2.0 (average), and ICR 2.9×10^{-4} and HI 5.2 (RME). In addition, lead exceeded the Illinois Ground Water Quality Standards (IGWQS) in some aquifer samples. It should be noted that no PCBs were detected in ground water.

The extent to which these estimated risks, in the case of future residential ground water usage is attributable to the Site can not be fully defined using the available data.

Although it is possible that arsenic, beryllium, and pentachlorophenol are being released from the Site, these constituents do not appear to have been detected at significant concentrations in leachate samples. Arsenic was not detected above the IGWQS, either in leachate or aquifer samples, and may be associated with background and solids in the aquifer. Beryllium was detected in leachate samples, but only slightly above detection limits, and was only detected above the Maximum Contaminant Level (40 CFR 141) in one of the 72 (1/72) site-related aquifer samples. Some data indicates that at least some of the arsenic and beryllium are associated with solids in the aquifer. The range of arsenic concentrations near the Site is also similar to the range in ground water samples collected from the Lake County region.

Pentachlorophenol was detected at a very low concentration in only one leachate sample, and was detected in 2/72 site-related ground water samples at concentrations below the Contract Required Quantification Levels (CRQLs) above the IGWQS.

If arsenic, beryllium, and pentachlorophenol are not considered, the ICR for the shallow ground water is reduced to 1.3×10^{-5} (average) and 7.0×10^{-5} (RME). These estimated risks are apparently due to releases of benzene, bis(2-ethylhexyl)phthalate and vinyl chloride (or vinyl chloride precursors) from the Site, which has resulted in sporadic detection of these compounds in the aquifer. Benzene was detected in leachate, and in 8 samples from three shallow monitoring wells along the perimeter of the landfill, and exceeded the IGWQS in three samples from one of the monitoring wells. Bis(2-ethylhexyl)phthalate was detected in leachate, and in 5/72 site-related aquifer samples at concentrations below the CRQL. Vinyl Chloride was not detected in the leachate although trichloroethylene and tetrachloroethylene, which can degrade to vinyl chloride, were detected in leachate. Vinyl chloride was detected in two shallow ground water samples from the perimeter of the Site at concentrations below the CRQL but at or above the IGWQS.

Lead was present in elevated concentrations in leachate samples and exceeded the IGWQS of 7.5 ug/l in 16/37 shallow ground water samples, and in 4/27 deep outwash samples. The highest concentration was 124 ug/l. However, lead also exceeded the IGWQS in 1/6 background ground water samples (25 ug/l) and appears to be strongly associated with solids in the aquifer. Some of the lead detected may be from the Site, but may be difficult to mobilize for residential exposures due to lead's affinity for solids.

The estimated non-carcinogenic risk is predominantly due to manganese. The manganese was as high as 1120 ug/l in leachate.

The IGWQS of 150 ug/l was exceeded in 35/42 shallow ground water samples with a maximum concentration of 2600 ug/l, and in 12/30 lower outwash samples with a maximum concentration of 2900 ug/l. However, manganese was also exceeded the IGWQS in 5/6 background ground water samples with a maximum of 830 ug/l. In addition, data appears to indicate that much of the manganese is associated with solids in the aquifer, and that the range of manganese

detected at the Site is similar to the range of ground water concentrations detected in Lake County, if the samples with the highest total suspended solids are excluded.

C. ESTIMATED RISKS IN CASE OF DEVELOPMENT OF THE PERIMETER OF THE SITE IN THE FUTURE:

If the perimeter of the Site is developed in the future for residential purposes and ground water is not used, the estimated ICR is estimated to be 3.2×10^{-6} (average) and 7.4×10^{-5} (RME). These risks are primarily due to potential exposure to PCBs in soil. Some of the estimated risk is also due to benzo(a)pyrene and benzo(b)fluoranthene in soil, PCBs in surface water, and benzene and vinyl chloride in landfill gas. If residential ground water usage is also assumed, these risks should be added to the ground water risks.

D. RISKS IN CASE SITE IS DEVELOPED IN THE FUTURE:

At this time it appears very unlikely that the Site will be developed in the future. However, for a number of reasons it is very likely that, absent the waste disposal on the Site, the Site would have been developed for residential, recreational, commercial, and/or governmental purposes (or in the case of Edwards Fields Landfill use as a baseball field would have continued). These reasons include:

- the Site is flat and surrounded by residential and commercial development, including other properties that filled in low areas to allow such construction;
- the City transferred the property to the School Board because of plans to build a school on the Site;
- until recently the Edwards Field Landfill and surrounding area was a little league ball park;
- until recently portions of the landfill adjacent to the School Board property were being advertised for sale;
- a portion of the landfill is presently being used as a parking lot;

- property transfers have occurred without knowledge of the presence of landfilled waste on the property.

There are a number of reasons why normal residential, commercial or governmental development on the Site would result in an unacceptable risk. One concern is that landfill gas entry would cause an explosion risk. In addition, landfill gas entry into a building could result in an unacceptable risk from long term exposure via inhalation. For example, use of the equation for exposure to soil gas using a distance of one foot from the source would result in an estimated ICR of 2.6×10^{-4} (average) and 7.8×10^{-4} (RME). Data on actual concentrations of contaminants in the landfill are unavailable. However, it is certainly expected that contaminant concentrations would be many times higher in some locations in the landfill than the concentrations detected in the leachate or leachate seep samples. This would result in a very high risk due to potential dermal and ingestion exposures to these contaminants in case the Site was developed. The potential risks from future ground water usage at the Site has already been discussed.

Based on the results of the risk assessment, the objectives of the remedial actions include addressing the following risks:

- human health risks in case of future development of the Site;
- human health risks due to off-site landfill gas migration;
- human health and ecological risks due to the continuing releases of hazardous substances to wetlands, Yeoman Creek, and the ground water (this includes meeting drinking water standards in the aquifers at the Site);
- human health risks from off-site soil contamination;
- ecological risks due to contamination of sediments and limited wetland areas.

VII. DESCRIPTION OF ALTERNATIVES:

A. OVERVIEW:

Because of the size of the landfill (over one million cubic yards), the costs for excavation and treatment of the entire landfill would be prohibitive. In addition, excavation and treatment of the entire landfill would entail significant public health and environmental risks. Therefore, alternatives for excavation and treatment of the entire landfill were not evaluated.

In addition, available information on the landfill operations indicates that industrial wastes were disposed of along with the residential and commercial wastes. Because of this and the difficulty in locating hot spots within a landfill, alternatives were not evaluated for location and treatment of hot spots in the landfill.

As a result, the Feasibility Study concentrated on alternatives for containment of the landfill -- that is measures to prevent or minimize migration of contaminants from the landfill to the ground water, wetlands, surface water, and air. Containment technologies evaluated in detail for the Yeoman Creek Landfill Site include use of the following technologies:

- site covers having single barrier clay and membrane liners, and having composite clay and membrane liners to minimize formation of leachate generated by infiltration of precipitation through the landfill;
- leachate collection systems to intercept, remove and treat any leachate before entering Yeoman Creek whether the leachate is formed by precipitation, ground water movement, or changes in stream water level elevations;
- artificial channels to provide a barrier to entry of landfill leachate into Yeoman Creek;
- slurry walls to prevent off-site migration of contaminated ground water; and
- passive and active landfill gas ventilation systems to prevent off-site migration of landfill gas in the subsurface.

The alternatives evaluated in detail, except for the no-action

alternative, include combinations of the above listed technologies.

B. ACTIONS COMMON TO ALL CAPPING ALTERNATIVES:

All of the alternatives, including the no-action alternative, include imposition of deed restrictions and access restrictions over all of the Site property and enclosing the site with a fence. In addition, all of the capping alternatives include additional investigation, long term monitoring, remediation of contaminated sediments in Yeoman Creek and limited wetland areas, compliance with floodway/floodplain regulations, remediation of contaminated surface soils outside of the new cover area, compensation for loss or damage to wetlands, rerouting and sealing of existing storm drains that go through the landfill, and continuation of interim actions to control and monitor landfill gases until the final remedial action is implemented and demonstrated to be effective.

While source control (i.e. the landfill cover) will provide a mechanism for preventing future ground water contamination, natural attenuation will address existing ground water contamination.

1. Additional Investigation:

Additional ground water investigation shall be conducted, as necessary to determine the extent of ground water contamination. If necessary, sampling of Yeoman Creek sediments, limited wetland soils, and soils that will be outside of the site cover that may be contaminated by leachate seeps, will be conducted to determine the extent of contamination exceeding the cleanup action level. In addition, verification sampling will be conducted, as necessary, to test whether cleanup action levels are attained following the remedial action. The baseline quality of the wetlands south and east of the Site will be assessed to enable evaluation of the long term impacts of the landfill.

2. Long Term Monitoring:

Long term monitoring of the ground water, Yeoman Creek, landfill gas emissions, and wetlands will be conducted.

3. Remediation of contaminated sediments in Yeoman Creek and limited wetland areas, and of surface soils outside of the wetland and site cover area:

U.S. EPA and IEPA have determined that major disturbance of the large area of wetlands located south and east of the Site to remove contaminants is not warranted to address the concentrations of hazardous substances detected in the wetlands due to the potential adverse impact on the wetlands.²

For the sediments in Yeoman Creek and the limited wetland areas shown in Figure 5, and for surface soils outside of the wetland areas and the site cover area, U.S. EPA has established cleanup action levels (CALs) to address contamination that is significantly adding to risks to ecological receptors. An explanation of these CALs is included in Attachment 1. Landfill cover Alternatives #2-#5, include excavation of sediments that exceed these CALs, consolidation and temporary containment of the excavated sediments on the Site, and final containment under the final site cover.

By this Record of Decision, the Regional Administrator has waived the TSCA disposal requirements of 40 CFR 761.75(b)(1), (2), (3) and (7).

It is anticipated that for temporary containment of excavated sediments, a berm will be constructed around designated areas on the Site. The excavated sediments will be placed within these bermed areas to a depth not to exceed 1 foot. After the excavated sediments have dewatered to a consistency that can support low ground pressure earthwork equipment, the sediments will be covered with at least 6 inches of clean soil.

Additional sampling will be conducted of the Yeoman Creek sediments and in limited wetland areas, and surface soils that

² Maximum concentration of various hazardous substances detected in wetland soils were: PCBs = 2 mg/kg in surface soil, and 5.5 mg/kg at 6-12 inches below the surface; benzo(a)pyrene = 0.82 mg/kg; benzo(b/k)fluoranthene = 1.9 mg/kg; cumulative polyaromatic hydrocarbons = 8.9 mg/kg; lead = 209 mg/kg; mercury = 0.31 mg/kg; and zinc = 307 mg/kg.

may have been affected by leachate seeps and are located outside wetland areas and the site cover area to determine the extent of excavation. Based on sampling data available, it appears that between 900 and 3000 feet of stream sediments will have to be excavated and 40,000 square feet of sediments south of Edwards Field Landfill. Assuming that contaminated sediments are excavated to a 12 inch depth and 1200 feet of stream sediments 10 feet wide are excavated, approximately 2000 cubic yards of sediments would be excavated at an estimated cost of approximately \$ 200,000. This cost will be partially offset by a reduction in the quantity of soil needed to bring the landfill cover to an acceptable grade.

As an Alternative to the limited excavation described above, excavation and on-site consolidation and containment of all sediments and the limited wetland areas shown in Figure 5 may be conducted if necessary to comply with floodplain/floodway regulations as described in the following section. In this case sampling to determine the extent of excavation will not be required.

An evaluation of the effects of the excavation on the wetland hydrology will have to be conducted. No adverse effects on the wetland hydrology will be allowed.

4. Compliance with floodplain/floodway regulations:

Work shall be conducted to comply with the Illinois Department of Transportation (IDOT) regulations (92 IAC 708) and Lake County Storm Water Management Commission (SMC) Watershed Development Ordinance. The remedial design phase shall include the additional investigation, modeling, alternative evaluation, and work with the regulatory Agencies to select procedures for compliance with the floodway/floodplain regulations. The required additional investigation, modeling and alternative evaluation shall be determined by U.S. EPA, largely based on input from IDOT and the SMC.

Compliance with the requirements of the SMC will entail remapping the floodplain because the current FEMA floodplain map is out of date (it does not include the filling that took place during operation of the landfill).

Following completion of the additional evaluation and work with IDOT and SMC, U.S. EPA will select the actions to be implemented for compliance with the floodplain/floodway regulations. The selected actions will largely be based on input from IDOT and the SMC.

All of the site cover alternatives (#2-#5) have the potential to include filling within the regulated floodway/floodplain in order to construct the site cover. Alternatives #3, 3A-3D, 4, 4A, and 4B have the potential for more floodway/floodplain filling than Alternative #2 because additional filling would be conducted to provide a 2% slope after settling and a 3 foot instead of a two foot cover would be added over the grading layer. Alternative #5 has the potential for even more floodway/flood plain filling since this Alternative includes additional filling to provide a 3 % slope after settlement and a 5 foot cover over the grading layer. New construction within a floodway and floodplain is regulated by IDOT and the SMC. The SMC regulations are more stringent than the IDOT regulations, and among other provisions require the following:

- providing compensatory storage for all lost floodplain storage at a 1.2 to 1 replacement ratio;
- prohibiting increase in flood height or velocity;
- maintenance of the flood carrying capacity (conveyance) of the floodway.

The IDOT regulations are similar but require compensatory storage for only lost floodway storage at a 1 to 1 replacement ratio.

Compliance with the IDOT and SMC floodway/floodplain regulations may be achieved for Alternatives #2 - #5 by one or by a combination of the following:

- a. Creation of compensatory storage for lost floodplain storage;
- b. Use of artificial channels combined with detention facilities to maintain capacity without increasing the average velocity through the Site;

- c. Limited excavation of soil and/or landfill wastes out of the floodway/floodplain, consolidation on-site, and containment under the new site cover;
- d. Approval of a variance by the regulatory Agencies.

In the Feasibility Study dated December 1994, Golder Associates estimated that compliance with the IDOT regulations will require creation of 6,880 cubic yards of compensatory floodway storage. Golder proposes that a reasonable way to comply with this requirement would be creation of compensatory floodway storage by excavation of sediments in Yeoman Creek and the limited wetland areas defined in the previous section. Golder estimates that excavation of these areas to a 2.5 foot dept would create 7,220 cubic yards of compensatory storage at an estimated cost of \$374,883 for excavation, consolidation and temporary containment on-site. This is \$170,000 more than the estimated cost for excavation, consolidation and temporary storage solely for compliance with the sediment cleanup action levels.

To comply with the SMC regulations by creation of compensatory storage, it is estimated that 30,000 cubic yards of compensatory storage will have to be created. Golder has estimated that this volume of compensatory storage could be created in the golf course north of the Site at an estimated cost of \$652,200.

The sediment and limited wetland excavation as described for compliance with the IDOT regulations could also be used toward compliance with the SMC regulations.

Another action that could be used towards compliance with both the IDOT and SMC regulations, is limited excavation of wastes at the limits of Yeoman Creek, or at the fringes of landfilled wastes. These wastes would be consolidated and temporarily contained on-site until the new site cover is installed over the wastes.

The excavation of wastes may cause short term odors in the vicinity of the Site, and create some potential for releases to the surface water. These problems should be controllable if the extent of waste excavation is limited. The costs for sediment and waste excavation and containment on-site would be partially offset by a reduction in the quantity of soil needed to provide

an adequate grade for the new site cover.

Article V of the SWC Watershed Development Ordinance provides criteria for obtaining a variance from the SMC requirements. However, no waivers or variances are available for the IDOT regulations.

5. Compensation For Loss or Damage To Wetlands:

The landfill cover alternatives (#2-#5), include filling an estimated relatively small area of on-site wetlands. This impact on existing wetlands will require compensation or replacement or some other compensatory action pursuant to Section 404 of the Clean Water Act.

Any other detrimental impact on wetlands from the remedial actions, such as the soil excavation in the limited wetland areas, that can not be mitigated, will also require compensation.

The run-off from the site cover will be adjusted to prevent degradation to and, if possible, enhance ecological conditions in the large wetlands south and east of the Site. It is anticipated that the cost of this portion of the remedy will be minor.

6. Rerouting and Sealing Of Storm Drains That Go Through the Landfill:

Storm drains that go through the Landfill shall be rerouted around that landfill and sealed. It is expected that two existing storm drains that go through the Yeoman Creek Landfill portion will have to be rerouted and sealed (see Figure 6). It is estimated that this will cost \$85,000 for Alternative 2, \$110,000 for Alternatives 3, 3A, 3B, 3C, 4, 4A, and 4B, and \$165,000 for Alternative 5. Drains that originate on-site will be covered by the new site cover, and so will not need to be rerouted or sealed.

7. Continuation of Interim Actions to Address Landfill Gas Migration:

Periodic monitoring of a number of buildings north of the Site for landfill gas entry, and construction and operation of ventilation systems in buildings north of the Site, where

potential landfill gas entry is detected, have been implemented during completion of the Remedial Investigation/Feasibility Study. Implementation of these measures will continue until the active landfill gas system is constructed and demonstrated to be effective in eliminating off-site landfill gas migration.

C. Alternative Evaluation

1. ALTERNATIVE 1, ACCESS RESTRICTIONS AND INSTITUTIONAL CONTROLS:

- a. DESCRIPTION: Under this alternative, deed restrictions would be imposed to prohibit use of, access to, and future development of the Site property, and the Site would be fenced. This alternative would not involve any filling of wetlands nor filling within the floodplain. Human health risks would be reduced by limiting access to the Site. However, risks to ecological receptors would not be addressed; leachate seepage into the ground water, Yeoman Creek and the wetland would continue unabated; landfill gas migration into the basement of an adjacent building would continue; and the landfill may be subject to erosion damage in the future.

- b. ESTIMATED COSTS:

CONSTRUCTION COSTS	:	\$	46,000
ANNUAL O&M COSTS	:	\$	5,600
PRESENT WORTH	:	\$	120,000
IMPLEMENTATION	:		a few months

2. ALTERNATIVE 2, SITE COVER INCLUDING A BARRIER LAYER OF TWO FEET OF LCW PERMEABILITY SOIL, and PASSIVE GAS VENTILATION SYSTEM:

- a. DESCRIPTION: The objective of any Site cover is to reduce generation of contaminated leachate that may migrate to ground water or the surface water, by reducing infiltration through the cover, and to eliminate the risks of direct contact with the wastes. The barrier layer to infiltration of precipitation for Alternative 2 would consist of two feet of low permeability soil (see Option 1 in Figure 7). Alternative 2 will have a minimum slope to promote run-off

of precipitation.

Pipe vents would be installed into the landfill to provide a direct route of release for landfill gases, which would reduce the likelihood of off-site migration of landfill gases.

The soil cover would reduce infiltration, and would at least temporarily eliminate direct contact with leachate seepage and soils near existing seeps. However, the reduction in infiltration would be modest even under ideal conditions, and this type of cap is susceptible to cracking due to desiccation, freezing and other causes. It is possible that leachate seeps would eventually reemerge through the sides of the landfill. The passive vents may not completely eliminate off-site migration of landfill gases. In addition, some of the landfill gases would be emitted near commercial and residential developments. This may cause an odor concern, and a hazard to off-site residents.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 6,700,000
ANNUAL O&M COSTS	: \$ 240,000
PRESENT WORTH	: \$ 9,900,000
IMPLEMENTATION	: 3-years

3. ALTERNATIVE 3, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A FLEXIBLE MEMBRANE LINER, AND PASSIVE PERIMETER GAS VENTILATION SYSTEM:

- a. DESCRIPTION: The site cover's barrier layer would consist of a flexible membrane liner (FML) placed over a permeable gas ventilation layer. It is anticipated that a 40 mil very low density polyethylene (VLDPE) FML would be used for the barrier layer. The barrier layer will underlie a geosynthetic drainage layer having a hydraulic conductivity of 28 cm/sec. In addition, a grading layer would be added to provide the cover with a 2% slope after settlement, and a three foot frost protection layer would be placed over the FML (see option 4 Figure 7). A passive perimeter trench system would be used to control off-site migration of landfill gases.

Modeling indicates that this cover could be very effective in reducing infiltration through the landfill due to precipitation as long as the FML overall quality is good. For example, if the leakage fraction is 10^{-5} , the HELP modeling included in the Feasibility Study predicts a 99.4% reduction in infiltration compared to current conditions.

This corresponds to a reduction in total infiltration from 1,800,000 cubic feet to 11,500 cubic feet per year over the portion of the landfill east of Yeoman Creek. Some factors argue for assuming a low leakage fraction, such as the shallow depth of the landfill and the age of the landfill, which will probably limit the amount of settlement due to further decomposition of the wastes. In addition, strict quality control measures can be required during installation of the FML to reduce the occurrence of leaks, and which should result in construction of a good quality FML cap.

However, leaks through FML liners always occur, and the results of this can result in substantial leakage through the FML, if the FML is underlain by a permeable layer, as is proposed for this site cover alternative. This is demonstrated in Figure 2-4 of Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991. As can be seen the flow rate through holes in FMLs can increase from 330 gal/acre/day for excellent FMLs to 10,000 gal/acre/day for poor quality FMLs. This is also demonstrated using site specific HELP model assumptions in Table 1, which predicts that infiltration would increase from 12,000 cubic feet for a good/excellent quality FML to 276,000 cubic feet for a poor quality FML.

TABLE 1
COMPARISON OF INFILTRATION RATES
FOR FML AND COMPOSITE FML/CLAY BARRIER LAYERS
FOR GOOD AND POOR QUALITY FMLS USING HELP MODEL³

TYPE OF BARRIER	INFILTRATION ASSUMING 10 ⁻⁵ LEAKAGE FRACTION ⁴ % REDUCTION ⁵ CUBIC FT		INFILTRATION ASSUMING 10 ⁻³ LEAKAGE FRACTION ⁶ % REDUCTION ⁵ CUBIC FT	
FML	99.4%	12,000	84.9%	276,000
FML/GCL	100.0%	0	100.0%	15
FML/2-feet compacted clay @ HC=10 ⁻⁷ cm/sec	100.0%	2	100.0%	141

³ Help Model Assumptions are shown in Appendix B, of the December 1994 Feasibility Study for the 10⁻⁵ leakage fraction runs. The 10⁻³ leakage fraction used the same assumptions as the corresponding run in Appendix B, except for changing the leakage fraction.

⁴ According to Table 2-4 of Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991, good to excellent quality FML (or geomembranes) can be characterized by having one 1 cm² to 0.1 cm² hole per acre. According to Figure 9-8 of the same reference, this corresponds to a leakage fraction in the vicinity of 10⁻⁵.

⁵ Cubic feet of infiltration using new cap divided by the cubic feet of infiltration under existing conditions times 100. Cubic feet of infiltration was estimated using the HELP model

⁶ According to Table 2-4 of Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991, poor quality FMLs (or geomembranes) can be characterized by having 30 0.1 cm² holes per acre. According to Figure 9-8 of the same reference, this corresponds to a leakage fraction in the vicinity of 10⁻³, assuming a 0.33 foot head.

FML/2-feet compacted clay @ HC=10 ⁻⁶ cm/sec	100.0%	14	99.9%	1,374
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Since 30-40% of the landfill wastes will remain below the water table even after the leachate mound in the landfill dissipates, some leachate will be generated from movement of ground water through the wastes. In the Feasibility Study, Golder Associates, Inc. estimated that the maximum ground water flow through the east side of the landfill would be 5 gpm, which corresponds to approximately 350,000 cubic feet per year and 16% of the estimated flow through the landfill due to infiltration of precipitation under existing conditions. Leachate generated by ground water flow would continue to recharge the ground water and possibly Yeoman Creek. However, Golder believes that "potential for ground water flow through the waste would be minimal" (see p. 38 of the Feasibility Study Report, Yeoman Creek/Edwards Field Landfills, Waukegan, Illinois), December 1994 by Golder Associates (Golder). Golder believes that the eastern portion of the Landfill is largely isolated from the shallow ground water flow system, and the flow through the western portion of the landfill may be much less than 5 gpm.

The substantial reduction in infiltration using a cap with an FML barrier layer would reduce impacts on the ground water. However, some ground water impact will continue as a result of the apparently limited ground water flow through the landfill and the amount of infiltration that gets through leaks in the FML. The aquifers near the Site would likely meet the ground water remediation goals over time (except for parameters that naturally exceed the goals) as a result of reduction of the source, natural biodegradation, and other natural attenuation mechanisms.

Surficial leachate seeps would be eliminated as a result of the reduction in leachate generation and placement of additional cover materials over the top, and would be unlikely to emerge because of the substantial reduction in leachate formation. However, leachate would continue to recharge Yeoman Creek through subsurface routes during the

period of time when the leachate mound is dissipating. Some leachate would also be generated from the ground water movement through the landfill, infiltration through the site cover, and variations in the water level in Yeoman Creek. Some of this leachate may seep into Yeoman Creek especially along the Yeoman Creek Landfill portion, where Yeoman Creek is a gaining stream.

The passive landfill gas ventilation system would provide confidence that landfill gas would not migrate off-site. However, the landfill gas vents would be located along the perimeter of the Site near residential and commercial developments. This may cause an odor concern, and a hazard to off-site residents.

It is possible that some of the soils excavated for the landfill gas ventilation system would contain PCBs at concentrations equal to or exceeding 50 ppm. However, by this Record of Decision, the Regional Administrator has waived the requirements of 761.75(b)(1), (2), (3) and (7). Therefore, contaminated soils generated from this excavation can be consolidated on-site.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 16,500,000
ANNUAL O&M COSTS	: \$ 230,000
PRESENT WORTH	: \$ 19,600,000
IMPLEMENTATION	: 3-years

3A. Alternative 3A, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A COMPOSITE FLEXIBLE MEMBRANE LINER OVER A GEOSYNTHETIC CLAY LINER, AND PASSIVE PERIMETER GAS VENTILATION SYSTEM:

- a. DESCRIPTION: This alternative is identical to Alternative 3 except that the barrier layer of the soil would consist of a composite FML over a geosynthetic clay liner (GCL), instead of being directly over the gas ventilation layer (see option 4A Figure 7). The GCL consists of a thin layer of natural bentonite clay incorporated into a geosynthetic mesh, which serves to keep the bentonite in place so that a continuous low permeability bentonite layer is created below the FML.

The GCL is forgiving under load and is self healing.

The FML by itself is very effective in minimizing infiltration through the landfill as long as the FML is of good quality. However, leaks in the FML always occur and can substantially increase the quantity of infiltration as discussed in Section C.3. The GCL complements the FML's capability by essentially plugging leaks in the FML with a thin, but low permeability layer of clay. The potential effectiveness of the composite FML/GCL is demonstrated in Figure 2-4 from Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991. For site specific application, it is also demonstrated using the HELP model in Table 1.

The composite FML/GCL barrier provides significantly more insurance that the site cover will be very effective, compared to the FML barrier.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 18,900,000
ANNUAL O&M COSTS	: \$ 230,000
PRESENT WORTH	: \$ 22,000,000
IMPLEMENTATION	: 3-years

3B. Alternative 3B, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A COMPOSITE FLEXIBLE MEMBRANE LINER OVER 2-FEET OF COMPACTED CLAY, AND PASSIVE PERIMETER GAS VENTILATION SYSTEM:

- a. DESCRIPTION: This alternative is identical to Alternative 3 except that the barrier layer of the soil would consist of a composite FML over 2-feet of compacted clay, instead of being directly over the gas ventilation layer. The ventilation layer would be below the compacted clay (see option 4B Figure 7). In order to reduce the quantity of soil that would have to be imported onto the Site, the two foot clay layer would replace some of the grading soil. Along the edges where grading soil would not be required, the existing cover may be usable as part of the 2-foot compacted clay layer. The compacted clay would have a maximum hydraulic conductivity of 10^{-6} cm/sec.

Like the GCL, a 2-foot compacted clay layer complements the

FML by providing a low hydraulic conductivity barrier wherever leaks develop in the FML. The clay layer would also be self healing to some degree. The FML would protect the clay layer from desiccation cracking. The potential effectiveness of the composite FML/compacted clay barrier layer is demonstrated in Figure 2-4 from Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991, which is attached. For site specific application, it is also demonstrated using the HELP model in Table 1. The composite FML/compacted clay barrier provides significantly more insurance that the site cover will be very effective, compared to the FML barrier.

Figure 2-3 from Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991, which is attached, shows that the effect of reducing the hydraulic conductivity requirement for the compacted clay from 10^{-7} to 10^{-6} cm/sec does not result in a significant increase in infiltration.

This is also confirmed for site specific application in Table 1. For this reason, and because there may be a cost savings, the hydraulic conductivity criteria for the compacted clay is set at 10^{-6} cm/sec.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS.	: \$ 18,100,000
ANNUAL O&M COSTS	: \$ 230,000
PRESENT WORTH	: \$ 21,200,000
IMPLEMENTATION	: 3-years

3C. ALTERNATIVE 3C: SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A FLEXIBLE MEMBRANE LINER, AND AN ACTIVE PERIMETER GAS CONTROL SYSTEM:

- a. DESCRIPTION: This Alternative is identical to Alternative 3 except that an active perimeter gas control system will be used instead of a passive gas control system. The active gas control system will utilize a blower to remove gases from the perimeter gas collection trench. It is anticipated that one fan/blower will be located on the northern portion of the landfill and one in the southern portion. The gases collected will be directed to the center of both on-site

landfills for treatment by flaring or some other method (see attached Figure 8).

The active perimeter trench control system is the most reliable system available for preventing off-site migration of landfill gases in the subsurface. It is considerably more reliable than the passive perimeter trench system and, therefore, should eliminate concerns about entry of landfill gases into adjacent buildings. An additional benefit of the active system is that the active withdrawal of landfill gases has more potential to reduce ground water contamination by volatile organic compounds such as benzene and vinyl chloride by actively withdrawing them in the vapor phase, and thus preventing them from recondensing at the perimeter of the landfill and contaminating ground water. Another advantage of the active system is that VOCs will be permanently treated prior to release to the ambient air. The combination of directing the landfill gases to the centers of the landfill and treating the gases prior to release, should eliminate the concern regarding the odor and health risks to off-site residents from the release of landfill gases.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 17,300,000
ANNUAL O&M COSTS	: \$ 340,000
PRESENT WORTH	: \$ 22,000,000
IMPLEMENTATION	: 3-years

4. ALTERNATIVE 4, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A FLEXIBLE MEMBRANE LINER, AN ACTIVE PERIMETER GAS CONTROL SYSTEM, A LEACHATE COLLECTION SYSTEM ALONG THE YEOMAN CREEK LANDFILL PORTION OF THE SITE, AND REROUTING YEOMAN CREEK ALONG EDWARDS FIELD PORTION OF THE SITE:

- a. DESCRIPTION: This Alternative includes the site cover and active perimeter gas control system described for Alternative 3C, plus measures to insure isolation of Yeoman Creek from the landfill leachate. The isolation measures along the Yeoman Creek Landfill portion of the Site would be a leachate collection system. The leachate collection system would be installed along both sides of Yeoman Creek

where the landfill is present. It is anticipated that the leachate collection trench would extend to 12 to 18 inches below the level of Yeoman Creek. Wastes observed to be between the leachate collection system and Yeoman Creek would be excavated and consolidated on-site. Leachate would drain to a sump, from which it would be pumped to a treatment and/or storage system. The leachate would either be treated and discharged to the North Shore Sanitary District treatment system, or be transported off-site for treatment.

The leachate collection trenches would provide an effective barrier to prevent leachate from seeping into Yeoman Creek during dissipation of the leachate mounds in the landfill, and would prevent leachate generated from ground water movement from seeping into Yeoman Creek. Since 30-40% of the landfill wastes will remain below the water table even after the leachate mound in the landfill dissipates, it is possible that some leachate will be generated from movement of ground water through the wastes. This leachate could continue to recharge Yeoman Creek especially along the Yeoman Creek Landfill portion where Yeoman Creek is a gaining stream.

Along the Edwards Field portion of the Site, the stream would be relocated through the middle of the wetlands and away from the landfill. According to aerial photograph interpretation, this was the route of Yeoman Creek before the stream bed was relocated during operation of the landfill. If properly implemented, this relocation may enhance the quality of the wetlands east of the Edwards Field area. This action would move Yeoman Creek to 150 feet or more from the Edwards Field portion of the landfill (see attached Figure 9).

Although this option would not necessarily prevent leachate from eventually reaching Yeoman Creek, any leachate generated from dissipation of the leachate mound, infiltration through the site cover, and ground water flow through the lower portion of the landfill, would be buffered by a longer ground water flow route and the wetlands before reaching Yeoman Creek. There is presently a 30 foot buffer between the landfilled waste and the Creek, and the Creek

appears to be a losing stream in that area.

It is possible that some of the soils excavated for the landfill gas control system and leachate collection system would contain PCBs at concentrations equal to or exceeding 50 ppm. However, by this Record of Decision, the Regional Administrator has waived the requirements of 761.75(b)(1), (2), (3) and (7) (see Section IX.A). Therefore, contaminated soils generated from this excavation can be consolidated on-site.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 18,000,000
ANNUAL O&M COSTS	: \$ 450,000
PRESENT WORTH	: \$ 24,200,000
IMPLEMENTATION	: 3-years

4A. ALTERNATIVE 4A, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A FLEXIBLE MEMBRANE LINER, AN ACTIVE PERIMETER GAS CONTROL SYSTEM, A CLOSED CULVERT IN YEOMAN CREEK ALONG THE YEOMAN CREEK LANDFILL PORTION OF THE SITE, AND REROUTING YEOMAN CREEK ALONG THE EDWARDS FIELD PORTION OF THE SITE:

- a. DESCRIPTION: This Alternative is identical to Alternative 4 except that Yeoman Creek would be isolated from the Yeoman Creek Landfill portion of the Site by construction of a closed culvert in the creek along the landfill instead of construction of a leachate collection system. The culvert would be designed to provide a physical barrier to the landfill leachate.

An underdrain system would be incorporated into the bottom of the culvert to drain fluid into sumps. The fluid would be pumped to a treatment/storage facility, and, if necessary, either treated and discharged to the Northshore Sanitary District treatment system, or transported off-site for treatment. This system would be equally effective as the leachate collection system in preventing leachate from the Yeoman Creek Landfill portion from entering Yeoman Creek due to dissipation of the leachate mound, infiltration through the site cover, or movement of ground water through the landfill.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 19,800,000
ANNUAL O&M COSTS	: \$ 440,000
PRESENT WORTH	: \$ 25,900,000
IMPLEMENTATION	: 3-years

4B. ALTERNATIVE 4B, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A FLEXIBLE MEMBRANE LINER OVER EITHER A GCL OR A 2-FOOT COMPACTED CLAY LINER, AN ACTIVE PERIMETER GAS CONTROL SYSTEM, AND A LEACHATE COLLECTION SYSTEM ALONG THE YEOMAN CREEK LANDFILL PORTION OF SITE

a. DESCRIPTION: Alternative 4B is the same as Alternative 4, except for use of one of the composite clay/FML liner systems as described for Alternatives 3A or 3B instead of use of the FML liner by itself for the barrier layer. In addition, rerouting of Yeoman Creek away from the Edwards Field portion of the Site is not included.

b. COSTS

CONSTRUCTION COSTS	: \$ 20,100,000 ⁷
ANNUAL O&M COSTS	: \$ 450,000
PRESENT WORTH	: \$ 26,300,000
IMPLEMENTATION	: 3-years

4C. ALTERNATIVE 4C, SITE COVER INCLUDING A BARRIER LAYER CONSISTING OF A FLEXIBLE MEMBRANE LINER, AN ACTIVE PERIMETER GAS CONTROL SYSTEM, A LEACHATE COLLECTION SYSTEM ALONG THE YEOMAN CREEK LANDFILL PORTION OF THE SITE:

a. DESCRIPTION: Alternative 4C is the same as Alternative 4, except that rerouting of Yeoman Creek away from the Edwards Field portion of the Site is not included.

b. COSTS

This cost is based on the cost of the FML/compacted clay barrier in Alternative 3B, since this is estimated to be the cheaper of the two alternatives.

CONSTRUCTION COSTS	: \$ 17,700,000
ANNUAL O&M COSTS	: \$ 450,000
PRESENT WORTH	: \$ 23,800,000

5. ALTERNATIVE 5, SITE COVER FULLY MEETING RCRA SUBTITLE C TECHNICAL GUIDANCE, AN ACTIVE PERIMETER GAS CONTROL SYSTEM, DEEP SLURRY WALLS AROUND THE ENTIRE LANDFILL, AND GROUND WATER/LEACHATE PUMPING TO PREVENT OFF-SITE MIGRATION:
- a. DESCRIPTION: This Alternative includes a site cover fully consistent with RCRA Subtitle C technical guidance. It includes a 3% slope after settlement, a gas ventilation layer, a composite barrier layer consisting of an FML and a 2 foot compacted clay layer with 10^{-7} hydraulic conductivity above the grading layer (not incorporated into the grading layer as in Alternative 3B), and a three foot frost protection layer. This cover would require importing considerably more soil to provide the 3% slope and the full 2 foot compacted clay layer above the grading layer, which would result in a 5 foot thick site cover above the grading layer rather than a three foot thick cover above the grading layer as Alternatives 3, 3A, 3B, and 3C, 4, and 4A. This site cover would be very effective in preventing infiltration through the cover with a high level of reliability.

Alternative 5 would utilize deep soil-bentonite slurry-walls keyed into the lower till to prevent flow from the landfills into Yeoman Creek, as well as preventing migration into the aquifers near the Site. Ground water would be pumped within the containment area formed by the slurry walls in order to minimize vertical flow between the shallow and deep aquifers by equalizing their potentiometric head. The removed leachate/ground water would be pumped to a treatment/storage system and either discharged to the Northshore Sanitary District or transported off-site for treatment.

It is possible that some of the soils excavated for the landfill gas control system and the slurry walls would contain PCBs at concentrations equal to or exceeding 50 ppm. However, by this Record of Decision, the Regional Administrator has waived the requirements of 761.75(b)(1), (2), (3) and (7) (see Section IX.A). Therefore,

contaminated soils generated from this excavation can be consolidated on-site.

b. ESTIMATED COSTS:

CONSTRUCTION COSTS	: \$ 39,800,000
ANNUAL O&M COSTS	: \$ 880,000
PRESENT WORTH	: \$ 51,900,000
IMPLEMENTATION	: 3-years

IX. SUMMARY OF COMPARATIVE EVALUATION OF ALTERNATIVES

The National Contingency Plan (NCP) requires that the alternatives be evaluated on the basis of the following nine evaluation criteria: (1) Overall protection of human health and the environment; (2) Compliance with applicable or relevant and appropriate requirements (ARARs); (3) Long-term effectiveness and permanence; (4) Reduction of toxicity, mobility, or volume through treatment; (5) Short-term effectiveness; (6) Implementability; (7) Cost; (8) State acceptance; and (9) Community acceptance. These criteria are summarized below. This section compares the alternatives with regard to these nine evaluation criteria.

A. Threshold Criteria

1. **Overall Protection of Human Health and the Environment** addresses whether a remedy provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced or controlled through treatment, engineering, or institutional controls. The selected remedy must meet these criteria.
2. **Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)** addresses whether a remedy will meet applicable or relevant and appropriate federal and state environmental laws and/or justifies a waiver from such requirements. The selected remedy must meet this criteria or waiver of the ARAR must be attained.

B. Primary Balancing Criteria

3. **Long-Term Effectiveness and Permanence** refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met.
4. **Reduction of Toxicity, Mobility, or Volume Through Treatment** addresses the statutory preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce toxicity, mobility, or volume of the hazardous substances as their principal element.

This preference is satisfied when treatment is used to reduce the principal threats at the site through destruction of toxic contaminants, reduction of the total mass of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume of contaminated media.
5. **Short-Term Effectiveness** addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed, until cleanup levels are achieved.
6. **Implementability** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
7. **Cost** includes estimated capital and operation and maintenance (O&M) costs, also expressed as net present worth.

C. Modifying Criteria

8. **State Acceptance**
Addresses whether or not the State Agency agrees with or objects to any of the remedial alternatives and also considers State ARARS.
9. **Community Acceptance**
Addresses the public's general response to the remedial alternatives and to the Proposed Plan. The specific responses to public comments are addressed in the

Responsiveness Summary section of this ROD.

A. THRESHOLD CRITERIA: OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT AND COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS):

The ARARs of most concern for this remedial action include the following:

- surface water quality standards in 35 IAC Part 302;
- Maximum Contaminant Levels (MCLs) pursuant to 40 CFR 141 and Illinois Ground Water Quality Standards (IGWQS) pursuant to 35 IAC 620.410 in the aquifers below the Site;
- final cover system requirements of 35 IAC 811.314, which requires placement of a final cover consisting of a low permeability layer (either 3 feet of compacted soil with a permeability of 10^{-7} cm/sec, or an FML in combination with a shallower depth of compacted soil, of equal or superior performance) overlain by a protective layer;
- actions to minimize the destruction, loss, or degradation of wetlands in Executive Order 11988 and 40 CFR 6, Appendix A Section 6(a)(5);
- restrictions on construction within floodways and flood plains pursuant to 92 IAC Part 708, which generally requires compensation for lost floodway storage and conveyance, and prohibits increases in average channel velocity and flood height (U.S. EPA has determined that the Lake County Storm Water Management Commission Regulations, which are somewhat more stringent, are not ARARs, but will be seriously considered during implementation of the remedial actions);
- Northshore Sanitary District pretreatment requirements, and restrictions on discharge of pollutants to POTWs in 40 CFR 403.5, 35 IAC 307 1101-1103, 35 IAC 310.201(a)(c), 35 IAC 310.202, 35 IAC 309(d)(e);
- landfill gas management and disposal requirements of 35 IAC 811.311 and 811.312, which requires use of an active perimeter gas control system and treatment of the gas prior

to discharge to the atmosphere.

- TSCA disposal regulations at 40 C.F.R. § 761.60 et seq., are applicable to PCBs in concentrations of 50 ppm or greater (PCBs') when such PCBs' are "taken out of service". Under the remedial actions being considered, TSCA disposal regulations could be triggered by excavation of PCBs' which may occur during the excavation of sediments, and during excavation of soils and wastes for construction of the leachate collection system and the landfill gas control system. The TSCA disposal regulations may also be triggered by constructing a new cover over leachate seep soils that contain PCBs'. Pursuant to 40 C.F.R. § 761.60(a)(4), PCBs' must be disposed of: "(i) in an incinerator which complies with 761.70; or (ii) in a chemical waste landfill which complies with 761.75." The TSCA compliant chemical waste landfill disposal method is generally much less expensive than incineration.

The on-site consolidation and containment of PCBs', whether from the sediments, seep soils, or soils excavated for construction, would not meet the following chemical waste landfill requirements of Section 761.75(b):

- bottom liner requirements because the landfill does not have a bottom liner (761.75(b)(1) and (2));
- fifty foot distance between bottom liner and historical high water table (761.75(b)(3));
- leachate collection requirements (761.75(b)(7));

Pursuant to 761.75(c)(4), the Regional Administrator may determine that one or more of the requirements in 761.75(b) is not necessary to protect against unreasonable risk of injury to health or the environment from the PCBs, and may waive such requirements. In this Record of Decision, the Regional Administrator waives the requirements in 761.75(b)(1), (2), (3) and (7) for the following reasons:

1. the final remedial action will provide protection to human health and the environment against unreasonable risks of injury;

2. no significant reduction in the long term risks would be gained from the off-site disposal of the small quantity of PCBs' in the sediments, seep soils, and excavated soils since the bulk of the PCBs' will be contained in place under the final cover; and

3. the costs for the analyses to detect the extent of PCBs' and for off-site disposal of the PCBs' located is potentially large.

Alternative 1, the No Action Alternative, would result in unacceptable risks under current conditions due to the fire and explosion threat from off-site migration of landfill gases, and detrimental impacts on ecological receptors may be occurring under current conditions. Although Alternative 2 includes sediment and limited wetland remediation, over the long term re-emergence of leachate seeps may also cause a detrimental impact on ecological receptors. Alternative 1 would result in unacceptable risks in case of future development of the Site. Alternatives 1 and 2, would result in unacceptable risks in case of future ground water usage, and Illinois Ground Water Quality Standards would not be met in the aquifers near the Site. It is possible that this contamination would eventually affect downgradient residential well users.

In addition, Alternatives 1 and 2 do not comply with State of Illinois' final site cover requirements in 35 IAC 811.314. Therefore, Alternatives 1 and 2 are eliminated from further consideration.

Alternatives 3, 3A, and 3B include use of a passive perimeter gas ventilation system rather than an active perimeter gas control system as required in 35 IAC 811.311. In addition, Alternatives 3, 3A, and 3B may cause malodors beyond the property boundary in violation of 35 IAC 811.311; do not include treatment as required pursuant to 35 IAC 811.312; and may cause an off-site exposure risk due to the uncontrolled release of landfill gases along the perimeter of the landfill. Therefore, Alternatives 3, 3A, and 3B are eliminated from further consideration.

Of the remaining alternatives, Alternatives 3C, 4, 4A and 4C consider a cover consisting of only an FML liner. An FML liner does not meet the requirements of 35 IAC Part 811 for a site

cover of at least 3 feet of compacted soil with a hydraulic conductivity of 10., cm/sec or less, or an alternative which has an equivalent or greater performance.

This leaves Alternatives 4B, and 5 under consideration, both of which include use of an active perimeter gas control system and a cap meeting or exceeding the criteria of 35 IAC 811.

Besides use of the active perimeter gas control system and cap requirements, all of the remaining alternatives include a number of common actions that are necessary to address site risks or to achieve ARARs, including the following:

1. Site access restrictions;
2. Institutional controls;
3. Additional investigation;
4. Long term monitoring;
5. Remediation of contaminated sediments in Yeoman Creek and limited wetland areas;
6. Compliance with floodway/floodplain regulations;
7. Remediation of surface soils outside of the new cover area;
8. Compensation for loss or damage to wetlands;
9. Rerouting and sealing of storm drains that go through the landfill;
10. Continuation of interim actions.

No alternative evaluation was conducted for these components of the remedy because either the costs are small compared to the overall costs of the remedy, or (with one exception) there was only one logical alternative to address the need. The exception is compliance with the floodplain/floodway regulations, for which alternatives for compliance will be evaluated during the remedial design phase.

Site access restrictions are necessary to protect the public from exposure to potentially hazardous landfill gases and leachate, and from the mechanical components of the remedial action. In addition, Site access restrictions are necessary to maintain the integrity of the site cover, and other components of the remedial action. The estimated cost of site access restrictions (\$35,000) are very minor compared to the total cost of the remedial action.

Institutional controls will include deed restrictions to prohibit future development of the Site that would be incompatible with the remedial action.

Institutional controls will also include restrictions on usage of the contaminated ground water near the site. The cost of institutional controls is very minor compared to the total cost of the remedial action.

The additional investigation includes additional ground water investigation to define the extent of ground water contamination. It also includes sampling to determine the required extent of sediment and soil remediation and to verify attainment of the cleanup action levels following remediation. Long term monitoring is necessary to evaluate the long term effectiveness of the remedy, and to detect any hazardous conditions caused by the Site before it adversely affects public health or the environment. The FS estimates that the initial cost of the long term monitoring and ground water investigation will be \$420,000, and yearly costs will be \$128,800.

Remediation of the contaminated sediments is necessary to reduce impacts on ecological receptors from relatively high concentrations of contaminants from the Site. Since the bulk of the contamination is being contained on-Site, the only reasonable alternative to address the contaminated sediments is to excavate, consolidate and temporarily store the contaminated sediments on-site until finally contained under the new Site cover.

Off-Site disposal is clearly more expensive and would provide no significant reduction in risk.

Thus a waiver of the TSCA disposal requirements is justified. The estimated cost of \$200,000 is small compared to the total cost of the remedy.

Compliance with the floodplain/floodway regulations is required pursuant to 92 IAC 708 and the Lake County Watershed Development Ordinance. Alternatives for compliance with these regulations will be evaluated during the remedial design phase. The actual costs will depend on the results of further study to determine the extent and impacts of filling in the floodplain and floodway. Golder estimates that a reasonable maximum cost will be \$652,200, which is not a large amount compared to the total cost of the remedy.

Remediation of surface soils that will be outside of the new Site cover, is necessary to reduce human health risks from exposure to PCBs on the surface soil. The cost of this action will be very minor.

Compensation for loss or damage to wetlands is required pursuant to Executive Order 11988 and 40 CFR 6, Appendix A Section 6(a)(5). It is expected that this cost will be minor compared to the total cost of the remedy.

Rerouting and sealing of storm drains is necessary to prevent leachate formation due to potentially large volumes of storm water flow through the waste. This leachate could recharge ground water or Yeoman Creek. The estimated cost of \$110,000 for Alternative 4B, is small compared to the total cost of the remedy.

Continuation of the interim actions for monitoring buildings north of the Site for landfill gas entry, and operation, maintenance and monitoring of the ventilation system installed to mitigate the affects of landfill gas entry, are necessary to protect public health from fire and explosion, and toxic hazards from the landfill gas until the final remedial action is implemented.

B. PRIMARY BALANCING CRITERIA: LONG-TERM EFFECTIVENESS AND PERMANENCE; REDUCTION OF TOXICITY, MOBILITY AND VOLUME THROUGH TREATMENT; SHORT-TERM EFFECTIVENESS; IMPLEMENTABILITY; AND COST.

Alternative 4B, is much less costly than Alternative 5. As stated before, these remaining alternatives include an active perimeter landfill gas control system. Alternative 4B includes a Site cover using a composite FML and clay liner as a barrier layer, a

leachate collection system along Yeoman Creek for the Yeoman Creek Landfill portion of the Site, but does not include relocation of Yeoman Creek away from the Edwards Field area. Alternative 4B is estimated to cost \$25,600,000 less than Alternative 5, which includes a site cover fully consistent with RCRA Subtitle C technical guidance, slurry walls, and a ground water/leachate pumpout system.

1. Active landfill gas control system:

The active perimeter landfill gas control system is estimated to cost \$1,200,000 to construct and \$115,000 per year to operate and maintain. This is substantially more than the \$540,000 to construct and \$13,000 per year to operate and maintain the passive perimeter control system. However, this additional cost is necessary to assure protection of the public health and to meet ARARs.

As stated previously none of the alternatives evaluated in detail include treatment to reduce toxicity, mobility or volume as a principle element. However, the remaining Alternatives, 4B, and 5 include treatment as a secondary element through inclusion of an active perimeter gas collection and treatment system. The active perimeter trench control system is the most reliable system available for preventing off-Site migration of landfill gases in the subsurface, and for addressing potential risks from air emissions of landfill gases. An additional benefit of the active system is that withdrawal of landfill gases has potential to reduce ground water contamination by volatile organic compounds (VOCs) such as benzene and vinyl chloride by withdrawing these VOCs in the vapor phase along with other landfill gases, and thus preventing them from recondensing at the perimeter of the landfill and contaminating ground water. No significant short-term risks nor implementability problems are expected from construction of an active perimeter gas system.

2. Site cover alternatives:

The site cover fully consistent with RCRA Subtitle C technical guidance, which is included in Alternative 5 is estimated to cost \$4,400,000 more than the Alternative 4B site cover, which also includes a composite barrier layer. However, Table 1 indicates that the Alternative 4B site covers would be expected to reduce

infiltration to negligible levels, even if leaks in the FML occur. Therefore, the Alternative 5 site cover is not cost effective. The Alternative 5 site cover also has more implementability problems than the Alternative 4B site cover due to more disturbance of nearby businesses and residents from transportation of a much larger quantity of soil in order to construct the five foot thick cap over a grading layer with a 3% slope, and more potential to affect nearby properties and structures due to the thicker capping requirement. Therefore, the site cover option in Alternative 5 is screened out.

The use of a site cover with a composite FML/clay liner barrier layer is included in Alternative 4B, but not in Alternatives 3C, 4, 4A, or 4C. As stated before, the FML by itself can be very effective in minimizing infiltration through the landfill as long as the FML is of good quality. Nonetheless, the FML by itself does not comply with 35 IAC 811 requirements.

In addition, the composite barrier layer would provide considerably more assurance that the site cover will remain very effective over the long-term. The estimated additional cost of use of the site cover with the composite FML/clay barrier layer compared to a site cover using only an FML as a barrier layer is summarized below:

ADDITIONAL CONSTRUCTION COSTS	:	\$ 1,900,000
ADDITIONAL ANNUAL O&M COSTS	:	\$ 0

No additional short term risks are anticipated from construction of a site cover with a composite FML/clay barrier as proposed in Alternative 4B compared to construction of with only an FML. In addition, no significant additional implementation problems are anticipated.

There may be some concern that the Edwards Field portion of the Site should not require as effective a site cover as the Yeoman Creek Landfill portion.

Although leachate seepage from only the Yeoman Creek Landfill portion of the Site had been the primary regulatory concern during the 1970s and early 1980s, the detection of VOCs such as benzene, acetone, trichloroethylene and tetrachloroethylene, in the leachate well samples at Edwards Field along with the similar

operational history indicates that an effective site cover should be placed over both the Edwards Field Landfill and the Yeoman Creek Landfill portions of the Site.

3. Alternatives to further isolate Yeoman Creek from the Landfill leachate along the Yeoman Creek Landfill portion of the Site.

A leachate collection system for the Yeoman Creek Landfill portion of the Site was included in Alternative 4B.

At the Yeoman Creek Landfill portion of the Site, some conditions argue against the need for measures to further isolate Yeoman Creek from the leachate beyond the protection provided by the new Site cover.

The new Site cover will eliminate surficial leachate seeps; so the only mechanism for leachate recharge of the Creek following cover installation would be through migration through the subsurface. A low permeability cover will nearly eliminate leachate generation due to precipitation, which will result in a gradual decrease in the leachate mound in the landfill, and therefore, a gradual decrease in the driving force for leachate recharge to the Creek.

Even after the leachate mounds are dissipated, leachate can be generated by movement of ground water through the portion of the landfilled waste that will remain below the water table. However, shallow ground water recharge to the Creek is apparently minor since the base flow of the Creek is zero during parts of the year. Water level measurements also indicate that discharge of ground water to the Creek occurs only locally. Furthermore, the ground water data indicates that there is significant natural attenuation between the leachate and ground water, which may also apply to the leachate recharge of the Creek. Consequently, there is a reasonable potential that implementation of the Remedy without a leachate collection system, along with natural attenuation, may expeditiously reduce leachate to below levels of concern.

On the other hand, further isolation of the Creek using a leachate collection system or an artificial channel along the Yeoman Creek Landfill portion of the Site would provide

significant additional insurance that leachate would not have a continuing effect on the Creek. The primary concern is that landfilled wastes are within a few feet of the Creek along much of the Yeoman Creek Landfill portion. Some of this landfilled waste may contain high concentrations of hazardous substances.

It is known that wastes likely to contain high concentrations of PCBs were disposed of in the Yeoman Creek Landfill portion over most, if not all, of its period of operation. The attenuation mechanisms that are protecting the ground water may not be effective over the few feet between the landfilled waste and Yeoman Creek. A number of the hazardous substances detected in the leachate at the Yeoman Creek Landfill portion of the Site may have an adverse impact on ecological receptors, including PCBs, lead, zinc, acetone and cyanide. Therefore, even local recharge of Yeoman Creek from the Yeoman Creek portion of the Site is of concern. Since 30-40% of the landfill wastes will remain below the water table even after the leachate mound in the landfill dissipates, some leachate will be generated from movement of ground water through the wastes, and some of this could recharge Yeoman Creek.

It is preferable to construct a leachate collection system or artificial channel now in conjunction with construction of the new site cover because the design can be integrated with the Site cover design to maximize effectiveness. After construction of the site cover construction of the Creek isolation measures would likely be more expensive due to additional mobilization costs, and the need to repair portions of the Site cover damaged during the construction. Furthermore, the Remedial Investigation (see Section 4.2.1.2.2) indicates that it may be difficult to detect the impact of leachate on Yeoman Creek through the monitoring program. As a consequence, concentrations of less mobile contaminants such as PCBs could build up over time without being detected.

The leachate collection trenches as proposed in Alternatives 4 and 4B would provide an effective barrier to prevent leachate from seeping into Yeoman Creek during dissipation of the leachate mounds in the landfill, in the event that the site cover is not effective, and would prevent leachate generated from ground water movement from seeping into Yeoman Creek.

The estimated additional costs for the leachate collection system including treatment and disposal are summarized below:

CONSTRUCTION COSTS FOR LEACHATE COLLECTION	:	\$ 300,000
ADDITIONAL ANNUAL O&M COSTS	:	\$ 87,000
ADDITIONAL PRESENT WORTH	:	\$ 1,500,000

The construction cost of the leachate collection system for the Yeoman Creek Landfill portion is relatively modest. The major portion of the present worth cost is for operation and maintenance. It is expected that as the leachate mound dissipates that the flow into the leachate collection system will decrease, and, as a result, operation and maintenance costs will also decrease.

There are some additional potential short term risks from exposure to leachate during construction and operation of the leachate collection system. However, these risks are controllable through implementation of standard worker safety procedures.

Alternative 4A includes use of a corrugated steel arch pipe with underdrains to collect leachate to isolate Yeoman Creek from the Yeoman Creek Landfill portion of the Site, instead of a leachate collection system. Use of corrugated steel arch pipe is estimated to cost \$1,300,000 more to construct than a leachate collection system with no decrease in operation and maintenance costs. This Alternative is not expected to be significantly more effective than the leachate collection system. Therefore, Alternative 4A is screened out.

4. Alternatives to further isolate Yeoman Creek from the Landfill leachate along the Edwards Field Landfill portion of the Site.

Alternative 4B includes no further actions beyond the new Site cover to control leachate from the Edwards Field Landfill portion of the Site. Alternatives 4 and 4A include relocation of Yeoman Creek away from the Edwards Field area to further isolate Yeoman Creek from the leachate.

Conditions are significantly different at the Edwards Field Landfill portion of the Site. Along the Edwards Field Landfill, the Creek is generally a losing stream, which indicates that recharge by the ground water is unlikely. There is no definitive

evidence that wastes containing high concentrations of PCBs were disposed of at the Edwards Field Landfill portion. In addition, PCBs were detected in only one leachate well sample at a very low concentration at the Edwards Field Landfill portion. Cyanide was not detected in the leachate at the Edwards Field Landfill, and lead, zinc and acetone were detected at lower concentrations than at the Yeoman Creek Landfill portion.

Finally, even if the leachate does recharge the Creek, there is an approximately 30 foot buffer between the Creek and the landfilled waste, which would be expected to provide significant attenuation especially for relatively insoluble contaminants such as PCBs and lead.

Therefore, it appears that the Site remedy without further measures to isolate the Edwards Field Landfill portion from the Creek will be effective in protecting Yeoman Creek. As a result, leachate collection or relocation of Yeoman Creek away from Edwards Field does not appear to be necessary (even though the cost of relocating Yeoman Creek is relatively modest (\$280,000) and the short term impacts are not expected to be significant).

5. Containment of leachate and contaminated ground water with slurry walls with ground water extraction.

Alternative 5 would contain leachate and contaminated ground water from both Yeoman Creek and the ambient ground water using slurry walls and ground water extraction within the slurry wall. Its primary advantage over Alternative 4B is that it would prevent off-site migration of contaminated ground water. However, this advantage would be gained at a very major increase in costs compared to Alternative 4B (\$ 16 million in additional construction costs and \$430,000 in additional annual costs). Considering the relatively minor levels of ground water contamination and the fact that the ground water in the vicinity of the Site is not presently being used, this additional cost does not appear to be justified. As previously noted in Section II.B, regarding the risks from ground water exposures, the ground water contamination is presently limited even though the Site does not have an effective site cover.

The substantial reduction in infiltration using an effective site cover would reduce impacts on the ground water, and most likely

would result in the aquifers near the Site eventually meeting the ground water remediation goals (except for parameters that naturally exceed the goals) as a result of controlling the source, natural biodegradation, and other attenuation mechanisms.

The results of the HELP model runs in Table 1, demonstrate that infiltration can be nearly eliminated using the site covers in Alternative 4B, without construction of a site cover that fully complies with RCRA Subtitle C technical guidance. In addition, the leachate collection system along the Yeoman Creek Landfill portion of the site along with the site cover will effectively isolate Yeoman Creek from the landfill without construction of the deep slurry walls.

Alternative 5 has implementability problems including a lack of space along the perimeter of the landfill for construction of slurry walls, more disturbance of nearby businesses and residents due to importing a much larger quantity of soil in order to construct the five foot thick cap over a grading layer with a 3% slope, and more potential to affect nearby properties and structures due to the thicker capping requirement. Therefore, Alternative 5 is screened out.

C. MODIFYING CRITERIA: STATE AGENCY ACCEPTANCE; COMMUNITY ACCEPTANCE.

The State of Illinois concurs in the U.S. EPA preferred alternative.

A representative of the potentially responsible parties (PRP) participating in preparation of the Remedial Investigation/Feasibility Study (RI/FS) has indicated that the group favors Alternative 3C, which does not include a leachate collection system along the Yeoman Creek Landfill portion, and includes the active landfill gas control system, and a site cover using only an FML for the barrier layer. Alternative 3C is estimated to cost \$22,000,000 in present worth. U.S. EPA agrees with use of the active gas control system, but also believes that the additional long-term protectiveness and permanence, and reduction in leachate generation justifies the additional \$ 1.7 million construction cost for a site cover with a composite FML/clay barrier layer. In addition, a barrier layer consisting of only an FML does not comply with either the capping ARAR 35 IAC 811 or

the current capping requirements applicable under 35 IAC 807 as proposed by PRP representatives.

The City of Waukegan, the Waukegan Park District and Waukegan School District #60, which are PRPs, have expressed concern regarding their budgetary constraints, and, in particular, urged U.S. EPA to use discretion in regarding the costs of the cap alternatives, the slurry wall, leachate collection, relocation of Yeoman Creek, and ground water remediation.

It should be noted that U.S. EPA's preferred alternative does not include the expensive site cover, slurry wall or ground water control measures included in Alternative 5. U.S. EPA's preferred alternative also does not include a leachate collection system along the Edward's Field Landfill nor relocation of Yeoman Creek away from Edward's Field.

In its comments on the draft Feasibility Study, the Lake County Health Department supported the following components in the selected remedy: a site cover with a composite FML/clay; a leachate collection system along Yeoman Creek; an active gas control system; and soil and sediment remediation.

U.S. EPA's preferred Alternative includes all of these components.

Residents in the vicinity of the Site are expected to favor U.S. EPA's preferred alternative since it will eliminate the landfill gas migration problem without causing potential off-site risks and odor problems. In addition, U.S. EPA's preferred alternative will not entail nearly as much disruption of local businesses as Alternative 5 because the Site cover will not be as thick and because less soil would have to be imported onto the site. In spite of this, U.S. EPA's preferred alternative will impact some local businesses, potentially including consolidation of wastes from, or construction of the site cover over business property in locations where landfilled wastes extend onto the properties, including property at 1401-1451 Golf Road, 2122 Yeoman Street, and 1615 Sunset Avenue. The exact dimensions and location of the cover will be developed during the design of the U.S. EPA's selected remedial alternative.

X. THE SELECTED REMEDY

The selected remedy is Alternative 4B. Alternative 4B, includes the following components (these components are further expanded including discussion of ARARs for each component):

A. Construction of a new cover over the Landfill to minimize infiltration precipitation through the landfill, consisting of the following (see options 4A and 4B Figure 7):

- a 3 foot frost protection layer including top soil and vegetation;
- a geosynthetic drainage layer with a hydraulic conductivity of at least 20 cm/sec and with a protective geotextile filter fabric above the layer to prevent plugging;
- a 3 foot Compacted Clay Layer, or a barrier of equal or exceeding performance, such as a composite barrier layer consisting of a 40 mil very low density polyethylene liner (or equivalent) over either a geosynthetic clay liner (GCL) or a 2-foot compacted clay layer;
- a gas ventilation layer with a hydraulic conductivity of at least 10^{-3} cm/sec with a protective geotextile filter fabric above it if the compacted clay layer option is implemented;
- a grading layer to provide a 2% slope after settlement;

1. Further Description:

The construction quality control staff must be certified by the National Institute of Certification and Engineering Technologies.

A GCL consists of a thin layer of bentonite clay incorporated into a geosynthetic mesh. The GCL must be capable of producing a continuous low permeability clay layer below the FML. The GCL must be able to withstand construction without tearing and must be self healing.

Remedial Design concepts (i.e. mounding cap design; limited consolidation) to minimize the volume of grading materials

and the aerial extent of the landfill cover will be considered during the Remedial Design phase.

The 3 foot Compacted Clay Layer must have a hydraulic conductivity of less than 1×10^{-7} cm/sec. A composite barrier must have compacted clay or equivalent construction material must have a hydraulic conductivity less than 1×10^{-6} cm/sec. The compacted clay layer, or equivalent material, would make up some of the grading layer over the Site so as not to increase the quantity of imported soils needed. Along the edges of the landfill where a grading layer would not be needed, the compacted clay layer can be constructed by scarifying and compacting the existing soil cover to the greatest extent possible.

The composite layer landfill cover will provide source control, the mechanism for preventing future ground water contamination. Natural attenuation will abate existing ground water contamination.

2. ARARs:

This final cover system will meet the requirements of State of Illinois regulations 811.314 (which requires a barrier layer at least as effective as 3 feet of compacted clay with a hydraulic conductivity of 10^{-7} cm/sec), and 811.322 (slope, vegetation and on-site structure requirements), for new solid waste landfills. In conjunction with other portions of the remedy, it also meets the closure performance standard for solid waste landfills in 35 IAC 807.502 (minimize future maintenance and releases). In addition, Ambient Air Quality Standards 40 C.F.R. § 50.6 and 35 IAC 811.103 are ARARs for the construction operation. Impacts on wetlands shall be subject to Executive Order 11990, 40 CFR 6 Appendix A, and Section 404 of the Clean Water Act.

RCRA hazardous waste landfill site cover requirements are not considered ARARs because there is no documentation that listed RCRA hazardous wastes were disposed of at the Site, and because none of the leachate samples even came close to meeting the definition of the RCRA hazardous waste by characteristic. However, because of the presence of PCBs

and other hazardous substances at the Site, the RCRA site cover requirements should be considered.

The selected site cover meets all of the criteria recommended in RCRA technical guidance documents for a hazardous landfill covers, with the following exceptions: use of a 2% slope instead of a 3% slope and acceptance of a 1×10^{-6} cm/sec compacted clay instead of 1×10^{-7} cm/sec in a composite barrier. Use of a 2% slope instead of 3% will reduce the quantity of soil that must be imported to the Site substantially, which is a significant consideration both because of the costs and because the disruption that the construction will cause to adjacent businesses and residents. Use of 1×10^{-6} cm/sec instead of 1×10^{-7} cm/sec as the hydraulic conductivity requirement for the composite barrier compacted clay will increase the likelihood that local clays can be used for the construction, and may reduce costs. Neither the reduced slope requirement nor the reduced hydraulic conductivity requirement is expected to significantly increase infiltration through the landfill.

B. Implementation of a comprehensive, long-term monitoring system which shall include sampling for leachate, groundwater at the edge of the landfill contents, surface water and creek sediments. Action levels will be established in the monitoring plan and shall include Maximum Contaminant Levels (40 CFR 141) and 35 IAC 620.

In the event that Action Levels are exceeded for a specified number of sampling events (to be determined and approved by U.S. EPA after construction of the Site cap), construction and operation of a leachate collection system along both sides of Yeoman Creek adjacent to the Yeoman Creek Landfill portion of the Site to prevent leachate and leachate contaminated ground water from entering or seeping into Yeoman Creek will be required.

1. Further Description: If determined necessary, the leachate collection system is expected to consist of a trench extending 12 to 18 inches below the level of Yeoman Creek. The trench will be lined with a membrane on the creek side in order to attempt to limit infiltration of creek water.

The trench will be capped with a clay surface seal.

Leachate will be collected in a 2 inch diameter pipe and will drain to a sump, from which it will be pumped to a storage and treatment system. It is anticipated that the leachate would either be treated (if necessary) and discharged to the North Shore Sanitary District treatment system, or transported off-site for disposal.

Excavated material, which will include landfilled wastes, from the leachate collection trench shall be consolidated and temporarily stored on-site before being contained under the new Site cover, in the same manner as the contaminated sediments as described in Section X.D. The construction and consolidation shall be conducted in a manner that prevents any release of contaminants from the Site into Yeoman Creek, the wetlands, or other off-site soils.

2. ARARs:

If the leachate is discharged to the North Shore Sanitary District, the following ARARs will be applied: 40 CFR 403.5 (pretreatment standards); Northshore Sanitary District regulations; 35 IAC 307.1101-1103 (sewer discharge criteria); 35 IAC 310.201(a) and (c) (pretreatment standards); 35 IAC 310.202 (pretreatment standards); and 35 IAC 309(d) and 309(e) (leachate treatment and disposal).

If the leachate is discharged to Yeoman Creek, the following ARARs will apply: surface water standards in 35 IAC Part 302; effluent standards 35 IAC 304.

40 CFR 122.44 (requires permit for direct discharge), 35 IAC Part 302 (water quality standards), 35 IAC 811.103 (run off from disturbed areas), Federal Water Pollution Control Act Section 111(b)(3), 40 CFR 110.6 (discharge prohibited), Clean Air Act Section 101, 40 CFR 52, 40 CFR 61 shall be construction requirements.

Although no testing of excavated wastes and soils will be required, it is possible that some of the waste and soils excavated for the leachate collection system may contain PCBs exceeding 50 ppm. Excavation of these wastes and soils and consolidation on-site could be considered disposal of PCBs pursuant to 40 CFR 761.1(b).

In this case, 40 CFR 761.60(a)(4) would require any non-liquid PCBs at concentrations of 50 ppm or greater in the form of contaminated soil, rags, or other debris shall be disposed of: (i) In an incinerator which complies with 761.70; or (ii) in a chemical waste landfill which complies with 761.75.

The selected remedy provides for disposal of the PCBs in a landfill that does not meet the following chemical waste landfill requirements of Section 761.75(b): bottom liner requirements because the landfill does not have a bottom liner (761.75(b)(1) or (2)); leachate collection requirement and requirement for a fifty foot distance between bottom liner and historical high water table (761.75(b)(3) and (b)(7)), and landfill operation requirement (761.75(b)(8)). However, pursuant to 761.75(c)(4), the Regional Administrator has determined that for this Site the requirements in 761.75(b)(1), (2), (3), (7), and (8) are not necessary to protect human health and the environment. For this Site, the low permeability site cover, leachate collection system, if indicated, long term monitoring, access restrictions, and institutional controls included in the selected remedy provide protection to the public health and the environment. Since the remedy provides for containment of the bulk of the PCB contamination, which will not be moved, below the new site cover, no additional protection to the public health or the environment would be added by off-site transport and disposal of the leachate collection material in an incinerator complying with 761.70 or in a chemical waste landfill complying with 761.75(b). The written statement of this finding and waiver by the Regional Administrator, as required in 761.75(c)(4), is provided by signing this Record of Decision.

The material excavated for the leachate collection system will be consolidated and temporarily stored above the 100 year flood elevation. The remedy will comply with 40 CFR 761.75(b)(4)(ii), which requires diversion of surface water run-off from a 24-hour, 25-year storm.

The remedy will also comply with 761.75(b)(5), which requires a site to have a moderate relief, 761.75(b)(6), which requires surface water and ground water monitoring, and 761.75(b)(9), which includes requirements for support facilities.

Regulations relevant to active landfilling operations such as

the waste handling requirements of 811.105, 106, and 107, are not ARARs but should be considered. These regulations should not be ARARs because the operations and conditions for this remedial action are very different from the operations and conditions at operating landfills.

The Yeoman Creek Landfill along with adjacent and downstream contaminated sediments within Yeoman Creek, and contaminated soils adjacent to the Landfill, constitute a single area of contamination. Therefore, excavation of contaminated sediments in Yeoman Creek and excavation of soils and landfilled wastes away from Yeoman Creek and consolidation on-site for final containment under the Site cover along with the rest of the landfilled wastes, does not constitute placement or disposal and, therefore, will not trigger the storage, handling or disposal requirements of RCRA, TSCA, or the State of Illinois Waste Disposal Regulations (the treatment and air emission requirements relevant to hazardous waste in 40 CFR 260-268 and 35 IAC 724 are not anticipated to be ARARs since no listed hazardous wastes are known to have been disposed of in the Landfill and the leachate samples collected were not even close to the criteria for a hazardous waste by characteristic.) The leachate collection system requirements in 35 IAC 307, 308 and 309 [except for 309(d) and 309(e)] shall not be ARARs since these requirements relate to construction of new landfills having a bottom liner and drainage system.

Regulations relative to stabilization of hazardous wastes such as 40 CFR 264.228(a)(2), which requires elimination of free liquids by removal or solidification, and stabilization of remaining wastes and waste residues to support a cover are not ARARs because the consolidation operation on the existing Site cover is much different than the type of operation in a surface impoundment. In addition, there is no documentation identifying that listed hazardous wastes were disposed of on the Site, and leachate samples from the Site have not even come close to meeting the criteria for a RCRA hazardous waste.

Construction and operation of an active perimeter landfill gas collection and treatment system.

1. Further Description: A landfill gas collection trench will be constructed along the perimeter of the Landfill except

along the sides that are adjacent to Yeoman Creek or the wetlands (see Figure 8). A blower or fan will be used to remove the gases from the perimeter trench system. One trench system and blower will be located on the northern portion of the landfill, and another in the Edwards Field area. The gases collected will be directed to the center of either the northern portion of the Site or to the center of the Edwards Field area for treatment by flaring or some other equally effective method.

2. ARARS: The following ARARS will be applied: Clean Air Act Sections 101 and 40 CFR 52 (requires design of an odor free operation, and filing an air pollution emission notice); 40 CFR 61 (limits on hazardous air pollutants); 35 IAC 811.311 (requires active gas control system) ; 35 IAC 811.312 (requires treatment of collected landfill gas); and 35 IAC 211, 212, 214, 215, 216, and 217 (emission regulations).

C. Excavation and consolidation of contaminated sediments and surface soils in limited wetland areas exceeding cleanup action levels:

1. Further Description: It may be advantageous to excavate sediments within the main channel of Yeoman Creek and wetland sediment as shown in Figure 5 in order to facilitate compliance with floodplain/floodway regulations. In this case the excavation can be conducted without preliminary sampling provided that the excavation is conducted in a manner that will not negatively impact the wetland hydrology.

Following the excavation, the sediments shall be consolidated and contained as described below.

Otherwise, only sediments within the main channel of Yeoman Creek and sediments in the wetland south of Edwards Field that exceed the following cleanup action levels (CALs) shall be excavated, consolidated on-site, temporarily contained under a temporary site cover to prevent wind and water erosion, and then permanently contained under the new site cover provided that the excavation is conducted in a manner that will not negatively impact the wetland hydrology. Prior to the excavation, composite samples should be

collected on every 100-500 feet of stream length and 40,000 square feet of surface area to evaluate whether the relevant portion of the sediment attains the CALs.

However, if it is demonstrated to the satisfaction of U.S. EPA that a parameter within an area exceeds the CAL for that parameter solely because of a source other than the Site, then sediment excavation within that area need not be performed.

The excavation, consolidation, and temporary containment shall be conducted in a manner that minimizes release of contaminants from the Site into Yeoman Creek, the wetlands, or other off-site soils. It is anticipated that for temporary containment, a berm will be constructed around designated areas on the Site. The excavated sediments will be placed within these bermed areas to a depth not expected to exceed 1 foot. After the excavated sediments have dewatered to a consistency that can support low ground pressure earthwork equipment, the sediments will be covered with at least 6 inches of clean soil.

2. Definition of CALs: Following is a list of the sediment CALs. The derivation of these CALs is described in Attachment 1.

For PCBs⁸: $[A-1242]/2 + [A-1248] + 10 \times [A-1254] = 3.4 \text{ mg/kg}$

For Lead: 180 mg/kg

For PAHs: 26 mg/kg

For Zinc: 317 mg/kg

3. ARARs: The following ARARs shall be applied: 40 CFR 110.6 (discharge prohibited); Water Quality Standards 35 IAC Part 302; 35 IAC 811.103 (run off from disturbed areas); Executive Order 11990 (wetland protection); 40 CFR 6 Appendix A (wetland protection); 40 CFR 6.302(g) (fish and wildlife protection); Clean Air Act Section 101; 40 CFR 52;

⁸ A- means Arochlor.

40 CFR 61.

Regulations relevant to active landfilling operations such as the waste handling requirements of 811.105, 106, and 107, are not ARARs but should be considered. These regulations should not be ARARs because the operations and conditions for this remedial action are very different from the operations and conditions at operating landfills.

Some of the excavated sediments may contain PCBs exceeding 50 ppm. Excavation of these sediments and consolidation on-site could be considered disposal of PCBs pursuant to 40 CFR 761.1(b). In this case, 40 CFR 761.60(a)(5) requires either: disposal of the sediments in an incinerator complying with 761.70; a chemical waste landfill complying with 761.75; or by an alternative method approved by the Regional Administrator. Pursuant to 761.75(c)(4), the Regional Administrator has determined that for this Site the requirements in 761.75 (b)(1), (2), (3), (7) and (8) are not necessary to protect human health and the environment, and that on-site consolidation, temporary containment, final containment under a low permeability cover, long term monitoring, access restrictions, and institutional controls provide adequate protection to health and the environment. Since the remedy provides for containment of the bulk of the PCB contamination, which will not be moved, below the new site cover, no additional protection to the public health or the environment would be added by requiring the very costly off-site transport and disposal of the contaminated sediments exceeding 50 ppm of PCBs in an incinerator complying with 761.70 or in a chemical waste landfill complying with 761.75(b).

The written statement of this finding and waiver by the Regional Administrator, as required in 761.75 (c)(4), is provided by signing this Record of Decision.

As previously noted in Section X.C, RCRA and State of Illinois Solid Waste regulations will not be applicable to the movement of contaminated sediments because the action constitutes consolidation and not placement or disposal. Also as noted in Section X.C, regulations relative to stabilization of hazardous wastes such as 40 CFR 228(a)(2)

are not considered relevant and appropriate.

It should be noted that excavated sediments will be allowed to dewater on-site. This will result in seepage of a small amount of additional water through the existing site cover and generation of some additional leachate. However, the quantity of leachate generated will be very minor compared to the total estimated quantity of leachate generated by infiltration of precipitation through the site cover (the estimated maximum volume of sediment excavated will be 7,220 cubic yards, of which possibly 20% will infiltrate through the cover, compared to 67,000 cubic yards per year of leachate generated under existing conditions).

D. Actions, including investigations, modeling, alternative evaluation, and implementation necessary to comply with the Illinois Department of Transportation regulations (92 IAC 708) and the Lake County Storm Water Management Commission Watershed Development Ordinance. Compliance may entail: creation of compensatory storage for lost flood plain and floodway storage; use of artificial channels combined with detention facilities or other technologies to maintain stream capacity without increasing the average velocity through the Site; excavation of landfill wastes and soils at the Site out of the floodway and flood plain and consolidation and temporary containment on-site for final containment under the new Site cover; approval of a variance from the floodway and flood plain regulations by the regulatory Agencies.

If excavation and on-site consolidation and temporary containment of wastes occurs, it shall be conducted in the same manner as described in Section X.B for excavation of wastes for the leachate collection system.

1. ARARs: The following ARARs shall be applied: 92 IAC 708; Lake County Watershed Development Ordinance; 40 CFR 6.302(g) (wetlands protection); 35 IAC 811.103 run off from disturbed areas); 35 IAC 311(b)(3); 40 CFR 110.6; Water Quality Standards 35 IAC Part 302; Executive Order 11990; 40 CFR 6 Appendix A; 40 CFR 230.70; 40 CFR 6.302(g); Clean Air Act Section 101; 40 CFR 52; 40 CFR 61.

If excavation and on-site consolidation and temporary

containment of wastes occurs, the same ARARs for these operations identified in Section X.B shall apply.

E. Rerouting and sealing storm drains that go through the Landfill.

1. Further description: It is expected that two storm drains that go through the Yeoman Creek Landfill portion will have to be rerouted and sealed (see Figure 6). Drains that originate on-site will be sealed under the new site cover, and so will not need to be relocated or sealed.
2. ARARs: Executive Order 119990; 40 CFR 6, Appendix A; 40 CFR and 40 CFR 6.302(g) (fish and wildlife protection). In addition, the Lake County Watershed Development Ordinance Article IV.D should be considered.

F. Actions to minimize the destruction, loss, or degradation of wetlands, including compensation for wetlands that will be adversely affected by the selected remedial action.

1. Further Description: This shall include actions to prevent or minimize negative impacts on the wetlands due to construction activities and the final remedy. Compensation shall be provided for wetlands that are lost or negatively impacted by the remedial actions. A detailed wetland mitigation plan is required.
2. ARARs: The following ARARs shall be applied: Clean Water Act Section 404; Executive Order 119990; 40 CFR 6, Appendix A; and 40 CFR 6.302(g). In addition, the Lake County Watershed Development Ordinance Article IV.D should be considered.

G. Attainment of surface water quality standards by control of the source of contamination.

1. Further Description: No active surface water remediation will be conducted, but surface water quality standards shall be attained and the potential risk identified in the Remedial Investigation due to detection of cyanide and acetone eliminated (except for parameters that exceed the standards because of reasons not related to a release from

the Site) by controlling the source including construction of the new site cover, and the leachate collection system along Yeoman Creek along the northern portion of the landfill.

2. ARARs: The following ARARs shall apply unless the exceedance is due to a condition that is not related to a release from the Site: 35 IAC 302. Federal Ambient Water Quality Criteria are not ARARs because fish are usually not present in Yeoman Creek because it is an intermittent stream.

H. Attainment of ground water quality standards by control of the source of contamination with no contingency for initiating direct remediation of ground water is included.

1. Further Description: No active ground water remediation will be conducted, but ground water quality standards shall be attained and the potential risk identified in the Remedial Investigation due to detection of vinyl chloride, benzene, bis(2-ethylhexyl)phthalate, pentachlorophenol, arsenic, beryllium, and lead shall be reduced or eliminated to the extent that the contamination is due to a release from the Landfill by controlling the source by construction of the new site cover, and operation of the active landfill gas control system. No contingency for initiation of active ground water remediation is included for the following reasons:
 - the ground water is already close to meeting cleanup requirements (except for constituents that may not be Site related) -- apparently considerable ground water protection is being provided even without an improved cap through natural mechanisms such as biodegradation, adsorption onto organic deposits, and other attenuating mechanisms;
 - the ground water is not used in the vicinity of the Site and usage restrictions are in place;
2. ARARs: Within a three dimensional region of ground water that exceeds Illinois Ground Water Quality Standards in 35 IAC 620.410 and 620.420 as appropriate due to a release at

the Site, a ground water management zone shall be defined consistent with 35 IAC 620.250. The source containment measures implemented under the selected remedy shall constitute an approved corrective action for the ground water as it relates to 35 IAC 620.250. Therefore, implementation of the selected remedy will satisfy the criteria defined in 35 IAC 620.250(a). Ground water management period required pursuant to 620.250(b) shall be 30 years from the date of completion of construction. In accordance with 35 IAC 620.450, at the end of the 30 year period, the ground water standard for each constituent shall either be: the IGWQS in 35 IAC 620.410 or 620.420 as appropriate if such standard is attained for that constituent; or the concentration as determined by ground water monitoring, if such concentration does not attain the relevant IGWQS.

The remedy shall also attain the Primary Federal Maximum Contaminant Levels (40 CFR 141).

I. Additional investigation to define a ground water management zone, the extent of sediment excavation, and baseline wetland conditions.

1. Additional ground water sampling is needed to define the three dimensional area of the ground water management zone. Additional sampling may be required to define the required extent of sediment excavation, including collecting composite samples every 100-500 feet of stream length and 40,000 square feet of surface area in the limited wetland areas identified in Figure 5. The Remedial Investigation did not adequately define the baseline quality of the wetlands south and east of the Site. Therefore, a more thorough ecological evaluation shall be conducted, including characterization of water, habitat, and vegetative quality in the wetlands. These will be used as a baseline for the long term monitoring.

2. ARARs: The following ARARs shall be applied: 35 IAC 250.

J. Enclosing Yeoman Creek in a corrugated steel semi-arch pipe, as necessary for construction of the site cover. ARARs would be the same as others identified for actions that may impact

wetlands and wildlife.

K. Excavation and consolidation under the new cover of limited soils and wastes potentially contaminated by the Site that will be outside of the site cover, and that exceed 10 mg/kg polychlorinated biphenyls. ARARs are the same as other actions that involve moving soil that may be contaminated by PCBs. In addition, the 10mg/kg action level is from the PCB Spill Cleanup Policy for non-restricted access areas (40 CFR 761.125(c)(4)(v)).

L. Continuation of landfill gas interim measure: To provide continued protection from potential landfill gas entry into adjacent buildings, the landfill gas monitoring and interim actions provided for in the present Amended Consent Order for the Remedial Investigation/Feasibility Study shall continue until full operation of the active perimeter gas control system is initiated.

M. Long term monitoring of ground water, surface water, surface sediments, landfill gas emissions, and wetland conditions to verify the effectiveness of the remedial action.

1. Further Description: Long term ground water, surface water, surface sediment, landfill gas emissions, and wetland monitoring shall be conducted to evaluate the effectiveness of the remedial actions.
2. ARARs: Applicable ARARs include 35 IAC 807.318.

N. Implementation of access restrictions, including enclosing the entire Site in a fence and posting warning signs.

O. Imposition of deed restrictions prohibiting future usage of the Site for purposes that are inconsistent with the selected remedy;

P. Long term maintenance or post-closure care.

1. Long term maintenance shall be provided to the site cover, the leachate collection system, and the active landfill gas control system.
2. ARARs: Applicable ARARs include 35 IAC 811.111(c), 807.318,

811.316.

IX. STATUTORY DETERMINATIONS

U.S. EPA's preferred alternative is believed to provide the best balance of trade-offs among alternatives with respect to the criteria used to evaluate remedies. Based on the information available at this time, therefore, U.S. EPA and the State of Illinois believe the preferred alternative would protect human health and the environment, would comply with ARARs, would be cost-effective, and would utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The preferred alternative will not satisfy the preference for treatment as a principal element.

X. DOCUMENTATION OF SIGNIFICANT CHANGES

The U.S. EPA Proposed Plan, May 1995, identified Alternative 4B as the recommended alternative for Yeoman Creek Landfill. In addition to a landfill cover with a composite barrier layer consisting of a Flexible Membrane Liner over a Geosynthetic Clay Liner or a Flexible Membrane Liner over a Compacted Clay Liner with Active Gas Control, a leachate collection system was also proposed.

During the public comment period, the Yeoman Creek Steering Committee submitted comments relating to the type of landfill cap (see Responsiveness Summary for U.S. EPA responses) and leachate collection system proposed by U.S. EPA. At a July 30, 1996, meeting with the Yeoman Creek Steering Committee, the committee again urged U.S. EPA to reconsider the need to construct a leachate collection system during the initial implementation of Remedial Action.

The current site conditions indicate that the Yeoman Creek portion of the landfill is discharging only limited volume of leachate (500 gallons per day or 0.3 gallons per minute into Yeoman Creek.) Furthermore, construction of a composite barrier cover, as recommended in the U.S. EPA Proposed Plan, will minimize the production of leachate within the landfill; therefore, the volume of leachate discharging into Yeoman Creek will be further reduced.

Based upon review of the current site conditions, U.S. EPA has determined that in lieu of initially constructing the leachate collection system, a long-term monitoring system shall be implemented. The long-term monitoring system will monitor the leachate production in the landfill and monitor quantity and quality of leachate discharging into Yeoman Creek.

The sampling and analysis shall include leachate/groundwater sampling along Yeoman Creek, sediment and surface water sampling in Yeoman Creek, and leachate sampling within the landfill. Furthermore, the installation of additional monitoring wells and piezometers will be necessary to evaluate whether the leachate/groundwater from the landfill continues to discharge into Yeoman Creek.

Action levels for surface water and leachate/groundwater levels shall be MCLs and 35 IAC 620 standards. The impact on the sediments would be determined by comparing the level of contaminants in the sediments during the monitoring period with the level of contaminants in the sediments immediately after sediment excavation in Yeoman Creek.

In the event that the specified standards are exceeded, construction, operation and maintenance of the leachate collection system shall be required of the parties responsible for implementation of Remedial Action and long term operation and maintenance.

ATTACHMENT 1 TO THE RECORD OF DECISION SUMMARY

Attachment 1 to the Record of Decision Summary explains the development of sediment cleanup action levels (CALs) by U.S. EPA. The risk calculations for development of these CALs were performed by ICF Kaiser under U.S. EPA oversight and are incorporated into the Remedial Investigation Report.

I. Sampling

Sampling area: A composite sample should be collected every 100-500 feet of stream length and 40,000 square feet of surface area to evaluate whether this portion of the sediment attains the CALs.

II. Polychlorinated Biphenyls CAL

According to the ecological risk calculations, PCBs may cause a toxic hazard to mink even from the A-1248 present in the wetland soils. Since we are not excavating the wetland soils, it would be unreasonable to require excavation of sediments unless the PCB concentrations significantly exceed that concentration in the wetland soils. The 95% UCL of the average concentration for A-1248 of 3.4 mg/kg will be used to indicate that A-1248 significantly exceeds concentrations in the surface soil. For Arochlors other than A-1248, the CALs should be adjusted to take into account the relative toxicities of the Arochlors. The risk from 3.4 mg/kg of A-1248 is equal to the risk from 6.8 mg/kg of A-1242, or 0.34 mg/kg of A-1254. To take into account cumulative effects in case more than one Arochlor is present, the following equation will be used:

$$[A-1242]/2 + [A-1248] + 10 \times [A-1254] = 3.4 \text{ mg/kg}$$

III. Lead CAL

According to the ecological risk calculations, lead may cause a toxic hazard to red-winged black birds even from lead that may be present in the wetland soils. Since we are not excavating the wetland soils, it would be unreasonable to require excavation of

sediments unless the lead concentrations significantly exceed that concentration in the wetland soils. The 95% UCL of the average for lead in surface soil of 180 mg/kg will be used to indicate that lead significantly exceeds concentrations in the soil.

IV. PAH CAL

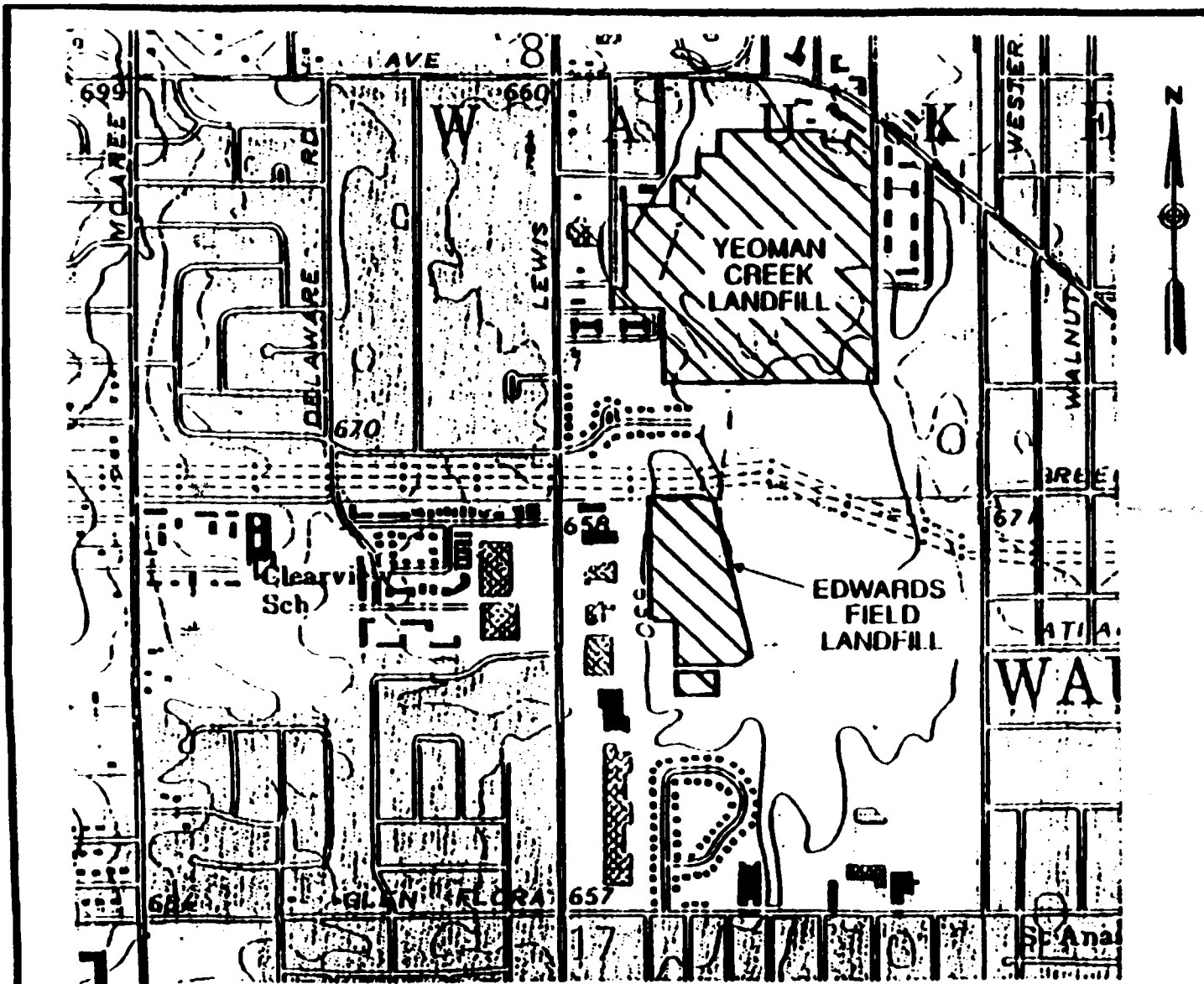
According to the calculations, cumulative PAHs may cause a toxic hazard to red-winged black birds even from PAHs that may be present in the wetland soils. Since we are not excavating the wetlands soils, it would be unreasonable to require excavation of sediments unless the PAH concentration significantly exceeds the concentration in the wetland soils. The 95% UCL of the average for PAHs in soil of 10 mg/kg could be used, but the maximum background stream sediment concentration of 18 mg/kg is larger. This amount can be adjusted to 26 mg/kg to account for uncertainty in the analytical method. Therefore, the CAL for cumulative PAHs is 26 mg/kg.

V. Mercury

According to the calculations, mercury may cause a toxic hazard to red-winged black birds even from mercury that may be present in the soils. Since the maximum mercury concentration in sediments is less than the 95% UCL of the average concentration in the wetland soils, and the wetland soils are not being excavated, no sediment CAL is proposed for mercury.

VI. Zinc CAL

According to the calculations, zinc may cause a toxic hazard to red-winged black birds even from zinc that may be present in the soils. Since we are not excavating the wetlands soils, it would be unreasonable to require excavation of sediments unless the zinc concentrations significantly exceed concentration in the wetland soils. The 95% UCL of the average for zinc in soil of 223 mg/kg could be used, but the maximum background sediment concentration of 276 mg/kg is higher. This value can be adjusted to 317 mg/kg to account for uncertainty in the analytical method. Therefore, the CAL for zinc is 317 mg/kg.



VICINITY MAP



SITE PLAN

SCALE IN FEET

CLIENT / PROJECT

PRP/YEOMAN-EDWARDS' RI-FS/L



Chicago, Illinois

REGIONAL LOCATION MAP

DRAWN

NAME

CHECKED

AAH

REVISED

RP

DATE

7/21/93

SCALE

AS SHOWN

FILE NO.

8136135

JOB NO.

933-8136

SHEET NO.

TOTAL

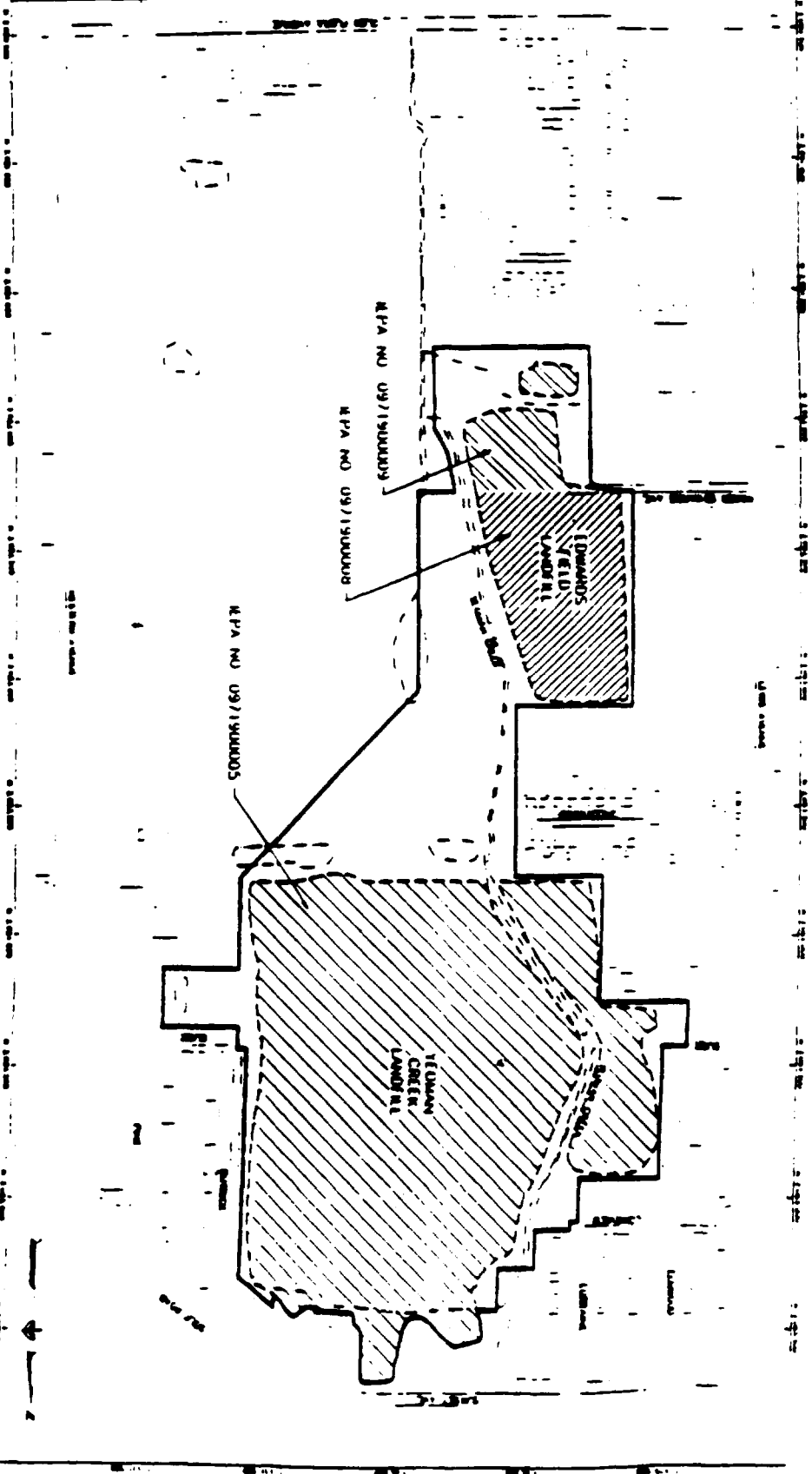
2

LEGEND

WATER

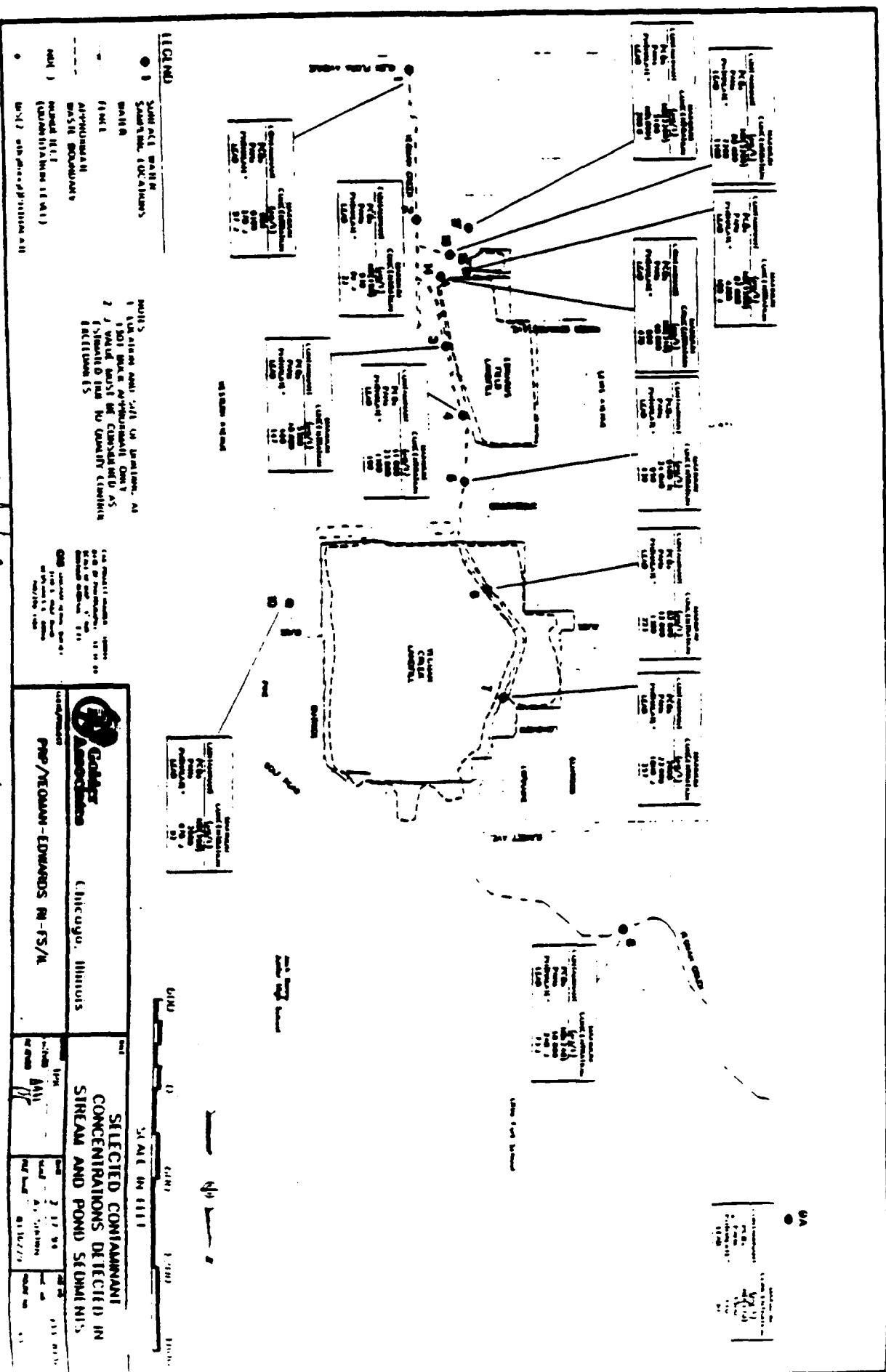
ADDITIONAL
ON THE SHORELINE

1. 100' BUFFER ZONE
2. 50' BUFFER ZONE
3. 25' BUFFER ZONE
4. 10' BUFFER ZONE

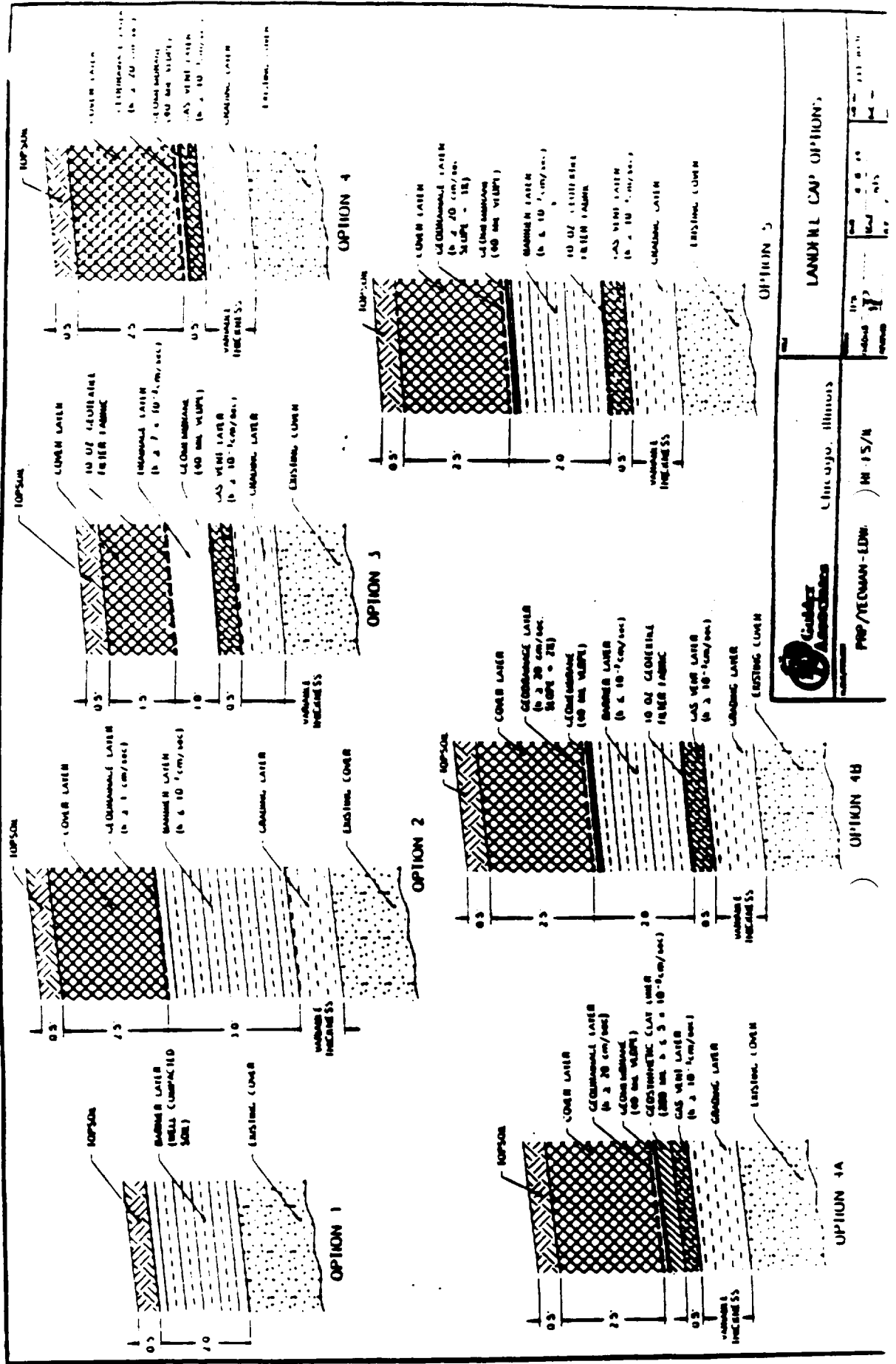


4000' 0" 1000' 0" 2000' 0" 3000' 0" 4000' 0" 5000' 0" 6000' 0" 7000' 0" 8000' 0" 9000' 0" 10000' 0"

SITE LOCATION MAP



should be
11/11/75
admirals



LANDFILL CAP OPTION

Chicago, Illinois

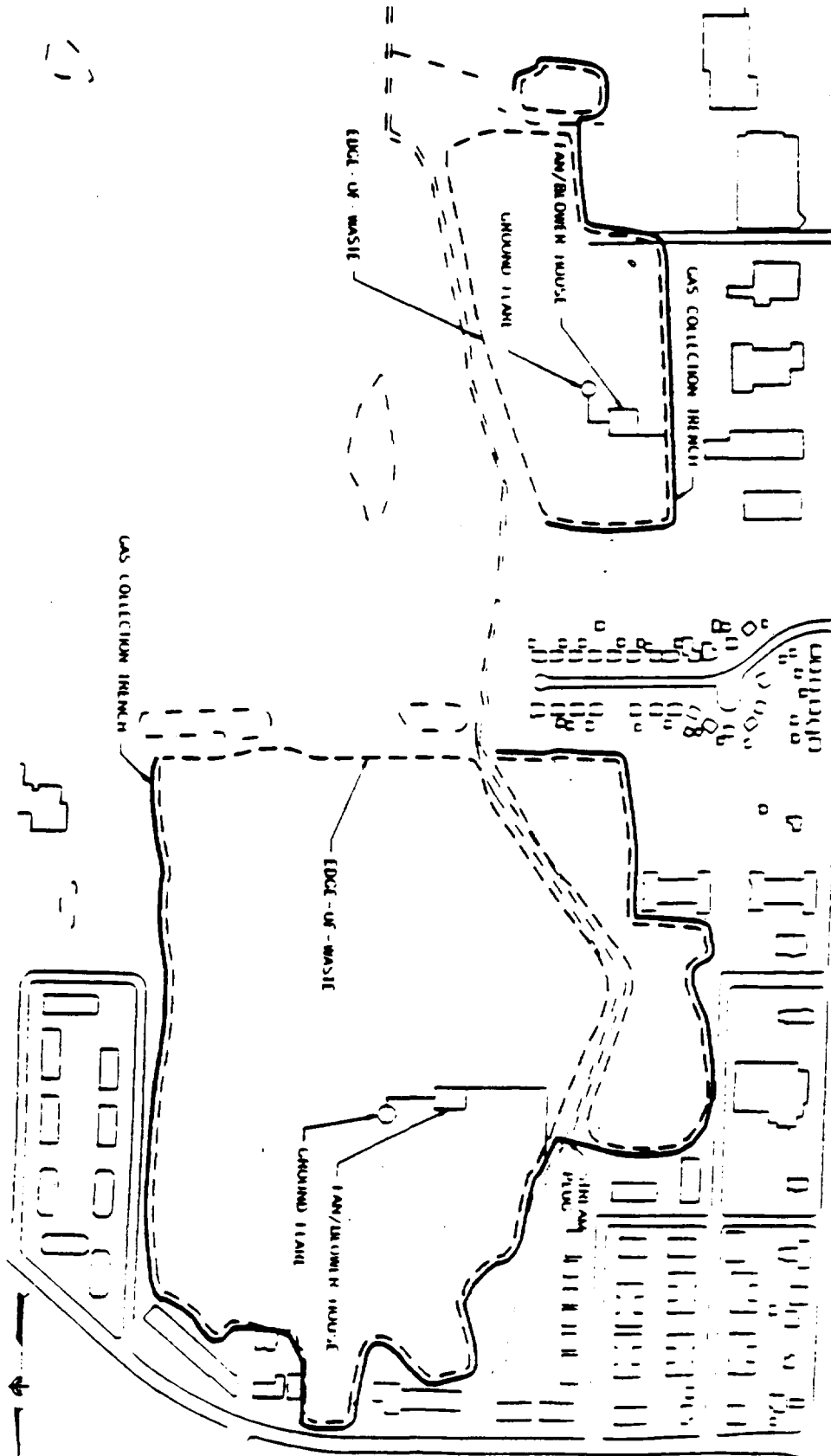
PREP/TECHNICAL - EDW. (M-15/4)

OPTION 4B

OPTION 4A



NOT TO SCALE
 1" = 100' (approx)
 1" = 200' (approx)
 1" = 300' (approx)
 1" = 400' (approx)
 1" = 500' (approx)
 1" = 600' (approx)
 1" = 700' (approx)
 1" = 800' (approx)
 1" = 900' (approx)
 1" = 1000' (approx)



Chicago, Illinois

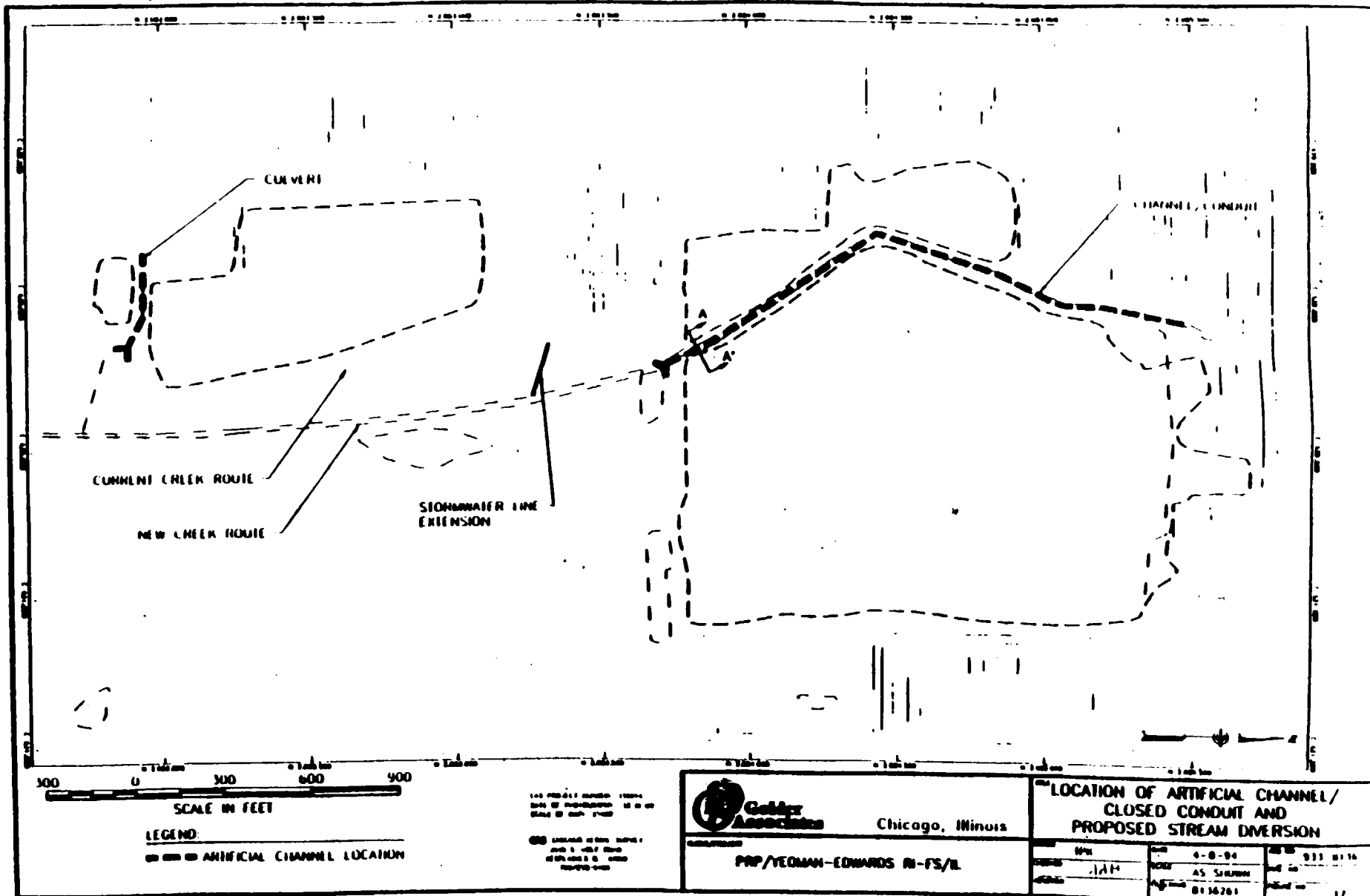
PRO/REDMAN-EDWARDS INC. 15/8

LOCATION OF ACTIVE
 GAS COLLECTION TRENCH
 AND MAJOR COMPARTMENTS

DATE: 10/1/88

10/1/88

7/6/88



U.S. EPA RESPONSES TO PUBLIC COMMENTS ON THE
EVALUATION OF ALTERNATIVES AND PROPOSED PLAN FOR THE
YEOMAN CREEK LANDFILL SITE

I. RESPONSES TO COMMENTS FROM THE YEOMAN CREEK STEERING
COMMITTEE AND TO COMMENTS MADE DURING THE PUBLIC MEETING BY THE
HONORABLE JAMES F. DURKIN, MAYOR OF THE CITY OF WAUKEGAN

ISSUE 1.

COMMENT IN INTRODUCTION TO COMMENTS IN JULY 15, 1995 LETTER:
U.S. EPA must consider this balance [a practical balance between protecting human health and environment and the cost of cleaning up this Site] in determining a practical and effective Site cleanup. U.S. EPA must weigh the adverse social and economic effects... It is in this context that we respectfully request that U.S. EPA broaden its consideration of the human health and environment at Yeoman Creek Site to include the health and financial welfare of Waukegan's citizens.

COMMENT BY MAYOR DURKIN DURING PUBLIC MEETING: "The \$6 million you are asking us to pay harms the overall wealth, health, and welfare of this City." "Our citizens should not be asked to give up essential services so that a landfill plan can be gold plated"

U.S. EPA RESPONSE:

At all Superfund Sites, the United States Environmental Protection Agency (U.S. EPA) is required by law to select an alternative that will be protective of human health and the environment and that meets applicable or relevant and appropriate State and Federal laws. The cost of an alternative is also a very important consideration. The cost of an alternative is balanced against its long-term effectiveness and permanence, its degree of permanent treatment, its short term impacts, and its implementability. It should also be pointed out that U.S. EPA and Illinois Environmental Protection Agency (IEPA) have made efforts to take into account specific conditions on this Site to reduce costs, while still retaining the additional long term protectiveness of the leachate collection system and the performance requirements of the site cover barrier layer. This

has resulted in an opportunity to demonstrate that an alternative with a leachate collection system for only the northern portion of the landfill is not necessary to be protective, and with a site cover that does not meet many of the technical items normally required for hazardous waste landfills, but are less important at this Site.

Besides costs, community acceptance is a consideration that can lead to a modification of the remedy. The information provided by the officials of the City of Waukegan, Waukegan School District #60, and the Waukegan Park District on their financial difficulties, has been taken into account in the remedy selection, as have comments from a few of Waukegan's citizens expressing concern about costs.

It should be pointed out that a number of viable private parties share liability for costs with the governmental parties; so the entire cost of the remedy will not be born by the governmental parties.

ISSUE 2.

COMMENT 1 (July 15, 1995 letter); COMMENT 2 (August 24, 1995 letter): There is no significant human health risk associated with the current and foreseeable usage of the site. COMMENT 2 (August 24, 1995 letter): Risks associated with Landfill Gas are being addressed both currently and by the Remedy Recommended in the Feasibility Study. COMMENT BY MAYOR DURKIN DURING PUBLIC MEETING: "These old landfills are presenting no significant risk to the health of the people."

U.S. EPA RESPONSE:

As documented in the Remedial Investigation (RI), there are some significant risks to nearby residents due to the Site under current usage conditions (estimated to be 1.6×10^{-5} for the reasonable maximum exposure assumptions, and 2.2×10^{-6} for average exposure assumptions). These include risks due to off-site migration of landfill gases. The off-site migration of landfill gas presents a fire and explosion risk as well as a risk from exposure to toxic chemicals. These risks are temporarily being addressed by monitoring and operation of a basement ventilation system in one adjacent building. In addition, there is a limited risk to nearby residents under current conditions

due to potential for contact with polychlorinated biphenyls (PCBs) and other hazardous substances in surface soils, surface water and contaminated sediments from the Site.

U.S. EPA agrees that the ventilation system installed by the Yeoman Creek Steering Committee combined with periodic monitoring by the Steering Committee is adequate as a temporary measure to address the risks from the off-site landfill gas migration. U.S. EPA also agrees that the risks from the off-site landfill gas migration will be addressed in the final remedial action by construction and operation of an active gas ventilation system.

The RI also documents that ground water contamination from the Site would make the ground water unacceptable for residential use due to the human health risk. Since the Site is surrounded by residential and commercial developments, it appears likely that the Site would have been developed for residential or business use if it had not been used as a landfill. Future development of the Site for residential or business usage would be unacceptable because of the human health risk due to the fire and explosion hazard and due to potential exposure to hazardous substances.

Standard U.S. EPA procedures were used to develop the risk assessment conducted in the RI.

ISSUE 3.

COMMENT 2 (July 15, 1995 letter), and Comment 3 (August 24, 1995 letter): There is no significant ecological risk associated with the current and foreseeable usage of the Site.

U.S. EPA RESPONSE:

It should be emphasized that Congress mandates that U.S. EPA enter agreements allowing potentially responsible parties (PRPs) to conduct risk assessments even though the PRPs have a direct financial interest in minimizing the estimated risks. To balance this bias, Congress also mandates for U.S. EPA to provide oversight of the RI/FS to assure that the PRPs' interests are properly balanced by public health and the environmental concerns. Under these conditions, it is not surprising that PRPs and U.S. EPA have differing points of view regarding risk

assessment procedures. In spite of the disadvantages of this process, it does have the benefit that it assures that the risks were carefully considered during the process, since it is an issue that is very important to PRPs.

The Administrative Record clearly shows that U.S. EPA did suggest use of breeding red-winged black birds and mink as indicator species for the risk assessment but did not "insist" on using these species, and that the PRPs were encouraged to suggest alternative indicators.

A review of mink habitats indicates that mink and related mammals could occur at this Site and may be currently present in spite of the limited access to appropriate contiguous habitats. In fact, the limited access to appropriate contiguous habitats may concentrate mink in the area, leading to higher than average numbers of individuals in the smaller area. Mink do not require fish as a prey source and, in fact, utilize a wide variety of terrestrial and aquatic prey.

It should be noted that improvement of the wetlands in the vicinity of the Site may improve the habitat for various wildlife species, including mink, in the future. While the mink is a sensitive indicator, it may be no more sensitive than many other mammals that have not been adequately tested.

The red-winged blackbird is not a particularly sensitive indicator. During the breeding season, males are very territorial and are not expected to travel far from the nest. Given that the Site is "an island of undeveloped habitat", it is reasonable to assume the life support requirements for breeding red-winged black birds (i.e. food, water, etc.) may all come from the Site. Therefore, while conservative, these assumptions may in fact, be appropriate for this Site. It should be noted that, based on suggested procedures by U.S. EPA, the first draft of the RI Report dated August 1993 (p. 181) used the assumption that all of the food and water was derived from the Site.

The ecological risk assessment is intended to determine whether or not the Site is or may be adversely impacting the environment. The ecological risk assessment does not evaluate risks to only one individual animal but evaluates risks to all individuals in the area surrounding the Site. Since the ecological risk

assessment for the Yeoman Creek Landfill Site determined that a risk exists to red-winged black birds and mink, the Site contamination may be depressing the populations of birds and mammals in the area of the Site.

Other issues addressed by U.S. EPA comments provided to the PRPs required the following changes in the ecological risk assessment:

- Use of standard U.S. EPA procedures for screening background concentrations and for determining the exposure point concentrations.
- Consideration of seep sediments as an exposure point.
- Consideration of soil ingestion as an exposure route.
- Provision of a more complete explanation of the derivation of reference doses.
- Use of uptake factors derived directly from experimental results, and not adjusted by unsupported distributional assumptions.

ISSUE 4.

COMMENT 3 (July 15, 1995 letter): U.S. EPA should rely on the stochastic risk assessment because the deterministic risk assessment relies on default exposure assumptions which are not reasonably expected to be encountered at the Site.

U.S. EPA RESPONSE:

It is very important that for all Superfund sites to be addressed in a consistent manner, and that risks be identified and addressed before adverse affects occur. The first step in this effort is to assure that all risk assessments are conducted in a consistent manner. In order to assure this, U.S. EPA requires that all risk assessments whether prepared by U.S. EPA or by PRPs be conducted consistent with U.S. EPA risk assessment guidance. What the PRPs are requesting in this comment is for U.S. EPA to approve use of a very different risk assessment procedure just for this Site. A second step in this effort is to identify,

characterize and address potential risks from the Site rather than waiting for real adverse effects to occur.

U.S. EPA risk assessments are not data and are not necessarily designed to be realistic. Rather, they are designed to identify and characterize current potential risks in a consistent manner. Hopefully, the end result of this effort will be to identify and characterize human health and environmental threats so that they can be addressed before the adverse effects actually occur. As a result, U.S. EPA risk assessment guidance provides for calculation of risks based on current usage of the Site as well as based on potential future usage of the Site.

Generally, U.S. EPA bases Site decisions on risk estimates calculated based on a reasonable maximum exposure (RME) estimate and on conservative toxicity estimates. The overall risk estimate should be reasonably conservative. U.S. EPA also considers estimates that are less conservative and possibly more likely to occur.

U.S. EPA does not agree that risk estimates calculated in accordance with its guidance documents is "overly conservative". The procedure described by the PRPs in the first two paragraphs of this Comment refers to the maximum or worst case exposure estimates, not to the RME, which is now used for decision making by U.S. EPA. Specifically according to the HHEM (p. 6-19):

For Superfund exposure assessments, intake, variable values for a given pathway should be selected so that the combination of all intake variables results in an estimate of the reasonable maximum exposure for that pathway.

U.S. EPA's risk estimates are generally not designed to reflect actual risks, but to estimate the risk under reasonable maximum exposure conditions. Furthermore, the RME is not tied strictly to numerical distributions, as stated in the HHEM (p. 6-19):

As discussed previously, a determination of "reasonable" cannot be based solely on quantitative information, but also requires the use of professional judgment.

The PRPs state that the ecological risk assessment conducted by the PRPs uses "worst case data points" (apparently referring to

the concentration term). This is not correct. For the concentration used to estimate exposures, U.S. EPA uses an estimate of the average concentration called the 95% upper confidence level (UCL) of the average concentration. Normally, the 95% UCL of the average concentration is not much larger than the calculated average concentration, unless there are very few samples. In cases where the 95% UCL of the average exceeds the maximum concentration detected, the maximum concentration is used instead of the 95% UCL of the average. During the conduct of the RI, the PRPs showed no interest in collecting additional samples in order to obtain an improved estimate of the average concentration.

The PRPs state that the factors required in U.S. EPA guidance documents (we presume this refers to factors such as ingestion rates for drinking water, soil and food) are "derived from single values for each of a variety of parameters". This is clearly a misstatement. Each of the factors required by U.S. EPA are the best estimates based on all available information, including experimental data and in some cases extensive surveys.

The "stochastic risk assessment" prepared by ICF Kaiser for the PRPs was reviewed by Karen A. Hammerstrom, one of U.S. EPA's foremost experts on use of probabilistic risk assessments. Ms Hammerstrom concluded in a memorandum dated July 8, 1994, that the ICF Kaiser's stochastic risk assessment was:

about as bad as such assessments can be. Confusing, lack of detail, lack of focus, insupportable assumptions, next to impossible to review.

Ms Hammerstrom made the following comments:

- But many of the input distributions are determined by "subjective judgement", and it is debatable whether these distributions encompass the full range of variability.... In addition, the distributions assigned to other variables are often unsupported by the available data. Dose distributions differing by orders of magnitude can be obtained by using different assumptions.
- The assessment makes no attempt to separate reducible uncertainty from interindividual variability.

- There is a suggestion that uncertainty in the toxicity factors is incorporated in the assessment but no indication of how this was done.
- There is no way to tell which pathways are likely to contribute the most to exposure without doing an independent assessment that would be so complex that it would be equivalent to redoing the risk assessment.
- The support for the input distributions is so poor in almost every case that the ranking of risk levels reported in the assessment is meaningless.
- The exposed population is not clearly defined

Ms Hammerstrom's review makes it clear that probabilistic risk assessments can be very difficult to review, and can be misleading unless all assumptions used are accurate and clearly presented. Probabilities can not be simply assumed but have to be based on relevant data. For some parameters this may entail collection of site specific information. As Ms Hammerstrom pointed out: "a probabilistic assessment is not necessarily more accurate than a point estimate. Accuracy depends on the input data."

Clearly, based on Ms Hammerstrom's comments, the PRPs' stochastic risk assessment did not "maximize use of available, quality-assured, site specific data", as stated by the PRPs. It should be noted that data such as "amount eaten" (ingestion rates), and frequency of exposure are very time consuming to collect and normally would not be expected to vary from site to site. Therefore, the approach taken in the RI of using parameters based on experimental studies, surveys, and professional judgement is the most reasonable approach.

An alternative would be to conduct an extensive biological study at the Site to evaluate the actual impact of the contamination from the Site on biota at the Site. However, the cost of such a study is unjustified considering the cost of the sediment excavation, which is the only portion of the remedy that is primarily for protection of biota from existing contamination (estimated cost is \$200,000). An extensive biological study is unjustifiably expensive.

ISSUE 5.

COMMENT 4 (July 15, 1995 letter): The cover recommended in the approved Feasibility Study (FS) provides the same degree of protection and reliability as the U.S. EPA preferred options.

COMMENT 5 (July 15, 1995 letter): The U.S. EPA unreasonably assumes that the FML will be poorly constructed and, hence, will not provide a reliable leakage barrier. Adding another layer is not the appropriate solution for increasing reliability.

COMMENT 6 (July 15, 1995 letter): The virtually identical performance offered by the U.S. EPA preferred cover does not justify the large additional cost.

COMMENT 5 (August 24, 1995 letter): U.S. EPA's Preferred Cover Adds Cost Without Any Significant Benefit or Increase in Reliability.

COMMENT 6 (August 24, 1995 letter): Composite Barrier Liners and Covers Are Not Required at Mixed-Waste Landfill Superfund Sites.

COMMENT IN SEPTEMBER 1, 1995 MEMORANDUM FROM RICHARD WILLIAMS: According to Design and Construction of RCRA/CERCLA Final Covers, EPA 625 4-91-025, May 1991, polyethylenes are expected to have a life of about 750 years at temperature of 90 degrees centigrade.

COMMENT IN SEPTEMBER 1, 1995 MEMORANDUM FROM RICHARD WILLIAMS: According to an article by Dr. Rolf Koch, Dr. Erwin Gaube, Dr. Joachim Hessel, Christiam Gondro Ph.D, and Dr. Heiz Heil in Mull and Abfall (Refuse and Waste), August 1988, Heft 8 (Volume 8), ISSN 0027-2957, pages 348-361: The authors conclude that the working life of this material [HDPE pipe] could be expected to be considerably greater than 100 years.

COMMENT IN SEPTEMBER 1, 1995 MEMORANDUM FROM RICHARD WILLIAMS: According to "Remaining Technical Barriers to Obtaining General Acceptance of Geosynthetics" by Robert M. Koerner, Y. Hsuan, and Arther E. Lord, Jr. of the Geosynthetic Research Institute, Drexel University in Geotextiles and Geomembranes 12 1993), pp. 1-52, the projected life of HDPE is in the range of 200 to 750 years.

U.S. EPA RESPONSE:

U.S. EPA included the composite flexible membrane liner (FML)/ geosynthetic clay (GCL, cover Option 4A from the FS) or compacted clay (CC, cover Option 4B) barrier layer in the Proposed Plan because composite barrier layers have the potential to add considerably to the long-term effectiveness of the remedy in reducing infiltration of precipitation into the landfill compared to a site cover with only an FML barrier layer (cover Option 4). These options have been determined to be equivalent to or more stringent than the performance of 3 feet of compacted soil, with a hydraulic conductivity of 10^{-7} cm/sec. We note that the ARAR for the landfill cap has been determined to be 35 IAC Part 811.314. The basis for this determination is discussed below after the technical merits of the questions are addressed. 35 IAC Part 811.314 provides some flexibility in designing the cover requirements, so long as they are equivalent to or exceed the performance of 3 feet of compacted soil with a hydraulic conductivity of 10^{-7} cm/sec.

As stated by the Yeoman Creek Steering Committee in Comment 4, "any reduction of infiltration reduces leachate production and potential leachate seepage and serves to provide an additional margin of safety in protecting groundwater quality." Based on the RI, the reduction of leachate will also provide further protection to the surface waters in Yeoman Creek and the wetland south and east of the Site.

A site cover with only an FML barrier layer (Option 4), as proposed by the PRPs, can be and often is very effective in reducing infiltration. As stated in the U.S. EPA approved FS, modeling indicates that a cover using only an FML for the barrier layer could be very effective in reducing infiltration through the landfill due to precipitation as long as the FML overall quality is good. For example, if the leakage fraction is 10^{-5} , the HELP modeling included in the Feasibility Study (FS) predicts a 99.4% reduction in infiltration compared to current conditions.

According to Design and Construction of RCRA/CERCLA Final Covers, EPA/625/4-91/025, May 1991, a leakage fraction of 10^{-5} represents a good or excellent quality FML (see Table 2-4 and Figure 9-8).

This corresponds to a reduction in total infiltration from 1,800,000 cubic feet to 11,500 cubic feet per year over the portion of the landfill east of Yeoman Creek. Some factors argue for assuming a low leakage fraction, such as the shallow depth of the landfill, which would limit the amount of settlement due to decomposition of the wastes. In addition, through strict quality control measures, a good quality FML cap should be constructable at this Site. Construction quality assurance measures that will have to be taken during construction of the Site cover include those listed in Comment 5.

U.S. EPA agrees with the Yeoman Creek Steering Committee that FMLs should remain effective for a very long time in site cover applications. If this were not so, FMLs would not be prescribed for hazardous waste landfill lining and capping applications. However, FMLs have only been used for the last 20 years, so their long term effectiveness is not well documented.

The documents providing the estimates of the long term effectiveness of FMLs submitted by the Yeoman Creek Landfill Steering Committee indicate that there is a large amount of uncertainty in these estimates. Indeed the estimates identified in the documents were performed for applications other than site covers, were conducted on materials other than that proposed for the FML (40 mil very-low density polyethylene), and did not take the synergistic effect of stress on the FML into account in the estimate. Uncertainties include:

- swelling from exposure to liquid may cause secondary actions that could lead to other synergistic effects (Design and Construction of RCRA/CERCLA Final Covers, EPA 625 4-91/025, May 1991, p. 36)
- because the temperatures used in the example [which resulted in an estimated lifetime of 752 years for polyethylene shielding of electric cables] are quite high and quite limited (ie. they are bunched together), extrapolation down to the site-specific temperature mentioned may be invalid. One does not know which, if any, of the geomembrane properties will be amenable to the Arrhenius approach, but the various possibilities should be investigated on a project-specific basis and as a general research area. (Design and Construction of RCRA/CERCLA Final Covers, p. 39)

- field feedback is necessary to establish better insight into degradation and aging issues involving polymeric geomembrane and other related geosynthetic materials. (Design and Construction of RCRA/CERCLA Final Covers, p. 40)
- "Regarding synergism of the different phenomena [stress, temperature, oxidation], the situation is just beginning to be explored." "One simply does not know what the effect of various types, and levels, of stress will be on geosynthetic degradations." (Koerner, Robert M, Hsuan, Y., and Lord, Arthur E. Jr. "Remaining Technical Barriers to Obtaining General Acceptance of Geosynthetics". Geotextiles and Geomembranes. 12 (1993) 1-52. Pages 32, 45)

In spite of construction quality assurance measures, leaks in FMLs always occur. In addition, as indicated in the documents submitted by the Yeoman Creek Steering Committee, leaks can develop in the FML over time due to settling and long term degradation. It is uncertain how long it would take for long term degradation to be significant, but some estimates have been in the vicinity of 200 years. Any leaks can substantially increase the quantity of infiltration through an FML if it is underlain by a highly permeable material.

This is demonstrated in Table 2-4 of Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991. As can be seen, the flow rate through holes in FMLs can increase from 330 gal/acre/day for excellent FMLs to 10,000 gal/acre/day for poor quality FMLs. This is also demonstrated using site specific HELP model assumptions in Table 1, which predicts that infiltration would increase from 12,000 cubic feet per year for a good/excellent quality FML to 276,000 cubic feet per year for a poor quality FML. Table 1 is shown on the following page.

It should be noted that there is little possibility of addressing FML leaks through increased maintenance once the soil cover has been installed over it, since leaks likely would not be detected.

TABLE 1
COMPARISON OF INFILTRATION RATES
FOR FML AND COMPOSITE FML/CLAY BARRIER LAYERS
FOR GOOD AND POOR QUALITY FMLS USING HELP MODEL²

TYPE OF BARRIER	INFILTRATION ASSUMING 10 ⁻⁵ LEAKAGE FRACTION ³ % REDUCTION ¹ CUBIC FT		INFILTRATION ASSUMING 10 ⁻³ LEAKAGE FRACTION ⁵ % REDUCTION CUBIC FT	
FML	99.4%	12,000	84.9%	276,000
FML/GCL	100.0%	0	100.0%	15
FML/2-feet compacted clay @ HC=10 ⁻⁷ cm/sec	100.0%	2	100.0%	141
FML/2-feet compacted clay @ HC=1 ⁻⁶ cm/sec	100.0%	14	99.9%	1,374

Help Model Assumptions are shown in Appendix B, December 1994 Feasibility Study for the 10⁻⁵ leakage fraction runs. The 10⁻³ leakage fraction used the same assumptions as the corresponding Appendix B run, except for changing the leakage fraction.

According to Table 2-4 of Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991, good to excellent quality FML (or geomembranes) can be characterized by having one 1 cm² to 0.1 cm² hole per acre. According to Figure 9-8 of the same reference, this corresponds to a leakage fraction in the vicinity of 10⁻⁵.

Cubic feet of infiltration using new cap divided by the cubic feet of infiltration under existing conditions times 100. Cubic feet of infiltration was estimated using the HELP model.

According to Table 2-4 of Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991, poor quality FMLs (or geomembranes) can be characterized by having 30 0.1 cm² holes per acre. According to Figure 9-8 of the same reference, this corresponds to a leakage fraction in the vicinity of 10⁻³, assuming a 0.33 foot head.

However, if the FML is underlain by a clay layer, it is likely that infiltration will be very low even if leaks occur in the FML, whether it is due to installation, landfill settling, or degradation. Since it is desired that this remedy be permanent, it is desirable for the site cover to remain effective even if FML degradation starts after 200 years. The GCL or CC below the FML complements the FML's capability by essentially plugging leaks in the FML with a low permeability layer of clay. The potential effectiveness of the composite FML/GCL and FML/CC is demonstrated in Figure 2-4 from Design and Construction of RCRA/CERCLA Final Covers, U.S. EPA, May 1991. For site specific application, it is also demonstrated using the HELP model in Table 1, above.

Under these circumstances the Agency's position is that a composite barrier layer is worth the 12-19% increase in cost compared to the cost of the site cover with an FML barrier layer (7-11% increase in the cost of the total remedy). In order to obtain the added long term protectiveness of a site cover having a composite barrier layer at a reduced cost, U.S. EPA is allowing a number of compromises of the normal hazardous waste capping requirements. This includes allowing a 2% slope instead of a 3% slope in order to reduce the quantity of soil that is needed for grading, allowing use of a GCL instead of two feet of CC, allowing use of the existing cover as part of a two foot CC layer, and allowing the CC to have a hydraulic conductivity of as high as 10^{-6} cm/sec rather than the usual requirement of 10^{-7} cm/sec.

Footnote 7 advocates use of a GCL rather than a CC layer for the composite barrier layer because of short-term impacts of construction of the 2-foot CC layer. Use of the GCL (instead of CC) along with an FML in the composite barrier layer is acceptable to U.S. EPA. However, regarding the concern about excavation of soils and wastes along the edges of the landfill for construction of the CC layer, it should be noted that if testing indicates that the existing site cover has adequate properties along the edges, excavation will not be necessary. It is also possible that the cap design can be adjusted to avoid excavation in the areas where the existing cover needs to be replaced. Furthermore, while excavation of large quantities of wastes is considered hazardous, excavation of small quantities is not expected to present a significant hazard or odor problem since the excavated material can be quickly covered and other

dust and vapor control measures can be taken including temporary containment structures, chemical suppressants, temporary covers, water sprays, and scheduling excavations during cooler and wetter seasons.

If construction of an Option 4A Site cover is shown to present a significant hazard that can not be controlled, U.S. EPA will not allow construction of the Option 4A site cover. Investigation of this issue can be addressed during the remedial design phase.

Regarding the increased truck traffic concern in Footnote 7 due to construction of the 2-foot CC layer, it should be noted that increased truck traffic for transportation of soil and other materials onto the Site is entailed for construction of either Option 4, 4A or 4B site covers. Measures can be taken to reduce the nuisance of the increased truck traffic by regulating the time of delivery and the delivery route. The Yeoman Creek Steering Committee contends that the CC site cover (Option 4B) would entail more truck traffic than the Options 4 and 4A site covers because clay is bulkier than other soils that the clay would replace in the grading layer. Although this may be true, the impact of this incremental increase in truck traffic would be minor.

An effective Site cover over the Yeoman Creek Landfill Site is very important. The Federal government and the State of Illinois have recognized that even normal household wastes can contain hazardous substances. For this reason, requirements for landfills accepting even normal household wastes have become much more stringent within the past few years. The State of Illinois now requires that landfills accepting household wastes have a bottom liner consisting of either 5 feet of low permeability compacted earth or a composite barrier layer consisting of a 60 mil FML and a three foot compacted clay layer, and a low permeability final cover consisting of 3 feet of low permeability compacted earth or an FML of equal performance. The bottom liner must be overlain by an effective leachate collection system. The Yeoman Creek Steering Committee is correct in stating that it is cost prohibitive to "transform [old municipal landfills] into a state-of-the art RCRA hazardous waste landfills." This is true also for transforming old municipal landfills into landfills that meet the new requirements for landfills accepting only household wastes. It would be too expensive to excavate the entire

landfill and place it into a landfill having a bottom liner and leachate collection system. Therefore, U.S. EPA is proposing to only install an effective site cover over the Site. In other words, U.S. EPA is depending on only the Site cover to provide all of the protection, which under current regulations would be provided by a combination of a bottom liner, leachate collection system, and final site cover. This is true even though U.S. EPA has information indicating that some of the wastes disposed of in the Yeoman Creek Landfill Site would not be allowed in municipal waste landfills under current waste disposal regulations. This includes oily wastes likely containing PCBs, used laboratory chemicals, waste solvents, and waste paint. Some of these wastes may have been listed hazardous wastes pursuant to RCRA.

Beyond the technical benefits of a composite landfill cover, the commentors' proposal to utilize a site cover with only an FML barrier layer, as proposed by the PRPs, does not comply with the site cover ARAR. U.S. EPA has determined that 35 IAC Part 811 is the ARAR for the Yeoman Creek Landfill Site cover. 35 IAC Part 811 requires a site cover of at least 3 feet of compacted soil with a hydraulic conductivity of 10^{-7} cm/sec or less, or an alternative which has equivalent or greater performance. The performance of an FML barrier, alone, is not expected to meet this performance criteria.

ARARs are defined as Applicable or Relevant and Appropriate Requirements. 35 IAC Part 807 appears to be directly applicable to the Yeoman Creek Landfill due to the date closure was initiated and waste was last accepted, prior to September 18, 1992. 35 IAC Part 811 standards are not applicable for the same reason. However, 35 IAC Part 811 standards are relevant and appropriate for any municipal landfill where revised environmental control systems need to be employed.

The Yeoman Creek Landfill was closed and cared for in substantial compliance with the requirements of 35 IAC Part 807. Despite this, the Landfill has made the National Priorities List, has had releases of hazardous contaminants from the Landfill and has had infiltration of water identified as part of the problem. In light of the historically demonstrated inadequacy of 35 IAC Part 807 for this Site, to specify 35 IAC Part 807 as setting the standards for remedial activities at the Yeoman Creek Landfill would not be protective of human health and the environment.

Therefore it seems relevant and appropriate to consider the requirements of 35 IAC Part 811 for effective landfill standards. The cover requirements of 35 IAC Parts 807 and 811 are not mutually exclusive; Subpart 811.314 will satisfy Subpart 807 requirements. 35 IAC Part 811 was developed through an exhaustive process for applications such as the Yeoman Creek Landfill situation, and are specifically designed to overcome the shortcomings of 35 IAC Part 807. It seems particularly appropriate that a site with identified problems should follow the latest standards, such as cap design, to limit infiltration. It is further supported where the facility does not have any of the other control features such as a constructed bottom liner and leachate collection blanket that are now considered a standard necessity in landfill construction.

ISSUE 6.

COMMENT 7 (July 15, 1995 letter): The leachate collection system required in the Proposed Plan is not necessary since the new landfill cover will virtually eliminate leachate impacts on Yeoman Creek.

COMMENT 8 (July 15, 1995 letter): The leachate collection system is unnecessary because groundwater recharge to Yeoman Creek is not a significant factor at this Site.

COMMENT 9 (July 15, 1995 letter): The leachate collection trenches are not cost effective since they only collect a nominal volume of leachate.

COMMENT 11 (July 15, 1995 letter): The proposed leachate collection trenches have potentially adverse environmental impacts at this Site.

COMMENT 7 (August 24, 1995 letter): The Leachate Collection System Proposed by U.S. EPA Is Neither Reasonable nor Cost-Effective for this Site.

U.S. EPA'S RESPONSE:

Current documented conditions at the Yeoman Creek Landfill portion of the Site demonstrate that leachate is unacceptable.

However, some conditions argue against the need for measures to further isolate Yeoman Creek from the leachate beyond the protection provided by the new Site cover. The new Composite Barrier Site cover will cover all of the wastes and extend into the ground water. This design will eliminate surficial leachate seeps to a high degree of confidence in long-term effectiveness; so the only mechanism for leachate recharge of the Creek following cover installation would be through migration through the subsurface. It also may reduce the rise in the water table within the landfill during flooding by increasing the flow path. This may reduce backflow of this ground water back into the Creek when the water level in the Creek drops. A low permeability cover will nearly eliminate leachate generation due to precipitation, which will result in a gradual decrease in the leachate mound in the landfill, and therefore, a gradual decrease in the driving force for leachate recharge to the Creek.

Even after the leachate mound is dissipated, leachate can be generated by movement of ground water through the portion of landfilled waste that will remain below the water table. However, shallow ground water recharge to the Creek is apparently limited since the base flow of the Creek is zero during parts of the year.

Water level measurements also indicate that discharge of ground water to the Creek occurs only locally. Furthermore, the ground water data indicates that there is significant natural attenuation between the leachate and ground water, which may also apply to the leachate recharge of the Creek. Finally, it can be argued that any problems caused by migration of contaminants through the ground water into Yeoman Creek can be addressed by monitoring and implementation of a remedial action, if a problem is detected.

On the other hand, further isolation of the Creek using a leachate collection system or an artificial channel along the Yeoman Creek Landfill portion of the Site would provide significant additional insurance that leachate from the landfill would not have a continuing effect on the Creek. The primary concern is that landfilled wastes are within a few feet of the Creek along much of the Yeoman Creek Landfill portion. Some of this landfilled waste may contain high concentrations of hazardous substances. Even though the flow rate of leachate into

Yeoman Creek may be small, if the leachate contains high concentrations of hazardous substances, it could recontaminate the sediments and result in a significant detrimental effect on the ecology. Measurement from leachate monitoring wells indicates that the leachate exceeds industrial pretreatment standards for chemical oxygen demand, ammonia, cyanide, iron, lead and zinc. A number of chemicals detected in leachate may have an adverse effect on ecological receptors based on the ecological risk assessment in the RI, including PCBs, lead, zinc, acetone, and cyanide. The attenuation mechanisms that are protecting the ground water may not be effective over the few feet between the landfilled waste and Yeoman Creek. Although the leachate is too contaminated for discharge without treatment into a sewer, the Yeoman Creek Steering Committee indicates no concern about its release without treatment into Yeoman Creek.

The leachate collection system will provide Yeoman Creek with protection from impacts of landfill leachate during the dissipation of the leachate mound. In Comment 9, the Yeoman Creek Steering Committee states that they estimate that the flow into the leachate collection system will be 500 gallons per day. Although Comment 8 states that the base flow in Yeoman Creek is negligible, in the FS, Golder Associates, Inc. estimated that the maximum ground water flow through the west side of the landfill would be 5 gpm, which corresponds to approximately 350,000 cubic feet per year and 16% of the estimated flow through the landfill due to infiltration of precipitation under existing conditions. Since 30-40% of the landfill wastes will remain below the water table even after the leachate mound in the landfill dissipates, the ground water flow through the west side of the landfill will generate leachate, which would eventually recharge the lower aquifer and possibly Yeoman Creek. Although the Yeoman Creek Steering Committee has proposed anchoring the FML barrier layer below the water table, this would not be expected to significantly reduce ground water flow into the Creek due to the ground water flow gradient within the shallow aquifer.

Ground water flow into Yeoman Creek can also be generated as a result of the rise and fall in the level of Yeoman Creek. As stated on page 63 of the RI:

During the Spring, the potential for discharge will be greatest at the time when the creek level, which fluctuates

on a short time scale in response to precipitation and freeze-thaw cycles, is lower than the adjacent groundwater levels which respond much slower to precipitation events.

Anchoring the FML liner below the water table may reduce this effect to some degree by increasing the length of the flow path between the waste and Yeoman Creek. However, because the wastes are so close to Yeoman Creek, groundwater flow to and from Yeoman Creek due to the rise and fall of the water level in Yeoman Creek could be significant.

Neither the potential impact of ground water flow through the west side of the landfill nor the impact of the fluctuating water tables in response to water levels of Yeoman Creek are taken into account in the estimated volume included in Comment 9.

Furthermore, there is a high level of uncertainty in the volume estimate in Comment 9 principally because the average hydraulic conductivity of the waste is unknown. Preferential pathways could exist within the waste that would result in a much higher hydraulic conductivity than 10^{-4} cm/sec. A higher flow rate would result in higher operation and maintenance costs until the leachate mound dissipates.

Because of the proximity of the landfill to Yeoman Creek and the potential variability in leachate quality and migration, it appears that only a costly ground water monitoring program could detect leachate before it enters Yeoman Creek. Simply monitoring the surface water and sediments in the Creek would not be acceptable because it would be difficult to determine the source of the contamination, and because it would not detect contamination until after the stream is contaminated.

If a contamination problem is detected due to leachate migration, it would be expected to be considerably more expensive to address at that time. The Yeoman Creek Steering Committee estimates that it would cost an additional \$40,000 to \$70,000 to "retrofit" the site cover after construction of the leachate collection system.

Although the Yeoman Creek Steering Committee did not provide a basis for their cost estimate, it is clear that they did not include the cost of the repeated sediment excavation to remove contaminated sediments. At that time, the sediments would probably have to be disposed of off-site, and, if contaminated

with PCBs at concentrations of 50 ppm or more, would have to be disposed of in a permitted chemical waste landfill, or by incineration.

Besides the cost savings, the design of the system can be made more effective by integrating the leachate collection system into the site cover design. For example, recharge of the leachate collection system by Yeoman Creek can be minimized by extending the Site cover over the leachate collection system and into the ground water.⁶

Finally, addressing the leachate collection system will be administratively more difficult and may even be administratively unimplementable in the future, depending on the Agency's funding and priorities at that time.

The estimated costs for implementing the leachate collection system including treatment and disposal concurrent with the cap construction is summarized below:

CONSTRUCTION COSTS FOR LEACHATE COLLECTION	:	\$ 390,000
ADDITIONAL ANNUAL O&M COSTS	:	\$ 115,000
ADDITIONAL PRESENT WORTH	:	\$ 2,000,000

This adds 9% to the estimated total cost of the alternative proposed by the PRPs. The major portion of the present worth cost is for operation and maintenance. It is expected that as the leachate mound dissipates that the flow into the leachate collection system will decrease, and, as a result, operation and maintenance costs will also decrease.

Comment 11 expresses a concern regarding the potential for the leachate collection system to negatively affect the ecology of Yeoman Creek and the adjacent wetlands due to seepage of water from the stream into the leachate collection system. In Comment

⁶ It should be noted that the diagram of the leachate collection system in Figure 3 of the Yeoman Creek Steering Committee's July 15, 1995 comment letter, is defective. This diagram indicates that drainage from the site cover would flow into the leachate collection system. As stated previously, the site cover could extend over the leachate collection system.

11, the PRPs estimate that 270 gpd, which is 100,000 gallons per year, could seep from the Yeoman Creek into the leachate collection system.

Section 4.5 of the FS provides information on the potential for the remedial action to impact the nearby wetlands. Although Section 4.5 of the FS voices no concern about seepage of water from Yeoman Creek into the leachate collection system (nor was any concern about this affect expressed in any portion of the FS, which was prepared by the Yeoman Creek Steering Committee's consultant), it includes an estimate that the total annual runoff into the wetlands within the Yeoman Creek basin is 486,000,000 gallons per year. The estimated approximately 100,000 gallons which may be removed by the leachate collection system is only 0.02% of the total flow entering the basin that recharges the wetlands. Section 4.5 also includes an estimate of increased drainage from the landfill due to the improved site cover of 8,200,000 gallons per year (the 8,200,000 gallons is partially off-set by a decrease in recharge of Yeoman Creek and the wetland by ground water, but the FS concludes that most of the ground water migrates into the lower aquifer, not into Yeoman Creek or the wetland). Therefore, the increased drainage due to the new site cover will more than make up for the small amount of water removed by the leachate collection system. As stated in Section 4.5, the drainage from the site cover can be controlled to eliminate adverse environmental impacts. It should also be noted that flow into the leachate collection system from Yeoman Creek will primarily occur during periods of high flow in Yeoman Creek, when the surface water flow into the wetlands would already be high. Collection of the seepage from Yeoman Creek during the high flow periods would have the beneficial effect of preventing a rise in the landfill water table and subsequent seepage of the water back into the Creek after it is contaminated by the wastes in the landfill.

In conclusion, for various reasons, the commenters expressed confidence that the leachate collection and treatment system is unnecessary. While EPA concurs that leachate will be reduced by the Site cover, concern remains that leachate will continue to be generated at levels containing high concentrations of hazardous substances, or otherwise adversely affecting the Creek.

This ROD allows the opportunity to demonstrate that the leachate

collection and treatment system does not need to be implemented. This determination was made based upon the required monitoring program, the composite Site cover, and the risks and obligation, if determined necessary after construction of the Site cover is completed, to construct, implement and operate a leachate collection system, and to remediate contaminated soils and sediments.

ISSUE 7:

COMMENT 10 (July 15, 1995 letter): U.S. EPA has failed to consider short-term risks due to waste excavation required in the construction of the leachate collection system.

U.S. EPA RESPONSE:

U.S. EPA has considered short-term risks of waste excavation for the leachate collection system. Uncontrollable risks can be caused by excavation of large quantities of wastes (such as excavation and removal of the contents of an entire landfill). However, risks from excavation of relatively small quantities of waste should be controllable. This is indicated in Section 5.5.5 of the FS prepared by Golder Associate, Inc., which states that:

However, it is anticipated that construction of leachate collection trenches along Yeoman Creek would require a limited amount of excavation of waste at the southern end of Yeoman Creek Landfill. Consequently, additional worker health and safety precautions would be required.

Note that the FS, which was prepared by the PRP contractor, states that the quantity of waste excavated would be limited, and indicates that additional risks to workers can be addressed by taking health and safety precautions. The FS goes on to state that similar risks are involved in the excavations for the active gas collection system. However, the PRPs have made no comment about risks due to construction of the active gas collection system.

U.S. EPA also believes that measures can be taken so that the excavation for the leachate collection system can be completed without discharging leachate to Yeoman Creek. Roy F. Weston,

Inc. (Weston) states in a letter dated August 23, 1995 that "leachate from the wastes during construction can be contained from going into Yeoman Creek by sound construction practices." Weston suggests use of leachate sumps to dewater the excavation. If a small quantity of leachate does discharge to Yeoman Creek, it will be less important than eliminating the long term seepage of leachate into the Creek.

Landfill gases are presently seeping through the site cover and into the ambient air at the Site although it has been determined that the health impact of this emission is negligible. Opening a trench along Yeoman Creek may temporarily increase landfill gas emissions somewhat, but because the trench will be open for only a limited period of time and the trench will not be near residences, the health effects would be negligible.

Measures such as construction of temporary containment structures, use of chemical suppressants, use of temporary cover, use of water sprays, and conducting work during seasons of lower temperature, can be used to reduce emissions of dusts and vapors from excavation.

ISSUE 8:

COMMENT 12 (July 15, 1995 letter): It is inappropriate to conduct additional investigation of soil contamination as part of pre-design activities.

U.S. EPA RESPONSE:

PCBs were detected at 90 mg/kg at a leachate seep near the northern boundary of the Site. There were no samples collected between the leachate seep and residences and businesses located north of the Site. Although run-off from the leachate seep is apparently not directed towards the residences and businesses, it is prudent to collect a number of samples to confirm that surface soils at the residences and businesses have not been affected. This will involve no delay in the project since other tasks such as sampling of Yeoman Creek sediments can be conducted at the same time. In addition, the cost of this effort will be minor compared to the total cost of the remedy.

ISSUE 9:

COMMENT 13 (July 15, 1995 letter): U.S. EPA's Proposed Plan is ambiguous in the discussion of PCB action levels and related site remedial activities.

COMMENT 14 (July 15, 1995 letter): There is no information in the Feasibility Study which justifies the establishment of PCB action levels for soils as set forth in footnote 5 of the Proposed Plan. In addition, the suggested action levels of 10 ppm in non-residential areas and 1 ppm in residential areas is inappropriate for this Site.

U.S. EPA RESPONSE:

U.S. EPA has clarified the applicability of the various action levels for PCBs in the ROD. The action level of 1 ppm for residential areas was meant to apply to residential and commercial areas as defined in 40 CFR 761.123, while the action level for non-residential areas was meant to apply to undeveloped property. It should be noted that these action levels are being set as a precaution, and it is not expected that any PCBs from the Site are present on residential properties.

U.S. EPA agrees that the proposed 1 ppm action level for PCBs is more stringent than is required under U.S. EPA's, PCB Spill Cleanup Policy (40 CFR 761.125). Under the PCB Spill Cleanup Policy, 1 ppm is the criteria for "clean soil", but the criteria for requiring excavation and replacement of soil contaminated by PCBs is 10 ppm (761.125(c)(4)(v)). 1 ppm of PCBs is also identified as a "starting point action level" in "Guidance on Remedial Actions for Superfund Sites with PCB Contamination", OSWER Dir. 9355.4-01, p. 26. According to this guidance document, a 1 ppm PCB concentration corresponds to a 10^{-5} lifetime incremental cancer risk level, using standard U.S. EPA exposure assumptions, while a 10 ppm concentration corresponds to a 10^{-4} risk.

Since the soil action levels for protection of human health are higher than the sediment action levels for protection of ecological receptors, U.S. EPA agrees that it is unnecessary to set separate action levels for non-residential soils, residential soils, and sediments. Inasmuch as contamination in non-resident

and residential area soils also may impact ecological receptors such as red-winged black birds, the action level for non-residential areas and residential soils, is changed to the same action levels used for sediments (Arochlor-1242 = 6.8 mg/kg, Arochlor-1248 = 3.4 mg/kg, and Arochlor-1254 = 0.34 mg/kg). Therefore, any soil exceeding this action level (other than extensive wetland areas) must be excavated to a depth of 10 inches and replaced with clean soil (containing less than 1 ppm of PCBs). This should provide protection to human health to more than the 10^{-5} risk level, since the portion of any property having a concentration between 1 ppm and 3.4 ppm, if any, will be very limited.

PCBs of 50 mg/kg is an action level that triggers disposal regulations under the Toxic Substances Control Act (TSCA) for excavated sediments, soils, and wastes. If sediments, soils or wastes are excavated and contain PCBs concentrations equal to or exceeding 50 mg/kg, then TSCA regulations become applicable and require disposal of these contaminated sediments, soils or wastes in a Chemical Waste Landfill or by incineration, unless a waiver is approved. The relevant chemical waste landfill requirements have been waived. See response to Issue 13.

ISSUE 10.

COMMENT 15 (July 15, 1995 letter): U.S. EPA's proposed sediment action levels are inappropriately based on unrealistic hypothetical risks to red-winged black birds and non-existent mink.

U.S. EPA RESPONSE:

It should be noted that the proposed sediment action levels have been available to the PRPs since the fall of 1994, but this is the first comment from them specifically criticizing the procedures for deriving these action levels.

The sediment action levels were derived using the following procedures:

1. Reference doses were derived for the chemicals of concern for mink and red-winged black birds. Reference doses were set at exposure rates that are reasonably expected to result

in no adverse effects on the animal based on scientific toxicity studies and application of protection factors.

2. Exposure rates to mink and red-winged black birds were estimated based on feeding rates, contaminant concentrations, and other considerations.
3. Plots were prepared of total hazard index to mink and red-winged black birds versus assumed sediment concentrations (see letter from ICF Kaiser to Richard Boice, U.S. EPA dated August 15, 1995) for each chemical of concern. The hazard index is the ratio of the estimated exposure rate divided by the reference dose. If a hazard index exceeds unity for a chemical, that chemical should be evaluated to determine whether it may be causing an adverse impact on wildlife in the area. For both mink and red-winged black birds, it was assumed that 100% of the diet came from the area near the Site. For calculation of the hazard index for the plots, it was assumed that 75% of the diet came from the areas represented by the soil data. At a sediment concentration of 0, the hazard index is represented by the risks due to the soils alone without any contribution from the sediment contamination. It was assumed that 20% of the diet came from areas represented by the sediment data (5% of the exposure, previously represented by the seep soil data, was assumed to be eliminated by construction of the site cover over the seep soils). The plots show how the hazard index increases in response to assumed increases in concentrations of chemicals in the sediments.
4. U.S. EPA staff intended to evaluate whether the sediment concentrations of each chemical that resulted in a hazard index of unity or above should be used to establish sediment cleanup action levels. However, it was found that for PCBs, lead, PAHs, and zinc the hazard indexes exceeded unity either for mink or red-winged black birds for exposures to soils even without consideration of exposures to sediments.

U.S. EPA ecologists had already advised that the concentrations of contaminants in the wetland soils were not high enough to justify excavation, which would damage the wetlands. However, the ecologists felt that excavation of stream sediments would not cause significant ecological damage. Under this situation, U.S.

EPA reviewers recommended setting the sediment cleanup action levels at concentrations based on the higher of either the upstream sediment concentrations, which were considered background, or on concentrations being left in the adjacent wetlands. For PCBs and lead the recommended cleanup action level is based on the 95% confidence level of the average concentration in the soil samples. Since only Arochlor-1248 was detected in the soil samples, U.S. EPA staff recommended that the action levels for the other Arochlors be adjusted from the level for Arochlor-1248 based on their relative toxicities. For PAHs and zinc, the recommended cleanup action level is based on upstream sediment concentrations since these concentrations were higher than the upper 95% confidence limit of the average concentration in the wetlands.

As described in item 3 above, the exposure rates were multiplied by 0.75 for the fraction of food from the soils, and by 0.2 for the fraction of food from sediments. Therefore, adding the hazard indexes for soils and sediments will not increase the estimated risk by a factor of three as stated in paragraph 2 of Comment 15. The soil concentrations used for the 0.75 fraction will not be covered by the new site cover as indicated in paragraph 2 of Comment 15. As explained in item 3 above, the 5% fraction of food from the seep soil area was assumed to be zero because the new site cover would cover these areas, but it will not cover the wetlands or other soil areas that were sampled.

In contrast to statements in paragraphs 3 and 5 of Comment 15, it should be emphasized that the hazard indexes for the different Arochlors of PCBs and different polyaromatic hydrocarbons (PAHs) should be added since all the Arochlors have the same mechanism of toxicity. Therefore, their ecological impact is additive. As a result, it was proper to depict the baseline risk from soils due to PCBs or PAHs as the sum of the hazard indexes from all of the types of these compounds. It is not clear why it is stated that adding the hazard indexes for Arochlor-1242, Arochlor-1248 and Arochlor-1254 results in an over-estimation by a factor of three. As stated previously the hazard indexes of the three should be added to obtain the total hazard index for PCBs. In addition, the RI assumed that the hazard indexes for the different Arochlors and PAHs should be added. Similarly, for PAHs a single reference dose was used for all of the PAH compounds, and the effects of different PAHs were assumed to be additive.

The concentrations used in calculation of the hazard indexes are actually a conservative estimate of the average concentration called the upper 95% confidence level (UCL) of the average. When large numbers of samples are collected the 95% UCL of the average will be reasonably close to the average concentration. However, to control costs, usually only a limited number of samples are collected and analyzed at Superfund Sites. In these situations where only a limited number of sample results are available, the 95% UCL of the average can be larger than the maximum detected concentration for a parameter. In this case the maximum detected concentration was used instead of the 95% UCL of the average.

Other comments that the PRPs make regarding the sediment cleanup action levels have already been addressed in U.S. EPA's response to Comments 2 and 3.

ISSUE 11.

COMMENT 16 (July 15, 1995 letter): U.S. EPA's proposed sediment remedial action levels are unnecessarily costly to implement as part of a remedial action.

U.S. EPA RESPONSE:

It is anticipated that the first phase of the sampling will be conducted before construction is mobilized, and, as a result, the laboratory turn-around time will not be disadvantageous. U.S. EPA will consider use of field screening techniques to determine the extent of excavation in the field. However, these will have to be followed up by confirmatory laboratory analysis meeting the necessary quality assurance/quality control criteria. It should be noted that the sediment cleanup action levels also apply to lead, zinc, and PAHs. All of these parameters will require a laboratory analysis in addition to PCBs.

ISSUE 12.

COMMENT 17 (July 15, 1995 letter): In accordance with the criteria outlined in the NCP, U.S. EPA should carefully weigh the protection of non-threatened individual animals against the other environmental and human health risks associated with extensive

excavation of soils and sediments.

U.S. EPA RESPONSE:

Mink and breeding red-winged black birds were used as indicator species to detect potential adverse affects of contaminants on wildlife in the area. Protection for these species should also protect other wildlife in the area (see response to Issue 3).

U.S. EPA has already stated that its ecologists recommended that the contaminant levels in the large wetland south and east of the site were too low to justify excavation (although limited excavation was felt to be acceptable). Prior to excavation of the sediments, an evaluation of the impact of the proposed sediment excavation on the large wetland south and east of the Site will have to be completed. U.S. EPA agrees that sediment excavation should be limited or be conducted in accordance with procedures that will not have a significant impact on the large wetland south and east of the Site. For example, if the excavation may result in dewatering part of the wetlands, the excavated sediments may have to be replaced by clean soil.

ISSUE 13.

COMMENT 18 (July 15, 1995 letter): The TSCA regulations dealing with PCB disposal are not applicable to the proposed remedial action.

U.S. EPA RESPONSE:

Although the TSCA regulations dealing with disposal of PCBs at or exceeding 50 ppm have been determined to be applicable or relevant and appropriate, the relevant chemical waste landfill requirements, 40 C.F.R. §761.75, have been waived to allow these PCB contaminated materials to be consolidated under the Site cover.

ISSUE 14.

COMMENT 19 (July 15, 1995 letter): Even if U.S. EPA considers the TSCA PCB disposal regulations relevant and appropriate,

consolidation of PCB-containing materials on-site is appropriate, whether or not the level of PCBs exceeds 50 ppm.

U.S. EPA RESPONSE:

See Response to Issue 13, Comment 18.

ISSUE 15.

COMMENT 20 (July 15, 1995 letter): Wetlands mitigation should be limited to the areas defined in the approved FS Report.

U.S. EPA RESPONSE:

The FS provided an estimate of the quantity of wetlands that will be eliminated as a result of construction of the new site cover. In addition to this, based on the FS certain limited wetland areas may be adversely impacted by sediment excavation, and limited wetland areas may be adversely impacted by diversion of storm sewers and other actions taken during the remedial action.

Therefore, U.S. EPA will defer the determination of the exact quantity of wetlands that will be adversely affected until a later stage in the project when the wetland impacts are better defined.

ISSUE 16.

COMMENT 21 (July 15, 1995 letter): The cost estimate presented in the Proposed Plan appears to be incorrect.

COMMENT 4 (August 24, 1995 letter): U.S. EPA has failed to account for contingency and engineering cost of the remedial action.

COMMENT FROM MAYOR DURKIN DURING PUBLIC MEETING: "The two pieces would cost \$ 6 million more ..."

U.S. EPA RESPONSE:

The difference between the cost for U.S. EPA's preferred

alternative identified in the Proposed Plan and that identified by the Yeoman Creek Steering Committee is approximately \$1,200,000. This difference is primarily because U.S. EPA assumed that the less expensive Option 4B cover (FML underlain by 2-feet of CC) would be implemented rather than the somewhat more expensive Option 4A cover (FML underlain by a GCL). However, in the Proposed Plan, U.S. EPA proposed that either the Option 4A or 4B site cover would be acceptable. Following is a list of the components that account for the larger cost estimate by the Yeoman Creek Steering Committee:

- + \$800,000: the Yeoman Creek Steering Committee assumed use of an Option 4A instead of an Option 4B cover.
- + \$134,000: the Yeoman Creek Steering Committee assumed higher compensatory storage/wetland mitigation costs than used in the FS.
- + \$167,000: the Yeoman Creek Steering Committee apparently double counted certain active gas control inspection costs, which were not included in Alternative 4 of the FS.
- + \$40,000: U.S. EPA did not adjust health and safety costs to 1% of construction capital costs.

If it is assumed that the less expensive FML/CC site cover is constructed, but correcting U.S. EPA's estimate for the health and safety costs to 1% of construction costs, the cost estimate for the selected remedy would still be \$ 25.7 million, which is \$ 3.7 million more than the cost estimate for the remedy including a site cover with only an FML barrier layer and without a leachate collection system.

ISSUE 17.

COMMENT 8 (from August 24, 1995 letter): No ground water management zone is necessary nor should one be imposed at this Site.

U.S. EPA RESPONSE:

U.S. EPA agrees that the State of Illinois Ground Water

Management Zone regulations should not be considered applicable or relevant and appropriate to this action. However, the ROD has addressed this concern and has prescribed only adequate ground water monitoring.

II. RESPONSES TO COMMENTS FROM EVOY, KAMSCHLUTE, JACOB & COMPANY (EVOY), AND FROM HARRY HOOKER

ISSUE 1: U.S. EPA MUST EITHER REMOVE THE LANDFILL WASTE FROM EVOY'S PROPERTY OR DETERMINE AND PUBLICLY STATE THAT SUCH REMEDIATION IS UNNECESSARY. (July 14, 1995 letter from Evoy)

U.S. EPA RESPONSE:

U.S. EPA has reviewed this matter and concluded that landfilled residential wastes are present on the Evoy property and are contiguous to the landfilled residential wastes on the Waukegan School District property. As a result, that portion of the Evoy property where the landfilled residential wastes are located has been properly identified as part of the Yeoman Creek Landfill Site. However, U.S. EPA is willing to be flexible in implementing the remedy to allow excavation and consolidation of wastes from the fringes of the Landfill, such as this property, and alternative site cover designs. This is expanded below.

It should be noted that the action level for PCBs in soils applies to surface soils where it may be contacted by people and not to the landfilled waste.

At the Yeoman Creek Landfill Site, it is known that residential wastes were co-disposed with industrial wastes. The best information we have is that the industrial wastes were simply buried along with the residential wastes wherever the filling was occurring at the time of disposal. Therefore, it is believed that industrial wastes are spread throughout the landfill. A number of hazardous substances were detected in leachate from the landfill, including: chloroethane; methylene chloride; acetone; 1,2-dichloroethylene; 2-butanone; trichloroethylene; benzene; 4-methyl-2-pentanone; tetrachloroethylene; toluene; chlorobenzene; ethylbenzene; xylene; phenol; 1,4-dichlorobenzene; 1,2-dichlorobenzene; 2-methylphenol; 4-methylphenol; isophorone; 2,4-

dimethylphenol; benzoic acid; naphthalene; 4-chloro-3-methylphenol; 2-methylnaphthalene; diethylphthalate; n-nitrosodiphenylamine; butylbenzylphthalate; bis(2-ethylhexyl)phthalate; polychlorinated biphenyls; and lead. The leachate testing is the best indication we have of the contents of the landfill. We do not know the distribution of these chemicals within the landfill, but we assume that hazardous substances could be distributed throughout the landfill. In general, chemical analyses of the wastes themselves are not very useful since the composition of wastes can vary dramatically from location to location. Furthermore, residential wastes require proper disposal regardless of their chemical make-up.

Figure 8 from the RI, appears to indicate that the following borings on the Evoy property contained landfilled residential wastes: WD-224U, WD-251B through WD-251G, WD-252C, and WD-252D. The logs for these borings described the waste as: metal pieces, paper, cloth, glass, wet-black-decomposed paper and cloth, pieces of aluminum foil, paper-black-wet-decomposed, copper wire, wire, plastic, plastic bag, plastic wrap, wood, hose, and piece of concrete. These descriptions are typical of landfilled residential wastes. In addition, in the judgement of the personnel who observed the cuttings from the borings (from Golder Associates, Inc, and Roy F. Weston, Inc) the wastes were landfilled residential wastes. Chemical analyses would be of no value in this determination since there is no chemical definition of landfilled residential wastes. As stated previously, based on available information, we have assumed that hazardous substances could be present within the landfilled residential wastes. It follows that the landfilled wastes on the Evoy property should be considered part of the Yeoman Creek Landfill Site, and should be addressed in the same manner as the rest of the landfill -- that is by containment under an effective site cover.

On properties where the extent of landfilling and the impact of the proposed site cover is limited, it may be possible to excavate wastes from the property and consolidate it onto the main part of the Site, or to implement an alternative site cover design that would better accommodate use of the property. However, because of the potentially significant costs involved, the potential health and safety problems, and the uncertainty regarding the results of negotiations and litigation that may occur among the parties of concern on this matter, the decision

regarding whether any excavation or alternative site cover design should be conducted will be deferred to a later date. Therefore, U.S. EPA has included the following provision in the ROD:

For the northern portion of the site in locations where wastes were disposed of outside of the boundaries of the Waukegan School District property, or where the site cover will extend onto otherwise unaffected properties, it will be acceptable to U.S. EPA for wastes to be excavated from these properties and consolidated on the Site, or to implement an alternative cap design that will better accommodate use of the property. This is subject to the following:

- determination by U.S. EPA that the alternative site cover design will meet an equal standard of performance with respect to reduction in infiltration over the long term, and will not require excessive maintenance.
- if excavation is conducted, followup sampling will be required to assure that excessive levels of hazardous substances are not being left behind.
- determination by U.S. EPA that the costs to the federal government of implementation of the excavation or alternative design will not be excessive; and
- determination by U.S. EPA that the action can be conducted in a manner that will be protective of human health and the environment.

The actual allocation of costs for implementation of the remedy will depend on the results of negotiations or litigation.

ISSUE 2: U.S. EPA MUST ADDRESS THE EFFECT OF DRAINAGE AND RUN-OFF ONTO THE SURROUNDING PROPERTIES (July 14, 1995 letter from Evoy).

"My comment would be that whatever plan is adopted that the drainage and impact on the drainage and the impact on the property owners north needs to be seriously evaluated."
(Harry Hooker during public meeting)

U.S. EPA RESPONSE:

U.S. EPA agrees that drainage onto surrounding properties is an important consideration. It would be unacceptable for the new

site cover to cause flooding or other hazards to the residents of the surrounding properties. Therefore, U.S. EPA has added the following performance standard for construction of the drainage system to the ROD: drainage from the site cover onto adjacent properties and into storm sewers will be adjusted to levels that will result in no increased potential for flooding or other adverse effects.

The drainage from the site cover can be adjusted to flow into the wetland south of the Site, into Yeoman Creek, into storm sewers, or onto adjacent properties and streets. The run-off could be either totally diverted from adjacent properties and storm sewers, or adjusted to levels that result in no adverse effects. Another performance requirement is that the run-off should not have an adverse effect on the ecology of the wetland south of the site. U.S. EPA believes that these performance requirements for the drainage system can be met. The details of the drainage system will be worked out during the design phase. U.S. EPA believes that after the preliminary design is completed, a meeting with adjacent property owners should be held to assure that their concerns are addressed.

Another flooding concern is the impact of the site cover in filling a portion of the floodway and floodplain in Yeoman Creek. This concern is preliminarily evaluated in Section 4.4 of the FS. Although the preliminary evaluation indicates that the impact of the site cover on the floodway and floodplain of Yeoman Creek will be minor, U.S. EPA's Proposed Plan includes provisions for creation of compensatory floodway and floodplain storage and other mitigation measures that may be necessary to assure that construction of the new site cover will not cause problems due to loss of floodway and floodplain capacity in Yeoman Creek.

III. RESPONSE TO COMMENT FROM JAMES D. GRIFFITH, DIRECTOR, LAKE MICHIGAN FEDERATION

"Plan 4B seems to be sound. I do not believe that five year reviews are sufficient. Perhaps initially this should be a review after the first and third year."

U.S. EPA RESPONSE:

Mr. Griffith stated that the actions in U.S. EPA's Proposed Plan seem sound. Regarding the sufficiency of the five year reviews, since annual monitoring of the ground water, surface water, sediments, and wetlands will be required, U.S. EPA will essentially be monitoring the performance of the remedy every year.

IV. RESPONSE TO COMMENTS FROM THE LAKE COUNTY STORM WATER MANAGEMENT COMMISSION

ISSUE 1: It is unclear from the information I have available who the permit applicant will be. If it is the City of Waukegan or if the city is a co-applicant a Watershed Development Permit (WDP) will be required from the Lake County Stormwater Management Commission. There is no mention of a WDP in the USEPA information. I would encourage a meeting with the design engineers as soon as possible. The issue of cost may be moot if one option or another is not permissible under the WDO.

U.S. EPA RESPONSE:

It is very important that the remedial actions at the site do not cause or increase flooding problems. Therefore, U.S. EPA agrees that a meeting is needed between the design engineer, and the Lake County Storm Water Management Commission as well as the Illinois Department of Transportation (IDOT) to work out methods to implement the remedial actions in a manner that will not significantly increase flooding potential, and that will comply with the substantive requirements of applicable or relevant and appropriate State and Federal laws (ARARs). However, it should be emphasized that, under federal law, federal, state or local permits are not required for on-site actions conducted under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (see 40 CFR 300.400(e), and Sections 104, 106, 120, 121, and 122 of CERCLA). Therefore, only the substantive requirements of ARARs have to be complied with.

It should be noted that to the extent that the substantive requirements of the Lake County Storm Water Management Commission Ordinance exceeds the requirements of IDOT floodway and floodplain regulations, the provisions of the Ordinance will not be considered mandatory because they are not State requirements.

This includes the provision for creating compensatory storage for loss of floodplain storage. However, the need for this provision, as well as other provisions of the Ordinance will be seriously considered in the design of the remedial action, in order to avoid significantly increasing the potential for damage due to flooding.

It is also very important that remedial actions at the Site comply with applicable or relevant and appropriate federal and state laws. U.S. EPA and IEPA have determined that the Illinois Department of Transportation (IDOT) floodway and floodplain regulations are applicable to this action; however, to the extent that the Lake County Storm Water Management Commission ordinance exceeds the IDOT requirements, it is not considered applicable.

V. RESPONSE TO COMMENTS FROM ILLINOIS CITIZEN ACTION "In reviewing the EPA's proposed plan for the cleanup we see one glaring omission: protection of the groundwater currently being contaminated with the leachate from the landfill. The proposal acknowledges that groundwater is being contaminated, and that contamination presents a risk, but the recommended solution does not address this issue, focusing only on the direct contamination of Yeoman Creek. Our concern is twofold: the highly dangerous nature of the contaminants (PCBs) leaching into the groundwater, and the ultimate impossibility of reclaiming the groundwater once it is contaminated. The US Department of Health and Human Services report TP-92/16 Public Health Statement 1.7 states 'for the maximum protection of human health the possible cancer effects of drinking water or eating fish or shellfish that contain PCBs in lakes and streams be not more than 0.001 parts of PCBs per billion parts of water (0.001 ppb).' The Superfund Study by the Congress' office of Technology Assessment (OTA) reveals that once the groundwater is contaminated it cannot be cleaned up. On a normal human timescale, groundwater contamination must be considered permanent. The pump and treat system of cleaning contaminated ground water will go on forever. Illinois Citizen Action respectfully requests that you recommend Alternative 5 in the cleanup of the Yeoman Creek Landfill. It is the only alternative listed that prevents further contamination of the groundwater.

We are sensitive to the economic burden this alternative places

on Waukegan, the Superfund and the responsible parties. We cannot in good conscience, however, permit a hazardous situation to continue. The protection of public health must be addressed and federal money may well have to be taken from projects where health is not an issue. This site has already been the focus of corrective actions in the past; it is unlikely that the ultimate solutions will become cheaper by being postponed. And in the meantime, the pollution of the ground water continues."

U.S. EPA RESPONSE:

U.S. EPA agrees that it would be desirable to completely contain the contaminated ground water as proposed in Alternative 5, which includes an effective site cover, an active landfill gas ventilation system, deep slurry walls around the entire landfill, and ground water/leachate pumping within the slurry wall to prevent off-site migration of contaminated ground water. However, the cost of this additional protection is estimated to be high compared to Alternative 4B: \$ 16 million in additional construction costs and \$430,000 in additional annual operation and maintenance costs. Please note that the extent of ground water contamination from the Site is limited, the ground water is not used for residential or commercial purposes in the vicinity of the site, ground water monitoring will be conducted that will be able to detect off-site migration of contaminants, and five-year reviews will be conducted to evaluate whether the selected remedial action continues to be protective. If it becomes apparent that ground water contamination from the Site is a more serious concern, an alternative for containment or remediation of the contaminated ground water can be selected and implemented before any human exposure to the ground water occurs, and before the contaminated ground water reaches Lake Michigan.

It should be noted that part of the reason U.S. EPA selected implementation of a leachate collection system along the northern portion of the landfill, preventing leachate seepage into Yeoman Creek, is because of the potential adverse ecological and human health effects resulting from even very low concentrations of PCBs in surface waters. The Ambient Water Quality Criteria (AWQC) for Protection of freshwater aquatic life is 0.014 ug/l, while the AWQC for protection of human health from cancer at the 10⁻⁶ risk level due to lifetime exposure to drinking water and

ingestion of aquatic organisms is 0.01 ug/l.⁷ The maximum concentration of PCBs in the leachate wells of 190 ug/l is far above these levels, as is the detection limit for the analysis used in the RI of 0.5 ug/l. In addition, PCBs were detected as high as 90 mg/kg in leachate seep soils in the northern portion of the landfill. Although the predominant amount of PCBs detected in leachate wells is probably associated with solids and would probably be filtered out in ground water before reaching the Creek, even low levels of PCBs and even levels below the detection limit that reach Yeoman Creek could have an adverse effect.

On the other hand, in the southern portion of the landfill (the Edwards Field portion), the highest PCB concentration detected in leachate was 0.51 ug/l, and no PCBs were detected in the leachate seep soils. This lower PCB concentration, combined with the 30 foot buffer between the landfill and the Creek and the indication that ground water discharge to the Creek may not be significant, is why a leachate collection system is not recommended between the southern portion of the landfill and Yeoman Creek.

Please note that the effects of PCBs on human health are not magnified when exposure is strictly through drinking water usage (not including exposure to aquatic organisms exposed to a given level of PCBs) as evidenced by the somewhat higher standard level of 0.5 ug/l, which is the Maximum Allowable Concentration (MCL) under the Safe Drinking Water Act. The MCL for PCBs is equal to the detection limit for PCBs attained in the RI. Inasmuch as PCBs were not detected above the MCL even in monitoring wells near the Site, the RI indicates that if any migration of PCBs is occurring through the ground water from the Site, it is very limited. If migration of PCBs from the Site increases, it will be detected during the ground water monitoring. Since ground water is unused in the vicinity of the Site, because ground water will be monitored near the Site, because PCBs migrate very slowly in the ground water, and because there is an approximately two mile distance between the Site and Lake Michigan, there will be plenty of time to implement a ground water action to contain or remediate PCB contamination before it reaches Lake Michigan or

⁷ U.S. EPA. Quality Criteria for Water 1986. EPA 440/5-86-001, May 1, 1986.

any ground water receptor.

**VI. RESPONSE TO COMMENTS FROM CITIZENS URGING THAT ACTION BE
TAKEN TO ADDRESS THE CONTAMINATION AT THE YEOMAN CREEK LANDFILL
SITE**

- "We urge you to contain landfill wastes --liquid & solid -- & clean up this 'blotch' on the environment once and for all to prevent any more damage to the ground water & big lake & the health of the residents of the area plus all the areas where the gases & water will migrate.

Protect our children, **PLEASE** resist the 'E-Z way out!' & do a thorough workman-like job of containment."

- "I respectfully urge the USEPA to take whatever measures are necessary to protect the health of local citizens by protection of the ground water and Lake Michigan from contamination. Yeoman Creek contamination puts at risk local wetlands through hazardous chemicals. Heavy metals found in ground water results in risk to us all. We the citizens of the area look to EPA to protect us."

- "Please stop the contamination of Yeoman Creek and clean up the entire 'mess' as soon as possible. Its a disgrace that it stayed open all these years endangering all of us especially the children. The terrible contents should be carefully removed and deposited w/ hazardous materials in some remote, safe, protected area, to eliminate an explosion in this densely populated area."

- "It is important that the EPA continue the action necessary to protect both the people and the Lake. The Lake is a beautiful natural resource."

- "I urge you to do anything possible to expedite cleaning up the Yeoman Creek Landfill. As residents (over 20 years) of this area, we are concerned with the human health risks, in addition to the ecological risks. The value of our property is also affected, as home buyers will avoid the landfill's surrounding area homes. I respectfully urge the U.S. EPA to take all measures necessary to protect the ground water and Lake Michigan from contamination. Additionally, the lives of local residents must be protected."

- "I, feel that whatever action is decided to be taken should be done as quickly as possible so that the least amount of damage can be done to our drinking water."

- "I am very concerned with this situation if not taken care of soon, will lead to addition problems with our leak. Also more risk to future generations. Not knowing how these situations are remedied, your options seen feasible."

- "I am now an adult and think it is EPA's responsibility to clean this mess up, I guess this is our reason for paying taxes. I am particularly concerned about the water supply being contaminated with toxic heavy metals and just the overall safety of the site. Your urgent attention to this matter would be greatly appreciated by all residents in the area and the whole town."

- "It goes without saying that the EPA must take the steps necessary to preclude contamination of ground water or Lake Michigan by leachate of materials in the dump."

- "I respectfully urge the U.S.E.P.A. to do everything necessary to protect the ground water & Lake Michigan from contamination. Please protect the health of local residents."

- "I urge immediate, thorough action to remedy the hazards from these two sites. The remedial action must confine the hazardous toxic gases to the sites * their controlled release must be carefully monitored."

- "We are pleased that steps are going to be taken to clean up this landfill."

- "I respectfully urge the United States EPA to implement all cleanup action necessary to preserve the purity of our groundwater and Lake Michigan water."

U.S. EPA RESPONSE:

U.S. EPA agrees that an action should be taken to address contamination at the Site. U.S. EPA believes that this action should include construction of an effective site cover, construction and operation of an active landfill gas ventilation

system, construction and operation of a leachate collection system along Yeoman Creek for the northern portion of the Landfill, if necessary, and excavation of contaminated sediments and consolidation on the landfill. These actions will remove contaminated sediments from Yeoman Creek, will nearly eliminate leachate seepage into Yeoman Creek, and will substantially reduce leachate seepage into the ground water. Complete containment of contaminated ground water from the site was not selected because the degree of ground water contamination is limited, because the site cover will substantially reduce leachate generation, and because the cost of ground water containment is very high.

VII. RESPONSE TO COMMENTS FROM CITIZENS SUPPORTING U.S. EPA'S PROPOSED PLAN:

- "What was done in the past cannot be undone but we must work together to ensure that the best alternative is taken so we don't make another error in judgement. Doing it the best way we know how the first time will be less expensive and cause us less grief in the long run. I am also concerned about the cost (since I'm a Waukegan taxpayer) but I think that we need to follow the EPA's recommendation as the minimum (alternative 4B with a composite barrier layer and leachate collection) unless there is data to conclusively show that the EPA's standards are not realistic and that their proposal is an overkill.

In my opinion on cases like this where there are many unknowns, it is better to err on the conservative side rather than do patch up jobs later. We need to protect the homes and people who live around the landfill site or do business around the site (homes, fast food, etc.). More importantly, we should not allow the leachate and whatever is released from the landfill to contaminate more land, the water supply and other yet to be discovered things."

- "We would like Waukegan to follow the EPA's recommendations (Alternative 4B with a composite barrier layer and leachate collection system). We believe the EPA has dealt with many landfills and has the best interests of our environment and people in mind.

As taxpayers of Waukegan, we realize that there will be a cost

associated with the landfill. However, if we have already spent 'millions of dollars to learn about the environment of the Yeoman Creek site', it seems like we should be able to budget an additional 6 million dollars for the EPA plan. Doing it the best way the first time will ultimately be less expensive in the long run."

- "Mayor Durkin's comments at the meeting are almost frightening -- he is obviously not willing to spend what it takes to clean up a mess that, contrary to his comments is harmful to the citizens."

U.S. EPA RESPONSE:

U.S. EPA agrees that the added long term protectiveness of a site cover with a composite barrier layer, and of the proposed leachate collection system is worth the additional costs.

VIII. RESPONSE TO COMMENTS FROM CITIZENS OPPOSING PORTIONS OF U.S. EPA'S PROPOSED PLAN:

ISSUE 1: "My idea is to do the minimal work at the site and continue to monitor what is happening. At the public hearing Rick Boice stated that there was limited groundwater contamination, risks were very limited and there is no significant amount of landfill gas coming from the site. Again according to Rick Boice, he can smell no landfill gas at the site as opposed to the smell at other landfill sites he has visited. What scares me the most is when the government gets involved spending millions of dollars, ruining peoples lives, property, and businesses only to find out their grand ideas didn't quite work and then we have to spend even more millions to straighten out the 1st and second mess."

U.S. EPA RESPONSE:

The technologies selected by U.S. EPA (namely construction of a new site cover, an active landfill gas collection system, a leachate collection system, and sediment excavation and consolidation under the new site cover) are standard technologies. The risks from implementing these technologies is

low and controllable by use of proper construction, and worker safety procedures.

Because landfilled residential wastes were found on properties adjacent to the Waukegan School Board property, or in some cases come close to the boundary of the property, the new site cover will impact these adjacent properties. However, U.S. EPA is willing to work with these property owners to reduce the impact on their use of the property while still obtaining the objectives of the remedial action.

During the RI, landfill gas emissions to the ambient air were monitored and found to be insignificant. However, landfill gases were found to be migrating off Site in the subsurface, and apparently are entering a building near the Site. This was causing a fire, explosion and toxic risk in this building. In addition, there is potential for landfill gas entry into other buildings near the Site. The parties conducting the RI have, with U.S. EPA oversight, taken interim measures to address these risks by installing a basement ventilation system in one building and by periodic monitoring in other buildings. However, U.S. EPA does not consider these to be acceptable measures for the long term. Instead measures should be taken to assure that the landfill gas does not migrate off-site in the subsurface. This will be accomplished by construction of a new site cover and operation of an active landfill gas ventilation system.

No action other than monitoring at the Site and access restrictions, is also unacceptable because without improvements to the site cover and a leachate collection system, leachate will continue to be released to Yeoman Creek and the adjacent wetland. This release is causing an ongoing threat to wildlife in the area as demonstrated in the ecological risk assessment. In addition, ground water will continue to be contaminated to levels exceeding drinking water standards (Maximum Allowable Concentrations under the Clean Water Act), and there will be some risks to nearby residents of contact with contaminated sediments.

ISSUE 2: "I feel that the recommendations of the City are appropriate at this time. The City of Waukegan has other problems beside Yeoman Creek and must use its funds cautiously. From the information presented at the meeting the risks from the

leachate do not appear that great. The trench around the Creek may not be necessary at this time."

"I feel that the clean up in Yeoman Creek should not be the plan proposed by the PEA but the one proposed by the City of Waukegan. The taxpayers of the City can not afford the plan proposed by the PEA. The Waukegan School System does not have funds to pay for any portion of the clean up." "Is it fair? I don't think so. Public health is an important issue, but the costs of the clean up should be kept to only what is necessary to insure public health."

U.S. EPA RESPONSE:

Please refer to U.S. EPA's response to Issues 1, 2, 3, 5, and 6 to the comments from the Yeoman Creek Landfill Steering Committee. It should be noted that a number of private companies are PRPs; so only a fraction of cost of the remedial action will be born by the City of Waukegan, Waukegan School District #60, and the Waukegan Park District.

V. RESPONSE TO OTHER COMMENTS AND QUESTIONS FROM CITIZENS

ISSUE 1: Concern was expressed about development by an organization called "Rebound". Rebound plans to build a large facility with a retention pond which would drain to a ditch, which drains long the south fence of the portion of the Site north of Greenwood Terrace before entering Yeoman Creek.

U.S. EPA RESPONSE:

Measures will have to be taken to assure that drainage from the new site cover does not adversely affect drainage from the new development. The effect of drainage from the new site cover, will be evaluated during the remedial design phase, and may have to take into account or coordinate with the drainage from the new development. U.S. EPA suggests that a meeting be held with adjacent property owners following completion of the preliminary design to discuss their concerns.

ISSUE 2: Who is paying for this? "If the federal government can pay for the cleanup of Love's Canal, why can't they pay for the cleanup of Yeoman Creek?"

U.S. EPA RESPONSE:

The RI/FS was paid for by a group of PRPs including: Browning-Ferris Industries; Outboard Marine Corporation; The Dexter Corporation; T.K. City Disposal; the City of Waukegan, Goodyear Corporation; and the Waukegan School District #60. In addition, these parties have reimbursed U.S. EPA's expenses for oversight of the studies.

U.S. EPA has identified a number of additional PRPs. Following issuance of the ROD, U.S. EPA will attempt to negotiate an agreement with a group of PRPs to implement the remedy. U.S. EPA may issue an order or use litigation to compel an agreement. If this is unsuccessful, U.S. EPA may implement the remedial action using money from a trust fund, which is supported primarily by taxes on chemical feed stocks.

U.S. EPA is mandated by Congress to attempt to reach an agreement under which costs for cleanup of hazardous waste sites are born by parties that caused the pollution. This includes owners and operators of the site, companies who generated hazardous substances that were disposed of at the site, or persons who arranged for transport of hazardous substances to the site. The City of Waukegan owned and operated the site and, therefore, is potentially liable for cleanup costs. However, they are not solely liable for the costs as implied by a number of statements. There are a number of private parties who are also liable for the cleanup.

ISSUE 3: Has the landfill owner been fined? Does he own any other landfills. If so, where, and what is their status?

U.S. EPA RESPONSE:

The owners of the landfill have been notified by U.S. EPA that they are potentially liable for costs for cleaning up the Site. The owners of the major portions of the landfill during its period of operation were the City of Waukegan and the Waukegan

School District #60. The City of Waukegan operated a number of municipal waste landfills within the City of Waukegan, including the Yorkhouse Municipal Landfill #1, and the Adelphi Municipal Landfill #2. All of these municipal landfills have been closed, and none of the other landfills are Superfund sites. These closed landfills are being monitored by the Lake County Health Department and the Illinois Environmental Protection Agency. The City of Waukegan was subject to a legal action by the Illinois Environmental Protection Agency in the late 1970s and early 1980s. An agreement was reached under which the City of Waukegan added additional cover soil to the landfill, constructed a fence at the landfill, and conducted stream monitoring.

ISSUE 4: Are there storm sewers emptying into Yeoman Creek?

U.S. EPA RESPONSE:

There is at least one storm sewer that appears to go through the landfill and into Yeoman Creek. This storm sewer and any other storm sewers found to go through the landfill will be rerouted and plugged.

ISSUE 5: Will an effective leachate collection system so drain the wetlands that our water supply will be affect?

U.S. EPA RESPONSE:

The leachate collection system should have no significant impact on water supplies or on the ecology of the nearby wetland. Mayor Durkin and the Yeoman Creek Steering Committee expressed concern regarding the potential for the leachate collection system to negatively affect the ecology of Yeoman Creek and the adjacent wetlands due to seepage of water from the stream into the leachate collection system. In Comment 11, the Yeoman Creek Steering Committee estimated that 270 gpd, which is 100,000 gallons per year, could seep from the Yeoman Creek into the leachate collection system. Section 4.5 of the FS provides information on the potential for the remedial action to impact the nearby wetlands. Although Section 4.5 of the FS voices no concern about seepage of water from Yeoman Creek into the leachate collection system (nor was any concern about this effect

expressed in any portion of the FS, which was prepared by the Yeoman Creek Steering Committee's consultant), it includes an estimate that the total annual runoff into the wetlands within the Yeoman Creek basin is 486,000,000 gallons per year. The estimated approximately 100,000 gallons which may be removed by the leachate collection system is only 0.02% of the total flow entering the basin that recharges the wetlands. Section 4.5 also includes an estimate of increased drainage from the landfill due to the improved site cover, of 8,200,000 gallons per year (the 8,200,000 gallons will be partially off-set by a decrease in recharge of Yeoman Creek and the wetland by ground water, but the FS concludes that most of the ground water migrates into the lower aquifer, not into Yeoman Creek or the wetland). Therefore, the increased drainage due to the new site cover will more than make up for the small amount of water removed by the leachate collection system. As stated in Section 4.5, the drainage from the site cover can be controlled to eliminate adverse environmental impacts. It should also be noted that flow into the leachate collection system from Yeoman Creek will primarily occur during periods of high flow in Yeoman Creek, when the surface water flow into the wetlands would already be high. Collection of the seepage from Yeoman Creek during the high flow periods would have the beneficial effect of preventing a rise in the landfill water table and subsequent seepage of the water back into the Creek after it is contaminated by the wastes in the landfill.

ISSUE 6: From the amount of pollution present, should the wetlands be drained to prevent contamination.

U.S. EPA RESPONSE:

Ecologists working for the U.S. EPA have reviewed the data, and concluded that the level of contamination in the wetlands south and east of the Site are not high enough to warrant excavation of the contaminated soils, or other actions that may damage the wetland as a habitat.

ISSUE 7: "Where will the run-off go after all this money is spent? Will the adjacent property owners be saddled with the runoff mess?"

"We are concerned about potential problems with flooding of our apartment units should work be done on the landfill that negatively impact Yeoman Creek. This property experienced a severe flood in 1986 that cost in excess of one million dollars to clean up. We are formally requesting that we be consulted during the design phase of the cleanup, once the final decision on which option is made."

U.S. EPA RESPONSE:

U.S. EPA agrees that drainage onto surrounding properties is an important consideration. It would be unacceptable for the new site cover to cause flooding to the residents of the surrounding properties. Therefore, U.S. EPA has added the following performance standard for construction of the drainage system to the ROD: drainage from the site cover onto adjacent properties and into storm sewers will be adjusted to levels that will result in no increased potential for flooding or other adverse effects. The drainage from the site cover can be adjusted to flow into the wetland south of the Site, into Yeoman Creek, into storm sewers, or onto adjacent properties and streets. The run-off could be either totally diverted from adjacent properties and storm sewers, or adjusted to levels that result in no adverse effects. Another performance requirement is that the run-off should not have an adverse effect on the ecology of the wetland south of the site. U.S. EPA believes that these performance requirements for the drainage system can be met. The details of the drainage system will be worked out during the design phase. U.S. EPA believes that after the preliminary design is completed, a meeting with adjacent property owners should be held to assure that their concerns are addressed.

Another flooding concern is the impact of the site cover in filling a portion of the floodway and floodplain in Yeoman Creek. This concern is preliminarily evaluated in Section 4.4 of the FS. Although the preliminary evaluation indicates that the impact of the site cover on the floodway and floodplain of Yeoman Creek will be minor, U.S. EPA's Proposed Plan includes provisions for creation of compensatory, floodway and floodplain storage and other mitigation measures that may be necessary to assure that construction of the new site cover will not cause problems due to loss of floodway and floodplain capacity in Yeoman Creek.

Appendix B to Consent Decree: Statement of Work

**STATEMENT OF WORK FOR
THE REMEDIAL DESIGN AND REMEDIAL ACTION
AT
YEOMAN CREEK LANDFILL
LAKE COUNTY
WAUKEGAN, ILLINOIS**

I. PURPOSE

The purpose of this Statement of Work (SOW) is to set forth requirements for implementation of the selected remedy set forth in the Record of Decision (ROD), which was signed by the Regional Administrator of U.S. EPA, Region 5 on September 30, 1996, for the Yeoman Creek Landfill Site (Site). The Settling Work Defendants shall follow the ROD, the SOW, the approved Remedial Design Work Plan, and the approved Remedial Action Work Plan in submitting deliverables for designing and implementing the remedial action at the Site. The Settling Work Defendants shall also follow the U.S. EPA Superfund Remedial Design and Remedial Action Guidance and any additional guidance provided by U.S. EPA in submitting deliverables for designing and implementing the remedial action at the Site, unless such guidance is inconsistent with the ROD, the SOW, the approved Remedial Design Work Plan or the approved Remedial Action Work Plan.

II. DESCRIPTION OF THE REMEDIAL ACTION/PERFORMANCE STANDARDS

Settling Work Defendants shall design the Remedial Action to meet performance standards and specifications set forth in the ROD and this SOW. Settling Work Defendants shall implement the Remedial Action to meet the performance standards and specifications set forth in the ROD and this SOW. Performance standards shall include cleanup standards, standards of control, quality criteria and other substantive requirements, criteria or limitations including all Applicable or Relevant and Appropriate Requirements (ARARs) identified as such in the ROD, the SOW (including the Performance Standards Summary attached hereto as Attachment 3) and/or the Consent Decree. Compliance shall be demonstrated through monitoring.

1. Site Security

The Settling Work Defendants shall regularly inspect, maintain, and properly repair or replace the fence and any portion thereof, as necessary, at the Site during Remedial Design/Remedial Action and Operation and Maintenance (O & M), to prevent unauthorized access and vandalism to the Site. Warning signs in english and spanish on the fence

and/or along the perimeter shall also be maintained. However, alternative site security measures (e.g., site security personnel) demonstrated by the Settling Work Defendants to be of equivalent performance, may be established during construction when maintenance of the fence has been temporarily suspended or portions of the fence have been removed to facilitate construction, subject to the approval of U.S. EPA.

2. Restrictive Covenants/Deed Restrictions

This remedy includes institutional controls to limit, as deemed appropriate by U.S. EPA, the future use of all areas of the Site where remedial construction has occurred. Deed restrictions will be imposed prohibiting the future usage of the Site for purposes that are inconsistent with the selected remedy.

3. Landfill Cover

The Settling Work Defendants shall design and construct a landfill cover that meets or exceeds the requirements of the ROD as specified below. Certain contaminated material from the Site, including excavated material and contaminated, will be consolidated under the cover. After consolidation of such contaminated material, the Settling Work Defendants shall cover the landfill to minimize infiltration of water into the landfill. The cover shall be constructed, at a minimum, to include the following:

- A three (3) foot frost protection layer including top soil and vegetation or materials demonstrated by the Settling Work Defendants to be of equivalent performance subject to the approval of U.S. EPA;
- A geosynthetic drainage layer providing a hydraulic conductivity of at least twenty (20) cm/sec overlain by a protective geotextile filter fabric to prevent plugging or materials demonstrated by the Settling Work Defendants to be of equivalent performance subject to the approval of U.S. EPA;
- A barrier layer consisting of a 3 foot Compacted Clay Layer which has a hydraulic conductivity of 1×10^{-7} cm/sec or less and meeting the requirements of the ROD. Alternatively, an equivalent barrier layer may be used, such

as a primary barrier layer consisting of a flexible membrane liner over a secondary barrier layer consisting of a Geosynthetic Clay Liner (GCL) or a 2 foot compacted clay layer with a hydraulic conductivity of 1×10^{-6} cm/sec or less which meets the requirements of the ROD or materials demonstrated by the Settling Work Defendants to be of equivalent performance subject to the approval of U.S. EPA;

- A gas ventilation layer with a hydraulic conductivity of at least 10^{-3} cm/sec overlain by a protective geotextile filter fabric or materials demonstrated by the Settling Work Defendants to be of equivalent performance subject to the approval of U.S. EPA;

- A grading layer with a minimum thickness of 6 inches to provide a 2% surface slope after settlement; and

- The cover shall be designed so that the slope will be 2% after settlement. However, other design options, such as multiple mounding of the landfill cover, may be considered in Remedial Design.

The Settling Work Defendants shall maintain the cover system over the landfill. The design shall specify procedures for the maintenance of the cover system. The QA/QC requirements for installation of the cover system shall be specified in detail in the Construction Quality Assurance Plan (CQAP) as part of the pre-final design submittal.

It is anticipated that some waste materials will have to be moved in order to facilitate construction of the cover. The cover will be designed in a manner which will accommodate, as practical, the amount of contaminated waste materials to be moved. Any such movement shall be conducted in such a manner as to minimize the release of contaminants to the environment. Measures to minimize the release of contaminants to the environment shall be documented in the Health and Safety Plan and Contingency Plan. All site construction shall be conducted in a manner which will minimize any potential degradation of Yeoman Creek. For further protection of Yeoman Creek a steel semi-arch pipe or materials demonstrated by the Settling Work Defendants to be of equivalent performance subject to the approval of U.S. EPA will be used to enclose portions of the creek as necessary for the isolation and protection of Yeoman Creek during construction.

Upon completion, the Settling Work Defendants shall

establish and maintain vegetative cover over the landfill. The design shall specify procedures for maintenance of the vegetative cover or materials demonstrated by the Settling Work Defendants to be of equivalent performance subject to the approval of U.S. EPA.

4. Data Collection and Long Term Monitoring

a. Pre-Design Phase

The Settling Work Defendants shall submit to U.S. EPA a Pre-Design Data Collection (PDDC) Work Plan for the Site. The PDDC Work Plan shall describe a sampling/monitoring program to be initiated during the pre-design phase sufficient to fully establish the current distribution of contaminants in the ground water, surface water, wetlands, sediments, and groundwater flow conditions.

The PDDC program shall initially include quarterly sampling/monitoring of leachate/ground water at the perimeter of the landfill and along Yeoman Creek, in surface water, sediments and wetlands, as well as leachate sampling within the landfill. The initial list of parameters to be sampled shall include all hazardous substances detected in soil, surface water, sediment, or groundwater at the Site in past sampling events as reflected on the attached Initial Parameter List. Any proposed change in the frequency of sampling or the parameters sampled are subject to U.S. EPA approval.

The purposes of the pre-design sampling/monitoring program shall be to determine baseline conditions (including for assessing natural attenuation), and to facilitate waste delineation, and excavation estimates. The Settling Work Defendants shall implement the PDDC program in accordance with the terms of the EPA-approved PDDC Work Plan.

b. Design and Construction Phases

During the design and construction phases of the work, the Settling Work Defendants shall continue sampling/monitoring of leachate/ground water (as prescribed by the PDDC Work Plan, as it may be amended) at the perimeter of the landfill and along Yeoman Creek, surface water, sediments and wetlands, as well as leachate sampling within the landfill, unless EPA approves a change in frequency of such sampling/monitoring during those phases of the work. The requirement to continue leachate sampling within the

landfill will be phased out and terminated at appropriate times(s) before or during the construction phase, as determined by U.S. EPA. The parameters to be sampled during the design and construction phases of the work shall include all hazardous substances detected in soil, surface water, sediment, or groundwater at the Site in past sampling events as reflected on the attached Initial Parameter List, unless U.S. EPA approves a change in the parameters to be sampled.

The purposes of the design and construction sampling/monitoring program shall be to extend the pre-design sampling/monitoring program, and to identify releases and threatened releases.

c. Post-Construction Long Term Monitoring

As part of the O&M Plan, the Settling Work Defendants shall submit to U.S. EPA a plan for post-construction long term monitoring for the Site.

The long term monitoring program shall initially include quarterly sampling/monitoring of leachate/ground water at the perimeter of the landfill and along Yeoman Creek, and surface water, sediments, and wetlands. Any proposed change in the frequency of monitoring/sampling is subject to U.S. EPA approval. The O&M Plan shall specify the parameters to be monitored/sampled initially and on a continuing basis during post-construction long term monitoring. Any proposal to monitor/sample less than all of the parameters included on the attached Initial Parameter List attached is subject to U.S. EPA approval.

As provided by the ROD, the long term monitoring program is intended to assist EPA in assessing the natural attenuation of groundwater contamination, in otherwise evaluating the efficacy of the remedy selected in the ROD, in making a determination whether there is a need to construct and operate a leachate collection and treatment system, and in evaluating the performance of such a system. The Settling Work Defendants shall implement the long term monitoring program in accordance with the terms of the EPA-approved O&M Plan.

d. Post-Construction Monitoring Results

In the event that any or all of the Action Levels set forth in the ROD and in Attachment 3 to this SOW are exceeded for a specified number of sampling events (to be determined and

approved by U.S. EPA after construction of the site cap, including after placement of all barrier layers), construction and operation of a leachate collection and treatment system along Yeoman Creek adjacent to the Yeoman Creek portion of the Site will be required in order to prevent leachate and leachate contaminated groundwater from entering or seeping into Yeoman Creek. Consistent with the intent of the ROD, the design, construction, and operation of a leachate collection and treatment system will not be required based solely on exceedances of leachate/groundwater Action Levels unless EPA determines that such exceedances are at sampling/monitoring points indicating a need to prevent leachate and leachate contaminated groundwater from entering or seeping into Yeoman Creek.

U.S. EPA shall not determine that construction and operation of the leachate collection and treatment system is required based solely on exceedance of groundwater/leachate Action Levels until at least 1 year after the completion of construction of the landfill cover. U.S. EPA may determine that construction and operation of the leachate collection and treatment system are required if surface water or sediment Action Levels are exceeded at any time after construction of the landfill cover. The Settling Work Defendants may elect to construct, but not operate, the leachate collection system pending U.S. EPA's determination whether leachate collection and treatment will be required.

No later than 60 days after notification by EPA that construction and operation of a leachate collection and treatment system are required, the Settling Work Defendants shall submit a Remedial Action Work Plan Supplement setting forth a plan for the design, construction and operation of the leachate collection and treatment system. Upon approval of the Remedial Action Work Plan Supplement by U.S. EPA, the Settling Work Defendants shall implement the activities required under the Remedial Action Work Plan Supplement. If leachate is discharged to the North Shore Sanitary District or any other POTW, the leachate shall meet the pretreatment requirements for the POTW. The treated leachate shall also meet the requirements of 40 CFR 403.5; 35 IAC 307.1101-1103; 35 IAC 310.201-202; 35 IAC 309(d), 309(e). If leachate is discharged to Yeoman Creek, the discharge shall meet the requirements set forth in 40 CFR 122.44; 40 CFR 110.6; 35 IAC 302; and 35 IAC 304. Discharges shall also meet all other applicable local, State and Federal discharge requirements.

The Settling Work Defendants shall monitor the leachate collection system's performance on a regular basis, and U.S. EPA may require adjustments to the system as warranted by the performance data collected during operation. Examples of adjustments which U.S. EPA may require are additional extraction wells and/or increased pumping rates.

5. Air

At all times during the performance of the Remedial Action, Settling Work Defendants shall ensure that air emissions do not exceed ARARs or risk guidelines set forth in the Superfund Risk Assessment Guidance. If air emissions exceed these levels, Settling Work Defendants shall take corrective measures as developed in the Contingency Plan and/or Design Plans. Residuals from air emissions control processes shall be treated and/or disposed of off-site.

Settling Work Defendants shall design, construct and operate an active landfill gas collection and treatment system that complies with Clean Air Act Section 101 and 40 CFR 52; 40 CFR 61; 35 IAC 811.311; 35 IAC 811.312; and 35 IAC 211, 212, 214, 215, 216 and 217 and the ROD. The Settling Work Defendants shall implement the design upon U.S. EPA approval.

The existing AOC and UAC contain provisions requiring that Settling Work Defendants continue the interim measures to address landfill gas entry into buildings near the Site until the Site's active gas collection system is installed and demonstrated to be effective, including monitoring for landfill gas entry into buildings surrounding the Site, and operation and maintenance of the Gas Collection System along the northern perimeter of the Site and the Air Evacuation and Ventilation System in the 1401 - 1451 West Golf Road/Sunset Avenue building. This SOW is not intended to modify the AOC or UAC.

6. Wetlands

Settling Work Defendants shall take action to minimize the destruction, loss or degradation of wetlands, including compensation on a minimum 3:1 replacement to impacted area ratio for wetlands that will be lost or adversely affected by the selected remedial action.

Settling Work Defendants shall excavate soil/sediments exceeding cleanup action levels (CALs) specified in the ROD

within the main channel of Yeoman Creek and wetlands soil/sediment. Prior to excavation, sampling will be necessary to determine the required extent of excavation within the main channel of Yeoman Creek and the wetlands. The excavation shall be conducted in such a manner that the wetland hydrology is not impacted. The Settling Work Defendants shall prepare a plan controlling sediment migration during excavation activities. Following completion of excavation, confirmatory soil/sediment samples shall be collected from the areas of excavation. The confirmatory sampling shall be completed using a statistical approach (i.e., grid and random number approach) or other U.S. EPA-approved method. The results of the confirmatory soil/sediment sampling shall be compared to the CALs. If the soil/sediments beneath the excavated soil/sediments exceed the CALs, then additional materials shall be excavated. Excavated contaminated materials shall be dewatered, transported, and stored on-site. The excavated soil/sediments shall be stored on-site temporarily until they are consolidated under the landfill cover. The excavated soil/sediment shall be placed in the landfill within a clay-soil berm with a minimum height of one foot to prevent run-on/run-off. Such temporary on-site storage shall include a low density polyethylene cover (LDPE) or equivalent to prevent infiltration, water erosion, and wind erosion. The LDPE shall be anchored with a soil berm. The berm and the LDPE cover shall be inspected monthly and repaired or replaced as necessary. If sediments are excavated for compensatory storage purposes the Settling Work Defendants may propose to reduce pre-excavation sampling accordingly. If sediments are excavated due to contamination, Settling Work Defendants may propose to collect a statistically significant number of pre-excavation samples in order to reduce or eliminate the number of post-excavation samples.

7. Relevant Monitoring Points

Monitoring and evaluation of the remedial action throughout the Site (including assessing attainment of Performance Standards) shall be conducted at relevant monitoring points, as specified herein.

All existing groundwater/leachate wells, as provided on the attached list of Existing Groundwater/Leachate Monitoring Wells (exclusive of G, L, and LW series wells which will be properly abandoned prior to or during construction of the cover), shall be considered relevant monitoring points for

groundwater/leachate. If any of the wells are destroyed or in any way become unusable, the Settling Work Defendants shall repair or replace the impacted well. Additional wells may be required by U.S. EPA at any time during the remedial design or remedial action, and shall also be considered relevant monitoring points for groundwater/leachate. At a minimum, the adequacy of the relevant monitoring points shall be evaluated during the development of the Remedial Design (RD) and Remedial Action (RA) and the Operation and Maintenance (O&M) Work Plans. The location of any additional wells installed pursuant to the Consent Decree or this SOW shall be approved by the U.S. EPA. Any wells determined by U.S. EPA to be unnecessary, shall be properly abandoned in accordance U.S. EPA's recommendations.

Relevant monitoring points for the monitoring and evaluation of landfill gas extraction, management, emissions, and treatment shall be addressed in the RD Work Plan, RA Work Plan, and O&M Plan.

8. Other Actions

Settling Work Defendants shall take all necessary actions, including investigations; modeling; alternative evaluation and; implementation, to comply with the Illinois Department of Transportation and Lake County Storm Water Management Commission regulations governing activities within floodways and flood plains. Actions may include, but shall not be limited to: creation of compensatory storage for lost flood plain storage; use of artificial channels combined with detention facilities or other technologies to maintain stream capacity without increasing the average velocity throughout the Site; excavation of landfill wastes and soils at the Site out of the floodway and flood plain and consolidation on-site and temporary containment for containment under the new Site cover; and approval of a variance or variances from the floodway and flood plain regulations by the regulatory agencies.

The following regulatory requirements shall be met: 92 IAC 708; 35 IAC 811.103; 35 IAC 311 (b) (); 35 IAC Part 302; 40 CFR G 302(g); 40 CFR 110.6; 40 CFR 6 Appendix A; 40 CFR 230.70; 40 CFR 52; 40 CFR 61; 40 CFR 122.44 and Clean Water Act Section 101.

As necessary, the Settling Work Defendants shall reroute and seal storm drains that go through the Yeoman Creek and Edwards Creek portions of the landfill.

III. SCOPE OF REMEDIAL DESIGN AND REMEDIAL ACTION

The Remedial Design/Remedial Action shall consist of seven tasks. All plans are subject to U.S. EPA approval.

Task 1: Pre-Design Data Collection Work Plan

- A. Investigation Activities
- B. Monitoring Activities

Task 2: Remedial Design Work Plan**Task 3: Remedial Design**

- A. Design Plans and Specifications
- B. Cost Estimate
- C. Project Schedule
- D. Construction Quality Assurance Objectives
- E. Health and Safety Plans
- F. Design Phases
 - 1. Proposal for ESD or ROD Amendment (if any)
 - 2. Preliminary Design
 - 3. Intermediate Design Briefing
 - 4. Pre-final Design/Final Design

Task 4: Remedial Action Work Plan**Task 5: Remedial Action/Construction**

- A. Preconstruction Meeting
- B. Prefinal Inspection
- C. Final Inspection
- D. Reports
 - 1. Final Construction Report
 - 2. Completion of Remedial Action Report
 - 3. Completion of Work Report

Task 6: Operation and Maintenance**Task 7: Performance Monitoring**

Task 1: Pre-Design Data Collection Work Plan

Within 30 days after U.S. EPA's notice of authorization to proceed, the Settling Work Defendants shall submit a PDDC Work Plan which shall document the investigation and monitoring activities that must be completed prior to design of the Remedial Action. The PDDC Work Plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation and shall include a description of qualifications of key personnel directing the Remedial Design, including contractor personnel. The PDDC Work Plan shall also contain a schedule of activities. The PDDC Work Plan shall include a Health and Safety Plan, Field Sampling Plan, and a Quality Assurance Project Plan for the activities. The Settling Work Defendants shall submit and implement the PDDC Work Plan in accordance with the Consent Decree and this SOW.

Upon approval of the PDDC Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submittal of the Health and Safety Plan for all field activities to EPA and the State, Settling Work Defendants shall implement the PDDC Work Plan. Unless otherwise directed by EPA, Settling Work Defendants shall not commence further Pre-Design Data Collection activities at the Site prior to approval of the PDDC Work Plan.

Task 2: Remedial Design Work Plan

The Settling Work Defendants shall submit a Remedial Design Work Plan which shall document the overall management strategy for performing the design, construction, operation, maintenance and monitoring of the Remedial Action. The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation and shall include a description of qualifications of key personnel directing the Remedial Design, including contractor personnel. The Settling Work Defendants shall submit a Remedial Design Work Plan in accordance with the Consent Decree and this SOW.

The Remedial Design Work Plan shall include plans and scheduled for implementation of all remedial design tasks identified in this SOW, including, but not limited to, plans and schedules for the completion of: (1) a design sampling and analysis plan (including, but not limited to, a Remedial Design Quality Assurance Project Plan (RD QAPP); (2) a preliminary design submittal; (3) an intermediate design meeting; (4) a pre-final/final design submittal; (5) a Construction Quality Assurance Plan; and (6) a flood way/floodplain control plan. In addition, the Remedial Design Work Plan shall include a schedule

for completion of the Remedial Action Work Plan.

At the time they submit the Remedial Design Work Plan, Settling Work Defendants shall submit to EPA and the State a Health and Safety Plan for field activities required by the Remedial Design Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. Section 1910.120.

Upon approval of the Remedial Design Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submittal of the Health and Safety Plan for all field activities to EPA and the State, Settling Work Defendants shall implement the Remedial Design Work Plan. Unless otherwise directed by EPA, Settling Work Defendants shall not commence further Remedial Design activities at the Site prior to approval of the Remedial Design Work Plan.

Task 3: Remedial Design

Settling Work Defendants shall prepare construction plans and specifications to implement the Remedial Action at the Site as described in the ROD and this SOW. Plans and specifications shall be submitted in accordance with the schedule set forth in Section V below. Subject to approval by U.S. EPA, Settling Work Defendants may submit more than one set of design submittals reflecting different components of the Remedial Action. All plans and specifications shall be developed in accordance with U.S. EPA's Superfund Remedial Design and Remedial Action Guidance (OSWER Directive No. 9355.0-4A) and shall demonstrate that the Remedial Action shall meet all objectives of the ROD, the Consent Decree and this SOW, including all Performance Standards. Settling Work Defendants shall meet regularly with U.S. EPA to discuss design issues.

A. Proposal for ESD or ROD Amendment (if any)

Before submitting a Preliminary Design, and in accordance with a schedule to be established in the approved RD Work Plan, Settling Work Defendants may submit for EPA consideration a proposal for a remedy update to the ROD addressing potential significant alterations in the design, features, or operation of the selected remedy. Any such proposal for a remedy update shall include a rationale for its approval consistent with U.S. EPA Guidance, shall be fully presented in a single submittal, and shall specify whether Settling Work Defendants believe the proposed remedy update should be implemented through an Explanation of

Significant Differences (ESD) or a ROD Amendment.

B. Preliminary Design

Settling Work Defendants shall submit the Preliminary Design when the design effort is approximately 30% complete. The Preliminary Design submittal shall include or discuss, at a minimum, the following:

- Preliminary plans, drawings, and sketches, including design calculations;
- Site Topographic Survey;
- Results of treatability studies and/or additional field sampling, pre-load settlement testing, landfill gas pilot study;
- Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for the treatment train, and expected removal or treatment efficiencies for both the process and waste (concentration and volume);
- Proposed cleanup verification methods, including compliance with Applicable or Relevant and Appropriate Requirements (ARARs);
- Draft Performance Standard Verification Plan;
- Outline of required specifications;
- Proposed siting/locations of processes/construction activity;
- Expected long-term monitoring and operation requirements;
- Real estate, easement, and permit requirements; and
- Preliminary construction schedule, including contracting strategy.

C. Intermediate Design Briefing

Settling Work Defendants shall present an Intermediate Design Briefing when the design effort is approximately 60% complete. The Intermediate Design Briefing shall provide

information developed through the continuation and expansion of the preliminary design. The Intermediate Design Briefing shall fully address all comments made to the preceding design submittal, and shall include a discussion of substantive issues addressed and to be addressed in the following receivables:

- Draft Performance Standard Verification Plan;
- Draft Construction Quality Assurance Plan; and
- Draft QAPP/Draft Remedial Action Health and Safety Plan/Draft Field Sampling Plan/Draft Contingency Plan.

D. Prefinal and Final Designs

Settling Work Defendants shall submit the Prefinal Design when the design effort is 95% complete and shall submit the Final Design when the design effort is 100% complete. The Prefinal Design shall fully address all comments made to the preceding design submittal, and comments raised by EPA during the Intermediate Design Briefing, and shall also include the following:

- Draft Construction Quality Assurance Plan; and
- Draft QAPP/Draft Health and Safety Plan/Draft Field Sampling Plan/Draft Contingency Plan.

The Final Design shall fully address all comments made to the Prefinal Design and shall include reproducible drawings and specifications suitable for bid advertisement. The Prefinal Design shall serve as the Final Design if U.S. EPA has no further comments and issues the notice to proceed.

The Prefinal and Final Design submittals shall include those elements listed for the Preliminary Design, as well as the following:

- Final Performance Standard Verification Plan;
- Final Construction Quality Assurance Plan;
- Final QAPP/Final Remedial Action Health and Safety Plan/Final Field Sampling Plan/Final Contingency Plan;
- Draft Operation and Maintenance Plan;

- Capital and Operation and Maintenance Cost Estimate. This cost estimate shall refine the FS cost estimate to reflect the detail presented in the Final Design;
- Final Project Schedule for the construction and implementation of the Remedial Action which identifies timing for initiation and completion of all critical path tasks. The final project schedule submitted as part of the Final Design shall include specific dates for completion of the project and major milestones.

Task 4: Remedial Action Work Plan

Within 30 day after Settling Work Defendants' award of contracts for the performance of the Remedial Action, Settling Work Defendants shall submit to EPA and the State a Remedial Action Work Plan for the performance of the Remedial Action at the Site. The Remedial Action Work Plan shall provide for construction and implementation of the remedy set forth in the ROD and achievement of the Performance Standards, in accordance with the Consent Decree, the ROD, this SOW, and the design plans and specifications developed in accordance with the Remedial Design Work Plan and approved by EPA.

The Remedial Action Work Plan shall include a detailed description of the remediation and construction activities. The RA Work Plan shall include a project schedule for each major activity and submission of deliverables generated during the Remedial Action. The Remedial Action Work Plan shall include the following: (1) the schedule for completion of the Remedial Action; (2) a description of the method used for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action plans; (4) methodology for implementation of the Construction Quality Assurance Plan; (5) surface water, groundwater, and landfill gas monitoring plans; (6) methods for satisfying off-Site permitting requirements, if any; (7) methodology for implementation of the Contingency Plan; (8) tentative formulation of the Remedial Action team; (9) construction quality control plan (by contractor); and (10) procedures and plans for the decontamination of equipment and the disposal of contaminated materials. The Remedial Action Work Plan also shall include a schedule for implementation of all Remedial Action tasks identified in the final design submittal and shall identify the initial formulation of the Settling Work Defendants' Remedial Action Project Team (including, but not limited to, the Supervising Contractor).

Upon approval of the Remedial Action Work Plan by EPA, after a reasonable opportunity for review and comment by the State, Settling Work Defendants shall implement the activities required under the Remedial Action Work Plan. Unless otherwise directed by EPA, Settling Work Defendants shall not commence physical Remedial Action activities at the Site prior to EPA's written approval of the Remedial Action Work Plan.

Task 5: Remedial Action Construction

The Settling Work Defendants shall implement the Remedial Action as detailed in the approved Final Design. The following activities shall be completed in constructing the Remedial Action.

A. Preconstruction inspection and meeting:

The Settling Work Defendants shall participate with the U.S. EPA and the State in a preconstruction inspection and meeting to:

- a. Review methods for documenting and reporting inspection data;
- b. Review methods for distributing and storing documents and reports;
- c. Review work area security and safety protocol;
- d. Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and,
- e. Conduct a Site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes shall be transmitted to all parties.

B. Prefinal Construction Inspection:

Within 15 days after Settling Work Defendants or U.S. EPA make preliminary determination that construction of the cover is complete, the Settling Work Defendants shall notify the U.S. EPA and the State for the purposes of conducting a prefinal construction inspection. The prefinal construction

inspection shall consist of a walk-through inspection of the entire Facility with U.S. EPA. The inspection is to determine whether the cover construction and other requirements of the project (other than the leachate collection and treatment requirements) are complete and consistent with the contract documents and the Remedial Action. Any outstanding construction items discovered during the inspection shall be identified and noted. Additionally, treatment equipment shall be operationally tested by the Settling Work Defendants. The Settling Work Defendants shall certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting shall be completed where deficiencies are revealed. The prefinal construction inspection report shall outline the outstanding construction items, actions required to resolve items, completion date for these items, and a proposed date for the construction completion inspection.

C. Construction Completion Inspection:

Within 15 days after completion of any work identified in the prefinal construction inspection report, the Settling Work Defendants shall notify the U.S. EPA and the State for the purposes of conducting a construction completion inspection. The construction completion inspection shall consist of a walk-through inspection of the Facility by U.S. EPA and the Settling Work Defendants to ensure completion of the cover construction and other requirements of the project (other than the leachate and treatment requirements). The prefinal construction inspection report shall be used as a checklist with the construction completion inspection focusing on the outstanding construction items identified in the prefinal construction inspection. Confirmation shall be made that outstanding items have been resolved.

D. Supplemental Construction Inspection

If the design, construction, and operation of a leachate collection and treatment system is required, within 15 days after completion of all work identified in the Remedial Action Work Plan Supplement, the Settling Work Defendants shall notify the U.S. EPA and the State for the purpose of conducting a supplemental construction inspection. The inspection is to determine whether all construction and other requirements of the project (including leachate collection and treatment requirements) are complete and consistent with the contract documents and the Remedial Action.

E. Reports

1. Construction Completion Report

Within 30 days of a successful construction completion inspection, Settling Work Defendants shall submit a Construction Completion Report. In the report, a registered professional engineer and the Settling Work Defendants' Project Coordinator shall state that the Remedial Action (other than components of the Remedial Action relating to leachate collection and treatment) has been constructed in accordance with the design and specifications. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendants or the Settling Work Defendants' Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2. Supplemental Construction Completion Report

Within 30 days of a successful supplemental construction completion inspection, Settling Work Defendants shall submit a Supplemental Construction Completion Report. In the report, a registered professional engineer and the Settling Work Defendants' Project Coordinator shall state that the Remedial Action (including components of the Remedial Action relating to leachate collection and treatment) has been constructed in accordance with the design and specifications. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendants or the Settling Work Defendants' Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

3. Completion of Remedial Action Report

Within 30 days of a successful Remedial Action Pre-Certification Inspection pursuant to the Consent Decree, Settling Work Defendants shall submit a Completion of Remedial Action Report. In the report, a registered professional engineer and the Settling Work Defendants' Project Coordinator shall state the Remedial Action has been completed and the Performance Standards have been attained in full satisfaction of the requirements of the Consent Decree. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendant or the Settling Work Defendants' Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Task 6: Operation and Maintenance

The Settling Work Defendants shall prepare an Operation and Maintenance (O&M) Plan to cover both implementation and long term maintenance of the Remedial Action. An initial Draft O&M Plan shall be submitted as a final Design Document submission. The final O&M Plan shall be submitted to U.S. EPA prior to the pre-final construction inspection, in accordance with the approved construction schedule. The plan shall be composed of the following elements:

1. Description of normal operation and maintenance;
 - a. Description of tasks for operation;
 - b. Description of tasks for maintenance;
 - c. Description of prescribed treatment or operation conditions; and
 - d. Schedule showing frequency of each O&M task.
2. Description of potential operating problems;
 - a. Description and analysis of potential operation problems;
 - b. Sources of information regarding problems; and
 - c. Common and/or anticipated remedies.

3. Description of routine monitoring and laboratory testing;
 - a. Description of monitoring tasks;
 - b. Description of required data collection, laboratory tests and their interpretation;
 - c. Required quality assurance, and quality control;
 - d. Schedule of monitoring frequency and procedures for a petition to U.S. EPA to reduce the frequency of or discontinue monitoring; and
 - e. Description of verification sampling procedures if Cleanup or Performance Standards are exceeded in routine monitoring.
4. Description of alternate O&M;
 - a. Should systems fail, alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and the environment or exceed performance standards;
 - b. Analysis of vulnerability and additional resource requirement should a failure occur; and
 - c. Process for Settling Work Defendants to request U.S. EPA approval for passive operation of the active gas collection system.
5. Corrective Action;
 - a. Description of corrective action to be implemented in the event that cleanup or performance standards are exceeded; and
 - b. Schedule for implementing these corrective actions.
6. Safety plan;
 - a. Description of precautions, of necessary equipment, etc., for Site personnel; and
 - b. Safety tasks required in event of systems failure.
7. Description of equipment; and
 - a. Equipment identification;
 - b. Installation of monitoring components;
 - c. Maintenance of Site equipment; and
 - d. Replacement schedule for equipment and installed components.

8. Records and reporting mechanisms required.
 - a. Daily operating logs;
 - b. Laboratory records;
 - c. Records for operating costs;
 - d. Mechanism for reporting emergencies;
 - e. Personnel and maintenance records; and
 - f. Monthly/annual reports to State agencies.

Task 7: Performance Monitoring

Performance monitoring shall be conducted to ensure that all Performance Standards are met.

A. Performance Standard Verification Plan

The purpose of the Performance Standard Verification Plan is to provide a mechanism to ensure that both short-term and long-term Performance Standards for the Remedial Action are met. The Draft Performance Standards Verification Plan shall be submitted with the Intermediate Design. Once approved, the Performance Standards Verification Plan shall be implemented on the approved schedule. The Performance Standards Verification Plan shall include:

1. Quality Assurance Project Plan
2. Health and Safety Plan
3. Field Sampling Plan
4. Description of the Performance Standards to be met

The Final Performance Standards Verification Plan from the approved final Remedial Design may be utilized. Modifications may be made, as necessary.

IV. CONTENT OF SUPPORTING PLANS

The documents listed in this section -- the Quality Assurance Project Plan, the Field Sampling Plan, the Health and Safety Plan, the Contingency Plan and the Construction Quality Assurance Plan -- must be prepared and submitted as outlined in Section III of this SOW. The following section describes the required contents of each of these supporting plans.

A. Quality Assurance Project Plan

The Settling Work Defendants shall develop a site specific Quality Assurance Project Plan (QAPP), covering sample analysis and data handling for samples collected in all

phases of future Site work, based upon the Consent Decree and guidance provided by U.S. EPA. The QAPP shall be consistent with the requirements of the U.S. EPA, Region 5 Model QAPP. The QAPP shall at a minimum include:

1. Project Description
 - * Facility Location History
 - * Past Data Collection Activity
 - * Project Scope
 - * Sample Network Design
 - * Parameters to be Tested and Frequency
 - * Project Schedule
2. Project Organization and Responsibility
3. Quality Assurance Objective for Measurement Data
 - * Level of Quality Control Effort
 - * Accuracy, Precision and Sensitivity of Analysis
 - * Completeness, Representativeness and Comparability
4. Sampling Procedures
5. Sample Custody
 - * Field Specific Custody Procedures
 - * Laboratory Chain of Custody Procedures
6. Calibration Procedures and Frequency
 - * Field Instruments/Equipment
 - * Laboratory Instruments
7. Analytical Procedures
 - * Non-Contract Laboratory Program
 - Analytical Methods
 - * Field Screening and Analytical Protocol
 - * Laboratory Procedures
8. Internal Quality Control Checks
 - * Field Measurements
 - * Laboratory Analysis
9. Data Reduction, Validation, and Reporting
 - * Data Reduction
 - * Data Validation
 - * Data Reporting
10. Performance and System Audits
 - * Internal Audits of Field Activity
 - * Internal Laboratory Audit

- * External Field Audit
- * External Laboratory Audit
- 11. Preventive Maintenance
 - * Routine Preventative Maintenance Procedures and Schedules
 - * Field Instruments/Equipment
 - * Laboratory Instruments
- 12. Specific Routine Procedures to Assess Data Precision, Accuracy, and Completeness
 - * Field Measurement Data
 - * Laboratory Data
- 13. Corrective Action
 - * Sample Collection/Field Measurement
 - * Laboratory Analysis
- 14. Quality Assurance Reports to Management

The Settling Work Defendants may utilize the Final QAPP from the approved final Remedial Design with modifications, as necessary.

B. Health and Safety Plans

The Settling Work Defendants shall develop health and safety plans which are designed to protect on-site personnel and area residents from physical, chemical and all other hazards posed by pre-design and design activities, and the remedial action. The safety plans shall develop the performance levels and criteria necessary to address the following areas:

- Facility Description
- Personnel
- Levels of protection
- Safe work practices and safe guards
- Medical surveillance
- Personal and environmental air monitoring
- Personal protective equipment
- Personal hygiene
- Decontamination - personal and equipment
- Site work zones
- Contaminant control
- Contingency and emergency planning
- Logs, reports and record keeping

The safety plan shall follow U.S. EPA guidance and all OSHA requirements as outlined in 29 CFR 1910 and 1926.

The Health and Safety Plan developed during the RI/FS may be used if appropriately modified for Design and Construction.

C. Contingency Plan

Settling Work Defendants shall submit a Contingency Plan describing procedures to be used in the event of an accident or emergency at the Site. The Contingency Plan may be part of the Health and Safety Plan or a separate document. The draft Contingency Plan shall be submitted with the prefinal design and the final Contingency Plan shall be submitted with the final design. The final Contingency Plan shall be submitted prior to the start of construction, in accordance with the approved construction schedule. The Contingency Plan shall include, at a minimum, the following:

1. Name of the person or entity responsible for responding in the event of an emergency incident.
2. Plan and date(s) for meeting(s) with the local community, including local, State and Federal agencies involved in the cleanup, as well as local emergency squads and hospitals.
3. First aid medical information.
4. Air Monitoring Plan (if applicable).
5. Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), as specified in 40 CFR Part 109 describing measures to prevent and contingency plans for potential spills and discharges from materials handling and transportation.

D. Field Sampling Plan

The Settling Work Defendants shall develop a field sampling plan (as described in "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," October 1988). The Field Sampling Plan should supplement the QAPP and address all sample collection activities.

E. Construction Quality Assurance Plan

Settling Work Defendants shall submit a Construction Quality

Assurance Plan (CQAP) which describes the Site specific components of the quality assurance program which shall ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The draft CQAP shall be submitted with the prefinal design and the final CQAP shall be submitted with the final design. The CQAP shall contain, at a minimum, the following elements:

1. Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the Remedial Action.
2. Qualifications of the Quality Assurance Official to demonstrate he possesses the training and experience necessary to fulfill his identified responsibilities.
3. Protocols for sampling and testing used to monitor construction.
4. Identification of proposed quality assurance sampling activities including the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation. A description of the provisions for final storage of all records consistent with the requirements of the Consent Decree shall be included.
5. Reporting requirements for CQA activities shall be described in detail in the CQA plan. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records shall be presented in the CQA plan.

V. SUMMARY OF MAJOR DELIVERABLES/SCHEDULE

A reduction in agency oversight activities may be possible without compromising the quality of response actions at the Site. U.S. EPA reserves the right to reduce or modify any of the reporting and deliverables requirements specified in this SOW based on proposals for reduced oversight by the Settling Work Defendants consistent with U.S. EPA Guidance.

A summary of the project schedule and reporting requirements contained in this SOW is presented below:

<u>Submission</u>	<u>Due Date</u>
1. Pre-Design Data Collection (PDDC) Work Plan	30 days after U.S. EPA's Notice of Authorization to Proceed
2. RD Work Plan	In accordance with schedule in the approved PDDC Work Plan
3. Proposal for ESD or ROD Amendment (if any)	In accordance with the schedule in the approved Final RD Work Plan
4. Preliminary Design (30%)	In accordance with the schedule in the approved Final RD Work Plan
5. Intermediate Design (60%) Briefing with U.S. EPA	60 days after receipt of U.S. EPA's comments on the Preliminary Design
6. Prefinal Design (95%)	60 days after Intermediate Design Briefing
7. Final Design (100%)	45 days after receipt of U.S. EPA's comments on the Prefinal Design
8. Award RA Contract(s)	60 days after receipt of U.S. EPA's Notice of Authorization to Proceed with RA
9. RA Work Plan	30 days after Award of RA Contract(s)

- | | | |
|-----|---|---|
| 10. | Pre-Construction
Inspection and Meeting | 15 days after Award of RA
Contract(s) |
| 11. | Initiate Construction of
RA | 15 days after Pre-Construction
Inspection and meeting |
| 12. | Completion of Construction
(Other than construction
of the leachate collection
and treatment system) | As approved by U.S. EPA in RA
Work Plan construction
schedule |
| 13. | Prefinal Construction
Inspection | No later than 15 days after
Completion of Construction |
| 14. | Prefinal Construction
Inspection Report | 15 days after Prefinal
Construction Inspection |
| 15. | Construction Completion
Inspection | 15 days after completion of
work identified in Prefinal
Construction Inspection Report |
| 16. | Final O&M Plan | No later than Prefinal
Construction Inspection |
| 17. | Construction Completion
Report | 30 days after Construction
Completion Inspection |
| 18. | Remedial Action Work Plan
Supplement (relating to
leachate collection and
treatment system) | 60 days after any notification
by U.S. EPA that construction
of the leachate collection and
treatment system is required |
| 19. | Completion of Construction
of Leachate Collection and
Treatment System | As approved by U.S. EPA in RA
Work Plan Supplement |
| 20. | Supplemental Construction
Completion Inspection | 15 days after Completion of
Construction of the Leachate
Collection and Treatment
System |
| 21. | Supplemental Construction
Completion Report | 30 after Supplemental
Construction Completion
Inspection |
| 22. | Completion of Remedial
Action | See Consent Decree |

- | | | |
|-----|---|--------------------|
| 23. | RA Pre-certification
Inspection | See Consent Decree |
| 24. | Completion of Remedial
Action Report | See Consent Decree |
| 25. | Completion of Work | See Consent Decree |
| 26. | Work Pre-certification
Inspection | See Consent Decree |
| 27. | Completion of Work Report | See Consent Decree |

Attachment 1 to SOW

EXISTING GROUNDWATER/LEACHATE MONITORING WELLS

MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-107, MW-108,
MW-109, MW-110, MW-111, MW-201, MW-202, MW-203, MW-204, MW-205,
MW-206, MW-207, MW-208, MW-209, MW-210, MW-211, MW-212, MW-213,
MW-214, MW-215, MW-216, MW-301, MW-302, MW-303, MW-401, MW-402,
MW-403, MW-405, MW-406, G103, G104, G105, G106, G110, G111, G113,
G114, G116, G117, G118, G119, G120, G122, L307, L308, L309, L315,
L321, LW-101, LW-102, LW-103, LW-201, LW-202, LW-203, LW-204,
LW-204A

All G, L, and LW series wells shall be properly abandoned before
or during construction.

Attachment 2 to SOW

INITIAL PARAMETER LIST

VOCs	SVOCs	Pesticides/PCBs	Metals
vinyl chloride	chrysene	4,4'-DDE	aluminum
chloroethane	4-nitrophenol	4,4'-DDD	antimony
bromodichloromethane	phenol	4,4'-DDT	arsenic
methylene chloride	1,4-dichlorobenzene	dieldrin	barium
acetone	1,2-dichlorobenzene	methoxychlor	beryllium
1,2-dichloroethene	2-methylphenol	delta-BHC	boron
(total)	4-methylphenol	beta-BHC	cadmium
chloroform	isophorone	heptochlor epoxide	calcium
1,2-dichloroethane	2,4-dimethylphenol	PCBs	chromium
2-butanone	benzoic acid	Aroclor 1221	cobalt
trichloroethene	naphthalene	Aroclor 1232	copper
benzene	4-chloro-3-methylphenol	Aroclor 1242	iron
4-methyl-2-pentanone	2-methylnaphthalene	Aroclor 1248	lead
tetrachloroethene	diethylphthalate	Aroclor 1254	magnesium
1,1,2,2-	N-nitrosodiphenylamine		manganese
tetrachloroethane	butylbenzylphthalate		mercury
toluene	bis(2-ethylhexyl)phthalate		nickel
chlorobenzene	acenaphthene		potassium
dichlorobenzene	dibenzofuran		selenium
ethylbenzene	fluorene		sodium
styrene	2-chlorophenol		vanadium
freon	pentachlorophenol		zinc
xylenes (total)	phenanthrene		sulfide
	anthracene		cyanide
	di-n-butylphthalate		
	di-n-octylphthalate		
	fluoranthene		
	pyrene		
	benzo(a)anthracene		
	chrysene		
	benzo(b)fluoranthene		
	benzo(k)fluoranthene		
	benzo(a)pyrene		
	indeno(1,2,3-cd)pyrene		
	dibenz(a,h)anthracene		
	benzo(g,h,i)perylene		

Attachment 3 to SOW

PERFORMANCE STANDARDS SUMMARY

This performance standards summary is intended to provide a consolidated list of performance standards from the ROD. The ROD should be reviewed for a more complete understanding of performance standards to be met. This summary does not affect the enforceability of the Consent Decree and SOW with respect to the requirements of the ROD.

I. Performance Standards Relating to Cover Construction and Other Requirements of the Project (Other Than the Leachate Collection and Treatment System)

Cap Features and Performance: The cover will have a 2 percent slope; hydraulic conductivity of the drainage layer will be at least 20 cm/sec; a barrier layer consisting of a 3 foot Compacted Clay Layer which has a hydraulic conductivity of 1×10^{-7} cm/sec or less. Alternatively, an equivalent barrier layer may be used, such as a primary barrier layer consisting of a flexible membrane liner over a secondary barrier layer consisting of a Geosynthetic Clay Liner (GCL) or a 2 foot compacted clay layer with a hydraulic conductivity of 1×10^{-7} cm/sec or less which meets the requirements of the ROD. A gas ventilation layer will have a hydraulic conductivity of at least 1×10^{-7} cm/sec. A grading layer will provide for a slope of 2% after settlement. The final cover system shall meet the substantive requirements of 35 IAC 811.314, 35 IAC 811.322, and 35 IAC 807.502. Ambient air quality standards set forth at 40 CFR 50.6 and 35 IAC 811.103 will apply to the construction operations. Impact to wetland will be addressed according to Executive Order 11990 and 11988, 40 CFR 6, Appendix A, and Section 404 of Clean Water Act.

Active Perimeter Gas Collection System: The design, construction and operation of the perimeter gas collection system will meet the requirements set forth in the Clean Air Act Sections 101 and 40 CFR 52, and 40 CFR 61 (Design and construction of an odor free system and limits on hazardous air pollutants). The system will also meet the requirements set forth in 35 IAC 811.311 and 312 (active gas control system and treatment of landfill gas), 35 IAC 211, 35 IAC 212, 35 IAC 214, 35 IAC 215, 35 IAC 216 and 35 IAC 217 (emission regulations).

Sediment Excavation: Sediment excavation will be conducted until the following Cleanup Action Levels (CALs) are achieved and maintained:

PCBs: $[A-1242]/2 + [A-1248] + 10 \times [A-1254] = 3.4 \text{ mg/kg}$
(A - means Aroclor)

Lead: 180 mg/kg
PAHs: 26 mg/kg
Zinc: 317 mg/kg

As provided by the ROD, if it is demonstrated to the satisfaction of the U.S. EPA that a parameter within an area exceeds the CAL solely because of a source other than the Site, then sediment excavation within that area need not be performed.

Disposition of Excavated Sediments, Soils, and Materials:

Excavated sediments, soils, and materials, if consolidated and stored on-site, will be stored above the 100 year flood elevation. The remedy will comply with 40 CFR 761.75(b)(4)(ii), which requires diversion of surface water run-off from a 24-hour, 25-year storm. The remedy will also comply with 40 CFR 761.75(b)(5) (requires site to have moderate relief), 40 CFR 761.75(b)(6) (for surface water and groundwater monitoring) and 40 CFR 761.75(b)(9) (support facility requirements).

Other regulatory requirements: 40 CFR 110.6 (discharge prohibition), 35 IAC 302, 35 IAC 811.103 (Water Quality Standards for runoff from disturbed area), Executive Order 11990 and 11988 (wetland protection), 40 CFR 6, Appendix A (wetland protection), 40 CFR 6.302(g) (fish and wildlife protection), Clean Air Act Section 101, 40 CFR 52, and 40 CFR 61.

Compliance with the IDOT regulations (92 IAC 708) and the Lake County Storm Water Management Commission Watershed Development Ordinance:

The following requirements will apply: 92 IAC 708 (Lake County Water Shed Ordinance); 40 CFR 6.302(g) (wetland protection); 35 IAC 311(b)(3); 40 CFR 110.6; (Water Quality Standards), 35 IAC 811.103 (run-off from disturbed area); Executive Order 11990 and 11988, 40 CFR 6, Appendix A, 40 CFR 6.302(g) and 40 CFR 230.70; Clean Air Section 101, 40 CFR 52 and 40 CFR 61.

Rerouting and sealing storm drains: The following requirements will apply: Executive Order 11990 and 11988, 40 CFR 6, Appendix A, 40 CFR 6.302(g) (fish and wildlife protection).

Destruction, loss or degradation of wetlands: The following requirements will apply: Clean Water Act Section 404; Executive Order 11990 and 11988; 40 CFR 6, Appendix A, and 40 CFR 6.302(g).

Comprehensive, Long Term Monitoring System for Leachate, Groundwater, Surface Water, and Sediments: The long term monitoring will be performed in accordance with the 35 IAC 807.318 and 40 CFR 761.75(b)(6).

Long Term Maintenance or Post-closure Care: The long term maintenance or post-closure care will be performed in accordance with the 35 IAC 811.111(c), 35 IAC 807.318 and 35 IAC 811.316.

II. Performance Standards Relating to Surface Water Quality and Ground Water Quality

Attainment of Surface Water Quality Standards by Control of the Source of Contamination

Under the ROD and the SOW, no active surface water remediation will be conducted, but surface water quality standards shall be attained and the potential risk identified in the Remedial Investigation due to detection of cyanide and acetone eliminated (except for parameters that exceed the standards because of reasons not related to a release from the Site) by controlling the source including construction of the new site cover, and, if required, the leachate collection system along Yeoman Creek along the northern portion of the landfill.

The remedy shall attain 35 IAC 302 standards unless the exceedance is due to a condition that is not related to a release from the Site.

Attainment of Groundwater Quality Standards by Control of the Source of Contamination

Under the ROD and the SOW, no active groundwater remediation will be conducted, but ground water standards shall be attained and the potential risk in the Remedial Investigation due to detection of vinyl chloride, benzene, bis(2-ethylhexyl)phthalate, pentachlorophenol, arsenic, beryllium, and lead shall be reduced or eliminated to the extent that the contamination is due to a release from the landfill by controlling the source by construction of the new site cover, and operation of the active landfill gas control system.

Within a three dimensional region of groundwater that exceeds Illinois Ground Water Quality Standards in 35 IAC 620.410 and 620.420 as appropriate due to a release at the Site, a ground water management zone shall be defined consistent with 35 IAC 620.250. The source containment measures implemented under the selected remedy shall constitute an approved corrective action for the ground water as it relates to 35 IAC 620.250. Therefore, implementation of the selected remedy will satisfy the criteria

defined in 35 IAC 620.250(a). Ground water management period required pursuant to 620.250(b) shall be 30 years from the date of completion of construction. In accordance with 35 IAC 620.450, at the end of the 30 year period, the ground water standard for each constituent shall either be IGWQS in 35 IAC 620.410 or 620.420 as appropriate if such standard is attained for that constituent; or the concentration as determined by ground water monitoring, if such concentration does not attain the relevant IGWQS.

Notwithstanding the preceding paragraph, the remedy shall attain the Primary Federal Maximum Contaminant Levels (40 CFR 141).

III. Action Levels Relevant to the Determination Whether the Design, Construction and Operation of a Leachate Collection and Treatment System Will Be Required

In the event that any or all of following Action Levels are exceeded for a specified number of sampling events (to be determined and approved by U.S. EPA after construction of the Site cap), construction and operation of a leachate collection and treatment system along Yeoman Creek adjacent to the Yeoman Creek Landfill portion of the Site will be required in order to prevent leachate and leachate contaminated groundwater from entering or seeping into Yeoman Creek:

Leachate/Groundwater Action Levels: Maximum Contaminant Level and 35 IAC 620 standards

Surface Water Action Levels: Maximum Contaminant Levels, 35 IAC 620 standards and Surface Water Quality standards 35 IAC 302

Sediment Action Levels (after sediment excavation): Any of the following:

(i) For the following hazardous substances, the following CALs:

PCBs: $[A-1242]/2 + [A-1248] + 10 \times [A-1254] = 3.4 \text{ mg/kg}$
(A - means Aroclor)

Lead: 180 mg/kg

PAHs: 26 mg/kg

Zinc: 317 mg/kg

(ii) For other hazardous substances, levels determined by U.S. EPA to be protective based on calculation methods and factors comparable to those used in the ROD to calculate the foregoing CALs for PCBs, PAHs, lead and zinc; or

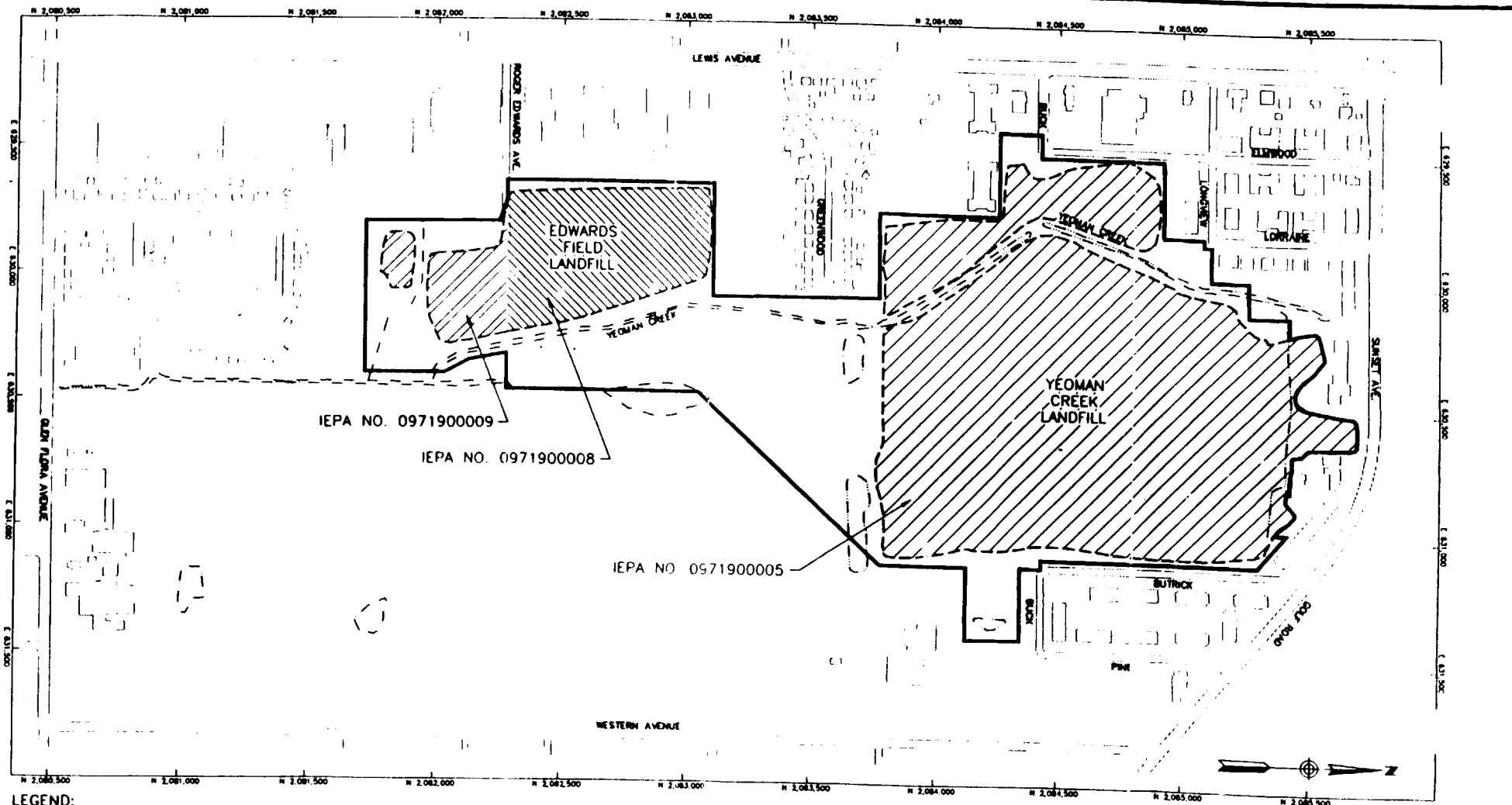
(iii) If monitoring shows a trend of sediment quality degradation which U.S. EPA considers can reasonably be expected to lead to an eventual exceedance of any level under the preceding paragraphs (i) or (ii), U.S. EPA shall direct the Settling Work Defendants to submit a study of such sediment quality degradation within 30 days. (As part of a timely study submittal, Settling Work Defendants may propose to augment the study by performing additional expeditious sampling, subject to U.S. EPA approval.) The study shall consider any matters EPA directs, and shall in any event consider leachate levels in the landfill, possible upstream sources, and the statistical significance of the data. If after receipt of such a study (or the passage of 30 days without receipt of such a study) EPA determines that eventual exceedances of any level under the preceding paragraphs (i) or (ii) is probable, EPA may direct the Settling Work Defendants to construct and operate the leachate collection and treatment system.

Consistent with the intent of the ROD, the design, construction, and operation of a leachate collection and treatment system will not be required based on exceedances of Leachate/Groundwater Action Levels unless EPA determines that such exceedances are at monitoring points indicating a need to prevent leachate and leachate contaminated groundwater from entering or seeping into Yeoman Creek.

IV. Performance Standards Relating to the Leachate Collection and Treatment System

Leachate Discharge and Treatment: If leachate is discharged to North Shore Sanitary District or any other POTW, the following standards will apply: 40 CFR 403.5 (pretreatment standard); applicable POTW regulations; 35 IAC 307.1101-1103 (sewer discharge criteria); 35 IAC 310.201 (a) and (c), 202 (pretreatment standard); and 35 IAC 309 (d) and (e) (leachate treatment and disposal). If the leachate is discharged to Yeoman Creek, the following standards will apply: 35 IAC 302 (Water Quality Standards) and 35 IAC 304 (effluent standards)

Construction Standards: The following standards will apply to the construction of the leachate collection and treatment system: 40 CFR 122.44 (requires permit for direct discharge), 35 IAC Part 302 (Water Quality Standards), 35 IAC 811.103 (run-off from distributed areas), Federal Water Pollution Control Act Section 111(b)(3), 40 CFR 110.6 (discharge prohibited) and Clean Air Act Section 101, 40 CFR 52 and 40 CFR 61.



LEGEND:

- WATER
- APPROXIMATE WASTE BOUNDARY
- YEOMAN CREEK LANDFILL AREA OF WASTE DISPOSAL
- EDWARDS FIELD LANDFILL AREA OF WASTE DISPOSAL
- ARTHUR RUBLOFF LANDFILL AREA OF WASTE DISPOSAL

CAS PROJECT NUMBER: 180044
DATE OF PHOTOGRAPHY: 12-11-78
SCALE OF MAP: 1" = 400'

CAS CHICAGO AERIAL SURVEY
140 S. WOLF ROAD
PLAINFIELD, N.J. 08061
708/299-1480



Chicago, Illinois

CLIENT/PROJECT

PRP/YEOMAN-EDWARDS

/S/IL

SITE LOCATION MAP

DATE	TPK	DATE	8-30-93	JOB NO.	933 8136
SCALE	AS SHOWN	DATE	8-30-93	FIGURE NO.	
FILE NAME	8136172				

Appendix C to Consent Decree: Site Map

Appendix D to Consent Decree: List of Settling Defendants

1. Settling Work Defendants

Browning Ferris Industries, Inc.
Browning Ferris Industries of Illinois, Inc.
City of Waukegan, Illinois
Outboard Marine Corporation
Waukegan Community School District No. 60
The Goodyear Tire & Rubber Company
The Dexter Corporation

2. Settling Cash Defendants

	<u>Settlement Amount</u>
Abbott Laboratories	\$2,450,000.00
Fansteel, Inc.	\$1,591,500.00
City of North Chicago, Illinois	\$320,000.00 *

* Notwithstanding the general requirements of Paragraph 53 of the Consent Decree that Settling Cash Defendants deposit the full amounts set forth above into an escrow account within 10 days after the lodging of the Consent Decree and then cause such amounts (plus any accrued interest) to be paid to the Settling Work Defendants within 10 days after the entry of the Consent Decree, Settling Cash Defendant the City of North Chicago, Illinois, due to its special financial circumstances, shall make the payment set forth above in installments, as follows:

Payment to be made within 30 days of entry of Consent Decree	\$80,000.00
Payment to be made within one year after entry of Consent Decree	\$80,000.00
Payment to be made within two years after entry of Consent Decree	\$80,000.00
Payment to be made within three years after entry of Consent Decree	\$80,000.00

Settling Cash Defendant the City of North Chicago, Illinois shall make such payments to the Settling Work Defendants in the form of a check or checks or by an Electronic Funds Transfer in accordance with instructions provided by the Settling Work Defendants.

Nothing herein shall otherwise alter the timing or terms of payment under Paragraph 53 of the Consent Decree for any Settling Defendant other than the City of North Chicago, Illinois.

Appendix E to Consent Decree: Stipulation and Agreed Order for the Protection and Exchange of Confidential Information

RECEIVED

MAR 10 1994

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

Judge Harry D. Leinenweber
U. S. District Court

WAUKEGAN COMMUNITY SCHOOL)
DISTRICT NO. 60, et al. : Case No. 92-C-7592
)
Plaintiffs, :
 : (Judge Leinenweber)
-vs- : (Magistrate Judge Rosemond)
 :
ABBOTT LABORATORIES, et al.)
 :
Defendants.)

STIPULATION AND AGREED ORDER
FOR THE PROTECTION AND EXCHANGE
OF CONFIDENTIAL INFORMATION

The undersigned entities (hereinafter the "Members") have hereby stipulated that their participation in the Yeoman Creek Landfill Superfund Site Alternative Dispute Resolution Participation Agreement (the "Agreement") will involve the production and exchange of documents and information which may be entitled to confidential treatment.

WHEREAS, certain Members have initiated litigation captioned Waukegan Community School District v. Abbott Laboratories, et al., Northern District of Illinois, Civil Action No. 92 C 7592 ("pending litigation"), seeking reimbursement for their past and future response costs incurred at the Yeoman Creek Edwards Field Landfill Superfund Site, a Superfund National Priorities List site located in Lake County, Illinois ("Site");

WHEREAS, all Members are alleged to be among the potentially responsible parties at the Site and are, thereby, alleged to be liable for payment of response costs incurred at the Site;

WHEREAS, all Members, individually and collectively, without admitting any fact, responsibility, fault or liability whatsoever in connection with the Site, desire to establish a process for evaluating issues of liability and allocation of responsibility for the response costs sought in the pending litigation, with the goal that such process will further efforts to settle all or substantially all of the issues and claims raised in the pending litigation;

WHEREAS, the Members agree and the Court finds that the Members and others will be substantially more likely to engage in full and frank exchange of information necessary to advance the settlement process if their communications and the result of the ADR process are kept confidential and used only for the ADR process;

NOW, THEREFORE, in consideration of the foregoing and in furtherance of the above-referenced attempt to settle all or substantially narrow the issues in this case, the Court finds that good cause exists for the issuance of this order and that entry of this Order is appropriate pursuant to Federal Rule of Civil Procedure 26(c).

IT IS HEREBY ORDERED as follows:

1. All communications of any nature or type, including but not limited to statements, documents, factual submissions, correspondence, reports, recommendations and discussions whether oral or in writing, between and among the Members, the Allocation Counsel and any consultant, investigator or assistant hired to aid the Allocation Counsel, all other information obtained by the Allocation Counsel during the course of his investigation relating to the matters covered in the Agreement, and the Allocation Counsel's report, recommendations and work product ("Shared Information") are to be afforded the full scope of the protection provided in Federal Rule of Evidence 408, which limits the admissibility of settlement-related evidence. Further, such Shared Information shall be subject to the joint attorney-client privilege and shall not be disclosed to any person or entity not a party to the ADR.

2. The disclosure or submission of Shared Information by the Members to each other, to the Allocation Counsel or to any consultant, investigator or assistant hired to aid the Allocation Counsel shall be solely for the purpose of implementing the Agreement, and shall not be considered a waiver of any applicable privilege or work product immunity.

3. (A) Except as provided below, all Shared Information shall be held in strict confidence by the receiving Member and the Allocation Counsel and by all persons to whom such information is

revealed by the receiving Member or the Allocation Counsel pursuant to the Agreement, and such information shall be used only in connection with activities to carry out the purposes of the Agreement. After the ADR process is terminated, the Members shall not use the Shared Information in this or other litigation, although nothing in the Agreement or this Protective Order shall prevent a Member from seeking any document or information submitted or disclosed pursuant to the Agreement through discovery if such document or information is otherwise discoverable. No Member shall disclose Shared Information to anyone other than a Member's in-house or outside counsel, persons working under the supervision or assisting a Member's counsel, and comparable personnel or corporations that own, are owned by or are under common control with the Member. Notwithstanding the foregoing, Shared Information of the type referred to above also may be provided to a Member's insurer if the insurer agrees in writing to hold the information confidential.

(B) The Members intend by this Stipulation and Agreed Order to protect from disclosure all Shared Information to the greatest extent permitted by law.

(C) If any Shared Information is sought by legal or administrative means, or becomes subject to an administrative or judicial order requiring disclosure of such information by a Member or Allocation Counsel, the Member or Allocation Counsel shall

provide not less than ten (10) business days prior written notice of the request or subpoena to all Members. Such Member or Allocation Counsel may comply with the subpoena or request if no other Member has taken action to quash the subpoena or information request within the ten day period.

(D) Each Member shall take all necessary and appropriate measures to ensure that any person who is granted access to any Shared Information or who participates in work on common projects or who otherwise assists any counsel, the Allocation Counsel or any consultant, investigator or assistant hired to aid the Allocation Counsel in connection with the Agreement, is familiar with the terms of that Agreement and complies with those terms as they relate to the duties of that person.

(E) The confidentiality obligations of the Members under the Agreement and this Order shall remain in full force and effect, and shall survive termination of this Agreement, the termination of any legal actions arising out of the Site and/or the removal or withdrawal of a Member.

(F) Upon termination of this Agreement, all Shared Information provided by a Member shall be returned to the Member, upon the written request of such Member. In the absence of such written request within 90 days after the termination of the Agreement, all such Shared Information shall be destroyed.

4. The Members agree that this Stipulation and Protective Order shall be a binding agreement, enforceable as such upon execution by the Members. The parties to the pending litigation agree to submit this Stipulation and Protective Order to the Court for approval and entry as a Protective order.

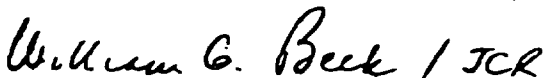
Dated: January _____, 1994 :



Jerome C. Randolph
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Attorney for Plaintiffs



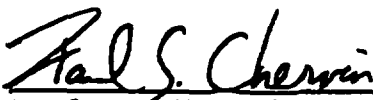
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Industries of Illinois, Inc.



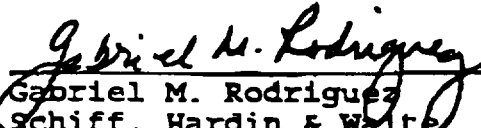
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Rubber Company

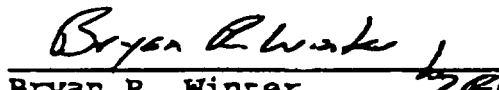


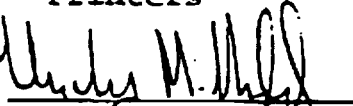
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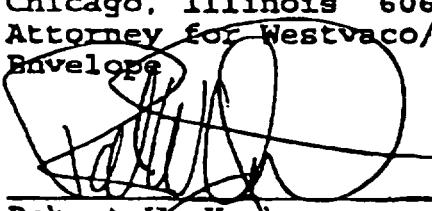



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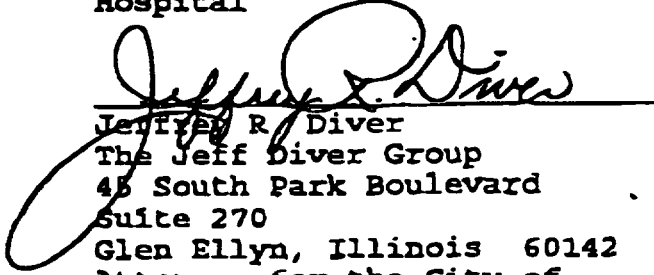

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Laboratories

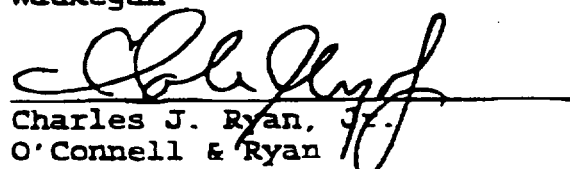

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Attorney for North Shore
Printers

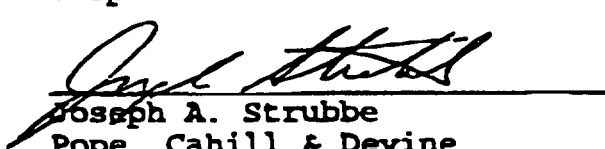

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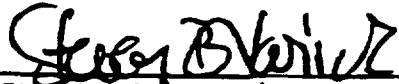

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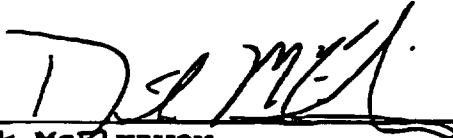

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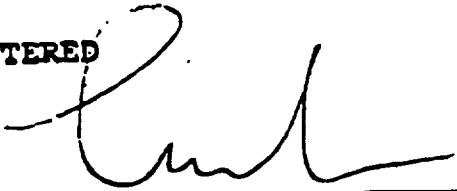


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ENTERED



JUDGE HARRY D. LEINENWEBER

DATED: March 10, 1994

Appendix F to Consent Decree: Settlement Agreement

**YEOMAN CREEK LANDFILL
SUPERFUND SITE SETTLEMENT AGREEMENT**

This Settlement Agreement is made as of December __, 1998 (the "Effective Date"), among the following parties:

Browning-Ferris Industries of Illinois, Inc., a Delaware corporation ("BFIIL"),
Browning-Ferris Industries, Inc., a Delaware corporation ("BFI"),
City of Waukegan, Illinois, a municipal corporation ("the City"),
Outboard Marine Corporation, a Delaware corporation ("OMC"),
Waukegan School District No. 60, a public entity ("the School District"),
The Goodyear Tire & Rubber Company, an Ohio corporation ("Goodyear"), and
The Dexter Corporation, a Connecticut corporation ("Dexter")

who are collectively referred to in this Settlement Agreement as "the Settling Parties."

THE FOLLOWING RECITALS ARE AGREED TO BE TRUE:

1. The United States Environmental Protection Agency ("USEPA") listed the Yeoman Creek Landfill Superfund Site ("the Site") on its National Priorities List in 1989.

2. BFIIL, OMC, the City, the School District, Goodyear and Dexter (the "RI/FS Parties") signed an Administrative Order on Consent (the "RI/FS Administrative Order") in which they committed to perform the RI/FS.

3. The RI/FS Parties signed an agreement titled "Participation Agreement Relating to RI/FS Action at Yeoman Creek/Edwards Field CERCLA Sites" ("RI/FS Agreement"), in which they committed to pay for the RI/FS according to a certain interim formula and to reallocate the costs later.

4. All obligations of the RI/FS Parties under both the RI/FS Agreement and the RI/FS Administrative Order have been fully satisfied, except with respect to (1) the reallocation of RI/FS costs among the Settling Parties, and (2) the continuing obligations under Section XXIX of the RI/FS Administrative Order and Section X of the Second Amendment to the RI/FS Administrative Order.

5. On or about April 28, 1998, USEPA issued a Unilateral Administrative Order, U.S. EPA Docket No. V-W-98-C-462 ("UAO") to the Settling Parties for performance of certain response actions including the development and implementation of an interim landfill gas management system pertaining to the Site. Without admitting any liability or any of USEPA's allegations, the Settling Parties provided notice to USEPA that they intended to perform the lawful requirements of the UAO.

6. The RI/FS Parties sued Fansteel, Inc. ("Fansteel"), Abbott Laboratories, Inc. ("Abbott"), the Waukegan Park District ("the Park District") and other defendants for contribution and a declaratory judgment of future liability for response actions at the Site, in Case No. 92 C 7592 in the United States District Court for the Northern District of Illinois ("the lawsuit").

7. By virtue of orders entered by the Court in the lawsuit, Abbott, Fansteel, the Park District and the other defendants counterclaimed against the RI/FS Parties for contribution and a declaratory judgment of future liability for response actions at the Site, and the RI/FS Parties also cross-claimed against one another, and Abbott, Fansteel, and the Park District cross-claimed against one another, for contribution and a declaratory judgment of future liability for response actions at the Site. The Park District also separately counterclaimed against the RI/FS Parties, and cross-claimed against Fansteel and Abbott for contribution.

8. In order to defend and resolve these claims and suits in the most efficient and cost-effective manner possible, the Settling Parties and others entered into an alternative dispute resolution proceeding ("the ADR proceeding") to determine a non-binding allocation of the costs of all response actions for the Site, which allocation might assist the ADR parties in resolving their differences.

9. USEPA has issued a Record of Decision selecting the Remedial Action it considers is required to address conditions at the Site.

10. The Settling Parties expect to be subject to a consent decree to perform Remedial Design, Remedial Action and other response actions at the Site ("the Consent Decree").

11. As a result of the ADR proceeding, the Settling Parties have agreed to the following terms and methods to allocate finally, as among themselves, response costs incurred to comply with the RI/FS Administrative Order and the UAO, and all other costs under the RI/FS Agreement and this Agreement, including costs that may be incurred to comply with the Consent Decree.

12. The Settling Parties do not admit any liability, fact or matter of law, but agree to settle the lawsuit and certain claims among themselves, and to cooperate with one another if they decide to comply with the Consent Decree.

IT IS THEREFORE AGREED AMONG THE SETTLING PARTIES:

1.0 *Yeoman Creek Remediation Group.* The Settling Parties hereby organize and constitute themselves as the Yeoman Creek Remediation Group (the "YCRG"), which is a voluntary association and not a partnership or joint venture. Each Settling Party is a member of the YCRG.

2.0 *Compliance with the Consent Decree.* Assuming the YCRG determines it should comply with the Consent Decree, each Settling Party shall cooperate to achieve such compliance.

3.0 *Termination of RI/FS Agreement.* The RI/FS Parties hereby terminate the RI/FS Agreement by unanimous consent, and convey ownership of the Trust Fund established under the RI/FS Agreement to the YCRG.

4.0 The Settling Parties agree to perform the following activities:

- a. negotiation with U.S. EPA and other government agencies concerning the terms of the Consent Decree;
- b. implementation of the Consent Decree, if the YCRG determines it should comply with the Consent Decree;
- c. completion of any continuing obligations under Section XXIX of the RI/FS Administrative Order, Section X of the Second Amendment to the RI/FS Administrative Order, and the UAO;
- d. assertion of claims and commencement and prosecution of litigation against other parties whom the Settling Parties claim are liable for response costs at the Site, and negotiation to resolve any such claim or litigation;
- e. repair of City streets and parkways damaged, and necessary replacement (including real property acquisition) of Butrick Avenue taken, as a result of the performance or implementation of the Consent Decree;
- f. administration of the YCRG and its funds, and of the contractor(s) performing work pursuant to the Consent Decree or this Agreement; and

- g. formation of a separate entity to undertake any of the activities contemplated in this Agreement to the extent the YCRG determines that it is advisable to do so.

4.1 For purposes of Section 4.0(e), "City streets and parkways" shall be limited to those dedicated City streets and ways adjoining or within the Site, except for that portion of Roger Edwards Avenue within the Site boundaries. Replacement of Butrick Avenue shall be considered "necessary" if the City is lawfully required to provide an alternative public way for motor vehicle access to and from those properties served by Butrick Avenue. "Damage" shall not include ordinary wear and tear. The obligation of the Settling Parties to repair City streets and parkways and replace Butrick Avenue pursuant to Section 4.0 shall include the reasonable costs in connection with such repairs or necessary replacements, including, but not limited to, legal fees and costs in pursuing or responding to claims, demands or litigation; provided, however, that it shall be a condition precedent to any request by the City for reimbursement of costs in pursuing or responding to any such claims, demands or litigation that the City first offered the YCRG a reasonable opportunity to pursue or defend any such claims, demands or litigation.

5.0 *Responsibility for Costs Incurred.* Each Settling Party agrees to pay the costs to perform the activities listed in Paragraph 4 according to the percentage share listed next to that Settling Party's name in Section 12.0. The Settling Parties agree to pay, on the same basis, any stipulated penalties for which the YCRG ultimately becomes responsible under the Consent Decree, all costs incurred under the RI/FS Agreement, all costs of indemnification for which the YCRG becomes liable under this Agreement, and all other costs associated with activities approved by the YCRG or the Steering Committee under this Agreement.

6.0 *Contributions to fund YCRG Activities.* From time to time the YCRG will require all Settling Parties to make contributions to the YCRG to fund the YCRG's activities, according to each Settling Party's percentage share. Each Settling Party will make the required payment within 30 days of receiving notice of the required payment.

7.0 *Defaults by Settling Parties.* If a Settling Party fails to pay an assessment on a timely basis, it will be in default of this Agreement, and has no rights under this Agreement, including the right to indemnity from the YCRG. Such a defaulting party will remain obligated under Paragraph 6 to contribute to the funding of the YCRG's activities, and will remain obligated under the covenant not to sue, insurance, confidentiality, waiver of conflicts, and indemnity provisions of this Agreement. Interest at 8% per year will accrue on all assessments more than 30 days past due. The YCRG may vote to waive such interest. If a Settling Party is in default more than 30 days, it will also be liable for the YCRG's costs, including attorneys' fees, to enforce the defaulting party's obligations under this Agreement.

7.1 A Settling Party will be in default if it files a voluntary bankruptcy petition, admits or fails to contest an involuntary bankruptcy petition, is adjudicated or admits it is a bankrupt or insolvent, has a receiver, custodian or trustee appointed for it, suspends its business operations, forfeits its charter or dissolves, defaults on any bonded indebtedness, or sells substantially all of its assets. "Bankruptcy" means any proceeding seeking relief from, or an arrangement with, creditors, and includes reorganization or other similar proceedings.

7.2 If a Settling Party is in default for more than 30 days, the YCRG may declare the defaulting party's percentage share of the unfunded portion of estimated future remedy costs, as well as all other amounts owing under this Agreement, to be immediately due and payable. The unfunded future remedy costs shall be calculated by deducting from the then best current estimate of future costs all amounts paid under this Agreement and amounts in escrow collected by the YCRG from others. Future remedy costs are currently estimated at \$35 million. That estimate may be modified from time to time by vote of the YCRG. Without limiting any other rights it may have, the YCRG may draw against any defaulting Settling Party's financial assurance to satisfy all or part of that party's obligations to the YCRG. Any dispute regarding application of this Section 7.2 shall be resolved in accordance with Section 28 below.

7.3 Except as provided in Section 7.1, the City shall not be considered in default if the total value of its actual cash contributions, credited in-kind contributions, and Work-in-Progress equal or exceed the amount of its assessed contributions hereunder. "Work-in-Progress" shall be the contracted-for value of materials and services which have been provided, but not credited, as in-kind contributions or which are scheduled to be provided in the next six-month period, and which have not been rejected by the YCRG. In the event the rejection of Work-in-Progress would otherwise cause the City to be in default, the City will have not more than ten (10) business days following receipt of the rejection notice to become current in its contributions without being considered in default.

8.0 *Financial Assurances.* Each Settling Party warrants that it has the ability to pay its percentage share of all costs incurred, and currently expected to be incurred, under this Agreement. Within 30 days of the YCRG's agreement, if any, to the Consent Decree, or within the time specified by some later lawful USEPA directive, each Settling Party shall procure, and maintain in force throughout the term of this Agreement, such financial assurance as is required by, and acceptable to, USEPA for that party's percentage share of the financial assurance required under the Consent Decree. If financial assurance is provided through a letter of credit, the letter of credit must state that it may be drawn upon by the YCRG or its authorized representative without action by the procuring Settling Party, and will be available to pay all monies owed by the procuring Settling Party under this Agreement. A Settling Party which does not procure or maintain adequate financial assurance is in default.

9.0 *Steering Committee.* The YCRG will act on a consensus basis through a Steering Committee composed of one representative of each Settling Party willing to regularly and actively participate. If a consensus cannot be reached, the Steering Committee will make decisions by vote of a majority of the total voting power represented on the Steering Committee, with each member's voting power equivalent to its percentage share. The selection of common counsel requires the affirmative vote of seventy-five percent (75%) of the total voting power represented on the Steering Committee. At least a majority of all percentage shares must be represented at a Steering Committee meeting to constitute a quorum. No Settling Party may vote if it is in default, and its voting power shall be disregarded in determining a quorum or a vote on any matter.

9.1 *Responsibilities of Steering Committee.* The Steering Committee will manage and administer the YCRG, including, but not limited to:

9.1.1 selecting consultants to undertake common tasks, and supervising the activities of those persons;

9.1.2 negotiating with the Government and other persons with respect to all matters relating to this Agreement;

9.1.3 recommending to the Group that additional assessments be required, and invoicing Settling Parties for approved assessments;

9.1.4 determining if a Settling Party is in default and recommending to the YCRG that litigation be commenced against a defaulting Party;

9.1.5 keeping the YCRG fully informed of activities pursuant to this Agreement;

9.1.6 administering the YCRG's funds;

9.1.7 approving invoices for payment;

9.1.8 recommending to the YCRG, for its approval, that claims or litigation be asserted or settled on behalf of the YCRG;

9.1.9 copying for any Settling Party that requests and pays for it any reports submitted to or by the Steering Committee in connection with this Agreement;

9.1.10 permitting Settling Parties to assert potential conflicts of interest concerning common counsel. At least 20 days prior to counsel's retention, the

Steering Committee will notify all Settling Parties in writing of the Steering Committee's intended selection of common counsel to allow the Settling Parties to check for potential conflicts of interest.

9.1.11 calling meetings of the YCRG as necessary, and referring for a vote any matters the Steering Committee chooses, or which this Agreement requires the YCRG to decide;

9.1.12 conducting any other activities necessary and proper to carry out this Agreement and, assuming the YCRG determines it should comply with the Consent Decree, the obligations of the Settling Parties under the Consent Decree.

9.2 The Steering Committee will provide to the Settling Parties periodic informal accountings of monies received, spent, and obligated, and a final accounting upon termination of this Agreement.

9.3 *Steering Committee Meetings.* The Steering Committee may act only at meetings duly called and held for such purpose. Any member of the Steering Committee may call a meeting.

9.4 *Notice.* Whenever feasible, each Settling Party will be given written notice of the time, place and purpose of any meeting of the YCRG or the Steering Committee at least five (5) days, and not more than thirty (30) days, prior to the meeting. Notice may be given by telephone when necessary. The Settling Party calling the meeting shall make a reasonable effort to provide notice, pursuant to this Section, to every Settling Party entitled to vote.

9.5 *Voting by Proxy.* A Settling Party entitled to vote may assign its vote at a YCRG or Steering Committee meeting, using the form attached to this Agreement as Exhibit A, to another Settling Party.

9.6 *Compensation of Steering Committee.* The Steering Committee members serve as volunteers without compensation from the YCRG other than reimbursement of expenses such as photocopying, conference call charges, etc.

10.0 *Withdrawal.* A Settling Party may freely withdraw from this Agreement until the date set by the YCRG for Settling Parties to submit their written commitments to perform the Consent Decree. If the Consent Decree, executed by some or all of the YCRG's members, is not approved by the United States or any court, the right to withdraw will reopen. If all Settling Parties do not submit written commitments within the time allowed, the Steering Committee will set a date by which the remaining Settling Parties must submit written commitments to perform the Consent Decree, which may be conditioned on other persons submitting the same written commitment. This Agreement

will terminate if less than two Settling Parties submit such a commitment. Except as stated above no Settling Party may withdraw from this Agreement.

11.0 Representation by Counsel.

11.1 Waiver of Conflicts of Interest. If the YCRG retains common counsel, each Settling Party agrees that it will not claim, except within 20 days of being notified of the Steering Committee's intent to hire particular counsel, that counsel has a conflict of interest in performing legal services authorized by the Group or the Steering Committee and arising out of the Site, or that, by virtue of counsel's representation of the YCRG, counsel has a conflict of interest in any other representation ongoing as of the date of receiving notice of the Steering Committee's intent to hire counsel. Each Settling Party also agrees that it will not claim, based solely on counsel's representation of the YCRG, that counsel has a conflict of interest in any future representation, unless the future representation involves the same or a substantially related matter in which the new client's interests are adverse to the interests of the YCRG.

11.2 Separate Counsel. Each Settling Party reserves the right to retain its own counsel to represent it on any matter.

12.0 Reallocation of Contributions to RI/FS Trust Account. The Settling Parties will receive full credit for their payments to the RI/FS Trust Fund, and those payments will be reallocated among the Settling Parties according to their percentage shares as described in this Section. Within thirty (30) days after all proceeds distributed to the Settling Parties from settlements of claims against Abbott, Fansteel, and others have been expended by the YCRG, Settling Parties whose contributions to the RI/FS Trust Fund were less than their percentage share, and Settling Parties that were not parties to the RI/FS Agreement, will pay the following amounts: BFI and BFIIL, collectively, shall pay \$623,962.98; the City shall pay \$108,185.43; the School District shall pay \$229,457.94; and Goodyear shall pay \$309,436.52. No payment shall be required from OMC or Dexter at that time. All subsequent payments shall be made in the following percentages:

BFI/BFIIL	33.857%
The City	26.602%
OMC	22.975%
School District	8.102%
Goodyear	5.441%
Dexter	3.023%
TOTAL	100.000%

12.1 Contingent upon entry of the Consent Decree by the United States District Court and distribution to the Settling Parties of all proceeds deposited by Abbott

and Fansteel into the Yeoman Creek Escrow Account established pursuant to that certain Environmental Escrow Agreement dated July __, 1998, the non-OMC YCRG members acknowledge that OMC has overpaid its equitable share of costs under the RI/FS Agreement and, notwithstanding the provisions of Paragraph 12.0 above and as an express exception thereto, will receive full payment of \$151,417.06 within thirty (30) days of the entry of the Consent Decree, subject to the availability of such sum for distribution from the Escrow Account.

12.2 Contingent upon entry of the Consent Decree by the United States District Court and distribution to the Settling Parties of all proceeds deposited by Abbott and Fansteel into the Yeoman Creek Escrow Account established pursuant to that certain Environmental Escrow Agreement dated July __, 1998, the non-Dexter YCRG members acknowledge that Dexter has overpaid its equitable share of costs under the RI/FS Agreement and, notwithstanding the provisions of Paragraph 12.0 above and as an express exception thereto, will receive full payment of \$1,119,628.81 according to the following schedule:

- (1) The sum of \$559,814.41 shall be paid within thirty (30) days of the entry by the United States District Court, of the Consent Decree, subject to the availability of such sum for distribution from the Escrow Account; and
- (2) The sum of \$559,814.40 shall be paid within three hundred ninety-five (395) days of the entry by the United States District Court, of the Consent Decree. In the event the YCRG assesses Dexter for costs under Paragraph 6.0 of this Settlement Agreement before Dexter's refund is fully paid, the amount of any such unpaid assessment shall be treated as a set-off from the refund balance until the balance is zero. Dexter shall not be required to pay an assessment under Paragraph 6.0 until its refund is fully paid.

12.3 The provisions of Paragraph 8.0 of this Settlement Agreement shall not apply to Dexter until Dexter has received full payment of its RI/FS refund.

12.4 The YCRG agrees that if it fails to pay Dexter or OMC as agreed in Sections 12.1 and 12.2 above, Dexter and OMC may pursue all relief under any legal authority and waive nothing.

13.0 *Effect of EPA's Acceptance of Responsibility for "Orphan Shares."* BFI's and BFIL's percentage share has been reduced from 34.648% to 33.857% based on the YCRG's determination that USEPA's grant of orphan share compensation (including forgiveness of USEPA and United States Department of Justice costs defined as "Past Response Costs" and "Future Oversight Costs") probably exceeds 2% of total YCRG past and future costs. The

Settling Parties expect to receive cost summaries from USEPA and the United States Department of Justice (USDOJ) documenting the amount of past costs forgiven as orphan share compensation. If the total amount of orphan share compensation reflected in all such cost summaries received through the date of completion of Remedial Action construction is between 1% and 2% of the sum of (i) all actual Site costs incurred by YCRG through completion of Remedial Action construction and (ii) the then current estimate of Operation and Maintenance costs, BFI and BFIL shall make a contribution to the YCRG (the "BFI Adjustment") equal to the amount by which such orphan share compensation is less than 2% of (i) and (ii) above. Any further orphan share compensation which was not reflected in any USEPA and USDOJ cost summaries received through the date of completion of Remedial Action construction and which benefits the YCRG through application of the \$1,841,000 credit against USEPA costs defined as "Future Oversight Costs" in the Consent Decree shall reduce the further obligations of BFI and BFIL to pay assessments until the BFI Adjustment has been fully offset.

14.0 *In-Kind Contributions.* Any Settling Party may satisfy all or part of any assessment by providing materials or services on an in-kind basis, under the terms and conditions of the agreement attached hereto as Exhibit B. No Settling Party may bid or make a proposal to provide materials or services unless it provides a statement of its intent to the other Settling Parties within ten (10) days of receiving a list from the YCRG or the YCRG's Project Coordinator specifying the materials and services needed for RD/RA specifications or for approved operation and maintenance activities. The statement of intent shall identify those materials and services from the list that the Settling Party is interested in providing or bidding to provide on an in-kind basis. The Settling Parties agree to exercise good faith, consistent with reason and economic sensibility, in allowing the City to provide in-kind contributions in satisfaction of its financial responsibilities hereunder. The City may not, however, provide or bid for the provision of services after completion of Remedial Action construction or bid to provide the services of the YCRG's Project Coordinator. Further, BFI and BFIL may not provide or bid for the provision of services during Remedial Action construction, except that BFI or BFIL may propose or bid to provide the services of the YCRG's Project Coordinator.

15.0 *Claims Against other Persons.* Each Settling Party assigns to the YCRG all rights the Settling Party may have to pursue claims against non-Settling Parties, except insurers, by way of contribution, cost recovery or otherwise for claims related to or arising out of the Settling Party's incurrence of any costs or expenses to comply with the RI/FS Administrative Order or the UAO, and all other costs incurred or to be incurred pursuant to this Agreement and the RI/FS Agreement. The YCRG may only assert or resolve any claim or litigation on behalf of the YCRG against other persons with the consent of seventy-five percent (75%) of the percentage shares of the YCRG. Any Settling Party may elect to decline to fund and/or be a party to any such suit, claim or settlement, and in that event that Settling Party will not share in the expense of, or the recoveries from, such claim, suit or settlement, and it will not vote upon, and its percentage share will be disregarded in

considering, any such claim, suit or settlement. No Settling Party will enter a settlement with any third party settling the assigned claims. The assignment of claims in this Section shall not apply to claims of any Settling Party arising out of or connected with any third-party claims for personal injury, death or property damage, any governmental claims for damages to Natural Resources, or any claims related to off-site disposal of wastes or materials currently located at the Site. For the purposes of this Agreement, "Natural Resources" has the meaning stated in CERCLA §101(16); "damages to Natural Resources" includes all costs associated with assessing the existence of or amount of such damage, injury, destruction, or loss.

16.0 *New Settling Parties.* Any entity that becomes a Settling Party after the effective date of this Agreement will pay all sums which it would have been obligated to pay if it had been a Settling Party on the effective date of this Agreement. The YCRG may impose different terms and conditions (but in no event more favorable than those set forth herein), including the imposition of interest or late fees, upon any entity seeking to enter this Agreement after its effective date. The percentage shares of, and the terms and conditions for admitting, new Settling Parties will be determined by an affirmative vote of seventy-five percent (75%) of the percentage shares of the YCRG.

17.0 *Covenant not to Sue.* In consideration of the mutual undertakings in this Agreement, each Settling Party covenants not to sue any other Settling Party or any other Settling Party's parent, subsidiary, affiliate, predecessor or successor entities (the "Related Entities"), or present or former officers, directors, employees or agents of the Settling Party or of the Related Entities (based on actions performed in such capacity), or any other Settling Parties' insurer (in its capacity as such), with respect to any claims or liabilities concerning costs or expenses incurred by any Settling Party to comply with the RI/FS Administrative Order or the UAO, and all other costs incurred or to be incurred pursuant to this Agreement and the RI/FS Agreement, except for any claims relating to the enforcement of this Agreement or any claims reserved pursuant to the Consent Decree. Notwithstanding anything to the contrary herein, the covenant provided in this Section shall not apply to claims of any Settling Party arising out of or connected with any third-party claims for personal injury, death or property damage, any governmental claims for damages to Natural Resources, or any claims related to off-site disposal of wastes or materials currently located at the Site except as required by the Consent Decree.

18.0 *Insurance.* Notwithstanding any other provision of this Agreement, each Settling Party retains the benefit of its own insurance. The Settling Parties do not intend hereby to prejudice any Settling Party with respect to its insurers and, by entering into this Agreement, anticipate that the actions taken pursuant to this Agreement will benefit their insurers. If any insurer claims that any aspect of this Agreement provides a basis for rejection or limitation of coverage of a Settling Party, the YCRG will attempt, consistent with the objectives of this Agreement, to return any Settling Party subject to such claim to a position that is satisfactory to its insurers.

19.0 *Shared Information.* The Settling Parties intend that no claim of work product privilege or other privilege will be waived by reason of participation or cooperation pursuant to this Agreement, or by sharing of information between and among the Settling Parties and technical, administrative or legal consultants performing work on behalf of the YCRG or an individual Settling Party, whether orally, in writing, or by any other means. "Shared Information" shall mean information the Settling Parties may elect to disclose or transmit to each other from time to time, directly or through legal, administrative or technical consultants hired by the YCRG, which such Settling Party or legal or technical consultant deems appropriate for the sole and limited purpose of coordinating activities that are necessary and proper to carry out the purposes of this Agreement. "Shared Information" as used in this Agreement also refers to all information falling within the definition of "Shared Information" in the RI/FS Agreement. All Shared Information is intended to be kept confidential and to be used only for the purpose of performing this Agreement. Information disclosed by a Settling Party to legal, administrative or technical consultants appointed by the Steering Committee to perform specified work may be disclosed to any other Settling Party to effectuate the purposes of this Agreement. The Settling Parties intend by this Section to protect from disclosure all Shared Information to the greatest extent permitted by law regardless of whether the sharing occurred before execution of this Agreement.

19.1 The Settling Parties expect that the information to be generated and disclosed pursuant to this Agreement will contain confidential attorney work product and attorney-client communications that are privileged, and that represent part of the Settling Parties' joint efforts to prosecute and defend claims and litigation by USEPA, other governmental entities, and private parties including the defendants in the lawsuit. This information constitutes "Joint Defense Information."

19.2 If any Shared Information becomes the subject of discovery requests or an administrative or judicial order requiring disclosure by a Settling Party, where the information will be unprotected by confidentiality obligations, the Settling Party may satisfy its confidentiality obligations under this Agreement by notifying the counsel or consultant who generated the information and the Steering Committee. Such notice must be provided, whenever possible, before disclosure occurs.

19.3 Each Settling Party will require any person granted access to any Shared Information, or who participates in work on common projects or who otherwise assists any counsel or technical consultant in connection with this Agreement, to sign the Confidentiality Agreement attached as Exhibit C. If a Settling Party becomes aware of a breach or threat of a breach of such an executed Confidentiality Agreement, that Settling Party will report that fact immediately to the Steering Committee.

19.4 The privileges, rights and obligations imposed or recognized by this Section survive the termination of this Agreement. This Section does not apply to information which becomes public without violation of this Agreement.

19.5 Nothing in this Agreement prevents or restricts counsel for a particular Settling Party from rendering legal advice to that Settling Party with respect to the lawsuit or any other claim, litigation or investigation related to the Site and, in the course thereof, relying on counsel's knowledge and examination of Shared Information or Joint Defense Information.

19.6 This Section 19 is not intended to limit or otherwise affect the ability of any Settling Party to assert any applicable privilege, including the joint defense privilege, with respect to communications occurring prior to the execution of this Agreement, or with respect to persons other than Settling Parties.

20.0 *Successors and Assigns.* This Agreement is binding upon the successors and assigns of the Settling Parties. No assignment or delegation of the obligation to make any payment or reimbursement under this Agreement will release the assigning Settling Party without the prior written consent of the Steering Committee.

21.0 *Allocation in the Event of Default.* As set forth in Section 7, any Settling Party who has failed to pay an assessment under this Agreement is in default, and remains obligated to pay all past and future assessments under this Agreement. Nevertheless, pending collection of past or future unpaid assessments from the defaulting party, and without waiver of the YCRG's rights against the defaulting party, as an interim measure the YCRG may assess the due and unpaid balance of any defaulting Settling Party's share against the other Settling Parties hereto according to their relative percentage shares.

22.0 *Advice of Counsel.* No Settling Party, or representative or counsel for any Settling Party, has acted as counsel for any other Settling Party with respect to such Settling Party entering into this Agreement, except as expressly engaged by such Settling Party with respect to this Agreement, and each Settling Party represents that it has sought and obtained any appropriate legal advice it deems necessary prior to entering into this Agreement.

22.1 No Settling Party or its representative serving on any committee or subcommittee shall act as legal counsel or legal representative of any other Settling Party, unless expressly retained by such Settling Party for such purpose, and except for such express retention, no attorney/client relationship or fiduciary relationship is intended to be created between representatives on the Steering Committee and the Settling Parties.

23.0 *Waiver and Release of Liability.*

23.1 *Waiver and Release.* No Settling Party or its representative serving on any committee shall be liable to any other Settling Party for any claim, demand, liability, cost, expense, legal fee, penalty, loss or judgment incurred or arising as a result of any acts or omissions taken or made pursuant to this Agreement. However, nothing in this Section shall constitute a waiver or release of any contribution or indemnification claim or potential

claim by a Settling Party against any other Settling Party which is reserved within the scope of the Consent Decree or which arises out of or is connected with any third-party claims for personal injury, death or property damage, any governmental claims for damages to Natural Resources, or any claims related to off-site disposal of wastes or materials currently located at the Site. In addition, this Section shall not apply to release a Settling Party from any liability or obligation arising under an agreement to provide materials or in-kind services in satisfaction of all or part of any assessment.

23.2 This Section survives the termination of this Agreement.

24.0 *Indemnification.*

24.1 *Indemnification.* Each Settling Party agrees to indemnify, defend and hold harmless any Settling Party and its representatives from and against any claim, demand, liability, cost, expense, legal fee, penalty, loss or judgment (collectively "Liability") which in any way relates to the good-faith performance of any duties under this Agreement by any Settling Party or its representatives on behalf of the Steering Committee, Project Coordinator, or the YCRG, including, but not limited to, any liability arising from any contract, agreement or instructions to the custodians of the YCRG's funds signed by the Settling Party or its representatives at the request of the Steering Committee or the YCRG, except as provided herein. Upon any claim, demand, notice or suit being made, given or filed by any non-Settling Party against any Settling Party regarding any liability subject to this indemnity, the affected Settling Party will notify all Settling Parties in writing. This Section shall not apply to any liability arising from a criminal conviction where the Settling Party or its representatives had reasonable cause to believe that the conduct in question was unlawful. In addition, this Section shall not apply to any liability or obligation arising under any agreement by a Settling Party to provide materials or in-kind services in satisfaction of all or part of any assessment. Nothing in this Section shall constitute a waiver or release of any contribution or indemnification claim or potential claim by any Settling Party which is reserved within the Consent Decree or which arises out of or is connected with any third-party claims for personal injury, death or property damage, any governmental claims for damages to Natural Resources, or any claims related to off-site disposal of wastes or materials currently located at the Site. Each Settling Party's obligation to provide indemnification is limited to its percentage share.

24.2 This Section survives the termination of this Agreement.

25.0 *Notice of a Change in Representation.* All notices, bills, invoices, reports, and other communications with a Settling Party shall be sent to the representative designated by the Settling Party on its signature page. Any Settling Party may change its representative by written notice to the Chairperson of the Steering Committee.

26.0 *Termination.* Except as otherwise provided herein, this Agreement shall terminate upon the termination of the Consent Decree, or upon the withdrawal or default of all the signatories.

27.0 *Amendments.* Notwithstanding entry of the Consent Decree, this Agreement may be amended by unanimous vote of 100% of the percentage shares of the Settling Parties (except that percentage shares may be altered by the effect of the default or withdrawal of a Settling Party pursuant to Sections 7 and 10 or by the admission of new Settling Parties pursuant to Section 16).

28.0 *Dispute Resolution.* All disputes arising under this Agreement shall be resolved through binding arbitration as follows:

28.1 All such disputes shall in the first instance be the subject of good faith, informal negotiations. If the dispute is not resolved through such negotiations, the dispute shall be considered to have arisen when any Settling Party sends the other members of the YCRG a written Notice of Dispute and Statement of Position setting out the facts relevant to the dispute and any supporting documentation or materials.

28.2 Within fourteen (14) days after receipt of the Notice of Dispute and Statement of Position, the other party(ies) to the dispute shall serve its/their Statement of Position. After this exchange of Statements of Position, a neutral arbitrator, jointly selected by the parties to the dispute, shall issue a final decision resolving the dispute, to which each party agrees to be bound. The arbitrator shall be a person with expertise concerning the subject matter of the dispute.

29.0 *Entire Agreement.* This Agreement constitutes the entire understanding of the Settling Parties with respect to its subject matter and supersedes any previous agreements entered into with respect to the Site.

30.0 *Applicable Law.* The Settling Parties agree that Illinois law will govern the enforcement and interpretation of this Agreement. The Settling Parties agree not to contest personal jurisdiction in the United States District Court for the Northern District of Illinois, Eastern Division (or, in the absence of subject matter jurisdiction, in the Circuit Court of Lake County, Illinois) for litigation brought to enforce or interpret this Agreement.

31.0 *Separate Documents.* This Agreement may be executed in two or more counterparts each of which is an original, but all of which together constitute one and the same instrument.

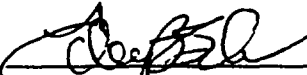
IN WITNESS WHEREOF, the Settling Parties enter into this Agreement, which may be by and through their appointed counsel. Each person signing this Agreement represents

and warrants that he or she has been duly authorized to enter into this Agreement by the company or entity on whose behalf they are signing.

Dated: 12/15/98

Browning-Ferris Industries, Inc.

Browning-Ferris Industries
Settling Party: of Illinois, Inc.

By: 
(Name and Title)

Eileen B. Schuler

Designated Representative For Receipt of Notice and Invoices:

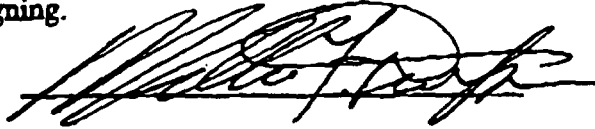
Name: Michael L. Miller
Director of CERCLA Activities

Address: 757 North Eldridge
Houston, TX 77079

Telephone Number: (281) 870-7937

Facsimile Number: (281) 584-8669

and warrants that he or she has been duly authorized to enter into this Agreement by the company or entity on whose behalf they are signing.



Date: December 17, 1998

Settling Party: City of Waukegan

By: William F. Durkin, Mayor
(Name and Title)

Designated Representative For Receipt of Notice and Invoices:

Name: City Clerk of City of Waukegan
Attention: Corporation Counsel

Address: 410 Robert V. Sabonjian Place
Waukegan, IL 60085

Telephone Number: (847) 599-2513

Facsimile Number: (847) 360-9744

and warrants that he or she has been duly authorized to enter into this Agreement by the company or entity on whose behalf they are signing.



Dated: 12-16-98

Settling Party: Outboard Marine Corporation
Robert S. Romano

By: Vice President, General Counsel and Secretar
(Name and Title)

Designated Representative For Receipt of Notice and Invoices:

Name:	<u>Joseph S. Moran</u>
	<u>Senior Environmental Counsel</u>
	<u>Outboard Marine Corporation</u>
Address:	<u>100 Sea Horse Drive</u>
	<u>Waukegan, IL 60085</u>
Telephone Number:	<u>847-689-5595</u>
Facsimile Number:	<u>847-689-6246</u>

and warrants that he or she has been duly authorized to enter into this Agreement by the company or entity on whose behalf they are signing.

Thomas A Morris Jr.

Dated: 12-15-98

Settling Party: Waukegan School Dist. 60

By: Thomas Morris Jr., Its Attorney
(Name and Title)

Designated Representative For Receipt of Notice and Invoices:

Name: Thomas A. Morris Jr.

Address: 222 N. LaSalle St., Ste. 300
Chicago, IL 60601-1081

Telephone Number: 312/704-3000

Facsimile Number: 312/704-3001

and warrants that he or she has been duly authorized to enter into this Agreement by the company or entity on whose behalf they are signing.

Dated: December 14, 1998
Attest: [Signature]
P. A. Kempf, Assistant Secretary

Settling Party: The Goodyear Tire & Rubber Company
C. Thomas Harvie
By: C. Thomas Harvie, Vice President
(Name and Title)

Designated Representative For Receipt of Notice and Invoices:

Name: Neal T. Rountree
Attorney
Address: The Goodyear Tire & Rubber Company
1144 East Market Street
Akron, OH 44316-0001
Telephone Number: 330-796-3737
Facsimile Number: 330-796-8836

and warrants that he or she has been duly authorized to enter into this Agreement by the company or entity on whose behalf they are signing.

Pierre C. Talbert

Dated: 16 December 1998

Settling Party: The Dexter Corporation

By: Pierre C. Talbert, One of Its
Attorneys
(Name and Title)

Designated Representative For Receipt of Notice and Invoices:

Name: Pierrre C. Talbert
Katz, Randall & Weinbert

Address: 333 W. Wacker Dr., #1800
Chicago, Illinois 60606

Telephone Number: 312.807.3800

Facsimile Number: 312.807.3903

EXHIBIT A

**YEOMAN CREEK/EDWARDS FIELD I ANDFILLS
SITE GROUP PROXY**

I, the duly authorized representative of _____, (hereinafter the "Settling Party") grant the Proxy of the Settling Party to _____ for the _____ meeting on _____, 199____. _____ is authorized to vote for Settling Party at such meeting (and at any adjournment thereof) on any issue, except for those listed below, put to a vote in accordance with the Yeoman Creek/Edwards Field Landfills Superfund Site Settlement Agreement. For those issues noted below, _____ has no authority on behalf of the Settling Party and must abstain from voting on the Settling Party's behalf.

Settling Party: _____

Date: _____

By: _____

(Name and Title)

Issues for which this proxy is not granted:

1. _____
2. _____
3. _____

EXHIBIT B

MASTER AGREEMENT FOR PROVISION OF MATERIALS AND SERVICES

This Master Agreement for Provision of Materials and Services ("Agreement") is entered into this __ day of ____, 19__ between _____ (the "In-Kind Provider") and the Yeoman Creek Remediation Group ("YCRG"). For purposes of this Agreement, the "Group" shall consist of those signatories to that certain agreement titled Yeoman Creek/Edwards Field Landfills Superfund Site Settlement Agreement dated November __, 1998 ("Settlement Agreement"), except the In-Kind Provider, which is also a signatory to that agreement.

1. **Purpose.** The purpose of this Agreement is to describe those methods through which the In-Kind Provider may satisfy all or some portion of its obligations under the Settlement Agreement by providing materials and/or services required for the performance of a Remedial Action at the Yeoman Creek Landfill Site.

The terms and conditions of this Agreement apply to those materials and services to be provided by the In-Kind Provider pursuant to the process described in Sections 6(a) - 6(d). In the event the In-Kind Provider provides materials or services through the competitive bid or other process, as provided in Section 6(e), the applicable terms and conditions shall be as stated in the accepted bid or proposal.

2. **Definitions.** The terms listed below shall have the following meanings for purposes of this Agreement:

a. Remedial Action: those activities required for the design, construction, operation and maintenance of the remedy for the Yeoman Creek Landfill Site, as described in the Consent Decree.

b. Yeoman Creek Landfill Site: the area described as the Site in the Consent Decree.

c. Group: all Settlement Agreement signatories except the In-Kind Provider.

d. Non-Party: any person or entity not a party to this Agreement.

e. Services/Materials List: a list prepared from time to time by the YCRG or YCRG's Project Coordinator containing a description of services and materials to be purchased by the Settling Parties for performance of the Remedial Action and including specifications for such services and materials.

f. Proposal for Services/Materials: a written proposal prepared by the In-Kind Provider to provide services and/or materials, including a description of all Non-Standard Terms and Conditions pursuant to which the In-Kind Provider proposes to provide such materials and/or services.

g. Standard Terms and Conditions: the terms and conditions set forth in this Master Services Agreement which shall apply to all services and materials provided by the In-Kind Provider hereunder.

h. Non-Standard Terms and Conditions: those terms and conditions pursuant to which the In-Kind Provider provides a particular material or service hereunder, including but not limited to price, personnel and their qualifications, the

method of transportation and or delivery of materials and arrangements for waste disposal or treatment.

i. **Settling Parties**: those entities who are signatories to the Settlement Agreement.

j. **Site Costs**: costs incurred pursuant to the RI/FS Agreement and all amendments thereto, and costs incurred and to be incurred pursuant to the UAO and the Settlement Agreement.

k. **Consent Decree**: the Consent Decree pursuant to which the Settling Parties are required to perform the Remedial Action, and any USEPA approved Scope of Work, plans or other documents submitted thereunder.

3. **Form of Agreement**. This Agreement shall be comprised of this Master Agreement for Provision of Materials and Services, the Services/Materials List(s) and any Proposal(s) for Services/Materials that are accepted by the YCRG.

4. **Project Coordinators**. Within ten (10) days of the execution of this Agreement, and within five (5) days of any change in the designation, the parties to this Agreement shall notify each other, in writing, of the name, address, telephone and fax numbers of the persons designated to serve as their respective Project Coordinators for the implementation of this Agreement. All notices required to be given under this Agreement shall be given to the Project Coordinators.

5. **Standard Terms and Conditions**. All services and/or materials to be provided by the In-Kind Provider shall be provided consistent with the terms and conditions set forth in this Master Agreement.

6. **Contracting Process.** The following process shall be used to identify the services and/or materials to be provided by the In-Kind Provider and to reach agreement on all Non-Standard Terms and Conditions under which such materials and/or services will be provided.

a. **Services/Materials List:**

At any time, but not later than ten (10) days following receipt of USEPA approval of the Remedial Design, the YCRG or YCRG's Project Coordinator will prepare a Services/Materials List. The Project Coordinator shall prepare such additional Services/Materials Lists from time to time at his or her discretion as are necessary to ensure the timely implementation of the Remedial Action by the Settling Parties. Each Services/Materials List shall contain the same description of the services/materials to be purchased as would be (or are, ultimately) included in a request for proposal or bid solicitation to be submitted to a Non-Party and shall at a minimum include any and all applicable performance standards and other specifications identified in the Remedial Design and/or the Consent Decree. Except as provided in subparagraph 6(f) below, the YCRG or YCRG's Project Coordinator shall transmit to the Settling Parties a Services/Materials List no later than 60 days prior to the date on which requests for proposals or bid solicitations for the services and/or materials identified in the List would otherwise be transmitted to Non-Parties (the "Bid Solicitation Date"). Each Services/Materials List shall identify the

Bid Solicitation Date for each category of services and materials listed therein.

b. Statement of Intent:

No Settling Party may bid or make a proposal to provide materials or services as an In-Kind Provider unless it provides a written Statement of Intent to each of the other Settling Parties within ten (10) days of receiving the Services/Materials List. The Statement of Intent shall identify each of the materials and services contained on the Services/Materials List that the Settling Party is interested in providing as an In-Kind Provider. A Settling Party shall be precluded from making any proposal or bid as an In-Kind Provider to provide any service or material that is not specified in its Statement of Intent.

c. Proposal for Services/Materials:

No later than 30 days prior to the Bid Solicitation Date, the In-Kind Provider shall transmit to the YCRG or YCRG's Project Coordinator one or more Proposal(s) for Services/Materials. The Proposal(s) shall identify all those services or materials contained in the In-Kind Participant's Statement of Intent that the In-Kind Provider proposes to provide and shall identify in detail all Non-Standard Terms and Conditions pursuant to which such materials and/or services would be provided. The YCRG shall not disclose to anyone other than the Project Coordinator any Proposal for

Services/Materials submitted by the In-Kind Provider that has not been accepted by the YCRG.

d. Negotiations/Final Agreement:

The In-Kind Provider and the YCRG shall come to a final agreement on all Non-Standard Terms and Conditions no later than 5 days before the Bid Solicitation Date. As used in this subparagraph, a "final agreement" will be deemed to have been reached when a majority of the YCRG, then entitled to vote, has either accepted or directed the YCRG's Project Coordinator to accept the In-Kind Provider's Proposal for Services/Materials and the original or revised Non-Standard Terms and Conditions.

e. Provision of Materials/Services by Non-Parties:

If the YCRG does not accept the In-Kind Provider's Proposal for Services/Materials within the designated time-frame, then the materials or services shall be obtained from a Non-Party (Parties) or from the In-Kind Provider through a competitive bid process, or through requests for proposals. The In-Kind Provider may participate in such bid or other process on the same terms as any other participant. The YCRG shall in good faith and to the greatest extent practicable solicit bids and/or requests for proposals in such a way as to allow comparison of such bids or proposals with bids or proposals for the same materials or services submitted by the In-Kind Provider. Where the In-Kind Provider's bid or

proposal meets or surpasses the terms of bids or proposals submitted to the YCRG by other vendors or contractors, based on the totality of factors relevant to the YCRG's awarding of a particular contract, the YCRG shall award the contract to the In-Kind Provider.

f. Reduced Time for Proposals/Bids:

The YCRG's Project Coordinator, by written notice to all Settling Parties, may reduce any time intervals allowed to make or negotiate proposals or bids to provide materials or services as an In-Kind Provider under this Agreement in the event and only to the extent he or she learns that a shorter time period or earlier due date is necessary to achieve compliance with the Consent Decree.

7. Credits Against In-Kind Provider's Share of Site Costs. The amount of the credit to be given against the In-Kind Provider's share of Site Costs for its provision of services or materials and the timing of such credit shall be one of the Non-Standard Terms and Conditions to be included in each of the In-Kind Provider's Proposals for Materials/Services and shall be a term on which the YCRG and the In-Kind Provider must reach final agreement no later than 5 days from the Bid Solicitation Date. No credit hereunder shall be given prior to inspection and final acceptance pursuant to Section 13 of this Agreement.

In the event the In-Kind Provider provides materials or services through the competitive bid or other process, as provided in Section 6(d), the In-Kind Provider shall

be provided credits in place of payments. The amount and timing of credits (payments) shall be provided in the accepted bid or proposal.

8. **Authority and Ability to Provide Materials/Services.** The In-Kind Provider warrants that it has all requisite authority and capability to enter into and fulfill all of its obligations under this Agreement. Prior to the execution of this Agreement the In-Kind Provider shall have provided the YCRG with a written opinion from the Corporation Counsel for the In-Kind Provider stating that the In-Kind Provider has the legal authority to enter into and fulfill its obligations under this Agreement. This opinion is attached hereto as Attachment _____. Prior to the provision of any materials or services under this Agreement, the In-Kind Provider shall obtain all necessary approvals. The In-Kind Provider acknowledges that the provisions of this Section 8 are essential elements of this Agreement.

9. **Indemnification.** The In-Kind Provider shall indemnify, defend and hold harmless the Group, its members and their respective agents, directors, officers, shareholders, representatives and employees from and against any and all losses, fines, penalties, costs, damages, claims or causes of action or expenses of any kind to which any or all of them may incur or become subject to, to the extent such result from acts or omissions of the In-Kind Provider, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control, in providing services or materials under this Agreement. Neither the Group nor any of its members shall be held out as a party to any contract or subcontract entered into by or on behalf of the In-Kind Provider in providing services or materials hereunder. Neither the In-Kind

Provider nor any of its contractors or subcontractors shall be considered an agent of the Group or any of its members.

10. **Insurance.** Prior to providing any services hereunder, the In-Kind Provider shall procure and maintain at its sole cost and expense the following insurance coverages at the indicated limits:

a) Workers' Compensation and Employer's Liability Insurance, statutory limits;

b) General Liability Insurance at One Million Dollars (\$1,000,000) per occurrence and in aggregate;

c) Automobile Liability Insurance at One Million Dollars (\$1,000,000) per occurrence and in aggregate.

The Group and each of its members shall be named as additional insureds as their interests may appear. No later than fifteen (15) days before providing any services or procuring or delivering any materials hereunder the In-Kind Provider shall provide to the Group certificates of such insurance evidencing the required coverage and shall resubmit such certificates each year on the anniversary of the effective date of this Agreement.

11. **Compliance With Laws.** The In-Kind Provider shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any governmental authority relating to its provision of materials or services hereunder and shall hereby be responsible for its employees', agents' and subcontractors' compliance therewith. The In-Kind Provider represents that its employees and agents shall be properly trained, registered

and certified, as required for the provision of services or materials. The In-Kind Provider shall have sole responsibility for the health, safety and welfare of its employees and agents in providing materials or services and shall exercise due care, and comply with all legal requirements, to protect the health, safety and welfare of its employees and agents involved in providing materials or services.

12. Representations and Warranties.

a. The In-Kind Provider represents and warrants that its agents and employees are qualified to provide the services and materials for which the In-Kind Provider submits any Proposal and that such services and materials will be provided in a workmanlike manner. The In-Kind Provider covenants that the services and materials shall be provided in accordance with the foregoing specifications and that if any of the foregoing specifications have not been met, the In-Kind Provider shall promptly correct such nonconforming services or materials at no cost to the Group.

b. The In-Kind Provider represents and warrants that all equipment and materials provided herein (i) shall conform to the specifications of each Services/Materials List, (ii) shall be free from defects in design, manufacture, material and workmanship, and (iii) shall be free from any security interest or other encumbrance and from any hostile claim of title. The In-Kind Provider covenants that the equipment and materials provided hereunder shall conform to the foregoing standards.

(1) The warranties of this Section 12(b) shall survive for the longer of the following time periods with respect to each item of equipment and material (i) one (1) year from the date of final acceptance of the particular equipment and materials pursuant to Section 13 hereof; or (ii) the warranty period allowed by the manufacturer and/or supplier of such equipment or materials.

(2) The In-Kind Provider shall, at the direction of the YCRG, provided such direction is given during the applicable warranty period, promptly replace or repair, without charge to the YCRG, any equipment or materials which fail to meet any of the foregoing standards.

(3) Such repaired or replaced equipment and materials shall be subject to this Section 12(b) except that time elapsed after final acceptance of the equipment or materials, and prior to written notification by the YCRG of the nonconformance, shall be deducted from the applicable warranty period for the purpose of computing time remaining in the warranty period for the repaired or replaced items.

(4) Any time subsequent to notification by the YCRG of the nonconformance and prior to repair or replacement and redelivery shall be added to the applicable warranty period for the

purpose of computing time remaining under Section 12(b) warranties for such repaired or replaced items.

(5) Notwithstanding anything herein to the contrary, items repaired or replaced pursuant to this Section 12(b) shall have a remaining warranty period under Section 12(b) of no less than one (1) year.

(6) In addition to all of the foregoing, the In-Kind Provider shall (i) promptly inform the YCRG of all manufacturer's, supplier's and other warranties on equipment and materials provided hereunder and the availability of any extended warranties, including information regarding related cost, (ii) after informing the YCRG pursuant to the foregoing and obtaining the YCRG's approval therefor, use its best efforts to obtain such warranties and extensions thereof, the cost of such to be borne by the YCRG and (iii) at the direction of the YCRG, assign the specific warranty to the YCRG.

c. In addition to the rights and remedies set forth in this Section 12, the In-Kind Provider shall reimburse the YCRG for any loss or damage to the extent such arises out of any failure to comply with the standards in this Section. The rights and remedies contained in this Section 12 shall be in addition to and shall not limit any rights or remedies which the YCRG may have elsewhere in this Agreement or otherwise at law or in equity.

13. Inspection, Final Acceptance and Rejection.

a. All equipment and materials provided hereunder shall be subject to inspection, review and testing by the YCRG at its cost.

b. Final acceptance or rejection of equipment or materials shall be in writing, and made as promptly as practicable but in no event more than 60 days following the YCRG's receipt of the In-Kind Provider's notice of delivery or installation unless a different schedule is established as an agreed Non-Standard Term and Condition of the In-Kind Provider's Proposal for Services/Materials; provided, however, that failure to inspect, accept or reject such items shall not relieve the In-Kind Provider from its responsibility under Section 12. Rejections shall specify the rejected equipment or material and the manner in which it fails to meet stated specifications or the warranties in Section 12.

c. Inspection, review or testing by the YCRG of any equipment or material provided hereunder does not relieve the In-Kind Provider from any responsibility regarding defects or inadequacies which are discovered and reported to the In-Kind Provider prior to expiration of the warranty period set forth in Section 12 hereof.

d. Final acceptance of equipment or materials shall be evidenced by the YCRG's written certification to the In-Kind Provider that the particular item has been accepted by the YCRG or expiration of the

period stated in subparagraph b, without the YCRG's written rejection of such equipment or materials.

14. **Dispute Resolution.** All disputes concerning the acceptability of materials or services provided pursuant to this Agreement, or the failure of such materials or services to achieve performance or other standards set forth in the Consent Decree, shall be resolved through binding arbitration as follows:

a. All such disputes shall in the first instance be the subject of good faith, informal negotiations. If the dispute is not resolved through such negotiations, the dispute shall be considered to have arisen when one party sends the other a written Notice of Dispute and Statement of Position setting out the facts relevant to the dispute and any supporting documentation or materials.

b. Within fourteen (14) days after receipt of the Notice of Dispute and Statement of Position, the other party shall serve its Statement of Position. After this exchange of Statements of Position, a neutral arbitrator, jointly selected by the In-Kind Provider and the Group, shall issue a final decision resolving the dispute, to which both parties agree to be bound. The arbitrator shall be a person with expertise concerning the subject matter of the dispute.

15. **Title and Risk of Loss and Damage.** The In-Kind Provider shall retain title to and risk of loss and damage on equipment and materials provided hereunder until final acceptance thereof by the YCRG pursuant to Section 13.

16. **Compliance with Consent Decree.** Any materials or services to be provided by the In-Kind Provider shall be provided in compliance with the terms of the Consent Decree, and the In-Kind Provider shall have sole responsibility for ensuring such compliance.

17. **Stipulated Penalties Imposed by USEPA or IEPA.** The In-Kind Provider shall defend, indemnify, and hold the Group harmless from and against claims for any stipulated penalties assessed against the Settling Parties to the extent such arise out of or relate to the failure of any services or materials provided hereunder, or the In-Kind Provider's provision of such services or materials, to comply with the Consent Decree. In the event the Group makes any payment in settlement or defense of any such claims for stipulated penalties, responsibility for defense and settlement costs shall be subject of dispute resolution between the Group and the In-Kind Provider under Section 14 above; provided, however, it shall be a condition precedent to any Group request for dispute resolution that the Group, before agreeing to pay or paying any stipulated penalties, first offered the In-Kind Provider a reasonable opportunity to participate in the defense or negotiation of any claim for such penalties.

18. **No Modification.** The terms and conditions contained in this Agreement shall not be modified except by a written modification signed by the authorized representatives of the YCRG and the In-Kind Provider.

19. **Governing Law.** All rights of the parties hereto shall be governed as to validity, enforcement, interpretation, construction, effect and in all other respects by the laws of the State of Illinois.

20. **Headings**. Headings of particular Sections herein are inserted only for convenience and are in no way to be construed as a limitation of the scope of the Sections to which they refer.

21. **Counterparts**. This Agreement may be signed in two or more counterparts, each of which shall be treated as an original but which, when taken together, shall constitute one and the same instrument.

22. **Signatories**. The undersigned representative of the In-Kind Provider and of the YCRG certifies that he or she is fully authorized to enter into this Agreement and to legally bind such party to this Agreement.

IN-KIND PROVIDER

YEOMAN CREEK
REMEDIAL GROUP

By: _____

By: _____

Signature: _____

Signature: _____

Title: _____

Title: _____

EXHIBIT C

CONFIDENTIALITY AGREEMENT

THIS CONFIDENTIALITY AGREEMENT, will memorialize the undersigned's agreement with respect to Shared Information (as defined below) obtained in connection with the common defenses and actions of the Yeoman Creek Remediation Group ("YCRG") formed under that certain Yeoman Creek Landfill Superfund Site Settlement Agreement dated December __, 1998 ("Settlement Agreement"). The undersigned has executed this Confidentiality Agreement in consideration of its receipt of Shared Information and/or participation in work on common projects of the YCRG or assistance of any counsel or technical consultant in connection with any activity undertaken pursuant to the Settlement Agreement.

1. The purpose of this Confidentiality Agreement is to ensure that no claim of confidentiality or work product privilege or other privilege will be waived by reason of the YCRG's participation or cooperation with the undersigned pursuant to the Settlement Agreement, or by sharing of information between and among the members of the YCRG and technical, administrative or legal consultants performing work on behalf of the YCRG or an individual member of the YCRG, whether orally, in writing, or by any other means.

2. "Shared Information" shall mean information the members of the YCRG may elect to disclose or transmit to each other from time to time, directly or through legal, administrative or technical consultants hired by the YCRG, which such YCRG member or legal or technical consultant deems appropriate for the sole and limited purpose of coordinating activities that are necessary and proper to carry out the purposes of the Settlement Agreement. "Shared Information" also refers to all information falling within the definition of "Shared Information" in that certain Participation Agreement Relating to RI/FS Action at Yeoman Creek/Edwards Field CERCLA Sites ("RI/FS Agreement"). "Shared Information" also includes Joint Defense Information as defined in Paragraph 4 below. All Shared Information is intended to be kept confidential and to be used only for the purpose of the YCRG's performance of the Settlement Agreement. Information disclosed by a YCRG member to legal, administrative or technical consultants appointed by the YCRG Steering Committee to perform specified work may be disclosed to any other YCRG member to effectuate the purposes of the Settlement Agreement.

3. The undersigned agrees to protect from disclosure all Shared Information to the greatest extent permitted by law regardless of whether the sharing occurred before execution of this Confidentiality Agreement.

4. The YCRG expects that the information to be generated and disclosed pursuant to the Settlement Agreement will contain confidential attorney work product and attorney-client communications that are privileged, and that represent part of the YCRG's joint efforts to prosecute and defend claims and litigation asserted by or against the

United States Environmental Protection Agency, other governmental entities, and private parties including the defendants in the lawsuit, Case No. 92 C 7592 filed in the United States District Court for the Northern District of Illinois. This information constitutes "Joint Defense Information."

5. The privileges, rights and obligations imposed or recognized by this Confidentiality Agreement shall survive the termination of the Settlement Agreement. This Confidentiality Agreement does not apply to information which becomes public without violation of this Confidentiality Agreement.

6. Nothing in this Confidentiality Agreement prevents or restricts counsel for a particular YCRG member from rendering legal advice to that member with respect to the lawsuit or any other claim, litigation or investigation related to the Yeoman Creek Landfill Superfund Site and, in the course thereof, relying on counsel's knowledge and examination of Shared Information or Joint Defense Information.

7. This Confidentiality Agreement is not intended to limit or otherwise affect the ability of any YCRG member to assert any applicable privilege, including the joint defense privilege, with respect to communications occurring prior to the execution of this Confidentiality Agreement, or with respect to persons other than YCRG members.

IN WITNESS WHEREOF, the undersigned has executed this Confidentiality Agreement this ____ day of _____, ____.

(Company Name)

By: _____

Its: _____

Address:

Appendix G to Consent Decree: List of Certain Special Notice Recipients

ABF Freight

Akzo Nobel Coatings, Inc. (successor to Reliance Paint & Varnish Co.)

Chicago Rubber

Commonwealth Edison

F.K. Pattern & Foundry

K-Mart Corporation

Karry Brothers Transmissions

Lake Shore Foundry

Larsen and Peterson Paint

North Shore Gas Company

Pfanstiehl Corporation (f/k/a Pfanstiehl Chemical Corporation)

Pfanstiehl Detergent & Chemicals Co.

Pfanstiehl Laboratories

Reed Randle Motors

Sears Roebuck & Co.

Waste Management, Inc., Waste Management Inc. of Lake County,
and/or their related corporate entities