SDMS Document
97623

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

CHAMBERS OF
JEROME B. SIMANDLE
DISTRICT JUDGE

UNITED STATES COURTHOUSE
ONE JOHN F. GERRY PLAZA
P.O. BOX 888
CAMDEN, NJ 08101
(609) 757-5167

June 30, 1997

All Liaison Counsel
and
All Parties on Service List

Gary J. Lesneski, Esq.
Archer & Greiner
One Centennial Square
P.O. Box 3000
Haddonfield, New Jersey 08033
Attorney for GEMS Phase II Trust

Re: State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al.
Civil No. 84-152 (JBS)
United States of America v. Air Products and Chemicals Incorporated, et al.
Civil No. 92-3860 (JBS)

Dear Litigants:

The Consent Decree with respect to Phase II was approved at the hearing before me on June 27, 1997. As promised at that hearing, I enclose for your file a conformed copy of the cover sheet and signature page of the Consent Decree. A complete copy of the Consent Decree has been filed on June 27, 1997 in the Clerk's Office, consisting of the 66-page Consent Decree text, the several hundred signature pages attached thereto, and each of the Appendices A through L. In addition, a complete certified copy of the Consent Decree is being forwarded to William Greenberg, Esq., as counsel for the Township of Gloucester, for his local filing requirements, under separate cover.

Very truly yours,

Jerome B. Simandle

JEROME B. SIMANDLE
U.S. District Judge

JBS:jlh
cc: Honorable Joel B. Rosen, U.S.M.J.

DEPARTMENT OF JUSTICE
JUL - 2 1997

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, Plaintiff, v. GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC., et al., Defendants.	CIVIL ACTION NO. 84-0152 (JBS)
and	CONSENT DECREE
UNITED STATES OF AMERICA, Plaintiff, v. AIR PRODUCTS & CHEMICALS, INC. et al., Defendants.	CIVIL ACTION NO. 92-3860 (JBS)

FILED

JUN 27 1997

AT 9:30 _____ M

WILLIAM T. WALSH
CLERK

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, Plaintiff, v. GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC., *et al.*, Defendants.	CIVIL ACTION NO. 84-0152(B)

and

CONSENT DECREE

UNITED STATES OF AMERICA, Plaintiff, v. AIR PRODUCTS & CHEMICALS, INC. *et al.*, Defendants.	CIVIL ACTION NO. 92-3860

TABLE OF CONTENTS

I. BACKGROUND 1

II. JURISDICTION 4

III. PARTIES BOUND 5

IV. DEFINITIONS 5

V. GENERAL PROVISIONS 10

VI. PERFORMANCE OF THE RSD WORK BY REOPENER SETTLING DEFENDANTS 12

VII. ADDITIONAL RESPONSE ACTIONS 18

VIII. EPA PERIODIC REVIEW 19

IX. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS 20

X. ACCESS AND INSTITUTIONAL CONTROLS 21

XI. REPORTING REQUIREMENTS 24

XII. SUBMISSIONS REQUIRING AGENCY APPROVAL 26

XIII. PROJECT COORDINATORS 27

XIV. ASSURANCE OF ABILITY TO COMPLETE RSD WORK 28

XV. CERTIFICATION OF COMPLETION 31

XVI. EMERGENCY RESPONSE 35

XVII. REIMBURSEMENT OF RESPONSE COSTS 36

XVIII. INDEMNIFICATION AND INSURANCE 40

XIX. FORCE MAJEURE 41

XX. DISPUTE RESOLUTION 43

XXI. STIPULATED PENALTIES 46

XXII. COVENANTS NOT TO SUE BY PLAINTIFFS 49

XXIII. COVENANTS BY SETTLING DEFENDANTS 53

XXIV. DE MINIMIS SETTLEMENT 54

XXV. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION 57

XXVI. ACCESS TO INFORMATION 59

XXVII. RETENTION OF RECORDS 60

XXVIII. NOTICES AND SUBMISSIONS 61

XXIX. EFFECTIVE DATE 63

XXX. RETENTION OF JURISDICTION 63

XXXI. APPENDICES 63

XXXII. COMMUNITY RELATIONS 64

XXXIII. MODIFICATION 65

XXXIV. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT 65

XXXV. SIGNATORIES/SERVICE 65

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, Plaintiff, v. GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC., et al., Defendants.	CIVIL ACTION NO. 84-0152(B)

and

CONSENT DECREE

UNITED STATES OF AMERICA, Plaintiff, v. AIR PRODUCTS & CHEMICALS, INC. et al., Defendants.	CIVIL ACTION NO. 92-3860

CONSENT DECREE

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 against some defendants in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§9606, 9607.

B. The United States in its complaint seeks, inter alia: (1) performance of certain response actions at the Gloucester Environmental Management Services, Inc. ("GEMS") Landfill Superfund Site, pursuant to the Record of Decision issued on September 27, 1985 and consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP") and (2) reimbursement of past and future costs incurred by EPA and the

Department of Justice for response actions at the GEMS Superfund Site in Gloucester Township, Camden County, New Jersey.

C. The State of New Jersey (the "State") has also filed a complaint against the defendants in this Court alleging that the defendants are liable to the State under Section 107 of CERCLA, 42 U.S.C. §9607, and under the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; the Sanitary Landfill Facility Closure and Contingency Fund Act, N.J.S.A. 13:1E-100 et seq.; the Spill Compensation and Control Act, 58:10-23.11 et seq.; the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.; water quality legislation set forth at N.J.S.A. 23:5-28; the common law of nuisance; the common law of negligence; and strict liability.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. §9622(j)(1), EPA notified the U.S. Department of the Interior and the National Oceanic and Atmospheric Administration (collectively, the "FNR Trustees") 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 the FNR Trustees have agreed to participate in the negotiation of this Consent Decree and to provide releases for federal natural resources damages claims in accordance with the terms of this Consent Decree, as set forth herein.

E. The State has informed the Commissioner of the Department of Environmental Protection as the trustee responsible for the protection of the natural resources belonging to the State (the "SNR Trustee") and the trustee has agreed to participate in the negotiations of this Consent Decree and to provide releases for State natural resources damages claims in accordance with the terms of this Consent Decree, as set forth herein.

F. The defendants and third-party defendants that have entered into this Consent Decree ("Settling Defendants") do not admit any liability to the Plaintiffs, each other or other parties, arising out of the transactions or occurrences alleged in the complaints.

G. Pursuant to Section 105 of CERCLA, 42 U.S.C. §9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register.

H. In response to a release or a substantial threat of a release of a hazardous substance at or from the Site, EPA commenced a Focused Feasibility Study ("FFS") for the Site, which was developed in April 1985 and which was not inconsistent with 40 C.F.R. §300.400.

I. In response to a release or a substantial threat of release of hazardous substances at the Site, EPA commenced a Remedial Investigation and Feasibility Study ("RI/FS") for the Site pursuant to 40 C.F.R. §300.430, which was generated in July 1985.

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 27, 1985, on which the State had a reasonable opportunity to review and comment and on which the State has given its concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

K. In August 1988, EPA issued a Unilateral Administrative Order (Index No. II-CERCLA-80112), which required implementation of certain work constituting Phase I of the remediation of the Site (the "Phase I activities") detailed in the ROD, and the State issued Directive Number Four, which also required implementation of the Phase I component of the remedy in the ROD.

L. On January 24, 1989, the State and a number of the Settling Defendants and De Minimis Settling Defendants hereunder entered into an Administrative Consent Order (the "Phase I ACO") with respect to the performance of the Phase I activities. On March 17, 1989, the Court entered the Phase I ACO as an Order of the Court. Thereafter, a trust was formed for the purpose of performing the Phase I activities.

M. Based on the information presently available to EPA and the State, EPA and the State believe that the Reopener Settling Defendants' Work ("RSD Work") will be properly and promptly conducted by the Reopener Settling Defendants if conducted in accordance with the requirements of this Consent Decree and its appendices.

N. The Parties agree that certain defendants and third party defendants, identified herein, meet the criteria set forth in Section 122(g) of CERCLA authorizing de minimis settlements, that, except as provided herein, this settlement is intended to be a final settlement of all present and future claims involving these defendants and third party defendants, and that the settlement embodied in this Consent Decree is consistent with the public interest.

O. 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 Reopener Settling Defendants and the State shall constitute a response action taken or ordered by the President.

P. 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.

Q. With respect to the New Jersey Department of Environmental Protection ("NJDEP"), this document shall have the same force and effect as a memorandum of agreement and/or a memorandum of understanding as those terms are used in L. 1993, c. 139, §25 and §33, respectively, and thus the execution of and performance under this Consent Decree by the Settling Defendants shall not give rise to any duty to pay the remediation funding source surcharge imposed by P.L. 1993, c. 139, §33.

R. De Minimis Settling Defendants are defined in Appendix E. Information currently known to EPA and NJDEP indicates (1) that the volume of waste allegedly contributed to the Site by certain transporter or municipal De Minimis Settling Defendants, so designated by an asterisk in Appendix E, exceeds one and one quarter percent (1.25%) of the total waste volume at the Site but does not exceed seven percent (7%) of the total waste volume at the Site and is certified to be waste of low toxicity such as solid waste, (2) that the volume of waste allegedly contributed to the Site by other De Minimis Settling Defendants listed in Appendix E, does not exceed one and one quarter percent (1.25%) of the total waste volume at the Site, and (3) that the toxic or other hazardous effects of the hazardous substances allegedly contributed to the Site by each De Minimis Settling Defendant do not contribute disproportionately to the cumulative toxic or other hazardous effects of the hazardous substances at the Site. Accordingly, pursuant to § 122(g)(3) of CERCLA, EPA has determined that the amount and the toxic or other hazardous effects of the substances contributed by each of the individual De Minimis Settling Defendants are minimal in comparison to other hazardous substances contributed to the Site. EPA has also determined that this settlement involves only a minor portion of the Plaintiffs' response costs at the Site with respect to each De Minimis Settling Defendant.

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

II. JURISDICTION

This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§1331 and 1345, and 42 U.S.C. §§9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Decree, 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

1. This Consent Decree applies to and is binding upon the United States and the State and upon Settling Defendants and their 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.

2. Reopener Settling Defendants shall provide a copy of this Consent Decree to each contractor hired to perform the RSD Work required by this Consent Decree and shall condition all contracts entered into hereunder upon performance of the RSD Work in conformity with the terms of this Consent Decree. Reopener Settling Defendants or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the RSD Work required by this Consent Decree. Reopener Settling Defendants shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the RSD 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 Reopener Settling Defendants within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. §9607(b)(3).

IV. DEFINITIONS

3. 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:

a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§9601 *et seq.*

b. "Consent Decree" shall mean this Consent Decree and all appendices attached hereto (listed in Section XXXI). In the

event of conflict between this Consent Decree and any appendix, this Consent Decree shall control.

c. "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.

d. "De Minimis Settling Defendants" shall mean various defendants and third party defendants as fully identified in Appendix E. "De Minimis Trust Agreement" shall mean the GEMS Phase II De Minimis Trust Agreement entered into pursuant to Section XIV hereof and attached hereto in Appendix F. The terms of this De Minimis Trust Agreement are incorporated into and fully enforceable as part of this Consent Decree. "De Minimis Trust" shall mean the trust fund established pursuant to the De Minimis Trust Agreement and all monies therein.

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

f. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States and the State incur, not inconsistent with the NCP, pursuant to Sections VII, VIII, X (including, but not limited to, attorneys fees and the amount of just compensation), XVI, and XXII, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, and Interest.

g. "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. § 9607(a).

h. "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. §9605, codified at 40 C.F.R. Part 300, including, but not limited to, any amendments thereto.

i. "NJDEP" shall mean the New Jersey Department of Environmental Protection and any successor departments or agencies of the State.

j. "Nonsettling Defendant" shall mean a named defendant or third party defendant in these consolidated actions who fails to enter into this Consent Decree.

k. "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 by EPA pursuant to this Consent Decree and the Remedial Design Report, to monitor the remediation activities at the Site, and to maintain the effectiveness of the facilities constructed during Phase I activities.

l. "Owner Settling Defendant" shall mean the Township of Gloucester, Camden County, New Jersey.

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

n. "Parties" shall mean the United States, the State of New Jersey, and the Settling Defendants.

o. "Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs and Interest, that the United States and the State incurred with regard to the Site prior to the date of lodging of this Consent Decree with the Court, but shall not include oversight costs incurred by NJDEP through June 30, 1994 in the amount of $772,417.53.

p. "Performance Standards" shall mean those cleanup standards, standards of control, and other substantive requirements, criteria or limitations set forth in Paragraph 11 of this Consent Decree, as more fully detailed in the Remedial Design Report.

q. "Phase I ACO" shall mean the January 24, 1989 Administrative Consent Order described in Paragraph K of Section I herein.

r. "Phase I activities" shall mean the actions required to be performed under the Phase I ACO.

s. "Plaintiffs" shall mean the United States and the State of New Jersey.

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

u. "Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to the GEMS Landfill Superfund Site signed on September 27, 1985 by the Regional Administrator, EPA Region II, as set forth in Appendix A to this Consent Decree, and all attachments thereto.

v. "Remedial Action" shall mean those activities, except for Operation and Maintenance, to be undertaken by the Reopener Settling Defendants to implement the final plans and specifications submitted by the Reopener Settling Defendants in the Remedial Design Report to implement the Record of Decision.

w. "Remedial Action Work Plan" shall mean the document submitted by the Reopener Settling Defendants pursuant to Paragraph 10(b) of this Consent Decree and described more fully in Paragraphs 10(c) through 10(e).

x. "Remedial Design Report" shall mean the report approved by EPA and NJDEP for implementation of the Remedial Action, including Operation and Maintenance, at the Site, pursuant to Paragraph 10(a) of this Consent Decree and according to the schedule set forth in Appendix J, and any modifications made in accordance with this Consent Decree.

y. "Reopener Settling Defendants" shall mean the Settling Defendants, including third-party defendants, except for the De Minimis Settling Defendants.

z. "Reopener Settling Defendants' O & M Work" or "RSD O & M Work" shall mean the first ten (10) years of Operation and Maintenance at the Site, following the Certification Date, to be performed by Reopener Settling Defendants.

aa. "Reopener Settling Defendants' Work" or "RSD Work" shall mean all Work required to be performed by the Reopener Settling Defendants under this Consent Decree, except the actions required by Section XXVII (Retention of Records). The term "RSD Work" shall not include any Operation and Maintenance by the Reopener Settling Defendants beyond 10 years after the Certification Date, except that nothing in this paragraph shall be construed to limit the Plaintiffs' reservations contained in Section XXII of this Consent Decree.

ab. "Section" shall mean a portion of this Consent Decree identified by a Roman numeral.

ac. "Settling Defendants" shall mean those Parties identified in Appendix D (Reopener Settling Defendants) and Appendix E (De Minimis Settling Defendants).

ad. "Site" shall mean the GEMS Landfill Superfund Site, encompassing approximately 61.7 acres, located at the intersection of Blackwood-New Brooklyn Road and Turnersville-Hickstown Road in Gloucester Township, Camden County, New Jersey and depicted generally on the map attached as Appendix C.

ae. "Spill Act" shall mean the New Jersey Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 _et seq_.

af. "State" shall mean the State of New Jersey, including for purposes of Paragraphs 74, 81, and 86 hereof, the SNR Trustee.

ag. "Supervising Professional" shall mean the principal design professional or firm retained by the Reopener Settling Defendants to supervise and direct the implementation of the RSD Work under this Consent Decree.

ah. "Trust Agreement" shall mean the Gems Phase II Trust Agreement entered into pursuant to Section XIV hereof and attached hereto in Appendix F. The terms of this Trust Agreement are hereby incorporated into and are fully enforceable as part of this Consent Decree.

ai. "Swamp Pink Monitoring Plan" shall mean the comprehensive hydrologic and vegetative monitoring program set forth in the document approved by EPA in consultation with the U.S. Department of the Interior, attached hereto as Appendix L. The terms of the Swamp Pink Monitoring Plan are hereby incorporated into and are fully enforceable as part of this Consent Decree.

aj. "Trust" shall mean the trust fund established pursuant to the terms of the Trust Agreement and all monies therein.

ak. "Unilateral Administrative Order" or "UAO" shall mean the Unilateral Administrative Order issued by EPA-Region II to some of the Settling Defendants on August 27, 1988.

al. "United States" shall mean the United States of America, including the United States Environmental Protection Agency, and for purposes of Paragraphs 74, 81, and 86 hereof, the FNR Trustees.

am. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. §9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. §9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. §6903(27);(4) any "hazardous material" under N.J.S.A. 58:10-23.11b(k); and (5) any "solid waste" under N.J.S.A. 13:1E-3.a.

an. "Work" shall mean all activities which the Settling Defendants are required to perform under this Consent Decree and all activities which the State is required to perform under this Consent Decree.

ao. "Institutional Controls" shall mean covenants, conditions, and restrictions and other equivalent requirements and controls developed at the discretion of the United States

and/or the State for one or more of the following purposes: (1) to restrict the use of groundwater at the Site; (2) to limit human or animal exposure to Waste Material at the Site; (3) to ensure non-interference with the performance, operation and maintenance of the Remedial Action and any other response actions at or pertaining to the Site; and (4) to ensure the integrity and effectiveness of the Remedial Action and any other response actions at or pertaining to the Site.

ap. "Natural Resource Damages" shall mean damages, including costs of damages assessment, recoverable under Section 107 of CERCLA and under the Spill Act for injury to, destruction of, or loss of any and all Natural Resources as a result of releases or threats of release at or from the Site.

aq. "Natural Resources" shall have the meaning provided in Section 106(16) of CERCLA, 42 U.S.C. § 9601(16).

V. GENERAL PROVISIONS

4. 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 implementation of response actions at the Site by the Reopener Settling Defendants in compliance with this Consent Decree, including construction of the Remedial Action, and performance of Operation and Maintenance for ten years from the Certification Date, and to have the Settling Defendants reimburse certain response costs of the Plaintiffs.

5. Commitments by Settling Defendants

a. Settling Defendants shall finance and Reopener Settling Defendants shall perform the RSD Work in accordance with this Consent Decree and all plans, standards, specifications, and schedules set forth in or developed and approved by EPA pursuant to this Consent Decree. Settling Defendants shall also reimburse the United States and the State for Past Response Costs and Future Response Costs as defined in Section IV and as provided in this Consent Decree.

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

c. The Parties agree that the obligations of the Reopener Settling Defendants to perform Operation and Maintenance shall be limited to ten (10) years following the Certification Date, except as set forth in Paragraph 12 and Section XXII of this Consent Decree.

6. Compliance With Applicable Law

All activities undertaken by Reopener Settling Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable Federal and State laws and regulations. Reopener Settling Defendants must also comply with all applicable or relevant and appropriate requirements of all Federal and State environmental laws as set forth in the ROD and the Remedial Design Report. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be considered to be consistent with the NCP.

7. Permits

a. As provided in Section 121(e) of CERCLA and §300.400(e)(1) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (as such term is defined in the NCP). However, work performed on-site must conform with the applicable standards and requirements as if a permit were in place. Where any portion of the RSD Work conducted off-site requires a Federal or State permit or approval, Reopener Settling Defendants shall submit timely and complete applications and take all other actions necessary, including payment of money, to obtain all such permits or approvals. If, after taking all actions required by this paragraph, the Reopener Settling Defendants are unable to obtain any permits or approvals which may be necessary in order to perform the RSD Work, the EPA and the State may use reasonable efforts to assist the Reopener Settling Defendants to obtain such permits or approvals. Nothing in this paragraph shall be construed to relieve Reopener Settling Defendants of any obligation pursuant to this Consent Decree.

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

8. Notice of Obligations to Successors-in-Title

a. Within 15 days after the entry of this Consent Decree, the Owner Settling Defendant shall record a certified copy of this Consent Decree with the Recorder's Office, Camden County, State of New Jersey. Thereafter, each deed, title or other instrument conveying an interest in the property included in the Site shall contain a notice stating that the property is subject to this Consent Decree and shall reference the recorded location of the Consent Decree and any restrictions applicable to the property under this Consent Decree.

b. The obligations of the Owner Settling Defendant with respect to the provision of access under Section X (Access and Institutional Controls) shall be binding upon any and all persons who subsequently acquire any such interest or portion thereof (hereinafter "Successors-in-Title"). Within 15 days after the entry of this Consent Decree, Owner Settling Defendant shall record at the Recorder's Office a notice of obligation to provide access under Section X (Access and Institutional Controls) and related covenants. Each subsequent instrument conveying an interest to any such property included in the Site shall reference the recorded location of such notice and covenants applicable to the property.

c. The Owner Settling Defendant and any Successor-in-Title shall, at least 30 days prior to the conveyance of any such interest, give written notice of this Consent Decree to the grantee and written notice to EPA and NJDEP of the proposed conveyance, including the name and address of the grantee, and the date on which notice of the Consent Decree was given to the grantee. In the event of any such conveyance, the Reopener Settling Defendants' obligations under this Consent Decree, including their obligations to provide or secure access pursuant to Section X, shall continue to be met by the Reopener Settling Defendants. In addition, if the United States and the State approve, the grantee may perform some or all of the Work under this Consent Decree. In no event shall the conveyance of an interest in property that includes, or is a portion of, the Site release or otherwise affect the liability of the Settling Defendants to comply with the Consent Decree.

VI. PERFORMANCE OF THE RSD WORK BY REOPENER SETTLING DEFENDANTS

9. Selection of Supervising Professional

a. All aspects of the Work to be performed by Reopener Settling Defendants pursuant to Sections VI (Performance of the RSD Work by Reopener Settling Defendants), VII (Additional Response Actions), VIII (EPA Periodic Review), IX (Quality Assurance, Sampling and Data Analysis), and XVI (Emergency

Response) of this Consent Decree shall be under the direction and supervision of the Supervising Professional, the selection of which shall be subject to disapproval by EPA after a reasonable opportunity for review and comment by NJDEP. Within 10 days after the effective date of this Consent Decree, Reopener Settling Defendants shall notify EPA and NJDEP in writing of the name, title, and qualifications of any contractor proposed to be the Supervising Professional. EPA will issue a notice of disapproval or an authorization to proceed. If at any time thereafter, Reopener Settling Defendants propose to change a Supervising Professional, Reopener Settling Defendants shall give such notice to EPA and NJDEP and must obtain an authorization to proceed from EPA, after a reasonable opportunity for review and comment by NJDEP, before the new Supervising Professional performs, directs or supervises any RSD Work under this Consent Decree.

b. If EPA disapproves a proposed Supervising Professional, EPA will notify Reopener Settling Defendants in writing. Reopener Settling Defendants shall submit to EPA and NJDEP a list of contractors (that does not include the contractor previously disapproved by EPA), 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 contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. Reopener Settling Defendants may select any contractor from that list that is not disapproved and shall notify EPA and NJDEP of the name of the contractor selected within 21 days of EPA's authorization to proceed.

10. Remedial Design/Remedial Action.

a. Within 45 days after EPA's issuance of an authorization to proceed, Reopener Settling Defendants shall submit a proposed final Remedial Design Report to EPA and NJDEP for review and approval pursuant to Section XII (Submissions Requiring Agency Approval). The final Remedial Design Report, including all plans, specifications, and modifications, shall bear the seal of a responsible Professional Engineer licensed in the State of New Jersey. Upon its approval by EPA, after a reasonable opportunity for review and comment by NJDEP, the final Remedial Design Report shall be incorporated into and become enforceable under this Consent Decree.

b. Within 60 days of EPA's approval of the Remedial Design Report pursuant to paragraph 10(a), Reopener Settling Defendants shall submit to EPA and NJDEP, 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 of the Remedial Action, in accordance with the

Remedial Design Report. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Consent Decree. At the same time as they submit the Remedial Action Work Plan, Reopener Settling Defendants shall submit to EPA and NJDEP 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. §1910.120, and including a Contingency Plan.

c. The Remedial Action Work Plan shall include the following: (1) the schedule for completion of each major activity of the Remedial Action; (2) the method for selection of the contractor; (3) a Construction Quality Control Plan and the methodology for its implementation; (4) the methods for satisfying permitting requirements; (5) a tentative formulation of the Remedial Action team; (6) a Site Security Plan; (7) a description of the roles and relationships for management and oversight of the Site; (8) the procedures and plans for the decontamination of equipment and the transportation and disposal of contaminated materials; (9) a strategy for the implementation of the Contingency Plan; (10) the schedule for developing and submitting other Remedial Action plans, including a plan for photographic documentation of the Remedial Action; and (11) the requirements for project closeout. The Remedial Action Work Plan shall also include a schedule for implementation of all Remedial Action tasks identified in the Remedial Design Report.

d. The Reopener Settling Defendants shall submit to EPA and NJDEP 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 XII (Submissions Requiring Agency Approval). Unless otherwise directed by EPA, Reopener Settling Defendants shall not commence physical Remedial Action activities at the Site prior to approval of the Remedial Action Work Plan.

e. The Remedial Action Work Plan shall include, with respect to Operation and Maintenance, any appropriate requirements for Operation and Maintenance of the facilities constructed during the Phase I activities. Upon approval of the Remedial Action Work Plan by EPA, and in accordance with, and as limited by EPA's Operable Unit Remedial Action Report for the Site dated March 30, 1995, the Phase I Activities shall be deemed fully accepted by the United States and the State.

f. Within 45 days after EPA's approval of the Remedial Action Work Plan pursuant to paragraph 10(d), Reopener Settling Defendants shall award a contract for the Remedial Action. Within 14 days of contract award, Reopener Settling Defendants shall schedule a pre-work conference with EPA. Within 10 days following the pre-work conference, Reopener Settling Defendants

shall commence the Remedial Action work in accordance with the approved Remedial Design Report.

11. Performance Standards

The Reopener Settling Defendants agree to meet the following Performance Standards:

a. The system constructed at the Site shall include both a groundwater extraction ("GWE") system and an on-site groundwater pre-treatment ("OSPT") system shown in the Pre-Final Remedial Design Report, attached as Appendix B, with the following general components:

i. A GWE system, including the use of the existing Holly Run underdrain system, a pump station to convey collected groundwater for treatment, a series of groundwater extraction wells, and a force main from the Holly Run underdrain pump station to the treatment system that will also serve as the header for the extraction system, shall be constructed at the GEMS Landfill;

ii. An OSPT system, consisting of conventional physical/chemical treatment processes, shall be constructed at the GEMS Landfill, which, along with the GWE system, shall be operated to achieve the minimum operational requirements set forth in Subparagraphs (e) and (f), below.

iii. All groundwater extracted by the GWE system, including all effluent from the OSPT system, shall be discharged through the Gloucester Township Municipal Utilities Authority ("GTMUA") sewerage system for final treatment at the Camden County Municipal Utilities Authority ("CCMUA") plant. The GTMUA Service Agreement between the Reopener Settling Defendants and the Authority is attached as Appendix H;

b. The GWE system shall be designed, constructed, operated, and maintained to ensure that the groundwater in the Cohansey Sand and Kirkwood Formation Aquifers, within the contaminant plume boundary as shown in Appendix G, shall be captured by the GWE system, subject to the limitations set forth in Subparagraph (c), below.

c. In accordance with the Remedial Design Report, all eight (8) groundwater extraction wells shall be installed; however, at the start of the operation of the GWE and OSPT systems, only the four (4) easternmost wells shall commence operation. The performance of this modified, 4-well extraction system shall be monitored in accordance with the Swamp Pink Monitoring Plan (attached as Appendix L), which shall provide for a comprehensive hydrologic and vegetative monitoring program. Based on the data from this program, EPA, in consultation with

the U.S. Fish and Wildlife Service, will determine whether one or more of the remaining four wells should begin operation to increase the total extraction rate of the system. Modifications of the system operation for the protection of swamp pink shall occur within the start-up extraction and pre-treatment phase of operation set forth in Subparagraph (e)(ii), below, or within the long-term extraction and pre-treatment phase set forth in subparagraph (e)(iii), below, if necessary. The zone of capture specified in Subparagraph (b) above shall be deemed modified to the extent necessary to protect the swamp pink population.

d. For purposes of determining compliance with the Performance Standard stated in Subparagraph (b), above, Reopener Settling Defendants shall collect and analyze data from the hydraulic monitoring locations shown in Appendix G; the frequency of data collection, methods to be used, and other requirements, including reporting, which the Reopener Settling Defendants shall comply with when monitoring hydraulics pursuant to this paragraph, are set forth in the Groundwater Performance Monitoring Plan (Appendix G). Reopener Settling Defendants shall install the new hydraulic monitoring wells specified in the Groundwater Performance Monitoring Plan and shown in Appendix G, to comply with the provisions of this subparagraph;

e. The operation of the GWE and OSPT systems is divided into three (3) separate phases. The Reopener Settling Defendants shall adhere to the requirements outlined below, in addition to the more-detailed requirements presented in the approved Operation and Maintenance Plan, for each phase.

i. Completion of Construction Phase: Completion of the construction of the GWE and OSPT systems shall include the testing and acceptance of all major components of the systems, followed by issuance of the Certification of the Completion of the Remedial Action.

ii. Start-Up Extraction and Pre-Treatment Phase: Following the Certification Date, the Reopener Settling Defendants shall operate these systems during a start-up phase to establish and confirm routine operating parameters that will apply to the subsequent long-term phase, and to allow the systems to reach their final operating conditions including capture of the contaminant plume. The systems will be operated to the extent practicable during this phase, which shall extend for a period of one (1) year, and be included in the Reopener Settling Defendants' obligation to perform 10 years of Operation and Maintenance.

iii. Long-Term Extraction and Pre-Treatment Phase: Following completion of the requirements of the Start-Up Extraction and Pre-Treatment Phase of operation, set forth in Subparagraph (e)(ii), above, the GWE and OSPT systems shall be

operated at a rate determined necessary to achieve capture of the contaminant plume. This rate shall be based upon the systems data collected during the start-up phase of operation, and any impacts caused by the GWE system to the swamp pink population, and any other scientific data acceptable to EPA. The systems shall remain operational for no less than 90% of the time when averaged over a one year period. Downtime shall be limited to routine maintenance and repairs and replacements.

f. All groundwater extracted by operation of the GWE system shall be conveyed to the OSPT system for pre-treatment, to the extent pre-treatment is required to meet the GTMUA or CCMUA pre-treatment limits. Notwithstanding any provision to the contrary in this Consent Decree, no release of any liquids of any type, including any discharge of treated or untreated groundwater or leachate, shall be allowed to enter Holly Run or any tributary thereto from the OSPT system, from the GWE system or from the Holly Run underdrain system, at any time after one year following the Certification Date.

g. The remedial actions required by this Consent Decree shall comply with:

i. the Natural Resource Damages Monitoring and Compliance Plan (Appendix K); and

ii. the Swamp Pink Monitoring Plan (Appendix L), including both the hydrologic and vegetative monitoring requirements stated in the Plan.

h. Reopener Settling Defendants shall be subject to stipulated penalties for violations of Subparagraphs (b), (e)(iii), (f), and (g).

12. Reopener Settling Defendants acknowledge and agree that nothing in this Consent Decree, the Remedial Design Report or Remedial Action Work Plan constitutes a warranty or representation of any kind by Plaintiffs that compliance with the work requirements set forth in the Remedial Design Report and the Work Plan will achieve the Performance Standards. Reopener Settling Defendants' compliance with the work requirements shall not foreclose Plaintiffs from seeking compliance with all terms and conditions of this Consent Decree.

13. Reopener Settling Defendants shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, comply with the provisions of all applicable federal and state environmental laws, including RCRA, and shall provide written notification 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 ten cubic yards.

a. The Reopener Settling 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.

b. The Reopener Settling Defendants shall provide the information required by this Paragraph as soon as practicable after the award of the contract for Remedial Action construction and before the Waste Material is actually shipped.

VII. ADDITIONAL RESPONSE ACTIONS

14. In the event that EPA determines or the Reopener Settling Defendants propose that additional response actions are necessary to meet the Performance Standards or to carry out the RSD Work, notification of such additional response actions shall be provided to all other parties pursuant to Section XXVIII (Notices and Submissions).

15. Within 45 days of receipt of notice from EPA or Reopener Settling Defendants pursuant to Paragraph 14 that additional response actions are necessary (or such longer time as may be specified by EPA), Reopener Settling Defendants shall submit for approval by EPA, after reasonable opportunity for review and comment by NJDEP, a work plan for the additional response actions. The plan shall conform to the applicable requirements of Paragraph 10. Upon approval of the plan pursuant to Section XII (Submissions Requiring Agency Approval), Reopener Settling Defendants shall implement the plan for additional response actions in accordance with the schedule contained therein.

16. Any additional response actions that Reopener Settling Defendants propose are necessary to meet the Performance Standards or to carry out the RSD Work, shall be subject to approval by EPA, after reasonable opportunity for review and comment by NJDEP, and, if authorized by EPA, shall be completed by Reopener Settling Defendants in accordance with plans, specifications, and schedules approved or established by EPA pursuant to Section XII (Submissions Requiring Agency Approval).

17. Reopener Settling Defendants may invoke the procedures set forth in Section XX (Dispute Resolution) to dispute EPA's determination that additional response actions are necessary pursuant to Paragraph 15. Such a dispute shall be resolved pursuant to Paragraph 62 of this Consent Decree. After the tenth

(10th) anniversary of the Certification Date, no additional response actions may be required pursuant to this Section. Nothing in this Section shall limit EPA's authority to require the Reopener Settling Defendants to perform any response actions which are not inconsistent with the terms of this Consent Decree.

VIII. EPA PERIODIC REVIEW

18. Reopener Settling Defendants shall conduct any studies and investigations as requested by EPA prior to the tenth (10th) anniversary of the Certification Date, and thereafter the State 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. 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. As required by Sections 113(k)(2) or 117 of CERCLA, Reopener Settling Defendants and 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 public comment period.

20. If EPA selects further response actions for the Site prior to the tenth (10th) anniversary of the Certification Date, the Reopener Settling Defendants shall undertake such further response actions to the extent that the reopener conditions in Paragraph 75 or Paragraph 76 (Plaintiffs' reservations of liability based on unknown conditions or new information) are satisfied. Reopener Settling Defendants may invoke the procedures set forth in Section XX (Dispute Resolution) to dispute (1) EPA's determination that the reopener conditions of Paragraph 75 or Paragraph 76 of Section XXII (Covenants Not To Sue by Plaintiffs) are satisfied, (2) EPA's determination that the Remedial Action is not protective of human health and the environment, or (3) EPA's selection of the further response actions. Disputes pertaining to whether the Remedial Action is protective or to EPA's selection of further response actions shall be resolved pursuant to Paragraph 62. If Reopener Settling Defendants are required to perform the further response actions pursuant to this Paragraph, they shall submit a plan for such work to EPA for approval in accordance with the procedures set forth in Section VI (Performance of the RSD Work by Reopener Settling Defendants) and shall implement the plan approved by EPA in accordance with the provisions of this Consent Decree. If EPA selects further response actions for the Site after the tenth (10th) anniversary of the Certification Date, the United States

and the State reserve, and this Consent Decree is without prejudice to, the right of the United States or the State to institute administrative or judicial proceedings to compel the Reopener Settling Defendants to perform such further response actions to the extent that the reopener conditions in Paragraph 75 or Paragraph 76 are satisfied.

IX. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

21. Reopener Settling Defendants shall use quality assurance, quality control, and chain of custody procedures for all 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 Reopener Settling 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, Reopener Settling Defendants shall submit to EPA for approval, after a reasonable opportunity for review and comment by NJDEP, a Quality Assurance Project Plan ("QAPP") that is consistent with the Remedial Design Report, 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), reviewed and approved by EPA, shall be admissible as evidence, without objection, in any proceeding under this Consent Decree. Reopener Settling Defendants shall ensure that EPA and NJDEP personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Reopener Settling Defendants in implementing this Consent Decree. In addition, Reopener Settling Defendants shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. Reopener Settling Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Consent Decree perform all analyses according to the accepted EPA methods in effect at the time the analyses are performed. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis" (No. ILM04.0) and the "Contract Lab Program Statement of Work for Organic Analysis," (No. OLM03.2), any amendments made thereto during the course of the implementation of this Consent Decree, and any other methods, approved by EPA, and which are directly comparable and equivalent to the CLP methods. Reopener Settling 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.

22. Upon request, the Reopener Settling Defendants shall allow split or duplicate samples to be taken by EPA and NJDEP or their authorized representatives. Reopener Settling Defendants shall notify EPA and NJDEP not less than 28 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA and NJDEP shall have the right to take any additional samples that EPA or NJDEP deem necessary. Upon request, EPA and NJDEP shall allow the Reopener Settling Defendants to take split or duplicate samples of any samples they take as part of the Plaintiffs' oversight of the Reopener Settling Defendants' implementation of the RSD Work.

23. Reopener Settling Defendants shall submit to EPA and the State three (3) copies of the validated results of all sampling and/or tests or other data obtained or generated by or on behalf of Reopener Settling Defendants with respect to the Site and/or the implementation of this Consent Decree within three (3) working days of the date when those results or data become available to Reopener Settling Defendants unless EPA agrees or requires otherwise. Reopener Settling Defendants shall, upon request by EPA, provide to EPA and NJDEP the unvalidated data at any time after it is available to Reopener Settling 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.

X. ACCESS AND INSTITUTIONAL CONTROLS

25. Commencing upon the date of lodging of this Consent Decree, the Owner Settling Defendant agrees to provide the other Reopener Settling Defendants, the State, the United States, and their representatives, including NJDEP and EPA and their contractors, access at all reasonable times to the Site and any other property to which access is required for the implementation of this Consent Decree, to the extent access to the property is controlled by Owner Settling Defendant, for the purposes of conducting any activity related to this Consent Decree including, but not limited to:

a. Performance of the Work or any additional response actions required herein; and

b. Operation and Maintenance.

26. Commencing upon the date of lodging of this Consent Decree, the Reopener Settling Defendants agree to provide the United States, the State, and their representatives, including EPA and NJDEP and their contractors, access at all reasonable

times to the Site and any other property to which access is required for the implementation of this Consent Decree, to the extent access to the property is controlled by Reopener Settling Defendants, for the purposes of conducting any activity related to this Consent Decree including, but not limited to:

a. Monitoring the Work;

b. Verifying any data or information submitted to the United States;

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

d. Obtaining samples;

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

f. Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents, consistent with Section XXVI;

g. Assessing Settling Defendants' compliance with this Consent Decree; and

h. Performing Operation and Maintenance, to the extent required by this Consent Decree.

27. a. To the extent that the Site or any other property to which access is required for the implementation of this Consent Decree is owned or controlled by persons other than Settling Defendants, Reopener Settling Defendants shall use best efforts to secure from such persons access for Reopener Settling Defendants, as well as for the United States and the State and their representatives, including, but not limited to, their contractors, as necessary to effectuate this Consent Decree. For purposes of this Paragraph "best efforts" includes the payment of reasonable sums of money in consideration of access. If any access required to complete the Work is not obtained within 45 days of the date of lodging of this Consent Decree, or within 45 days of the date EPA notifies the Reopener Settling Defendants in writing that additional access beyond that previously secured is necessary, Reopener Settling Defendants shall promptly notify the United States, and shall include in that notification a summary of the steps Reopener Settling Defendants have taken to attempt to obtain access. The United States or the State may, as it deems appropriate, assist Reopener Settling Defendants in obtaining access. Reopener Settling Defendants shall reimburse the United States or the State, in accordance with the procedures

in Section XVII (Reimbursement of Response Costs), for all costs incurred by the United States in obtaining access.

b. Notwithstanding any provision of this Consent Decree, the United States and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulations.

28. Institutional Controls

a. Reopener Settling Defendants shall take such actions as the United States or the State direct to secure Institutional Controls of the Site property and any other property owned or controlled by one or more of the Settling Defendants for which Institutional Controls are determined by the United States or the State to be required for implementation of response actions (including, without limitation, design, construction, operation, maintenance, monitoring, and use restrictions) for or pertaining to the Site.

b. Upon the request of the United States or the State, the Reopener Settling Defendants' securing of Institutional Controls shall include, without limitation, the Reopener Settling Defendants' filing a recordation in the registry of deeds of the County of Camden, New Jersey, of a declaration or declarations of covenants, conditions, and restrictions regarding the property referred to in paragraph 28(a), that run with the property, setting forth the Institutional Controls applicable thereto. All such declarations shall be enforceable by the United States, the State, and the Reopener Settling Defendants, and shall provide that these persons have the right to inspect the property to determine whether the declarations are being complied with. In accordance with Section 104(j) of CERCLA, 42 U.S.C. §9604(j), the United States' interest in any declaration shall terminate at such time as EPA determines that the Work for the Site is complete.

c. Reopener Settling Defendants shall obtain the approval of the United States or the State (whichever is requesting the declaration of covenants, conditions, and restrictions) of the content and form of each declaration prior to filing a recordation. Reopener Settling Defendants agree to submit draft declarations of covenants, conditions, and restrictions within 30 days of any such request by the United States or the State and to record each declaration of covenants, conditions, and restrictions, as approved by the United States and/or the State, within 30 days of approval by the United States and/or the State.

d. Any declaration required to be filed pursuant to this paragraph 28 shall conform with local and State law in order

to create an enforceable property restriction that runs with the land. If a question arises as to the enforceability of a declaration under State or local law after it has been filed, the United States or the State may require the Reopener Settling Defendants to secure an amended declaration that is enforceable under State and local law. Any such amended declaration shall be subject to the approval and filing requirements set forth above.

e. Reopener Settling Defendants shall not use any portion of the Site property or any other property owned or controlled by one or more of the Settling Defendants in regard to which access or Institutional Controls are required for implementation of response actions relating to the Site in any manner that the United States or the State determine would adversely affect the integrity of any containment system, extraction system, treatment system, or monitoring system installed as part of the Remedial Action.

XI. REPORTING REQUIREMENTS

29. In addition to any other requirement of this Consent Decree, Reopener Settling Defendants, through their Project Coordinator, shall submit to the EPA Project Coordinator and to the State's Section Chief, Hazardous Site Litigation Branch three (3) copies of written progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree since the previous report; (b) include a summary of all results of sampling and tests and all other data received or generated by Reopener Settling Defendants or their contractors or agents that have passed QA/QC procedures since the previous report; (c) identify all work plans, plans and other deliverables required by this Consent Decree completed and submitted since the previous report; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled prior to submittal of the next two reports and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams, Gantt charts and Pert charts; (e) 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; (f) include any modifications to the work plans or other schedules that Reopener Settling Defendants have proposed to EPA or that have been approved by EPA; (g) describe all activities undertaken in support of the Community Relations Plan, including any reports of community concerns, since the previous report and those to be undertaken prior to submittal of the next report and any reports of accidents or injuries. One copy of such report shall be sent to all other persons as specified in Section XXVIII (Notices and Submissions). Such reports shall be submitted monthly during all

on-site construction and facility start-up activities and be submitted quarterly at all other times. Reopener Settling Defendants, through their Project Coordinator, shall submit these progress reports to EPA and NJDEP by the tenth day of the first month following the effective date of this Consent Decree, and continue submitting them on the tenth day of the month following the applicable reporting period until EPA notifies the Reopener Settling Defendants pursuant to Paragraph 45(b) of Section XV (Certification of Completion). If requested by EPA or the State, Reopener Settling Defendants shall also provide briefings for EPA and the State to discuss the progress of the RSD Work.

30. The Reopener Settling Defendants, through the Project Coordinator, shall notify EPA of any change in the schedule described in the 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, or another such time period as approved by EPA, prior to the performance of the activity.

31. Upon the occurrence of any event during performance of the RSD Work that Reopener Settling 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), 42 U.S.C. §§ 11001 et seq., Reopener Settling Defendants or the Project Coordinator 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 II, United States Environmental Protection Agency. In addition, notice shall be given to NJDEP via the DEP Hotline, (609) 292-7172, and notice shall be given to EPA via the EPA Hotline, (800) 424-8802. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

32. Within 20 days of the onset of such an event, Reopener Settling Defendants shall furnish to Plaintiffs a written report, signed by the Reopener Settling 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, Reopener Settling Defendants shall submit a report setting forth all actions taken in response thereto.

33. Reopener Settling Defendants shall submit three (3) copies of all plans, reports, and data required by the Remedial Design Report, the Remedial Action Work Plan, or any other approved plans to EPA in accordance with the schedules set forth in such plans. Reopener Settling Defendants shall simultaneously

submit three (3) copies of all such plans, reports and data to the State.

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

XII. SUBMISSIONS REQUIRING AGENCY APPROVAL

35. 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 NJDEP, shall by written transmittal: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Reopener Settling Defendants modify the submission; or (e) any combination of the above. EPA shall provide a written explanation whenever EPA disapproves any submission and directs the Reopener Settling Defendants to modify that submission pursuant to this Paragraph.

36. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 35(a), (b) or (c), Reopener Settling 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 made or conditions imposed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 35(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XXI (Stipulated Penalties). However, EPA shall not modify a submission without first providing Reopener Settling 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. a. Upon receipt of a notice of disapproval pursuant to Paragraph 35(d), Reopener Settling Defendants shall, within 14 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, shall accrue during the

14-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 Paragraph 39.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 35(d), Reopener Settling 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 Reopener Settling Defendants of any liability for stipulated penalties under Section XXI (Stipulated Penalties).

38. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Reopener Settling 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. Reopener Settling 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).

39. If upon resubmission, a plan, report or item is disapproved or modified by EPA due to a material defect, Reopener Settling Defendants shall be deemed to have failed to submit such plan, report or item timely and adequately unless the Reopener Settling 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 RSD Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, or if Reopener Settling Defendants do not challenge EPA's disapproval, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XXI.

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

XIII. PROJECT COORDINATORS

41. a. Within 10 working days of lodging this Consent Decree, Reopener Settling Defendants, NJDEP and 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 five (5) working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Reopener Settling Defendants' Project Coordinator shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the RSD Work. The Reopener Settling Defendants' Project Coordinator shall not be an attorney for any of the Settling Defendants in this matter, but may be a representative or employee of the Supervising Professional. 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. A Project Coordinator must be retained by the Reopener Settling Defendants and available for EPA to contact during all working days until Certification of Completion of the RSD O & M Work by EPA, and such longer time, whether continuously or from time to time, as may be required by EPA pursuant to and consistent with the terms of this Consent Decree.

b. Notice by EPA to the Project Coordinator will be deemed notice to the Reopener Settling Defendants for all matters relating to the RSD Work under this Consent Decree.

42. a. Plaintiffs 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 NCP, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the NCP, to halt any Work required by this Consent Decree and to take any necessary response action when he or she 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.

b. Reopener Settling Defendants' Project Coordinator shall be available to meet with EPA within two working days after receiving EPA's request, unless EPA agrees otherwise.

XIV. ASSURANCE OF ABILITY TO COMPLETE RSD WORK

43. a. Prior to the lodging of this Consent Decree, the De Minimis Settling Defendants established the De Minimis Trust

pursuant to the De Minimis Trust Agreement and the Reopener Settling Defendants established the Trust pursuant to the Trust Agreement. The De Minimis Trust Agreement and the Trust Agreement are attached hereto as Appendix F. The Settling Defendants provided the United States and the State with copies of the executed De Minimis Trust Agreement and the Trust Agreement and the names of the designated Trustees. If a Trustee initially designated under either of these agreements is changed, the identity of the successor Trustee shall be given to the United States and the State within five (5) working days after the change occurs, unless impracticable.

b. The Reopener Settling Defendants shall ensure that, as of the thirtieth (30th) day following the effective date of this Consent Decree, the Trust, after giving effect to the payments required by Paragraph 48(b)(i)-(v) hereof, shall consist of $16.5 million, for the purpose of constructing the Remedial Action in accordance with the Remedial Design Report and conducting the Operation and Maintenance as required by this Consent Decree. It is estimated by the Settling Defendants that $6 million will be required for construction of the Remedial Action. Should more than this amount be expended, Reopener Settling Defendants may fund the additional costs of construction out of the Trust, provided that, should the Trust be depleted before the termination of the Reopener Settling Defendants' obligations to perform Operation and Maintenance pursuant to this Consent Decree, Reopener Settling Defendants shall fund all Operation and Maintenance at the Site for the 10-year period starting on the Certification Date through the tenth (10th) anniversary of the Certification Date. The foregoing notwithstanding, in the event the accumulated earnings on the funds paid into the De Minimis Trust and the Trust as reflected on Appendices D and E to this Consent Decree, after taking into account all trust administration expenses incurred or accrued in accordance with the Trust Agreement, are less than $588,000 as of the thirtieth (30th) day following the effective date of this Consent Decree (the amount of such deficiency being hereinafter referred to as the "Net Earnings Deficiency"), the Trust, after giving effect to the payments required by Paragraph 48(b)(i)-(v) hereof, shall consist of $16.5 million less such Net Earnings Deficiency.

c. The Reopener Settling Defendants agree as follows with respect to the performance of their financial responsibilities hereunder:

i. The Trustees for the Trust shall review at least annually the remainder of funds available in the Trust and the estimated costs of the remaining RSD Work at the Site. If the Trustees, based on this review, determine that the amount remaining in the Trust, taking into account accrual of Interest, will be insufficient to complete the RSD Work and pay outstanding

Future Response Costs, the Trustees shall determine the amount of monies needed to cover this anticipated shortfall and shall issue an appropriate notice by certified mail to all Reopener Settling Defendants specifying the overall additional amount necessary ("Additional RSD Funds"), with copies to the Court, the United States, and the State. The apportionment of this additional amount shall be subject to allocation by and among Reopener Settling Defendants, although each Reopener Settling Defendant shall be jointly and severally liable for the entire amount requested by the Trustees. Reopener Settling Defendants shall pay these additional contributions to the Trust in the time period and in the form detailed in the Trust. The foregoing notwithstanding, in the event of a Net Earnings Deficiency, the State shall be obligated to provide the first $50,000 of Additional RSD Funds from the funds paid to the State by the Settling Defendants pursuant to Paragraph 48(b)(iii).

ii. Any Reopener Settling Defendant who does not meet a request from the Trustees for an additional contribution pursuant to (c)(i) above within the designated time shall be deemed in violation of this Consent Decree, and shall be liable in contract for its proportionate share, plus such Interest and costs as the Court may determine, to the other Reopener Settling Defendants.

iii. Any action to enforce obligations to fund additional contributions hereunder, as required in Subparagraph (ii), hereof, may be brought in an Order to Show Cause or similar proceeding in this action.

iv. The Owner Settling Defendant asserts that it is a political subdivision of the State of New Jersey and is subject to constitutional, statutory and home-rule restrictions, including limitations on incursion of debt. Notwithstanding anything to the contrary contained in this Consent Decree and the Appendices, in the event the Trustees make a demand upon the Owner Settling Defendant, pursuant to Paragraph 43(c) hereof, for additional funds in excess of its initial contribution pursuant to this Consent Decree, the Owner Settling Defendant shall in good faith consider contributing additional funds in the same proportion in relation to the total amount of any additional funds demanded by the Trustees from the Reopener Settling Defendants as Owner Settling Defendant's contributions to the Phase I activities and initial contribution pursuant to this Consent Decree bears to the total amount contributed by the Reopener Settling Defendants to the Phase I activities and initially contributed pursuant to this Consent Decree. Any deadline imposed by the Trustees upon the Owner Settling Defendant for making such contribution of additional funds shall be extended as reasonably necessary in order for the Owner Settling Defendant to complete statutory funding procedures and requirements.

d. Within 30 days of the issuance of the Certification of Completion of the RSD O & M Work pursuant to Paragraph 45(b) below, the Reopener Settling Defendants shall cause the payment of the remaining sums in the Trust to the State of New Jersey, according to the procedures outlined in Paragraph 48; provided, however, that if additional funds are contributed by the Reopener Settling Defendants pursuant to subparagraph (b) and (c) hereof, any amount remaining in the Trust, but in no event to exceed the amount of such additional contributions, shall be paid over to the Reopener Settling Defendants. After such payment, the Trust may be terminated by the Trustees.

e. Reopener Settling Defendants shall comply with all of the obligations set forth in the Trust Agreement, attached in Appendix F. Failure to comply with the Trust obligations shall be considered a violation of the Consent Decree.

f. Notwithstanding any provision to the contrary in either the Trust Agreement or this Consent Decree, if EPA determines, pursuant to Paragraph 79, to perform any or all portions of the RSD Work at the Site, EPA, upon thirty days written notice to the Settling Defendants, may require the Trustees to withdraw funds from the Trust and pay those funds to the United States.

XV. CERTIFICATION OF COMPLETION

44. Completion of the Remedial Action

a. Within 90 days after Reopener Settling Defendants conclude that the Remedial Action, including the groundwater extraction ("GWE") system and on-site pre-treatment ("OSPT") system, has been constructed in accordance with this Consent Decree, the Remedial Design Report and the Remedial Action Work Plan, and such systems have been tested by the Reopener Settling Defendants in accordance with the Construction Quality Assurance Plan ("CQAP"), Reopener Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by Reopener Settling Defendants, EPA, and NJDEP. The date on which Reopener Settling Defendants conduct such initial pre-certification inspection shall be referred to in this Paragraph 44 as the "Initial Inspection Date." If, after the pre-certification inspection, the Reopener Settling Defendants still believe that the Remedial Action has been constructed in accordance with this Consent Decree, the Remedial Design Report and the Remedial Action Work Plan, and has been tested by the Reopener Settling Defendants in accordance with the CQAP, they shall submit a written report requesting certification (the "Certification Application") to EPA for approval, with a copy to NJDEP, pursuant to Section XII (Submissions Requiring Agency Approval) within 30 days of the Initial Inspection Date. In the Certification

Application, a registered professional engineer and the Reopener Settling Defendant's Project Coordinator shall state that the Remedial Action has been constructed, tested, and is functioning and operating in full satisfaction of the applicable requirements of this Consent Decree, the Remedial Design Report and the Remedial Action Work Plan. The Certification Application shall include as-built drawings signed and stamped by a professional engineer. The Certification Application shall contain the following statement, signed by the Reopener Settling 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."

The Certification Application shall be deemed complete on the thirtieth (30th) day after receipt of the same by EPA unless EPA notifies the Reopener Settling Defendants in writing within such 30-day period of any deficiencies in the form or content of such application, which notice shall specify such deficiencies. In the event that EPA notifies the Reopener Settling Defendants that the Certification Application is incomplete or deficient, the Reopener Settling Defendants shall correct the deficiencies in writing within 30 days. The Certification Application as resubmitted shall be deemed complete within 21 days of receipt by EPA unless EPA notifies the Reopener Settling Defendants in writing within such 21-day period that they have failed to correct any previously-identified deficiencies.

b. EPA shall have 90 days from the date of EPA's receipt of a complete Certification Application to approve or disapprove it. If, after completion of the pre-certification inspection and receipt and review of the Certification Application, EPA, after reasonable opportunity for review and comment by NJDEP, determines that the Remedial Action or any portion thereof, including the GWE and OSPT systems, has not been constructed in accordance with this Consent Decree, or that such systems have not been tested in accordance with the CQAP, or have failed such testing, EPA shall so notify the Reopener Settling Defendants in writing within 90 days of EPA's receipt of a complete Certification Application, specifying the reasons for such determination and the activities, consistent with this Consent Decree, the Remedial Design Report and the Remedial Action Work Plan, that must be undertaken to complete the Remedial Action ("Notice of Disapproval"). EPA shall set forth in such Notice of Disapproval a schedule for performance of such activities, or require the Reopener Settling Defendants to submit a schedule to EPA for approval pursuant to Section XII (Submissions Requiring Agency Approval). The Reopener Settling Defendants shall perform

all activities described in the Notice of Disapproval 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) to dispute EPA's disapproval of the Certification Application. Upon completion of the activities required by EPA pursuant to this Paragraph 44(b), the Reopener Settling Defendants shall schedule a subsequent pre-certification inspection and thereafter submit a revised Certification Application as provided in Paragraph 44(a). The date(s) on which any subsequent inspection(s) occur(s) shall hereinafter be referred to as the "Subsequent Inspection Date(s)." The foregoing notwithstanding, if EPA does not give a Notice of Disapproval within 90 days of the date of EPA's receipt of a complete Certification Application, EPA shall be deemed to have issued a Certification of Completion of the Remedial Action for the sole purpose of determining, pursuant to paragraph 44(e), hereof, when the ten-year period for performance of Operation and Maintenance by Reopener Settling Defendants shall begin, regardless of whether or not EPA subsequently disapproves such completed Certification Application.

c. If EPA concludes, based on the initial or any subsequent Certification Application, and after a reasonable opportunity for review and comment by NJDEP, that the Remedial Action, including the GWE and OSPT systems, has been constructed in accordance with this Consent Decree, the Remedial Design Report and the Remedial Action Work Plan, that such systems have been satisfactorily tested in accordance with the CQAP, and that such systems are functioning properly and operating as designed based on such testing, EPA will so certify in writing to the Reopener 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 Plaintiffs). The date on which EPA issues the Certification of Completion of the Remedial Action, the date on which EPA shall be deemed to have issued the Certification of Completion of the Remedial Action pursuant to Paragraph 44(b), hereof, or the date on which EPA shall be deemed to have issued the Certification of Completion of the Remedial Action pursuant to Paragraph 44(d), hereof, whichever date occurs first, shall be referred to in this Consent Decree as the "Certification Date" for the sole purpose of determining when the ten-year period for conduct of Operation and Maintenance by Reopener Settling Defendants shall begin.

d. Solely for purposes of determining when the ten-year period for Reopener Settling Defendant's performance of Operation and Maintenance shall begin, the date of issuance of the Certification of Completion of the Remedial Action shall be deemed to be the Initial Inspection Date or the most recent Subsequent Inspection Date, whichever comes later, in the event

that (i) on such Initial Inspection Date or most recent Subsequent Inspection Date, as appropriate, the Reopener Settling Defendants operate the GWE and OSPT systems in a manner consistent with Subparagraph 11(e)(i) or Subparagraph 11(e)(ii) of this Consent Decree, as appropriate, and so as to extract groundwater, as well as collect all flows from the Holly Run underdrain system, in accordance with the approved Remedial Design Report including the Operation and Maintenance Plan, and (ii) the Certification Application submitted by the Reopener Settling Defendants following such Initial Inspection Date or most recent Subsequent Inspection Date is thereafter approved pursuant to Paragraph 44(c), or the Reopener Settling Defendants prevail in any dispute resolution proceeding initiated pursuant to Paragraph 44(b) to dispute a disapproval by EPA of such Certification Application. EPA may require the Reopener Settling Defendants to certify or otherwise reasonably demonstrate that the systems have been operated in accordance with (i) hereof.

e. The Reopener Settling Defendants shall perform Operation and Maintenance for ten (10) years after the Certification Date.

45. Completion of the RSD O & M Work.

a. At least 120 days prior to the tenth anniversary of the Certification Date, Reopener Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by Reopener Settling Defendants, EPA, and NJDEP. If, after the pre-certification inspection, the Reopener Settling Defendants still believe that the RSD O & M Work shall have been fully performed as of the tenth anniversary, Reopener Settling Defendants shall submit a written report by a registered professional engineer stating that the RSD O & M Work will be completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by the Reopener Settling 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 for review and comment by NJDEP, determines that any portion of the RSD O & M Work will not be completed in accordance with this Consent Decree, EPA will notify Reopener Settling Defendants in writing of the activities that must be undertaken to complete the RSD O & M Work. EPA will set forth in the notice a schedule for performance of such activities consistent with the

Consent Decree and the Remedial Design Report or require the Reopener Settling Defendants to submit a schedule to EPA for approval pursuant to Section XII (Submissions Requiring Agency Approval). Reopener Settling 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). Nothing in this paragraph shall be deemed to extend the obligations of the Reopener Settling Defendants to perform Operation and Maintenance for more than ten (10) years after the Certification Date; provided that nothing in this Section shall affect the rights of the Plaintiffs as set forth in Section XXII of this Consent Decree.

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

c. Starting on the tenth (10th) anniversary of the Certification Date, NJDEP shall assume responsibility for, and shall perform and fully fund Operation and Maintenance of the Remedial Action for a period not to exceed twenty (20) years. NJDEP shall, during that period, comply with all requirements of CERCLA, including 42 U.S.C. §9604(c)(3), and with the NCP, as they relate to the duties and obligations of NJDEP with regard to the Site. NJDEP shall comply with the Performance Standards set forth in Paragraph 11 at all times during which it is obligated to perform Operation and Maintenance of the Remedial Action pursuant to this Consent Decree.

XVI. EMERGENCY RESPONSE

46. In the event of any action or occurrence during the performance of the RSD 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, Reopener Settling Defendants shall, subject to Paragraph 47, 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 Reopener Settling Defendants shall notify the EPA Emergency Response Section, Region II at (800) 424-8802. Reopener Settling 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 Plan, the Contingency Plan, and any other applicable plans or documents developed pursuant to the Remedial Design Report or the Remedial Action Work Plan. In the event that Reopener Settling Defendants fail to take appropriate response action as required by this Section, and EPA or, as appropriate, the State takes such action instead, Reopener Settling Defendants shall reimburse EPA and the State all costs of the response action not inconsistent with the NCP pursuant to Section XVII (Reimbursement of Response Costs).

47. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, to take, direct or order all appropriate action or to 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.

XVII. REIMBURSEMENT OF RESPONSE COSTS

48. a. Prior to the lodging of this Consent Decree, the Reopener Settling Defendants and De Minimis Settling Defendants shall have paid into the Trust and the De Minimis Trust the amounts specified in Appendices D and E, respectively, which funds and accumulated earnings thereon shall be held pursuant to the Trust Agreement and the De Minimis Trust Agreement attached hereto as Appendix F and used to make the payments required by Subparagraph 48(b) hereof.

b. Within thirty (30) days of the effective date of this Consent Decree ("Payment Date"), the Trustees shall disburse, or cause to be disbursed, from the De Minimis Trust, and, upon disbursement of all the assets thereof, the Trust, funds sufficient to:

i. Pay to the United States $3,275,000, in reimbursement of Past Response Costs, by Fedwire Electronic Funds Transfer ("EFT" or wire transfer) to the U.S. Department of Justice account, referencing CERCLA Number 0229 and DOJ Case Number 90-11-2-292A. Payment shall be made in accordance with instructions provided by the United States to the Trustees of the Trust upon execution of the Consent Decree. Payment by EFT must be received at the U.S.D.O.J. lockbox bank no later than 11:00 am on the date such payment is due, or such payment will be deemed late. Proof of payment shall be sent to the United States as specified in Section XXVIII (Notices and Submissions);

ii. Pay to the United States and the State of New Jersey (New Jersey) $488,000, in full and final satisfaction, except as provided pursuant to Paragraph 80, of all joint Federal and State Natural Resource claims for Natural Resource Damages. Payment shall be made in the form of a certified check made payable

to "Treasurer, State of New Jersey" and shall reference the "GEMS Landfill Superfund Site." The certified check shall be sent by certified mail, return receipt requested to:

Edward Devine, Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

A copy sent of the check and any accompanying transmittal letter shall be sent certified mail return receipt requested to:

Marcia F. Gittes, Esq.
Office of the Northeast Regional Solicitor
One Gateway Center - Suite 612
Newton Corner, MA 02156-2868

and

Chief, Division of Finance
U.S. Fish and Wildlife Service
4401 North Fairfax Drive
Arlington, Virginia 22203

In compliance with 42 CFR §9607(f), all Natural Resource Damages recovered pursuant to this section shall be utilized solely for the restoration, replacement or acquisition of equivalent resources as those injured and/or destroyed at or in the vicinity of the Site. All decisions as to the expenditure of recovered Natural Resources Damages shall be made jointly by the U.S. Department of the Interior (DOI) and New Jersey pursuant to and in conformity with the provisions and procedures set forth in a Memorandum of Agreement (MOA) to be entered into by and between DOI and New Jersey. None of the monies recovered for Natural Resources Damages arising from the Site, including interest accrued thereon, shall be obligated or expended prior to the execution of such a mutually agreed upon MOA;

iii. Pay to the State $4,100,000, to be applied to Operation and Maintenance costs to be incurred by the State after ten (10) years following the Certification Date. Payment shall be made in the form of a certified check, or checks, made payable to "Treasurer, State of New Jersey" and shall be submitted to Deputy Attorney General Edward Devine, Division of Law, Richard J. Hughes Justice Complex, CN 093, Trenton, New Jersey 08625;

iv. Pay to the State sufficient funds such that such payment, together with the payments to be made to the State pursuant to Subparagraph 48(c) hereof (excluding Interest on such payments), will be equal to $5,875,000 in reimbursement of Past

Response Costs incurred by the State and in full and final satisfaction of all claims against the Settling Defendants that the State had, has or may have in the future arising from payments made to claimants prior to the effective date of this Consent Decree from the Spill Compensation Fund or the Sanitary Landfill Closure and Contingency Fund relating to the Site. Payment shall be made in the form of a certified check, or checks, made payable to "Treasurer, State of New Jersey" and shall be submitted to Deputy Attorney General Edward Devine, Division of Law, Richard J. Hughes Justice Complex, CN 093, Trenton, New Jersey 08625; and

v. Pay to the State $100,000 in full and final satisfaction of all claims the State may have against the Settling Defendants in the future arising from payments, if any, that are made to claimants after the effective date of this Consent Decree from the Spill Compensation Fund or the Sanitary Landfill Closure and Contingency Fund relating to the Site. Payment shall be made in the form of a certified check, or checks, made payable to "Treasurer, State of New Jersey" and shall be submitted to Deputy Attorney General Edward Devine, Division of Law, Richard J. Hughes Justice Complex, CN 093, Trenton, New Jersey 08625.

c. The State has agreed with several members of the municipalities group of the De Minimis Settling Defendants to accept payment over time of amounts due to the State pursuant to this Consent Decree. Such De Minimis Settling Defendants shall make payments to the State, together with accrued interest thereon, in accordance with such agreements. Payments shall be made in the form of a certified check, or checks, made payable to "Treasurer, State of New Jersey" and shall be submitted to Deputy Attorney General Edward Devine, Division of Law, Richard J. Hughes Justice Complex, CN 093, Trenton, New Jersey 08625. Such payments shall be applied for the purposes set forth in Paragraph 48(b)(iv) hereof.

49. Reopener Settling Defendants shall reimburse the United States and the State for all Future Response Costs not inconsistent with the NCP incurred by the United States and the State. The United States and the State will each periodically send Reopener Settling Defendants billings for such costs. With respect to the United States, these billings will be accompanied by a printout of cost data in EPA's financial management system and by a calculation of EPA's indirect costs. With respect to the State, these billings will be accompanied by similar documentation. Reopener Settling Defendants shall make all payments within 30 days of Reopener Settling Defendants' receipt of each bill requiring payment, except as otherwise provided in Paragraph 50. The Reopener Settling Defendants shall have the right to draw down monies from the Trust for this purpose, subject to their obligations under Section XIV hereof. The

Reopener Settling Defendants shall make all payments to the United States required by this Paragraph in the form of a certified check or checks made payable to "EPA Hazardous Substance Superfund" and referencing CERCLA Number 0229 and D.O.J. case number 90-11-2-292A. Reopener Settling Defendants shall forward the certified check(s) to:

EPA - Region II
Attention: Superfund Accounting
P.O. Box 360188M
Pittsburgh, Pennsylvania 15251

and shall send copies of the check(s) to the United States as specified in Section XXVIII (Notices and Submissions). Reopener Settling Defendants shall make all payments to the State required under this Paragraph in the same manner described in Paragraph 48.

50. Reopener Settling Defendants may contest payment of any Future Response Costs under Paragraph 49 if they determine that the United States or the State has made an accounting error or if they allege that a cost item that is included represents costs 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 (if the United States' accounting is being disputed) or the State (if the State's accounting is being disputed) pursuant to Section XXVIII (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 Reopener Settling Defendants shall, within the 30-day period, pay all uncontested Future Response Costs to the United States or the State in the manner described in Paragraph 49. Simultaneously with the objection, the Reopener Settling Defendants shall initiate the Dispute Resolution procedures in Section XX (Dispute Resolution). If the United States or the State prevails in the dispute, within five days of the resolution of the dispute, the Reopener Settling Defendants shall pay the sums due (with accrued Interest) to the United States or the State, if State costs are disputed, in the manner described in Paragraph 49. If the Reopener Settling Defendants prevail concerning any aspect of the contested costs, the Reopener Settling Defendants shall pay that portion of the costs (plus associated accrued Interest) for which they did not prevail to the United States or the State, if State costs are disputed, in the manner described in Paragraph 49. 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 Reopener Settling Defendants' obligation to reimburse the United States and the State for their Future Response Costs.

51. Any Settling Defendant who fails to make any payment on the date required by this Consent Decree shall be liable for Interest on the unpaid balance and such Interest shall be compounded each federal fiscal year until the unpaid balance, including accrued Interest, is paid. The Interest on such unpaid balance shall begin to accrue on the day after such payment was due. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiffs by virtue of Settling Defendants' failure to make timely payments under this Section. The Settling Defendants shall make all payments required by this Paragraph in the manner described in Paragraph 49.

XVIII. INDEMNIFICATION AND INSURANCE

52. The United States and the State do not assume any liability by entering into this agreement or by virtue of any designation of Reopener Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Reopener Settling Defendants shall indemnify, save and hold harmless the United States, the State, and their officials, agents, employees, contractors, subcontractors or representatives for or from any and all claims or causes of action arising from, or on account of, acts or omissions of Settling 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 Reopener Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Reopener Settling Defendants agree to pay the United States and the State all costs they incur 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 acts or omissions of Settling 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 Defendants in carrying out activities pursuant to this Consent Decree. Neither the Settling Defendants nor any such contractor shall be considered an agent of the United States or the State.

53. Settling Defendants waive all claims against the United States and the State for damages or reimbursement or for set-off of any payments made or to be made to the United States or the State, 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 RSD Work on or relating to the

Site, including, but not limited to, claims on account of construction delays. In addition, Reopener Settling Defendants shall indemnify and hold harmless the United States and the State 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 Reopener Settling Defendants and any person for performance of RSD Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

54. Reopener Settling Defendants shall maintain, or in the alternative, require all contractors and subcontractors performing services of their behalf at the Site associated with the RSD Work, including the Project Coordinator, to maintain comprehensive general liability ("CGL") insurance or other liability insurance acceptable to EPA and NJDEP and, where applicable, additional automobile insurance, in an amount of not less than $1 million, combined single limit per policy. Said insurance policies shall include as additional insureds the United States and the State. In the event that Reopener Settling Defendants or the trustees of the Trust established pursuant to Section XIV elect to obtain the insurance coverage required by this paragraph with regard to the Site, they shall include as additional insureds the United States and the State. In addition, for the duration of this Consent Decree, Reopener Settling 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 RSD Work on behalf of Settling Defendants in furtherance of this Consent Decree. Prior to commencement of the RSD Work under this Consent Decree, Reopener Settling Defendants shall provide to EPA and the State certificates of such insurance and a copy of each insurance policy. Reopener Settling Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the effective date of this Consent Decree. If Reopener Settling Defendants demonstrate by evidence satisfactory to EPA and the State 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, Reopener Settling Defendants need provide only that portion of the insurance described in this Paragraph which is not maintained by the contractor or subcontractor.

XIX. FORCE MAJEURE

55. "Force majeure," for purposes of this Consent Decree, is defined as any event arising entirely from causes beyond the control of the Settling Defendants or of any entity controlled by Settling Defendants, including, but not limited to, their

contractors and subcontractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendants' best efforts to fulfill the obligation. The requirement that the Settling 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 RSD Work or a failure to attain the Performance Standards.

56. 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 Reopener Settling 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 Emergency Response Section of the Emergency & Remedial Response Division, EPA Region II, at (800) 424-8802, within 48 hours of when Reopener Settling Defendants first knew or should have known that the event might cause a delay. Within five (5) days thereafter, Reopener Settling Defendants shall provide in writing to EPA and the State 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 Reopener Settling 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 Reopener Settling Defendants, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Reopener Settling 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 Reopener Settling Defendants from asserting any claim of force majeure for that event. Reopener Settling Defendants shall be deemed to have notice of any circumstance of which their contractors or subcontractors had or should have had notice.

57. If EPA, after a reasonable opportunity for review and comment by NJDEP, 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, after a reasonable opportunity for review and comment by NJDEP, 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, after a reasonable opportunity for review and comment by NJDEP, does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the Reopener Settling Defendants in writing of its decision. If EPA, after a reasonable opportunity for review and comment by NJDEP, agrees that the delay is attributable to a force majeure event, EPA will notify the Reopener Settling Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

58. If the Settling 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, Reopener Settling 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 Reopener Settling Defendants complied with the requirements of Paragraphs 55 and 56, above. If Reopener Settling Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Reopener Settling Defendants of the affected obligation of this Consent Decree identified to EPA and the Court.

XX. DISPUTE RESOLUTION

59. 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 or the State to enforce obligations of the Settling Defendants that have not been disputed in accordance with this Section.

60. 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 this time period 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.

61. 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 10 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 62 or 63.

b. Within fourteen (14) 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 62 or 63.

c. If there is disagreement between EPA and the Settling Defendants as to whether dispute resolution should proceed under Paragraph 62 or 63, 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 62 and 63.

62. 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 Emergency & Remedial Response Division, EPA Region II, will issue a final administrative

decision resolving the dispute based on the administrative record described in Subparagraph 62(a). This decision shall be binding upon the Settling Defendants, subject only to the right to seek judicial review pursuant to Subparagraphs 62(c) and (d).

c. Any administrative decision made by EPA pursuant to Subparagraph 62(b) shall be reviewable by this Court, provided that a notice of judicial appeal is filed by the Settling Defendants with the Court and served on all Parties within 10 days of receipt of EPA's decision. The notice of judicial appeal 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' notice of judicial appeal.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendants shall have the burden of demonstrating that the decision of the Emergency & Remedial Response 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 Subparagraph 62(a).

63. 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 61, the Director of the Emergency and Remedial Response Division, EPA Region II, will issue a final decision resolving the dispute. The 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 notice of judicial appeal 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' notice of judicial appeal.

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

64. 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 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 71. 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).

XXI. STIPULATED PENALTIES

65. Settling Defendants shall be jointly and severally liable for stipulated penalties in the aggregate amounts set forth below to the United States and the State for failure to comply with the requirements of this Consent Decree, unless excused under Section XIX (Force Majeure):

Period of Noncompliance	Penalty per Violation Per Day
1st through 7th day	$ 1,000
8th through 14th day	$ 2,500
15th through 29th day	$ 5,000
30th through 44th day	$ 7,500
45th through 59th day	$10,500
60th day and beyond	$15,000

"Compliance" by Settling Defendants shall include completion of the activities under this Consent Decree, or any work plan or other plan approved under this Consent Decree, in accordance with all applicable requirements of law, this Consent Decree, the Remedial Design Report, 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. For purposes of this Section, the liability of any De Minimis Settling Defendant for stipulated penalties shall be several only, and "failure to comply" by any De Minimis Settling Defendant shall include only the following:

a. failure to satisfy any of its payment obligations in accordance with Section III (Parties Bound), Section V (General Provisions), Section XIV (Assurance of Ability to Complete RSD Work), Section XVII (Reimbursement of Response Costs), or XXIV (De Minimis Settlement);

b. failure to comply with any requests for access to information made by Plaintiffs in accordance with Section XXVI;

c. failure to comply with any obligations imposed upon it by Section XXVII relating to the retention of records;

d. failure to meet any term of the covenants contained in Section XXIII (Covenants by Settling Defendants);

e. failure to comply with any of the provisions of Section XXIV (De Minimis Settlement); and

f. failure to comply with any provision of Section III (Parties Bound).

66. Any written decision by EPA or the State not to seek payment of a stipulated penalty shall not be deemed to be a waiver by EPA of any future right to seek the payment of a later stipulated penalty based on a similar or repeated event.

67. 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 XII (Submissions Requiring Agency Approval), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Defendants of any deficiency; (2) with respect to a decision by the Director, Emergency & Remedial Response Division, EPA Region II, under Subparagraph 62(b) or 63(a) of Section XX (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that 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.

68. 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 and NJDEP 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.

69. All penalties owed to the United States or the State under this section shall be due and payable 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 under this Section shall be paid by certified check made payable to "EPA Hazardous Substances Superfund," shall be mailed to:

EPA - Region II
Attention: Superfund Accounting
P.O. Box 360188M
Pittsburgh, Pennsylvania 15251

and shall indicate that the payment is for stipulated penalties, and shall reference CERCLA Number 0229 and DOJ Case Number 90-11-2-292A. 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 XXVIII (Notices and Submissions).

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

71. Penalties shall continue to accrue as provided in Paragraph 67 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; or

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 NJDEP or to Settling Defendants to the extent that they prevail.

72. a. If Settling Defendants fail to pay stipulated penalties when due, the United States or the State 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 demand made pursuant to Paragraph 69.

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 Consent 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.

73. No payments made under this Section shall be tax deductible for Federal or State tax purposes.

XXII. COVENANTS NOT TO SUE BY PLAINTIFFS

74. a. In consideration of the actions that will be performed and the payments that will be made by the Reopener Settling Defendants under the terms of the Consent Decree, and except as specifically provided in Paragraphs 75, 76, and 78 of this Section, the United States covenants not to sue or to take administrative action against Reopener Settling Defendants for recovery of Natural Resource Damages, or pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA relating to the Site and the State covenants not to sue or to take administrative action against Settling Defendants for recovery of Natural Resource Damages, or pursuant to Section 107(a) of CERCLA and Section 7003 of RCRA; the Spill Act; the Solid Waste Management Act, N.J.S.A. 13;1E-1 et seq. and its attendant regulations; N.J.S.A. 23:5-28; the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.; the Sanitary Landfill Facility Closure and Contingency Act, N.J.S.A. 13;1E-100, et seq.; or common law theories of public nuisance, private nuisance, negligence, or strict liability; nor shall the State seek exemplary damages, Court costs, expert fees or counsel fees relating to the Site. Except with respect to future liability, these covenants not to sue shall take effect upon the receipt by EPA; NJDEP, and DOI of the payments required by Paragraph 48 of Section XVII (Reimbursement of Response Costs). With respect to future liability, these covenants not to sue shall take effect upon Certification of Completion of the Remedial Action by EPA pursuant to Subparagraph 44(c) of Section XV (Certification of Completion). These covenants not to sue are conditioned upon the complete and satisfactory performance by Reopener Settling Defendants of their obligations under this Consent Decree. These covenants not to sue extend only to the Reopener Settling Defendants and do not extend to any other person.

b. Without in any way limiting the generality of the foregoing, in consideration of the payments made by the Reopener Settling Defendants under this Consent Decree, which payments are

accepted by the State, including the Spill Compensation Fund and the Sanitary Landfill Facility Closure and Contingency Fund (collectively, the "Funds"), as full compensation for all claims or causes of action the State ever had, has now or will hereafter acquire against the Reopener Settling Defendants arising from payments made or to be made from the Funds (the "Fund Payments") to certain individuals or entities (such individuals and entities together with their successors and assigns, if any, "Fund Recipients") in connection with the Site, the State: (i) in its capacity as the assignee or subrogee (through agreement, operation of N.J.S.A. 58:23-11q or N.J.S.A. 13:1E-111 or otherwise) of any and all rights, claims, interests or causes of action of any Fund Recipient against the Reopener Settling Defendants in connection with the Site up to the amount of the Fund Payment received or to be received by such Fund Recipient (the "Underlying Rights"), discharges, forever releases, cancels, extinguishes, compromises, settles and waives all Underlying Rights of each and every Fund Recipient, provided that, as to Fund Recipients receiving Fund Payments in the future, this release shall become effective upon the Fund Recipient's receipt of the Fund Payment; and (ii) otherwise discharges, forever releases, cancels, extinguishes, compromises, settles and waives, for the benefit of the Reopener Settling Defendants, all rights, claims, interests, liens or causes of action the State had, has now or may hereafter acquire, by way of assignment, subrogation or otherwise, to recover or receive reimbursement for the Fund Payments, or any portion thereof, from the Fund Recipients, the Reopener Settling Defendants or any other person, firm, corporation or other entity.

75. Plaintiffs' Pre-certification reservations.

Notwithstanding any other provision of this Consent Decree, the United States reserves, pursuant to its authorities, and the State reserves, pursuant to its authorities under Section 107 of CERCLA and under the Spill Act, 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 Reopener Settling Defendants (1) to perform further response actions relating to the Site or (2) to reimburse the United States and the State for additional costs of response if, prior to Certification of Completion of the Remedial Action:

(i) conditions at the Site, previously unknown to Plaintiffs, are discovered, or

(ii) information, previously unknown to Plaintiffs, is received, in whole or in part,

and EPA determines, after a reasonable opportunity for review and comment by NJDEP, based on these previously unknown conditions or

information together with any other relevant information, that the Remedial Action is not protective of human health or the environment.

76. Plaintiffs' Post-certification reservations.

Notwithstanding any other provision of this Consent Decree, the United States reserves, pursuant to its authorities, and the State reserves, pursuant to its authorities under Section 107 of CERCLA and the Spill Act, 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 Reopener Settling Defendants (1) to perform further response actions relating to the Site or (2) to reimburse the United States and the State for additional costs of response if, subsequent to Certification of Completion of the Remedial Action:

(i) conditions at the Site, previously unknown to Plaintiffs, are discovered, or

(ii) information, previously unknown to Plaintiffs, is received, in whole or in part,

and EPA determines, after a reasonable opportunity for review and comment by NJDEP, based on these previously unknown conditions or information together with any other relevant information, that the Remedial Action is not protective of human health or the environment.

77. For purposes of Paragraph 75, the information and the conditions known to Plaintiffs shall include only that information and those conditions known to Plaintiffs set forth in the Record of Decision for the Site, in the administrative record supporting the Record of Decision, or in Appendix I. For purposes of Paragraph 76, the information and the conditions known to Plaintiffs shall include only that information and those conditions known to Plaintiffs as of the date of Certification of Completion of the Remedial Action and set forth in the Record of Decision, in the administrative record supporting the Record of Decision, in Appendix I, and any information received by EPA pursuant to the requirements of this Consent Decree prior to Certification of Completion of the Remedial Action.

78. General reservations of rights. The covenants not to sue set forth above do not pertain to any matters other than those expressly specified in Paragraph 74. The United States and the State reserve, and this Consent Decree is without prejudice to, all rights against Reopener Settling Defendants with respect to all other matters, including but not limited to, the following:

(1) claims based on a failure by Reopener Settling 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 at any location other than the Site;

(3) criminal liability;

(4) liability for violations of federal or state law which occur during or after implementation of the Remedial Action; and

(5) liability for future disposal of Waste Material at the Site.

79. a. In the event EPA determines that Reopener Settling Defendants have ceased implementation of any portion of the RSD Work, are seriously or repeatedly deficient or late in their performance of the RSD Work, or are implementing the RSD 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. After this determination, EPA may, upon thirty days written notice to the Reopener Settling Defendants, require the Trustees to withdraw any and all funds from the Trust created pursuant to Paragraph 43 and pay those funds to the United States. Reopener Settling Defendants may invoke the procedures set forth in Section XX (Dispute Resolution) to dispute EPA's determination that takeover of the RSD Work is warranted under this Paragraph. If Reopener Settling Defendants invoke the procedures set forth in Section XX, Reopener Settling Defendants must establish that EPA's decision was arbitrary and capricious or otherwise not in accordance with law in order to succeed in this dispute. Such dispute shall be resolved on the administrative record. Costs incurred by the United States in performing the Work pursuant to this Paragraph, in excess of the amounts withdrawn and transferred to the United States from the Trust Fund, shall be considered Future Response Costs that Reopener Settling Defendants shall pay pursuant to Section XVII (Reimbursement of Response Costs).

b. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all authority and reserve all rights to take any and all response actions authorized by law.

80. <u>Reservations concerning natural resource injury</u>

Notwithstanding any other provision of this Consent Decree, the United States, on behalf of its natural resource

trustees, reserves the right to institute proceedings against Reopener Settling Defendants in this action or in a new action seeking recovery of Natural Resource Damages based on information received after the date of lodging of this Consent Decree which indicates that there is injury to, destruction of, or loss of Natural Resources of a type that was unknown to the United States and its natural resource trustees at the date of lodging of this Consent Decree.

XXIII. COVENANTS BY SETTLING DEFENDANTS

81. Settling Defendants hereby covenant not to sue and agree not to assert any claims or causes of action against the United States or the State with respect to the Site or this Consent Decree, including, but not limited to, any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. §9507) through CERCLA Sections 106(b)(2), 111, 112, 113 or any other provision of law, any claim against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Site, or any claims arising out of response activities at the Site. However, the Settling Defendants reserve, and this Consent Decree is without prejudice to, actions against the United States or the State based on negligent actions taken directly by the United States or the State (not including oversight or approval of the Settling Defendants plans or activities) that 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. 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. §9611, or 40 C.F.R. §300.700(d).

82. Except as provided herein, and except (a) pursuant to any allocation agreement among the Reopener Settling Defendants with respect to the performance of obligations or payment of funds hereunder and (b) for any rights of the trustees of the trust fund under the Phase I ACO against any settling private parties under the Phase I ACO who have not yet fulfilled their financial obligations thereunder, all Settling Defendants hereby agree that (other than with respect to rights created hereunder) they will not assert any claims of any kind, including claims for contribution and/or indemnity, whether under state or federal statute or under contract or at common law, including but not limited to CERCLA or the Spill Act, or any common law cause of action for the cost of any Work covered by this Consent Decree and/or any monies paid pursuant to this Consent Decree or for any matters covered by or related to the Phase I ACO or the Phase I Work, against any other Settling Defendants. It is further understood and agreed that this Consent Decree shall in no way be construed to affect or waive claims that the Settling Defendants

may have against any Nonsettling Defendants, including claims for contribution and indemnity, whether under state or federal statute or under contract or at common law, except as set forth in Paragraph 91 hereof.

83. For purposes of Paragraphs 82 and 94 only, Settling Defendants shall include all of their officials, officers, directors, shareholders, and employees in their official, corporate, and individual capacities. Anything herein to the contrary notwithstanding, each of the Settling Defendants reserves, and does not waive, any claims it may have as an insured on any insurance policy, up to the limits of said policy, whether or not that policy names any other Settling Defendants as an insured, and third-party defendant Delaware County specifically reserves, and does not waive, its contractual indemnification rights against defendant Mascaro & Sons.

XXIV. DE MINIMIS SETTLEMENT

84. Each De Minimis Settling Defendant certifies to the best of its knowledge and belief that:

a. the De Minimis Settling Defendant has made reasonable inquiry and provided to its liaison counsel or its internal allocation consultant, to the extent requested, and to EPA, all information in its possession or control that relates in any way to its generation, treatment, transportation, storage or disposal of any Waste Material at or in connection with the Site;

b. the De Minimis Settling Defendant has executed and provided to EPA the "Certification of De Minimis Status";

c. all information submitted pursuant to Subparagraphs 84(a) and (b) is true and correct with respect to the amount, the chemical nature, the constituents, the toxicity, and the hazardous effects of all Waste Material that the De Minimis Settling Defendant may have either: (i) transported to the Site, (ii) disposed of at the Site or (iii) arranged for disposal or treatment of, and which De Minimis Settling Defendant has reason to believe was subsequently disposed of at the Site; and

d. the De Minimis Settling Defendant has reviewed all of the information described in Subparagraphs 84(a) and (b) in combination with all information provided to the De Minimis Settling Defendant by EPA, NJDEP or the Settling Defendants describing that De Minimis Settling Defendant's alleged involvement with the Site and the De Minimis Settling Defendant asserts that it neither possesses nor knows of any other documents or information which indicate that the De Minimis Settling Defendant disposed of or arranged for the transportation to or disposal of at the Site, either:

i. a greater quantity of Waste Material than is indicated by this information; or

ii. Waste Material possessing a different chemical nature or constituents or possessing more toxic or other hazardous effects than are indicated by this information.

85. In the judgment of EPA, both of the following are minimal in comparison to the other hazardous substances at the Site: (a) the amount of the hazardous substances contributed by each De Minimis Settling Defendant identified in Appendix E and (b) the toxic or other hazardous effects of the substances contributed by each De Minimis Settling Defendant identified in Appendix E.

86. In consideration of the payments that will be made by each De Minimis Settling Defendant under the terms of the Consent Decree, and except as specifically provided in Paragraphs 87 and 89 of this Section, the United States covenants not to sue or to take administrative action against any of the De Minimis Settling Defendants for recovery of Natural Resource Damages, or pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA relating to the Site and the State covenants not to sue or to take administrative action against any of the De Minimis Settling Defendants for recovery of Natural Resource Damages, or pursuant to Section 107(a) of CERCLA and Section 7003 of RCRA or pursuant to the Spill Act; the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and its attendant regulations; N.J.S.A. 23:5-28; the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.; or the Sanitary Landfill Facility Closure and Contingency Act, N.J.S.A. 13:1E-100, et seq.; or common law theories of public nuisance, private nuisance, negligence, or strict liability; nor shall the State seek exemplary damages, Court costs, expert fees or counsel fees relating to the Site. For purposes of this Paragraph only, "De Minimis Settling Defendants" shall include all of their officers, directors, shareholders, and employees in both their corporate and individual capacities.

87. Notwithstanding any other provisions of this Consent Decree, the United States and the State reserve all rights against each De Minimis Settling Defendant with respect to the following matters:

a. claims based on a failure by that De Minimis Settling Defendant to perform a requirement of this Consent Decree set forth in this Section, Section XXVII, or Paragraphs 43 or 48;

b. criminal liability; and

c. liability arising from the past, present or future disposal, release or threat of release of any Waste Material at any location other than the Site.

88. The covenant not to sue granted in Paragraph 86 shall take effect as to each De Minimis Settling Defendant upon receipt by EPA and NJDEP of certification from the Liaison Counsel for the Settling Defendants that each such De Minimis Settling Defendant has made the payment required by Paragraphs 43 or 48 in the full amount identified for such De Minimis Settling Defendant set forth in Appendix E and receipt by EPA and NJDEP of payment of any Interest, penalties, and late payments due thereon; provided however, that such covenant shall not take effect, unless a De Minimis Settling Defendant has executed and returned to EPA the "Certification of De Minimis Status" referenced in Subparagraph 84(b) above. The covenants not to sue described in this Section extend only to De Minimis Settling Defendants and do not extend to any other person.

89. Nothing in this Consent Decree constitutes a covenant not to sue or take action or otherwise limits the ability of the United States, or the State, to take appropriate action against a De Minimis Settling Defendant if the De Minimis Settling Defendant knew or had reason to know that the certifications set forth in Paragraph 84 were not true or that information or documentation relevant to any certification set forth in Paragraph 84 was not provided to EPA.

90. a. In the event that new information shows, or any Reopener Settling Defendant establishes, based on new information, that the De Minimis Settling Defendant no longer qualifies as a de minimis party, the de minimis covenant not to sue under this Consent Decree shall be nullified as to that Settling Defendant. If such Settling Defendant (1) pays to the Trust the additional amount, and to the United States one-half that amount, as determined by that Settling Defendant's Liaison Group and approved in writing by EPA, necessary to bring its payment to the level required if the correct information about the Waste Material had been used as the basis for the initial payment, plus Interest, computed from the date of the initial payment pursuant to Appendix E until the Settling Defendant has made the necessary payment and (2) reimburses the United States and Reopener Settling Defendants for all costs incurred to effectuate payment of such additional amount, such Settling Defendant shall receive the covenants not to sue contained in Section XXII, and shall henceforth be deemed a Reopener Settling Defendant.

b. For purposes of Subparagraph 90(a), above, "new information" shall mean: (1) with regard to the rights of any Reopener Settling Defendant against any other Settling Defendant, only information which was not in the possession of any Settling Defendant within any Liaison Group as of the effective date of this Consent Decree; and (2) with regard to the rights of the United States or the State against any Settling Defendant, any

information not in either the possession of the United States or the State as of the effective date of this Consent Decree.

91. Assignment of Rights by De Minimis Settling Defendants to Reopener Settling Defendants

The De Minimis Settling Defendants hereby assign to Reopener Settling Defendants any and all actions which they may be authorized to pursue, under federal or state statute or common law for contribution, indemnification and Spill Act treble damages, against any person not a signatory to this Consent Decree and relating to these consolidated actions. This assignment shall include any authorization received from the NJDEP to collect treble damages pursuant to N.J.S.A. 58:10-23.11.f.a(3), any right to bring an indemnification action for any costs paid, and any other rights to seek contribution or indemnification pursuant to any other provision of law, statute or under common law, except that the right to pursue any indemnification claim based on a contract shall not be assigned. Anything herein to the contrary notwithstanding, each of the De Minimis Settling Defendants reserves, and does not assign, any claims it may have as an insured on any insurance policy, up to the limits of said policy, whether or not that policy names any other Settling Defendant (or any other person or entity) as an insured.

92. Each De Minimis Settling Defendant shall cooperate with reasonable requests for assistance made by the Reopener Settling Defendants in connection with the prosecution of any claims referred to in Paragraph 91, including making available appropriate records in discovery and appropriate personnel for the provision of testimony.

XXV. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

93. Except as provided in Paragraph 91, 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. 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. This Consent Decree may not be offered in evidence by any Settling Defendant against any other Settling Defendant in this or any other action except in an action by the parties to enforce its terms.

94. The Parties agree, and by entering this Consent Decree this Court finds, that the Settling Defendants 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) and, with respect to the De Minimis Settling Defendants, CERCLA Section 122(g)(5), for matters addressed in this Consent Decree. For purposes of this paragraph "matters addressed" shall mean all claims asserted in the complaints filed by the Plaintiffs in these consolidated actions, the Phase I activities, and all actions of Settling Defendants required by this Consent Decree. The State agrees that the Settling Defendants are also entitled to protection from contribution actions or claims to the extent provided by the laws of the State of New Jersey.

95. The settlement embodied in this Consent Decree does not resolve any crossclaims for contribution and/or indemnification asserted or which may be asserted against any of the Settling Defendants, including without limitation the De Minimis Settling Defendants, in any pending matter or matter not yet in suit involving personal injury or property damage claims asserted by private individuals or entities, including, but not limited to In re GEMS Landfill Superior Court Litigation, Master Docket No. L-068199-85 (Camden County - Law Division), Keating, et al. v. ABC Detachable Container, Inc, Docket No. L-12152-90 (Camden County - Law Division) and Amoroso v. Owens-Illinois, et al., Docket No. L-6584-92 (Camden County - Law Division).

96. 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 and the State in writing no later than 60 days prior to the initiation of such suit or claim.

97. 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 and the State within 10 days of service of the complaint on them. In addition, Settling Defendants shall notify the United States and the State within 10 days of service or receipt of any Motion for Summary Judgment and within 10 days of receipt of any order from a Court setting a case for trial.

98. In any subsequent administrative or judicial proceeding initiated by the United States or the State 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 or the State 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 Not to Sue by Plaintiffs) or Section XXIV (De Minimis Settlement).

XXVI. ACCESS TO INFORMATION

99. Settling Defendants shall provide to EPA and NJDEP, 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 RSD Work. Settling Defendants shall also make available to EPA and NJDEP, for purposes of investigation, information gathering or testimony, their employees, agents or representatives with knowledge of relevant facts concerning the performance of the RSD Work.

100. a. Settling Defendants may assert business confidentiality or trade secret claims covering part or all of the documents or information submitted to Plaintiffs under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. §9604(e)(7), and 40 C.F.R. §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 and NJDEP, 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 Plaintiffs 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 required to be created or generated, or required to be submitted to EPA, under the terms of this Consent Decree shall be withheld on the grounds that they are privileged.

101. No claim of confidentiality shall be made with respect to any data generated by the Reopener Settling Defendants or their contractors in connection with the performance of the RSD Work, 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. Results of chemical analyses submitted by Settling Defendants and conspicuously marked as "CONFIDENTIAL" shall not be released to the public prior to EPA's receipt of validation of such chemical analyses unless EPA determines pursuant to 40 CFR, Part 2, Subpart A and 40 CFR §2.210(a) that such material should be disclosed under the Freedom of Information Act, 5 U.S.C. §552. Nothing contained in this Paragraph shall be construed to limit EPA's discretion to release any information relating to this Site pursuant to any of its authorities under CERCLA or other federal law.

XXVII. RETENTION OF RECORDS

102. a. Until six (6) years after the Reopener Settling Defendants' receipt of EPA's notification pursuant to Paragraph 45(b) of Section XV (Certification of Completion), each Reopener 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 RSD Work or liability of any person for response actions conducted and to be conducted at the Site, regardless of any corporate or municipal retention policy to the contrary. Until six (6) years after the Reopener Settling Defendants' receipt of EPA's notification of Certification of Completion of the RSD O & M Work pursuant to Paragraph 45(b) of Section XV (Certification of Completion), Reopener 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 RSD Work.

b. Until twelve (12) years after the date of entry of this Consent Decree, each De Minimis 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 liability of any person for response actions conducted and to be conducted at the Site, regardless of any corporate or municipal retention policy to the contrary.

103. 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 NJDEP. 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 Plaintiffs 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 or De Minimis Settling Defendants. However, no documents, reports or other information required to be created or generated, or required to be submitted to EPA, under the terms of the Consent Decree shall be withheld on the grounds that they are privileged.

104. Each Settling Defendant hereby certifies, individually, 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 since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site and that 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. 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. 6927.

XXVIII. NOTICES AND SUBMISSIONS

105. 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:

EPA Project Coordinator--GEMS Landfill Superfund Site
Emergency & Remedial Response Division
United States Environmental Protection Agency
Region II, 19th Floor
290 Broadway
New York, NY 10007-1866

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044
Re: DOJ # 90-11-2-292A

Chief, New Jersey Superfund Branch
Office of Regional Counsel
United States Environmental Protection Agency
Region II, 17th Floor
290 Broadway
New York, NY 10007-1866
Attn: GEMS Landfill Superfund Site Attorney

As to the State:

Section Chief
Hazardous Site Litigation Branch
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN093
Trenton, NJ 08625

Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection
401 East State Street, 6th Floor
CN028
Trenton, NJ 08625

As to the Settling Defendants:

Reopener Settling Defendants' Project Coordinator

with a copy to the Trustees under the Trust Agreement at the addresses set forth therein

One copy of all required written communications other than work plans, design documents, and technical reports shall also be sent to each of the following individuals:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044
Re: DOJ # 90-11-2-292A

Chief, New Jersey Superfund Branch
Office of Regional Counsel
United States Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007
Attn: GEMS Landfill Superfund Site Attorney

Section Chief
Hazardous Site Litigation Branch
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN093
Trenton, NJ 08625

XXIX. EFFECTIVE DATE

106. 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.

XXX. RETENTION OF JURISDICTION

107. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Plaintiffs 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) hereof.

XXXI. APPENDICES

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

"Appendix A" is the ROD.

"Appendix B" is the Pre-Final (90%) Remedial Design Report and "Response to Comment" document.

"Appendix C" is the description and/or map of the Site.

"Appendix D" is the complete list of the Reopener Settling Defendants and the aggregate amount to be paid by the Reopener Settling Defendants to the Trust Fund.

"Appendix E" is the complete list of the De Minimis Settling Defendants and the amount to be paid, or in the event of prior overpayment, credited, by each De Minimis Settling Defendant to the Trust Fund.

"Appendix F" is the De Minimis Trust Agreement and the Trust Agreement.

"Appendix G" is the Groundwater Performance Monitoring Plan.

"Appendix H" is the Service Agreement between the Reopener Settling Defendants and the Gloucester Township Municipal Utilities Authority.

"Appendix I" is the list of documents referenced in Section XXII.

"Appendix J" is a detailed schedule for the completion of the final Remedial Design Report and the Remedial Action Work Plan and all of their components.

"Appendix K" is the Natural Resource Damages Monitoring and Compliance Plan.

"Appendix L" is the Swamp Pink Monitoring Plan.

XXXII. COMMUNITY RELATIONS

109. EPA will determine the appropriate role for the Reopener Settling Defendants under the community relations plan developed by EPA. Reopener Settling Defendants shall also cooperate with EPA and the State in providing information regarding the RSD Work to the public. As requested by EPA or the State, Reopener Settling 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.

XXXIII. MODIFICATION

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

111. No material modifications shall be made to the Remedial Design Report without written notification to and written approval of the United States, Reopener Settling 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 Remedial Design Report that do not materially alter that document may be made by written agreement between EPA, after providing NJDEP with a reasonable opportunity to review and comment on the proposed modification, and the Reopener Settling Defendants.

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

XXXIV. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

113. 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. §9622(d)(2), and 28 C.F.R. §50.7, and may be subject to a public meeting in accordance with Section 7003(d) of RCRA. 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.

114. 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 between the Parties.

XXXV. SIGNATORIES/SERVICE

115. Each undersigned representative of a Settling Defendant to this Consent Decree, the Assistant Attorney General for Environment and Natural Resources of the Department of Justice, and the Assistant Director, Division of Responsible Party Site Remediation 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.

116. 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.

117. This Consent Decree shall be executed in counterparts, and the individual signature pages may be collected to form and constitute one document. 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. Each Settling Defendant hereby agrees 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.

SO ORDERED THIS 27th DAY OF June, 1997.

Jerome B. Simandle
United States District Judge

01-02-1997 12:23

RECEIVED

JAN 1 5 1997

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR THE UNITED STATES OF AMERICA

Date: 12/24/96

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

Date: 12/26/96

ALEX BEEHLER
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

FAITH S. HOCHBERG
United States Attorney
District of New Jersey

LOUIS J. BIZZARRI (003903)
Assistant United States Attorney
Mitchell H. Cohen Courthouse
U.S. Courthouse
401 Market Street
Camden, NJ 08101

State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al.
Consent Decree Signature Page

Date: 9/30/96

JEANNE M. FOX
Regional Administrator, Region II
U.S. Environmental Protection Agency
290 Broadway
New York, NY 10007

Date: 9/30/96

DELMAR KARLEN
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007

State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al.
Consent Decree Signature Page

FOR THE STATE OF NEW JERSEY

Date: _____

EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: 10/3/96

RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection ~~& Energy~~
401 East State Street
Trenton, New Jersey 08625

Date: 10/24/96

JAMES F. HALL
Assistant Commissioner
Natural and Historic Resources
New Jersey Department of Environmental Protection
401 E. State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR _____
(Name of settling party -- please type)

Date: _____

_____
SIGNATURE

_____
(Name -- please type)

_____
(Title)

_____
_____
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: _____
(Please type)

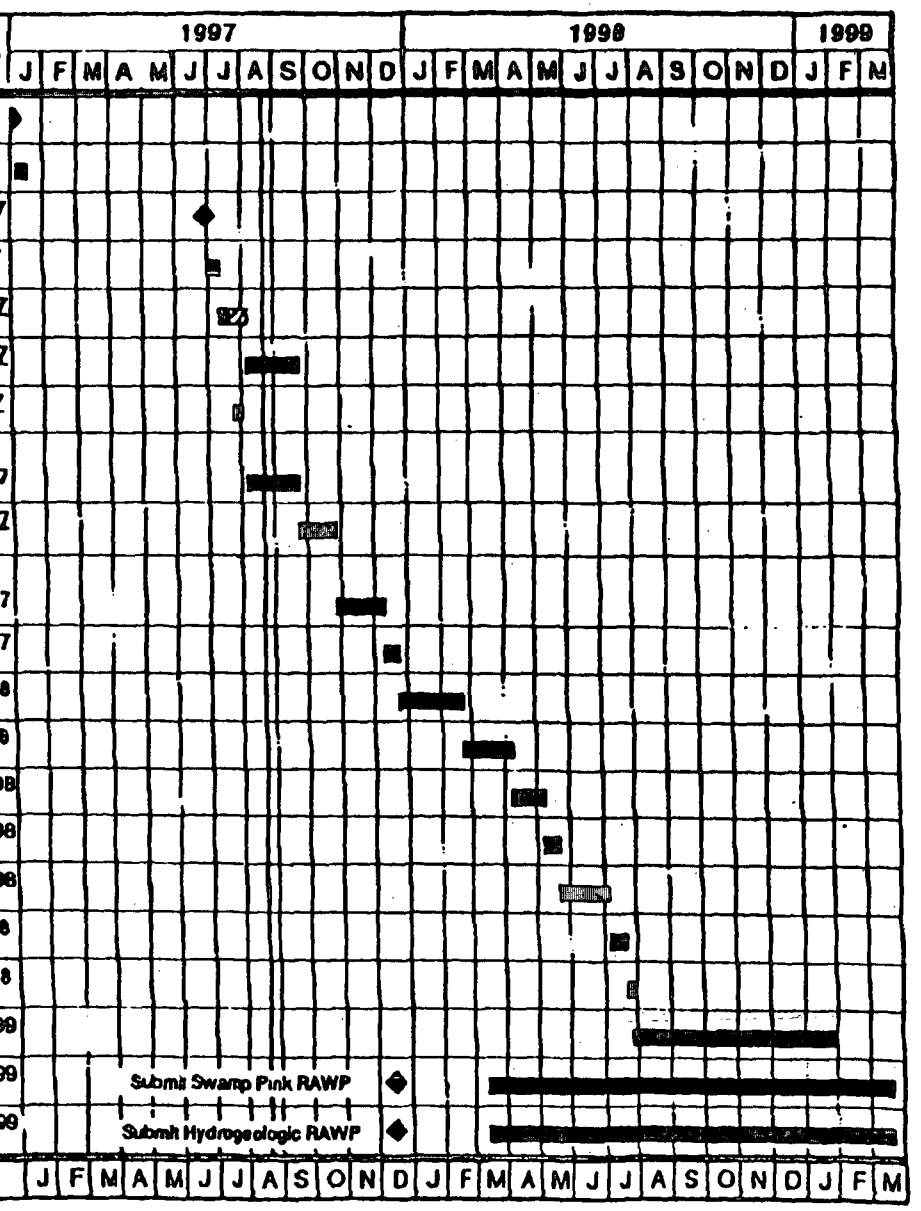
Title: _____

Address: _____
_____

Tel. Number: _____

GEMS Phase II Project
Revised Preliminary Schedule
August 20, 1997

Tasks	Consent Decree Duration	Assumed Duration	End Date
Consent Decree Lodged			
Project Coordinator Named			
Consent Decree Entered			Jun27-97
Supervisory Professional Named	10 d		Jul07-97
EPA Notice To Proceed		xx	Aug05-97
Begin Alternate Design		45 d	Sep22-97
CCM/UA Meeting			Jul30-97
Submit 100% "Contingency" Design & Preliminary Alternate Design	45 d		Sep22-97
EPA Design Review & Comment		45 d	Nov06-97
Response to Design Comments & Complete Alternate Design		30 d	Dec08-97
EPA Approval 100% Design		14 d	Dec22-97
Submit RAWP	60 d		Feb20-98
EPA RAWP Rvw & Comment		45 d	Apr06-98
Response to RAWP Comments		30 d	May08-98
EPA Approval RAWP		14 d	May20-98
Award Construction Contract	45 d		July06-98
Schedule Pre-Work Conference	14 d		Jul20-98
Hold Pre-Work Conference		7 d	Jul27-98
Construction GRE/Treatment		6 mos	Jan27-99
Swamp Pink Baseline	1 yr		Mar15-99
Hydrogeologic Baseline	1 yr		Mar15-99



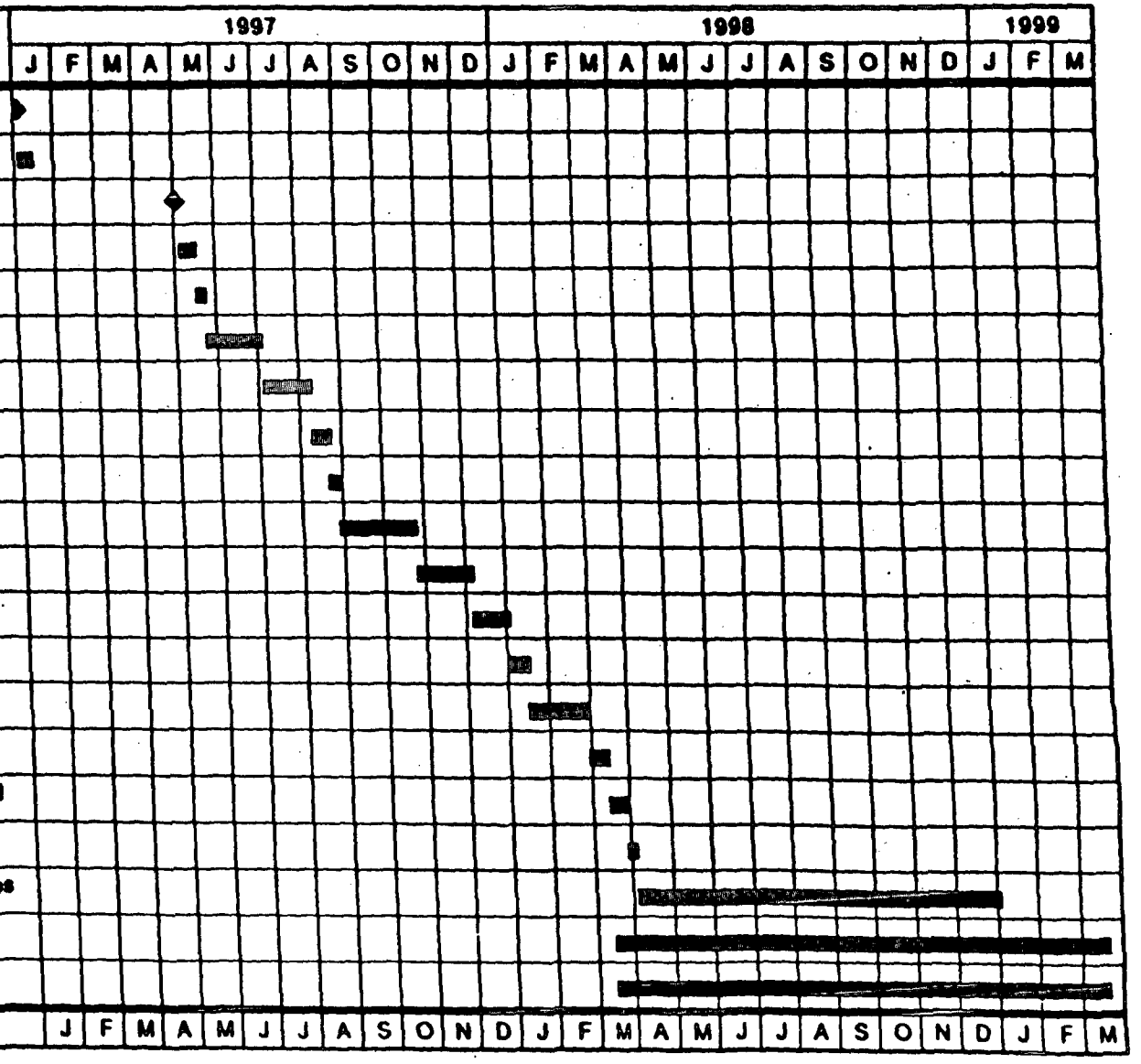
gems (8/20/97)

GEMS Phase II Project

Draft No. 1

Preliminary Schedule

Activity Name	Consent Decree Duration	Assumed Duration
Consent Decree Lodged		
Project Coordinator Named		
Consent Decree Entered		
Supervisory Professional Named	10 d	
EPA Notice To Proceed		7 d
Submit 100% Design	45 d	
EPA Design Review & Comment		35 d
Response to Design Comments		14 d
EPA Approval 100% Design		7 d
Submit RAWP	60 d	
EPA RAWP Rvw & Comment		45 d
Response to RAWP Comments		30 d
EPA Approval RAWP		14 d
Award Construction Contract	45 d	
Schedule Pre-Work Conference	14 d	
Hold Pre-Work Conference		14 d
Mobilization Lag	10 d	
Construction GRE/Treatment		9 mos
Swamp Pink Baseline	1 yr	
Hydrogeologic Baseline	1 yr	



2/3/97

RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION

Site

Gloucester Environmental Management Services (GEMS) Landfill, Gloucester Township, Camden County, New Jersey

Documents Reviewed

I am basing my decision on the following documents describing the analysis of cost-effectiveness of Remedial Alternatives for the GEMS Landfill site:

- Remedial Investigation and Feasibility Study, GEMS Landfill Site, NUS Corporation, July 1985
- Focused Feasibility Study Report, GEMS Landfill Site, NUS Corporation, April 1985
- Conceptual Design Report for Interim Remedial System, GEMS Landfill, Malcolm Pirnie Inc., April 1985
- Phases I-III Report, Treatability Study to Meet Objective I for GEMS Landfill Leachate, Princeton Aqua Science, February, 1985
- Staff summaries and recommendations for remedial alternative selection
- Responsiveness Summary for the GEMS site, September 1985

Description of Selected Remedy

- Construction of a landfill cap with regrading of existing landfill side slopes. The cap will consist of a multimedia cap on the top of the landfill, clay and soil on the sides, and a cap foundation with a toe drain.
- Construction of an active gas collection and treatment system.
- Construction of a ground water pumping and treatment system. The treatment preference for collected leachate is pretreatment and discharge to the POTW. Implementation is pending approval of the State of New Jersey and the local POTW. If such approval is not obtained, complete treatment will be provided on-site followed by discharge to adjacent surface waters.

GML 001 1785

- Holly Run and Briar Lake remediation.
- Construction of surface water controls.
- Implementation of a monitoring program.
- Construction of a security fence.
- Implementation of the State of New Jersey's proposed remedial action as an initial phase of the selected remedy. The initial phase addresses the area between the landfill and the Fox Chase II Development, and includes a ground water/ leachate collection and pretreatment system, relocation and isolation of Holly Run and limited runoff controls. In addition, the connection of the potentially affected homes with the existing public water supply system will be included as part of the initial phase of remedial action implementation.
- Operation and Maintenance as required to ensure the continued effectiveness of the remedy.

Declarations

Consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the National Oil and Hazardous Substances Contingency Plan (NCP), 40 CFR Part 300, and pursuant to EPA Delegation Manual Order 14-5, I have determined that the remedy described above is the cost-effective remedial action alternative for the GEMS Landfill site.

It is hereby determined that implementation of this remedial action is the lowest cost alternative that is technologically feasible and reliable, and which effectively mitigates and minimizes damages to and provides adequate protection of public health, welfare and the environment. It is also determined that the State of New Jersey's proposed remedial action for Holly Run behind the Fox Chase II Development, to collect and pretreat the ground water/leachate and to relocate a portion of Holly Run is technically equivalent and comparable in cost with the recommended IRM, and consistent with the selected remedy. The selected remedy is also determined to be appropriate when balanced against the availability of trust fund monies for use at other sites.

The State of New Jersey has been consulted and agrees with the selected remedy.

September 27, 1985
Date

Christopher J. Daggett
Regional Administrator

GML 001 1786

011445

GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES LANDFILL
SUMMARY OF REMEDIAL ALTERNATIVE EVALUATION

Site Location and Description

The GEMS Landfill site is located in Gloucester Township, Camden County, New Jersey, at the intersection of Blackwood-New Brooklyn Road (Erial Road) and Turnersville-Hickstown Road. The site is situated on Tax Map Block 14003, Lot 26, with geographical coordinates 39°46'48" North and 75°01'15" West. The location of the landfill is shown in Figure 1-1. The site covers approximately 60 acres in a triangular plan, with a vertical relief of approximately 100 feet above the surrounding topography. The volume of the landfill is estimated to be 6 million cubic yards.

Holly Run is a small stream that originates near the southeast corner of the landfill and flows northward along the northeast side of the property as shown in Figure 1-2. Near its origin and adjacent to the landfill, Holly Run was relocated to allow for development of the land. As a result, a swampy area has developed in the former streambed. Flowing past the northwest corner of the landfill, Holly Run maintains its northwesterly direction. It flows into Briar Lake which is a quarter mile away from the site. From Briar Lake, Holly Run flows to Holly Lake, three quarters of a mile from the landfill, and on to the South Branch of Timber Creek.

The area surrounding the GEMS Landfill is rural and predominantly residential. However, some of the land adjacent to the site is used for industrial and recreational purposes. The closest homes to the landfill are in the Fox Chase II development along the northeast side, approximately 300-500 feet from the toe of the landfill. The homes in the Briar Lake area are about 1,000 feet northwest of the site. Both the Fox Chase II homes and the Briar Lake homes are separated from the landfill by Holly Run (Figure 1-2). Another group of homes is located 1,000 feet south of the landfill across Turnersville-Hickstown Road. A cement manufacturing and welding operation is located across the road about 300 feet from the site. A motorbike course is maintained just west of the landfill.

Site History

Gloucester Township has owned the GEMS site for the entire period extending from the late 1950's up to the present. During this time period the GEMS Landfill has been operated by various parties as a disposal site for solid, liquid and hazardous wastes and hazardous substances. Originally, the Township was responsible for operating a small portion of the landfill. In 1969, the Township contracted Anthony Amadei to operate the landfill. Anonthy Amadei created the Anthony Amadei Sand and

GML 001 1787

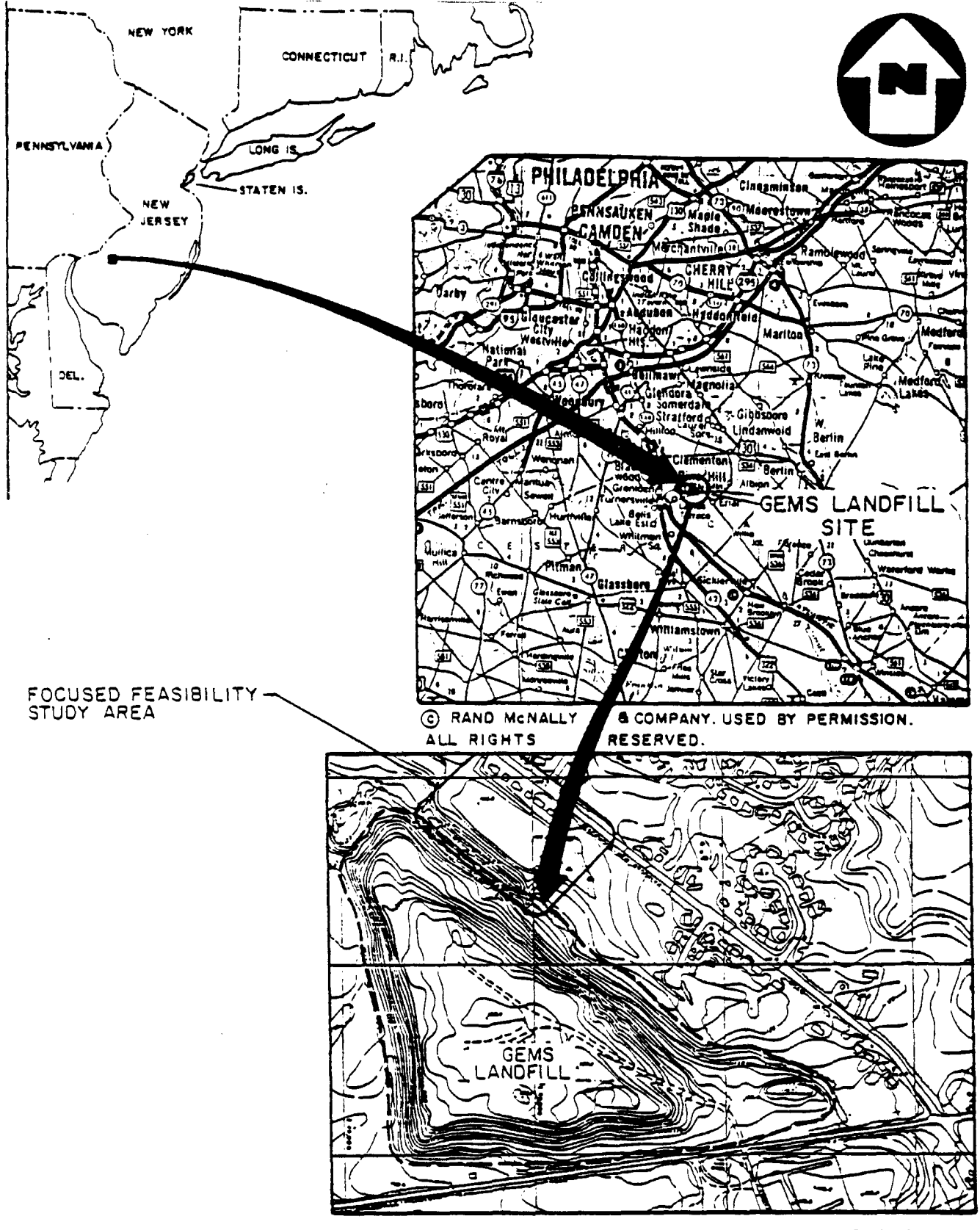


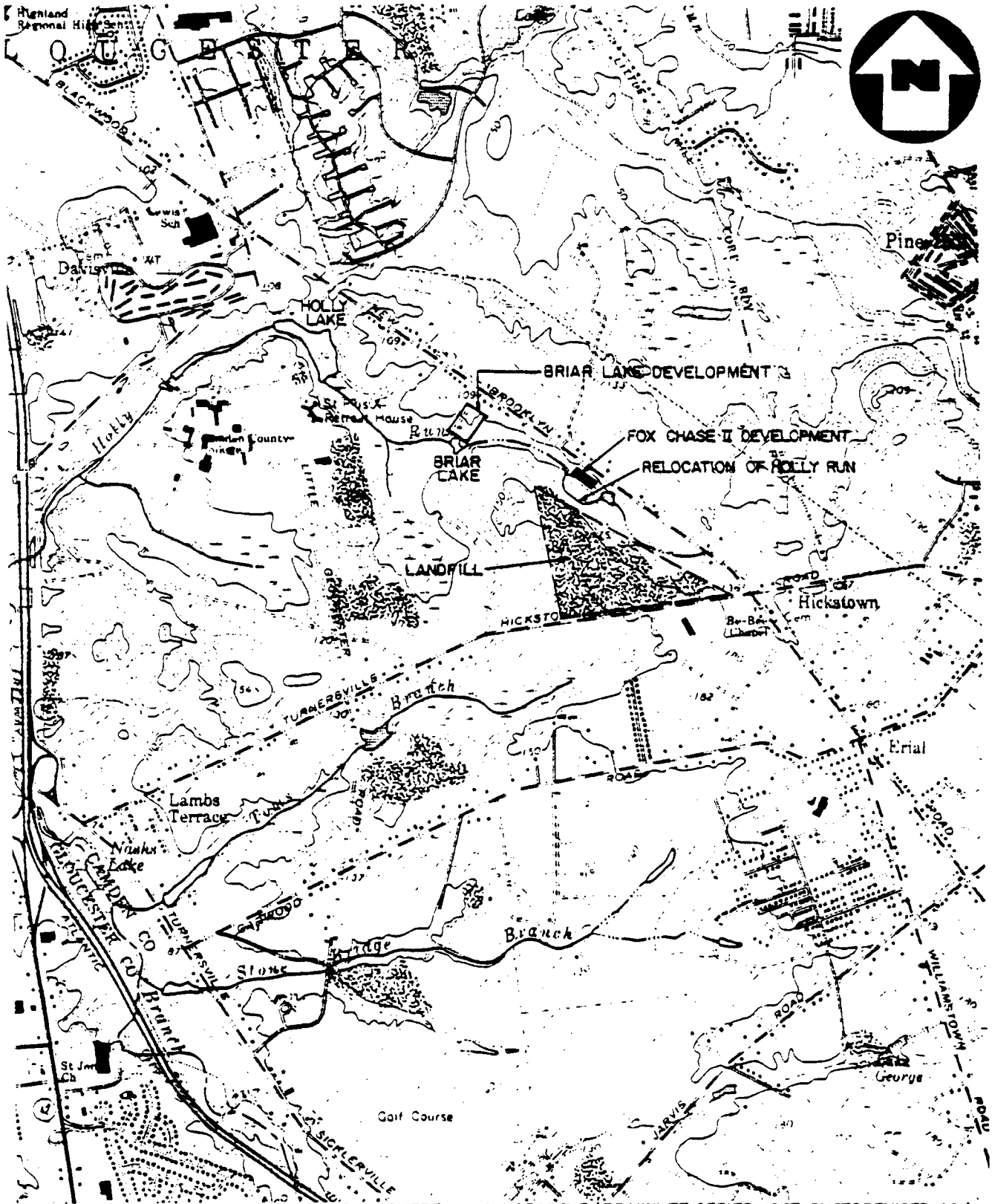
FIGURE 1-1

LOCATION MAP
GEMS LANDFILL SITE, GLOUCESTER TWP., NJ
NO SCALE

NUS CORPORATION
A Halliburton Company

GML 001 1788

011447



BASE MAP IS A PORTION OF THE U.S.G.S. RUNNEMEDE, NJ QUADRANGLE (7.5 MINUTE SERIES, 1967, PHOTOREVISED 1981) CONTOUR INTERVAL 10'.

FIGURE 1-2

SITE ENVIRONS
GEMS LANDFILL SITE, GLOUCESTER TWP., NJ
SCALE 1"=2000'

NUS CORPORATION
A Halliburton Company

GML 001 1789

011448

Gravel Company in 1970 which continued to operate the site. In 1976, Gloucester Environmental Management Services, Inc. (GEMS), started to operate the site and continued such operations until the site was closed in November 1980.

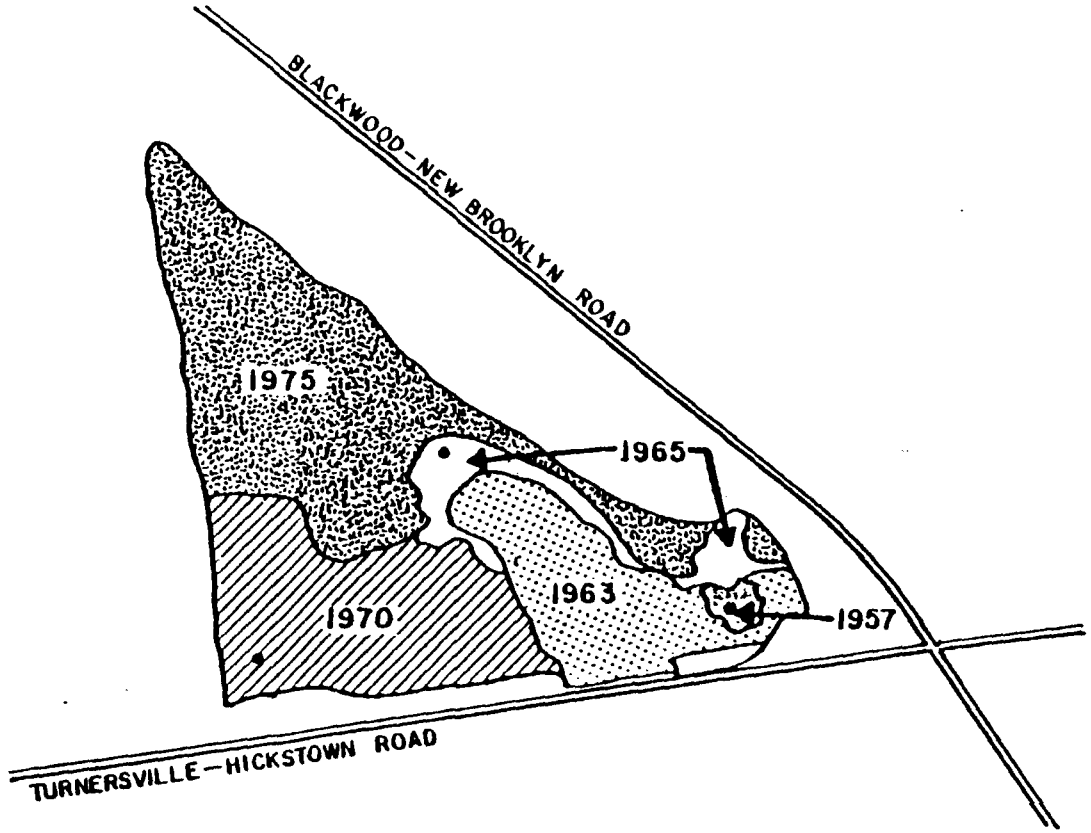
The Environmental Photographic Interpretation Center (EPIC) of the Environmental Monitoring Systems Laboratory (EPA's Office of Research and Development) has compiled a historical analysis based on aerial photographs taken while the landfill was active. Figure 1-3 shows aerial development of the landfill with time. An aerial photograph taken in 1957 shows a small area of scarred ground in the southeast corner of the plot that would later become the landfill. A photograph taken June 25, 1963 shows 11.4 acres of landfill operations. The April 4, 1965 photograph shows a 16 acre area of the landfill operation which may include ditches and trenches. By September 12, 1970, the operation had expanded to cover 39.5 acres. The photograph also shows evidence of possible open liquid disposal. At that time, sand and gravel may have been extracted after the land was cleared and the pit backfilled with waste. As shown in the photograph taken April 7, 1974, the landfill operation occupied 61.7 acres. Drums, tanks, and trash trucks were all visible.

Records indicate that chemical wastes may have been disposed at the site beneath the water table prior to 1970. Disposal of chemical wastes occurred at the site for a period of approximately three weeks in 1970. NJDEP inspections and other evidence indicate that chemicals may have also been dumped at the site between 1970 and 1976. The NJDEP Solid Waste Administration (SWA) conducted regular inspections of the GEMS Landfill beginning in April, 1973. These inspections often revealed deficiencies in sanitary landfill operating procedures, such as use of inadequate or insufficient cover material and failure to control windblown paper. Over 60 separate inspection reports indicate leachate emanating from the landfill and flowing into Holly Run.

Records indicate that a variety of industrial waste including asbestos, solvents and other materials were disposed of at the GEMS site between 1970 and 1979.

In April, 1977, a land survey by SWA indicated that GEMS Landfill had exceeded its approved design specifications. GEMS disputed that the landfill had reached capacity, but supplied no evidence to NJDEP in support of its position. A design for expansion submitted at the end of 1976 was not approved because the Environmental Impact Statement required for the expansion had not been conducted. Consequently, SWA issued an Administrative Order on September 1, 1977, requiring the landfill to cease operation within 10 days, however, the site was subsequently allowed to continue operations until November 1980.

JML 001 17 90



NOTE: OUTLINE OF DISTURBED AREAS BASED ON AERIAL PHOTOGRAPHS.
DATES INDICATE EXTENT OF GROUND DISTURBANCE AT TIME OF AERIAL PHOTOGRAPHY.

0 500 1000 2000
APPROXIMATE SCALE

FIGURE 1-3

HISTORY OF LANDFILL DEVELOPMENT
GEMS LANDFILL SITE, GLOUCESTER TWP., NJ

NUS CORPORATION
A Halliburton Company

011450

GML 001 1791

In 1980, sludge from the City of Philadelphia northeast wastewater treatment facility was disposed of at the GEMS site. Analyses of this sludge by DEP revealed the presence of dichlorodiphenyl dichloroethane (DDD), a degradation by-product of the pesticide dichlorodiphenyl trichloroethane (DDT) among other constituents.

Studies undertaken by New Jersey State, Camden County, and EPA among others have documented the fact that hazardous substances have been disposed at the GEMS site in the past, that hazardous substances exist at present at the GEMS site and that hazardous substances have continued to be released from the site in the form of groundwater, leachate, surface runoff, and airborne contaminants.

In January of 1980, the New Jersey Department of Environmental Protection (NJDEP) began testing private water wells in the area for volatile organic chemicals. In June, 1980, NJDEP expanded its testing to include surface water and found leachate contamination in Holly Run and Briar Lake. Eighteen monitoring wells were installed at the site in October 1981. Since then, additional monitoring of both ground water and surface water has been conducted periodically by both NJDEP and Camden County, including scans for priority pollutants.

In April and December of 1982, the New Jersey Department of Health (NJDOH) and the Camden County Health Department conducted a health survey for the population living near the GEMS Landfill site. Increased minor respiratory problems had been reported by those living near the landfill. Pulmonary function tests were conducted to verify the results of the survey. However, there was no significant difference in the percentage of abnormal pulmonary functions between the those who were exposed to the GEMS Landfill and those who were not exposed.

In February of 1983, EPA and NJDEP agreed to initiate work in the area of Holly Run and the Fox Chase II homes off Blackwood-New Brooklyn Road. The contamination in Holly Run was determined by NJDOH to present a direct contact hazard to the public. Ambient air readings of total organics near Holly Run indicated a potential hazard to persons entering the area. Children were observed playing in the area behind Fox Chase II. Also, because of inadequate sizing of the culverts at the inlet to Briar Lake, flooding of residential properties was occurring in the Briar Lake development by Holly Run. This flooding increased the likelihood of contact with the contaminants in Holly Run. Several actions were taken to reduce these hazards. A sand berm was installed to restrict the surface water from flowing into Fox Chase II. Fences were installed along Holly Run and around Briar Lake to restrict access to the landfill and to the surface waters. In addition, the two culverts at the inlet of Briar Lake were replaced to control flooding upstream.

GML 001 1792

In March of 1983, EPA and NJDEP agreed to develop and evaluate alternatives to dewater the area between Fox Chase II and the landfill. EPA performed studies to determine the geologic characteristics at the site, determine the direction and rate of ground water flow, assess the extent of ground water contamination, and evaluate the effect of pumping on existing ground water flow patterns which would determine the feasibility of permanently lowering the water table. Lowering the water table would prevent the leachate from surfacing behind the homes in Fox Chase II. The study was completed in November, 1984 and the results were used for the Focused Feasibility Study (FFS) prepared by NUS Corp. The FFS was completed in April, 1985.

Enforcement Status

As of this date, EPA has identified the following potentially responsible parties (PRPs) for the GEMS site: Gloucester Environmental Management Services, Inc. (GEMS), Owens/Corning Fiberglas, Inc., E.I. duPont de Nemours and Company, Rohm and Haas Company, City of Philadelphia, Gloucester Township, Richard Winn, David Ehrlich, Anthony Amedei, Geppert Brothers, Inc. and Curtis T. Bedwell and Sons, Inc. These parties were issued notice letters dated August 1, 1985.

This letter informed each of the PRPs, among other items, that:

a. EPA considered them to be responsible parties for the GEMS site;

b. EPA had recently completed a Remedial Investigation and Feasibility Study (RI/FS) for the site;

c. EPA intended to select a remedial action for the site by mid-September 1985;

d. Copies of the RI/FS report were available for their review at the EPA-Region II Offices and at four (4) locations in New Jersey;

e. Comments on the RI/FS must be submitted to EPA no later than August 23, 1985. (This was extended to August 31, 1985); and

f. EPA would assume they do not wish to undertake the design or remedial action required at the site if they did not respond to EPA within fourteen (14) days after receipt of the Notice Letter.

GML 001 1793

On September 10, 1985, the three (3) industrial PRPs listed above met with EPA officals to discuss the GEMS site. Each of the PRPs had the opportunity to volunteer to assist with evaluation of the site, design the RI/FS remedy and the site cleanup, respectively. As of this date, none of the PRPs for the GEMS site has indicated any willingness to undertake, assist or pay for any aspect of any of the following: (a) any past site studies at the site, (b) the development of the RI/FS, (c) the design for the RI/FS remedy for the GEMS site or, (d) the site remedial actions proposed by the RI/FS.

Geology and Hydrogeology

The GEMS Landfill site is located in the Coastal Plain in an area underlain by Pleistocene, Tertiary and Cretaceous age sediments. The Coastal Plain Formations beneath the site dip gently (<1°) to the southeast and generally become thicker in that direction. The geologic formations pertinent to the GEMS site include (see Figure 3-1):

- The Bridgeton Formation, which is a Pleistocene sand and gravel that occurs only beneath hilltops in this area. Portions of this formation were probably excavated for the landfill.

- The Cohansey Formation, a Tertiary age sand unit that forms the ground surface for this area and also is in contact with the base of the landfill.

- The Kirkwood Formation, a Tertiary age silty sand unit, below the Cohansey, that lies about 40 feet beneath the landfill and is about 35 to 55 feet thick.

- The Manasquan, Vincentown, and Hornerstown Formations, underlying the Kirkwood, are Tertiary age clay, sandy clay units that are about 40 to 75 feet thick.

- The Navesink Formation is a Cretaceous age sandy clay about 30 feet thick.

- The Mount Laurel and Wenonah Formations, underlying the Navesink, are Cretaceous age sand units with a combined thickness of 90 to 120 feet.

The Cohansey-Kirkwood Formations, and the Mt. Laurel-Wenonah Formations form two distinct aquifers beneath the site. The Manasquan-Navesink Formations collectively form an aquitard which effectively separates the Kirkwood-Cohansey Aquifer from the Mt. Laurel-Wenonah Aquifer. Some local wells are developed in the Kirkwood-Cohansey Aquifer. The Mt. Laurel-Wenonah Aquifer is an important source of municipal water. The vertical gradient between the Cohansey-Kirkwood Aquifer and the Mt. Laurel-Wenonah Aquifer is downward. However, the connection between aquifers is poor because of the thick aquitard between them.

GML 001 1794

ERA	PERIOD	FORMATION	LITHOLOGY SYMBOL	THICKNESS (FT.)	DESCRIPTION
CENOZOIC	QUATERNARY	BRIDGETON		0-25	YELLOW-BROWN SAND AND GRAVEL
	TERTIARY	COHANSEY		41-111	YELLOW-BROWN TO BROWN-GRAY, FINE-TO-MEDIUM-GRAINED SAND, INTERBEDDED AND MICACEOUS
		KIRKWOOD		25-55	DARK-GRAY, SILTY FINE SAND, TRACE CLAY IN LOWER SECTIONS, MICACEOUS
		MANASQUAN		30-110	UPPER MEMBER: GRAY-GREEN TO OLIVE-GRAY, GLAUCONITIC, CLAYEY SAND AND SANDY CLAY MIDDLE MEMBER: GRAY-GREEN TO OLIVE-GRAY SILTY CLAY LOWER MEMBER: GRAY-GREEN TO GREEN-GRAY, GLAUCONITIC, CLAYEY SAND, COMMONLY CALCAREOUS
		VINCENTOWN		30-40	GRAY TO GRAY-GREEN, CALCAREOUS, FINE-TO-MEDIUM SAND, TRACE CLAY AND SHELL FRAGMENTS
		HORNERSTOWN		0-5	DARK-GREEN GLAUCONITIC CLAYEY SAND
MESOZOIC	CRETACEOUS	NAVESINK		24-30	GRAY-GREEN TO BLACK-GREEN, GLAUCONITIC, CLAYEY SAND WITH SHELL FRAGMENTS, COMMONLY CALCAREOUS, BELEMNITE FOSSILS AT THE BASE OF FORMATION
		MT. LAUREL		55-65	GRAY-GREEN TO BROWN-GRAY, FINE-TO-MEDIUM, GLAUCONITIC, QUARTZ SAND, TRACE FINE GRAVEL, SLIGHTLY CALCAREOUS
		WENONAH		30-35	GRAY-GREEN TO DARK-GREEN-BROWN, FINE SAND TO SILTY SAND, MICACEOUS
		MARSHALLTOWN		>3	GRAY-BROWN SILTY SAND TO SANDY SILT, TRACE CLAY, MICACEOUS

FIGURE 3-1

GENERALIZED GEOLOGIC COLUMN
GEMS LANDFILL SITE, GLOUCESTER TWP., NJ

NUS CORPORATION
A Halliburton Company

The Kirkwood-Cohansey Aquifer is unconfined to semi-confined. In this system, ground water generally flows north to northwest. The landfill is situated directly over this aquifer and the base of the landfill lies very close to sand, and in some areas, contacts the saturated zone. The estimated ground water flow velocity for the Kirkwood-Cohansey Aquifer is between 10 to 196 feet per year. This range of ground water velocities reflects a range of subsurface conditions encountered at the site. Permeabilities ranged from $4X10^{-3}$ to $2X10^{-4}$ centimeters per second (cm/sec) in the Cohansey Formation to $1X10^{-4}$ to $6X10^{-5}$ cm/sec in the Kirkwood Formation.

The Mount Laurel-Wenonah (Mount Laurel) Aquifer is confined and ground water flows south to southeast. The ground water flow rate in this aquifer under natural conditions was estimated to be about 26 feet per year. Permeability of the Mount Laurel Formation is approximately 10^{-3} cm/sec.

REMEDIAL INVESTIGATION ACTIVITIES & RESULTS

Remedial Investigation Activities

The Remedial Investigation Activities conducted at the GEMS Landfill site included:

- Hydrogeologic and geophysical investigations to determine ground water quality, flow characteristics, and aquifer characteristics
- Surface water and sediment sampling of surface waters
- Five day, 24 hour, air sampling
- Gross organic vapor analyses of ambient air by portable organic vapor analyzers
- Sampling of landfill gas from natural vents
- Subsurface gas survey and sampling
- Surface leachate seep sampling
- Treatability studies of the leachate to determine removal efficiency of air stripping and vapor phase carbon loading to remove organic vapors from air stripper off-gas
- Treatability studies to determine acute toxicity, overall treatability and toxicity/inhibition of pretreated leachate to the activated sludge system of the Gloucester Township Municipal Utilities Authority (GTMUA) sewage treatment plant.

GML 001 1796

RESULTS

Hydrogeologic and geophysical investigations by NUS Corp and by EPA Region II's Technical Assistance Team (TAT) were conducted at the site. The investigation into the ground water concentrated on the Kirkwood/Cohansey and Mount Laurel Aquifers. Residential wells were also sampled.

The Kirkwood/Cohansey Aquifer was found to be severely contaminated with organics and inorganics. The plume of contamination is believed to extend approximately 800 feet from the site to the north and northeast. The general direction of ground water flow in the Kirkwood/Cohansey was determined to be northwest. The plume that appears to the northeast is probably due to the local influence of Holly Run and the configuration of the landfill.

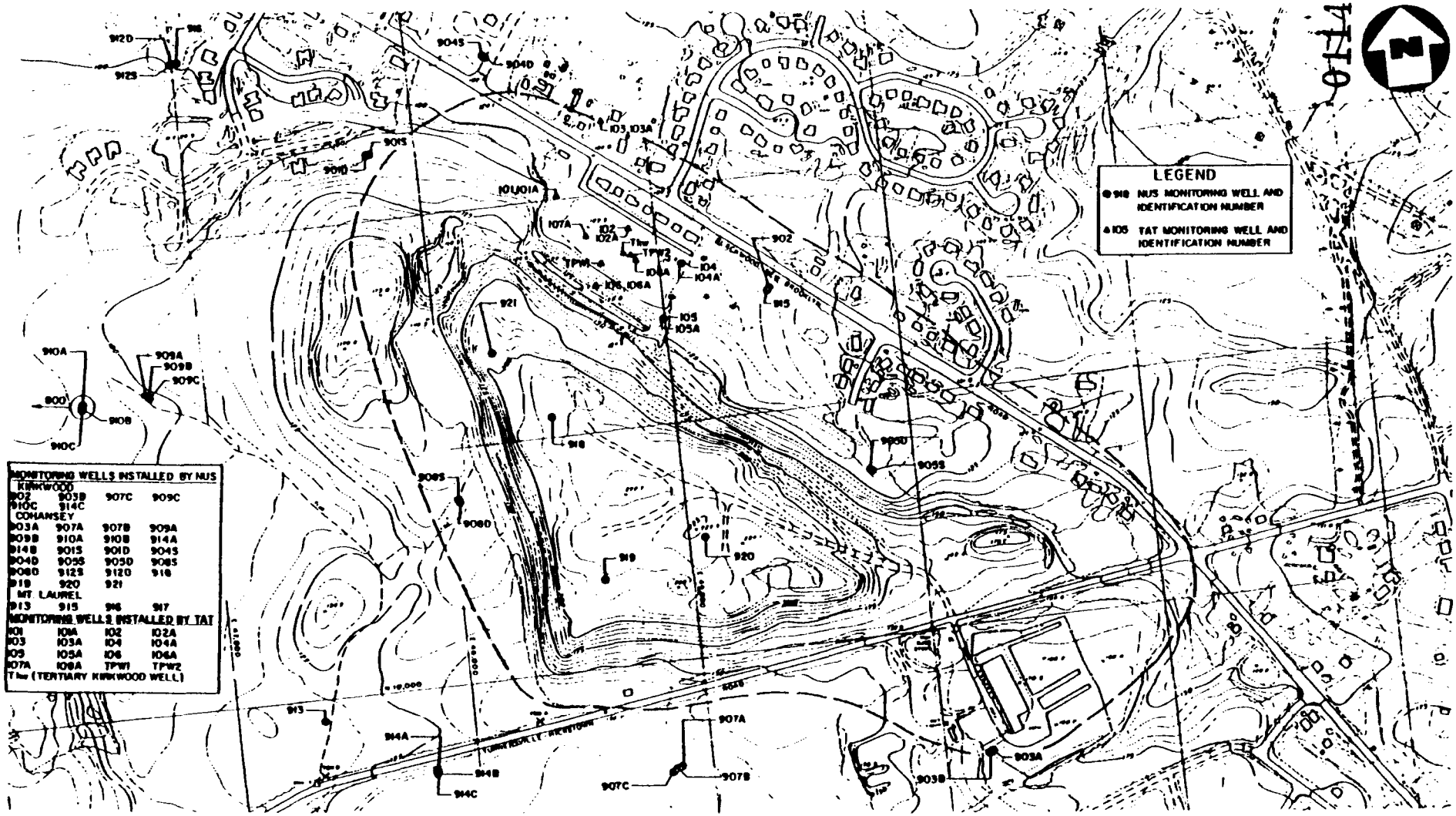
Figure 4-4 illustrates the estimated location of the plume in the Kirkwood-Cohansey Formation. This figure shows a component of the plume extending to the east and south although general plume transport is in the northerly direction. These plume components were based on analyses of well 903A samples and surface conductivity results which revealed the presence of a contaminant plume. The available data are insufficient to explain the contradiction.

Analyses completed to date have not revealed any contamination of ground water in the Mount Laurel Aquifer traceable to the GEMS site. The current flow in the Mount Laurel is affected by an active municipal supply well located approximately one mile southeast of the site. Water level measurements indicate that the site is located over the cone of depression formed by the municipal well. Therefore, leachate from the GEMS site could potentially contaminate this municipal well at some future date.

No residential wells have been found to be contaminated. However, approximately 12 residential wells could be impacted due to either future migration of the plume from the GEMS site or from leaks which may develop in the seals of the wells that prevent downward migration.

Monitoring wells drilled through the landfill indicate that the landfill intrudes into the water table, and that there is no significant mounding of water in the site itself. Hydrogeologic studies have also indicated that contaminated ground water is being released from the GEMS landfill site into Holly Run.

GML 001 1797



ESTIMATED LIMITS OF EXISTING ORGANIC CONTAMINANT PLUME
COHANSEY - KIRKWOOD AQUIFER
GEMS LANDFILL SITE, GLOUCESTER TWP, NJ

FIGURE 4-4

0 400 800
SCALE IN FEET

NUS CORPORATION
A Halliburton Company

Water quality analyses of samples taken from Holly Run in October, 1983, March, 1984, and February 1985 also indicate that the landfill is heavily contaminating this waterway (Appendix I). Several hazardous substances were discovered in Holly Run, including benzene, chlorobenzene, dichloroethane, acetone, and xylene. Briar Lake appears to be the edge of the significant downstream contamination. However, observations by NJDEP personnel in 1985 indicate the iron staining present in Holly Run and Briar Lake is now appearing in Holly Lake 2000 ft downstream of Briar Lake. This indicates that contamination has begun to migrate past Briar Lake.

In addition to samples from Holly Run, surface water samples were collected from Toms Branch and from two streams outside the site area to establish naturally occurring background concentrations for certain constituents. Sediment samples were limited to Holly Run due to a lack of visual evidence of sediment transport to Toms Branch. Toms Branch showed no organic contamination but did show elevated levels of barium and lead. Because of recent runoff controls implemented by the State along Hickstown Road, Toms Branch appears to be potentially impacted by the site only during storm events.

Volatile organic compounds (VOCs) entering Holly Run and Briar Lake from the GEMS site appear to be volatilizing and impacting ambient air quality near these waterways. Ambient air monitoring conducted by the EPA's TAT in the area behind Fox Chase II in February, 1983 revealed gross organic vapor readings ranging from 10 to 40 parts per million. Air samples, taken over a five day period by the NJDEP in September, 1983, also indicated that the air quality at the site has been significantly degraded by volatile organics. The highest concentrations were found in the area behind Fox Chase II. During these surveys, off-site concentrations of volatile organics although elevated, were not recorded at levels indicating an imminent hazard.

Gases emanating from the landfill represent another source of air quality contamination caused by the site. Four natural vents discharging landfill gases and water vapor were monitored. All four vents were found to be discharging significant concentrations of methane. In one of these vents, seven VOCs were detected at a total concentration of over 100 parts per billion (ppb). These VOCs included chlorobenzene, benzene, and tetrachloroethene.

GML 001 1799

The soil atmosphere was investigated in two phases by NUS. The investigation revealed that methane was migrating from the site in the unsaturated zone at concentrations greater than 100% of the lower explosive limit (LEL). Several volatile organics were also detected in the soil atmosphere, at concentrations up to 9000 ppb of total volatiles. These included chlorobenzene, benzene, toluene, 1,2,-dichloroethene, trichloroethene and tetrachloroethene. Methane and volatile organics were found immediately adjacent to the foundations of homes in Fox Chase II. No gross organic vapors or methane were found in the basements of these homes that were not attributable to basement sources (i.e. diesel fuel).

Several surface leachate seeps were sampled during the remedial investigation. However, due to the time of year, only one seep had flowing liquid; the other samples were of the stained soil at the seep. The predominant compounds found were polynuclear aromatics including benzo-a-pyrene. Trace levels (1 ppb) of DDE, DDD, and DDT were also found.

The results of the Treatability Study show that the leachate is treatable with a combination of on-site pretreatment (air stripping) and off-site treatment at the local activated sludge sewage treatment plant. The study also indicates that on-site treatment with activated sludge would be effective.

In summary, the results of the environmental studies at and in the vicinity of the GEMS site have indicated, among other items, that:

1. Hazardous substances (HSs) and vapors containing HSs exist in the soils at the GEMS site;

2. Portions of the GEMS landfill are in direct contact with the ground water system (Cohansey-Kirkwood) beneath the site;

3. HSs are being released from the GEMS Landfill into the ground water system (Cohansey-Kirkwood) beneath the site;

4. HSs have been transported in the Cohansey-Kirkwood aquifer from the GEMS site up to 800 feet beyond the northeast boundary of the site;

5. Water from a portion of the Mt. Laurel Aquifer beneath the GEMS site is flowing toward a municipal water supply well and, therefore, the well could become contaminated with HSs and other pollutants or contaminants at some future date;

GML 001 1800

6. HSs have entered Holly Run, a class FW-2 stream which adjoins the GEMS site; the levels of these substances in the waterway are greater than levels which are believed to be acutely and chronically toxic to aquatic biota;

7. Volatile organic compounds (VOCs) detected at both the GEMS site and in Holly Run are volatilizing into the atmosphere and significantly degrading air quality in the vicinity of Holly Run;

8. Gases containing VOCs and HSs are emananting directly from the landfill site into the above atmosphere in the vicinity of the site;

9. Residents at and in the vicinity of the site could be exposed to a greater carcinogenic risk and other adverse health effects if: a) they inhale volatilized HSs or contaminants being released from Holly Run, b) they inhale gases emanating from the GEMS site, or c) they make dermal contact with or ingest runoff or leachate from the GEMS site, waters in Holly Run, or sediments contaminated with HSs from the GEMS site.

Risk Assessment

To assess the potential public health risks posed by the presence of known or suspected carcinogens at the site, a risk assessment was conducted. Potential routes of exposure to receptors were identified. Also, measured concentrations of contaminants of concern were compared to relevant and applicable criteria and associated risks were calculated. The results of this work are displayed in Tables 5-1 through 5-8, attached as Appendix II.

The conclusions of the assessment are summarized below:

- Ambient air sampling conducted in September, 1983 indicates that a potential carcinogenic risk is associated with inhalation of on-site ambient air.

- The detection of combustible gases in excess of the lower explosion limit in soil atmosphere samples suggest the potential for fire and/or explosion hazards. In addition, organic compounds in the landfill gases may have associated health implications. The presence of hydrocarbon gases also affects the quality of the local environment.

GML 001 1801

- The major exposure path and subsequent risk is the ingestion of contaminated ground water. There would be a potential for acute, chronic, and carcinogenic health risks if the contaminants were ingested at the observed concentrations in ground water. Although the available data indicate that receptors are presently not exposed to significant levels of contaminants in drinking water, receptors may be exposed at some future time if the contaminants would migrate via ground water to wells used for drinking purposes. Receptors with water wells pumping from the Cohansey-Kirkwood Aquifer (or those that penetrate deeper aquifers which have leakly seals or casings) have the greatest risk of exposure.

- Acute and chronic ingestion, inhalation, or dermal exposure to surface water, sediments, or leachate may be associated with health implications.

- Another possible mode of human exposure is via ingestion in the food chain, i.e., the consumption of aquatic biota from Holly Run or Briar Lake. Contaminants of concern include benzene, methylene chloride, chloroform, bis(2-chloroethyl)ether, bis(2-ethyhexyl)phthalate, lead, arsenic, cadmium, and chromium.

- Environmental receptors may be affected by the site. Acute and chronic toxic effects to aquatic biota are likely.

INITIAL REMEDIAL MEASURE

To address the contamination of Holly Run and the subsequent volatilization of organic chemicals into the ambient air, an Initial Remedial Measure (IRM) for the area behind the Fox Chase II Development (Study area) was proposed for the GEMS site. A Focused Feasibility Study (FFS) was completed in accordance with EPA guidance to determine the cost-effective remedial alternative to address the contamination of Holly Run and minimize the degradation of the air quality in the Fox Chase II area.

To accomplish this goal, it was determined that the discharge of leachate into Holly Run would need to be virtually eliminated. If it were eliminated through a ground water collection system, the leachate would have to be properly treated. An on-site pretreatment system to remove volatile organic chemicals was deemed necessary since any off-site transmission of the leachate would only change the location of where the chemicals volatilized and would not remove them from the environment. Because it is a proven, effective technology, air stripping was chosen to re-

GML 001 1802

move volatiles from the leachate. To collect the stripped volatile organic compounds (VOCs), vapor phase activated carbon units were included as part of the pretreatment system. After air stripping, the leachate would require further treatment prior to its ultimate discharge. The local POTW which serves the area near the site utilizes an activated sludge treatment system. The analysis of the leachate for standard water pollutants indicated that, with proper pretreatment, the activated sludge system would be able to treat the leachate prior to ultimate discharge. The treatability studies necessary to confirm this were initiated concurrently with the FFS.

Screening of Remedial Technologies

The remedial technologies evaluated to prevent the leachate from entering Holly Run were:

- Impermeable barriers
- Ground water pumping/treatment
- Ground water collection trenches
- Relocating Holly Run
- Surface runoff diversion
- No action

The criteria used in the initial screening of the techniques consisted of:

- The technological status of the technique
- The effectiveness and applicability
- Constraints of the technique when applied to this situation

Impermeable barriers were eliminated in the initial screening on the basis of effectiveness and technical constraints. Barriers are effective when anchored into a low permeability layer which would form the bottom of the containment. The uppermost natural low permeability formation at the site occurs approximately 140 feet below the ground surface. This depth is considered excessive for the installation of effective barriers.

Both of the surface water control technologies, relocating Holly Run and surface runoff diversion, were retained with the ground water control technologies. Relocating and isolating Holly Run would eliminate leachate from entering Holly Run where it was isolated, but would allow the leachate to discharge either adjacent to the new channel or at the outfall of the

GML 001 1803

channel. Also, these technologies would not eliminate the potential for BOCs from the ground water to enter the homes in Fox Chase II via migration beyond the new channel of Holly Run. Surface runoff accounts, on the average, for a very small portion of the leachate entering Holly Run. Therefore, surface runoff control would have little effect on eliminating the leachate entering Holly Run. Both these technologies, when used in conjunction with groundwater collection, significantly reduce the amount of surface water which would enter the collection system. Reduction of the quantity of surface water runoff entering the collection area would allow reduction in the sizing of the collection and treatment system.

Alternatives

After the screening of the initial remedial technologies, two alternatives were developed for detailed evaluation.

A. Surface water control and ground water collection trenches/treatment

B. Surface water control and ground water pumping wells/ treatment

The criteria used for the detailed evaluation included:

- Technical Feasibility
  - Constructability/Implementability
  - Time required to implement
  - Operation and Maintenance (O&M)
  - Past performance
- Environmental Effectiveness
  - Ability to meet remedial goals
  - Adverse environmental impacts during implementation
- Public/Worker health and safety during implementation
- Institutional/Regulatory constraints
- Cost
  - Capital
  - Operation and Maintenance
  - Total present worth for 5 year operating life of an IRM

Surface water controls and treatment are components of both alternatives and were evaluated separately.

GML 001 1804

011463

Surface Water Control

The surface water control consists of relocating Holly Run to near its original course and limited regrading to control surface runoff within the study area.

The surface water control techniques involve standard engineering practices. A new channel would be constructed for Holly Run (see Attachment 1, Figure 4-1. The channel would be trapezoidal about 2 to 3 feet deep and 6 feet wide at the top with side slopes of 3:1. It would be constructed to prevent ground water/ surface water interaction. The channel is sized to accommodate the 100 year 24 hour storm flow of 250 cubic feet per second.

The existing channel of Holly Run would be regraded to collect and transport surface runoff north to a detention pond and then to Holly Run north of the study area. The current runoff channels from the landfill would be filled and the area regraded to direct the flow north to the detention pond.

The surface water controls would substantially reduce the surface water infiltration into the ground water collection system and would drain the marsh south of the study area. The marsh was created when Holly Run was relocated, and has contributed to the vegetative stress observed in this area.

Excavation for the new channel may result in temporary additional volatilization of VOC from the ground water during construction. However, by limiting the area excavated to small sections, releases of VOC could be minimized. These releases would be expected to readily dissipate a very short distance from the excavations and will be continuously monitored during the construction. These temporary additional releases of VOC are not expected to adversely affect the residents nearby.

There would be no technical constraints associated with the surface water control measures. A stream encroachment permit and access agreements with the property owners would be required. County sedimentation and erosion permits may be required. These constraints are not expected to significantly inhibit implementation of these measures although some delays may be encountered.

The estimated capital cost for constructing the new, lined channel is $157,200, while estimated capital cost for the surface runoff collection is $5,500. These costs include all site erosion and control requirements and the revegetation of disturbed areas.

GML 001 1805

Treatment

The treatment system consists of air stripping to remove VOCs from the collected leachate and vapor phase carbon to remove the VOCs from the stripper's effluent off-gas.

The use of air stripping to remove VOCs from water is a proven, effective technology. Likewise, vapor phase carbon is a proven, effective technology for removing VOCs from air. The two technologies will be effective (+99% removal) in removing the VOCs.

The air stripper to be used for this IRM would consist of two packed columns. The system is designed to remove the maximum expected concentration of 32 ppm at a flow rate of up to 60 gpm. The average expected concentration of 11 ppm at a flow rate of approximately 40 gpm could be effectively treated by only one column. Provision of two columns would allow for the columns to be operated alternately so that routine maintenance could be performed on one column while the system is operating using the other column. If concentrations or flow rates higher than expected, are both columns could be used to effectively treat the leachate.

The activated carbon treatment of the air stripper off-gas would consist of a series of 6 individual carbon units placed in series for the maximum expected concentration of 32 ppm total VOC (TVOC). Only 4 units are necessary to effectively remove the VOCs at the expected average concentration of 11 ppm TVOC and the minimum concentration of 2 ppm TVOC. The first unit would adsorb the majority of the contaminants and would be saturated before the others. The system would be designed to allow a clean unit to be placed at the end of the series, and the first spent unit to be taken out of the system and sent off site for disposal or regeneration. This allows for continuous operation of the system during routine maintenance.

The treatment system was based on the results of the treatability study. The air stripper system removed the VOCs to below detection limits (10ug/l). This represents a removal efficiency of over 99%. The only exception is methylene chloride which was present after air stripping at 15 ug/l.

However, considering that the methylene chloride concentration before air stripping was 15,000 ug/l, the removal efficiency is 99.9%. The carbon units were designed based on the treatability study carbon loading which removed all the VOCs to below detection limits (25 ug/l). This represents a removal efficiency of over 99% for the carbon units.

GML 001 1806

After air stripping, the leachate would still contain other pollutants which would prevent its discharge to adjacent surface waters. The FFS was conducted assuming that the leachate would be further treated at the GTMUA sewage treatment plant. The treatability studies conducted concurrently with the FFS determined that zinc in the leachate represented the only contaminant that could cause inhibitory effects on the normal operation of the treatment plant. The study's recommendation that the leachate not be favorably considered for discharge to the GTMUA was based on the flow ratio of 4.63:1. (State regulations require treatability studies to be conducted at 5 times the expected flow rate to the POTW). The maximum design flow for the pretreatment system is 60 gpm or 83,000 gpd. The actual flow ratio would be approximately 20:1, and therefore, the zinc levels would be well below inhibitory levels.

The NJDEP has discussed the potential zinc problem with the GTMUA. Based on what the actual flow ratio would be, the GTMUA has indicated that pretreatment of the leachate to remove the zinc would not be required. However, the GTMUA expects to begin incinerating the sludge from the POTW within the year. At that time, the metals concentration in the GEMS leachate may dictate that removal of the metals during pretreatment may be required. Further sampling and analyses to confirm the concentrations of zinc found originally are being conducted by the NJDEP.

Construction of the on-site pretreatment system is not expected to endanger the public/workers or produce any adverse health and safety effects. Operation of the treatment system is expected to significantly reduce the potential adverse effects at the site and is not expected to produce any adverse impacts. The system fully contains the hazardous substances and therefore would not present any threat to the operators.

The costs associated with the air stripping of volatile organics from the ground water include capital costs for: the air stripper unit and the associated equipment, carbon adsorption vapor phase treatment, and operating and maintenance costs for a 340-day operating year (including labor). The five-year present worth costs for operation and maintenance are also given. Both capital and operation and maintenance costs reflect the use of the three different treatment levels which may be encountered.

SMT 001 1807

The cost breakdown for each level is as follows:

Influent Total Volatile Organic Concentrations	Capital	Annual* O&M	5-Yr Present Worth
32 ppm Case (maximum)	$239,100	$541,000	$2,290,300
10.8 ppm Case (average)	$206,000	$311,100	$1,385,500
2 ppm Case (minimum)	$206,000	$204,700	$ 980,000

*These costs include the estimated $150,000/yr treatment charge for discharge to the GTMUA.

Alternative A

Surface Water Control, Ground Water Collection Trenches/ Treatment

Surface water control and treatment were previously discussed. This alternative would incorporate ground water collection trenches to lower the ground water table and collect the water for treatment.

Two systems were evaluated. One system included a deep single trench (up to 12 feet deep) and the other evaluated a two-trench system that was set to a depth of 6 feet. The two-trench system would involve two trenches parallel to each other about 50 feet apart. They would be constructed in the same manner as the single trench except for depth. Both systems would reduce the ground water levels and minimize ground water discharges to Holly Run. After the trench is excavated, a perforated flexible polyethylene drainage pipe would be placed near the bottom and backfilled with sand and gravel. To decrease the possibility of fine materials from entering the pipe, a layer of filter fabric would be installed around the sand and gravel. A graded backfill would be used to fill the trench to about 2 feet below the surface where compacted clay backfill would be placed to reduce surface infiltration. Because of the gradients required to effectively drain the leachate, a sump pit, approximately 20 feet deep, would be installed to collect and feed the leachate to the treatment system.

3ML 001 1808

Ground water control through collection trenches is a proven technology. However, at this site, the combination of a high water table, unconsolidated soils, and contaminated groundwater/ soils would cause construction difficulties that would require additional precautions.

Shoring and dewatering would be required to maintain the trench stability. Due to the potential for release of VOC from the trench, workers would be required to wear protective clothing and respiratory protection. This would significantly add to the time to construct the trench since it would inhibit the efficiency of the workers.

Collection trenches will lower the water table at Holly Run and will intercept some of the leachate plume and decrease the rate of migration of the plume. Since most of the contaminants are in solution, as opposed to precipitated contaminants that bond to the soil, the contaminants would be removed through ground water collection. Ground water collection/treatment combined with surface water control measures would have a beneficial effect on the environment. The contaminants would be prevented from entering the stream and would be removed from the environment through ground water treatment.

Worker safety during construction was previously discussed. Volatilization of VOCs during construction of the trench is expected. The dewatering system required for construction should also reduce the amount of VOCs released. The VOCs that are released should only present a hazard to the workers and not the general public since they would collect in the trench and not readily disperse. Limiting the area of open excavation would also reduce the amount of VOCs released to the ambient air.

After construction, the only facet of the trench system which would present a hazard is the sump pit which will be properly secured to prevent unauthorized access.

Technical constraints of the trench collection system were discussed above. The dewatering system would require well permits.

Costs for construction of the single and double trench alternatives are estimated at $581,000 and $815,000, respectively. These costs are in addition to capital and O&M costs for treatment and surface water control.

TME 001 1809

Alternative B

Surface Water Control, Ground Water Pumping Wells/Treatment

This alternative incorporates surface water control, ground water collection with pumping wells, and subsequent treatment of collected water. Surface water control and treatment were previously discussed.

Based on a computer model, it was determined that three wells, pumping at a combined flow of 39 gpm, could produce the desired drawdown of 4 feet through the study area. The locations of these wells are shown on Figure 4-6 in Attachment 1. For conservative design, these three wells are augmented by two additional wells to provide for backup in case of well malfunction. Also, the five-well system could yield an average of 51 gpm for the first 6 months of pumping, in order to facilitate removal of the aquifer storage. The flow could be decreased with time as aquifer storage is removed.

Ground water pumping to intercept a plume or lower the water table is technically feasible and widely used. This system would lower the water table, reduce discharge of contaminated ground water to Holly Run, and reduce migration of the plume off-site in the Fox Chase II area.

The wells are to be constructed of 10-inch diameter casing and installed in an 18-inch diameter, gravel packed borehole. In order to install an efficient well, the boring should be made by a bucket auger or reverse circulation drilling method. The pumps will be submersible and designed at a rating of at least 30 gpm each. Float-activated on/off switches would start the pumps when the water table rose and then shut off in times of depressed water tables. To adjust pumping rates, the pumps would be equipped with valves.

Ground water pumping will lower the water table at Holly Run. In addition, this alternative will intercept some of the leachate plume and decrease the rate of migration of the plume. Since most of the contaminants are in solution, as opposed to precipitated contaminants that bond to the soil, the contaminants would be removed through ground water collection. Ground water treatment combined with surface water control measures would be expected to meet the objectives of the IRM because the contaminants entering the stream would be removed from the environment through ground water treatment.

3ML 001 1810

Installation of ground water pumping wells would only release VOCs to the immediate vicinity of the well and only during construction. These gases would be expected to dissipate within a few feet of the well and would not present any threat to the residents nearby. The releases may require the workers to wear respiratory protection.

There are no technical constraints associated with the installation of ground water pumping wells. The wells and pumping tests would require state permits.

The estimated cost to install the five wells and their associated materials (pipe, valves, etc.) would be $139,000. Annual operation and maintenance costs for the wells and pumps are estimated at $1,100 per year. These costs are in addition to the capital and O&M costs for treatment and surface water control.

LONG TERM REMEDIAL ACTION

The FFS addressed appropriate remedial actions only for the Holly Run and Fox Chase II area. The draft feasibility study dated July, 1985 evaluates the remedial action alternatives for the entire site including the Holly Run and Fox Chase II area.

Screening Remedial Alternative Technologies

Table A summarizes the problems posed by conditions at the site and pathways of migration identified during the remedial investigation. The goal of the remedial action at the GEMS Landfill is to prevent or mitigate the release of hazardous substances outlined in this Table.

A comprehensive list of remedial technologies generally applicable to uncontrolled hazardous waste sites was evaluated. This screening procedure evaluated the technological applicability and constraints, public health and environmental effects, institutional constraints, and order of magnitude costs. The results of the screening identified feasible remedial action technologies that were the basis of the remedial alternative components.

3ML 001 1811

REMEDIAL ALTERNATIVE COMPONENTS

Capping

Installing a cap at this site will reduce the amount of leachate being produced, primarily by restricting the amount of rainfall that percolates through the deposited wastes. This in turn would be expected to reduce the contamination in the ground and surface waters by the leachate. A cap would also substantially reduce the direct contact hazards associated with the leachate and exposed waste as well as the inhalation hazards from the surface leachate seeps. Capping is a proven technology and is widely used at sanitary and hazardous waste landfills.

Several materials are available for use as a capping material. These include synthetic membranes, clay, soil, asphalt, concrete, chemical sealants/stabilizers, and multimedia (combination of materials). Asphalt, concrete, and chemical sealants were eliminated in the initial screening due to the likelihood of cracking (low permeability) as a result of differential settling which is expected at the GEMS site. The materials retained for use in the cap are clay, soil and synthetic liners, or a variety of combinations or multimedia caps.

The multimedia cap proposed for the GEMS site consists of:

- 6 inches of topsoil
- 18 inches of soil
- Filter fabric
- 12 inches of sand/gravel (drainage layer)
- 30 mil synthetic membrane
- 24 inches of clay
- Filter fabric
- 12 inches gravel (gas collection layer)
- Filter fabric

This cap conforms to final cover guidance developed under the Resource Conservation and Recovery Act (RCRA). If properly installed and maintained, the cap essentially eliminates infiltration of rain water. Therefore, the amount of leachate generated would be substantially reduced. However, there are technical limitations to construction of this type of cap at this site. The RCRA guidance recommends the slope of the cap over the waste to be a maximum of 3-5%. The top of the GEMS

ML 001 1812

Landfill can easily be regraded to this slope. However, the side slopes of the site are currently greater than 33%. Regrading the side slopes to 5% is technically impractical due to the area needed to expand the landfill and the amount of soil needed to fill the grade up to 5%. Even though this type of cap is not feasible for the side slopes of the site, it can be used on the top of the landfill.

The maximum side slope for caps is generally accepted to be 3:1 to ensure reliability. In order to achieve a 3:1 slope at the site, the existing waste would need to be regraded or fill material would have to be added over the waste. Both methods are technically feasible and, once completed, would ensure the reliability of the cap against slope failure.

Soil is a viable cap material in that it does reduce leachate generation and is the least expensive alternative. A 30 inch clayey soil placed over the waste and/or fill material with a 6 inch top soil is envisioned as the soil cap for the GEMS site. Installation of a soil cap is technically feasible on a 3:1 slope and easily implementable. The easy installation of the soil cap and its low cost relative to other caps are the advantages to the soil cap. However, the soil cap provides the lowest reduction in leachate generation.

Another capping alternative is to add a clay to the soil cap. It would consist of a gravel gas collection layer, 2 feet of clay, a sand drainage layer and 2 feet of soil and topsoil. This cap significantly reduces leachate generation over the soil cap, although not as much as the multimedia cap. The time needed to install the clay cap is greater than the soil cap, but less than the multimedia cap. The cost is also greater than the soil cap but less than the multimedia. A clay cap is technically feasible to construct on a 3:1 slope and effectively reduces leachate generation.

The advantage of regrading the existing waste, rather than adding fill, is a lower cost and shorter construction time. The drawback of regrading the waste is the potential short term adverse effects from exposing it. Exposing and cutting into the waste could increase the air emissions from the site posing a hazard to workers and nearby residents. Hazardous waste containers buried at the site could also be encountered and may pose hazards to the workers should they be ruptured. It is possible to limit the potential short term adverse impacts through careful construction techniques and proper precautionary measures. Limiting the area of the open face allows for controlling any emissions detected by monitoring instruments.

EWL 001 1813

Material to control or eliminate emissions can be on-hand and quickly and easily applied over the open working face. Although encountering and possibly rupturing hazardous waste containers with heavy equipment always presents an unknown hazard, uncovering these containers also allows for their removal and proper disposal before the material can leak and flow into the ground water.

Adding fill to the existing side slopes to bring them to a 3:1 slope would be more costly and time consuming than regrading the fill. It would not present the same potential short term adverse effects, but due to the longer construction time, the existing hazard would not be remediated as quickly.

The cost difference of the slope options are within an order of magnitude and each option has beneficial and adverse impacts, therefore, both are considered for inclusion in the remedial alternatives.

In order to ensure the reliability of all the cap alternatives, a gas venting system and runoff control system have to be implemented. Once the landfill is covered, the amount of gas produced is expected to increase significantly due to increased pressure and temperature. Pressure would then continue to build up and could rupture the cap, unless relieved. Runoff controls are necessary to prevent erosion of the cap material. All the caps will be vegetated to reduce erosion.

Gas Collection/Treatment

Two types of gas collection systems were evaluated; passive gas ventilation and active gas collection and treatment. The passive gas ventilation system was eliminated in the initial screening due to a high potential for failure after installation. Differential settling could cause pockets of gas to be formed in areas isolated from a passive vent. These pockets could cause pressure build-up sufficient to rupture the cap. The off-site migration of methane and the potential for methane to collect in basements would most likely require that an active gas collection system, rather than a passive gas venting system, be installed under New Jersey Solid Waste Regulations.

An active gas collection and treatment system would significantly reduce the potential for gas pockets to form. The collection system creates a negative pressure under the cap. Pockets formed by differential settlement would not impede the gas from migrating toward the point of negative pressure, the gas collection wells.

Ambient air samples collected in September, 1983 by NUS identify the organic chemical constituents and concentrations of the gases emanating mainly from the landfill. The risks associated with the minimum concentrations of the volatile organic compounds are believed to necessitate treatment of the landfill gases. Three types of treatment for the gases were evaluated; activated carbon, flaring, and incineration. Incineration was eliminated since it is considered to be in the developmental stage when applied to landfill gases, and could involve a large capital expense.

Vapor phase activated carbon is a proven technology for removing trace organic chemicals from gases. Treatment of the landfill gas with activated carbon would substantially reduce the human health risk associated with the landfill gas. Activated carbon would not remove the methane, and the potential adverse environmental problem associated with the discharge of large amounts of hydrocarbons to the atmosphere would remain.

Flaring the gas would effectively destroy the methane but may not destroy the organic chemicals and may produce toxic compounds from incomplete combustion.

The combination of activated carbon followed by flaring effectively reduces both the human and environmental impacts from the landfill gas.

Surface Water Diversion

Surface water diversion at the GEMS site would primarily involve storm water runoff controls. When used in conjunction with a cap, it is necessary to control erosion and ensure the reliability of the cap. Facilitating storm water runoff reduces the amount of water available for percolation and subsequent leachate generation.

Since surface water controls alone do not significantly reduce leachate generation, this component will be retained to be used in conjunction with capping.

For this site, surface water controls, implemented in conjunction with a cap, would involve collection channels on the cap leading to sedimentation basins and channels to local surface waters. The sedimentation basins are essential in protecting the streams since the erosion potential during construction of the cap is high until it can be vegetated.

TML 001 1815

The existing coarse of Holly Run is causing adverse impacts in relation to storm water runoff. Holly Run is eroding the soil at the base of the northeast side of the landfill, and has flooded an area just upstream of the Fox Chase II Development. The flooding is believed to be the primary cause of the dead vegetation. This situation would be aggravated with the increased runoff from the cap. It appears necessary to relocate Holly Run in order to avoid erosion at the base of the landfill and to facilitate proper storm water runoff.

Toe Drain

A toe drain installed at the base of the landfill would collect any leachate migrating laterally above the level of the drain from the landfill into the surrounding soil or breaking out on the side slopes. The toe drain would be integrated into a gravel foundation for the cap. The drain would encompass the entire site. The gravel foundation could also help control lateral migration of gases.

Ground Water Pumping

In order to control the off-site migration of contaminants in the ground water and the discharge of contaminated ground water into Holly Run, ground water control is necessary. Two technologies to control ground water migration were evaluated: ground water barriers and ground water pumping. The ground water barriers were eliminated in the initial screening. Barriers are effective in containing ground water when they are keyed into an impermeable base. The only adequate base at the site is the Manasquan Formation which is approximately 140 feet below the ground surface. This depth is considered to be too great to reliably install a barrier.

Ground water pumping can effectively and reliably control the off-site migration of contaminated ground water from the site. It is a proven technology and has relatively low adverse environmental impacts. A ground water pumping system can be easily implemented in a relatively short time.

The ground water pumping system envisioned utilizes 24 pumping wells surrounding the site. The pumping system would be designed to accomplish two important goals. One is to stop the generation of leachate from the waste that is in contact with the ground water. The other is to stop the migration of the contaminant plume. To ensure that ground water is no longer contacting the waste, the water table must be lowered under the landfill by approximately 25 feet. Through the use of a computer program,

TMC 001 1816

it was estimated that a combined pumping rate of 183 gpm would be necessary to maintain a cone of depression of 25 feet below the entire landfill. This cone of depression also extends out from the site and reverses the flow direction of the contaminant plume and draws it back to the pumping/collection system. The initial flow rate would be greater than 183 gpm to remove aquifer storage and create the cone of depression.

This pumping system would also prevent ground water, both contaminated and uncontaminated, from discharging to Holly Run. Although preventing contaminated ground water from entering Holly Run is beneficial, the pumping system may dry up Holly Run by depriving it of recharge from the ground water system.

Ground Water Treatment (Aqueous Waste Treatment)

After the ground water is collected in the pumping system, it will need to be treated prior to its ultimate discharge to surface water.

Several treatment technologies were evaluated. Based on the treatability studies previously conducted, which indicated that the ground water can be effectively treated with air stripping and activated sludge, the preferred treatment approach is on-site pretreatment and discharge to the local POTW.

The on-site pretreatment system is envisioned to contain primary settling/stabilization, pH adjustment, flocculation and clarification, and air stripping. The effluent from the air stripper would then be discharged to the POTW for final treatment.

The treatability studies previously conducted for ground water at the GEMS site indicate that, at a design flow of 60 gpm, this pretreatment system should produce an effluent that does not present any inhibitory or toxic effects to the POTW. However, the ground water system for the long term remedy is believed to have a design flow greater than 180 gpm. The three-fold increase in flow will probably necessitate additional treatability studies to reevaluate pretreatment and full on-site treatment systems.

Should the further treatability studies or physical or institutional constraints preclude the implementation of the preferred pretreatment system, a complete on-site treatment system would be considered. This system would include an activated sludge treatment unit, secondary clarification, sand filtration, and carbon adsorption. The effluent from the carbon adsorption unit would then be discharged to nearby surface waters.

TMC 001 1817

Holly Run and Briar Lake Remediation

The contaminants in Holly Run are believed to present potential adverse health impacts from direct contact, accidental ingestion and inhalation of volatilized contaminants. The combination of a cap and a ground water pumping system would essentially eliminate the contamination of the water in Holly Run and Briar Lake and, therefore, no direct remediation of the water would be necessary. The contaminated sediments however would remain, as would the potential for migration. The proposed Holly Run and Briar Lake remediation would involve excavating the contaminated sediments and placing them under the cap. The excavated area would be regraded and lined with crushed stone, and Holly Run would be integrated into the storm runoff control system. It is currently estimated that sediment excavation will be necessary beyond Briar Lake.

Excavation

This remedial technology is a common construction technique. Applying this technology to the GEMS site would involve excavating the entire landfill and disposing of the material in an on-site or off-site secure landfill. The cost of excavating and handling an estimated six million cubic yards of waste is substantial. Although technically feasible, excavating the waste would present the same safety hazards discussed above for capping except that the duration of the hazard would be at least twelve times longer. The long-term benefit would be greater due to the more secure disposal site.

On-Site RCRA Landfill

This component would involve construction of a secure hazardous waste landfill conforming to the regulatory requirements of RCRA (RCRA landfill). This component is dependent on excavation of the existing landfill. A RCRA landfill would consist of a double liner system with leak detection and leachate collection and a RCRA cap (multimedia). The cost of this component is considered an order of magnitude higher than other remedial technologies. Although technically feasible, it would involve extensive time for construction and would be expected to have severe institutional constraints. This remedial technology component was retained in accordance with EPA guidance.

ML 001 1818GML

011477

Off-Site RCRA Landfill

This component would involve disposal of the waste in an existing secure hazardous waste facility after excavation. It is extremely doubtful that there are six million yards of capacity available at any existing secure landfill. Even if capacity were available, the cost of transporting and disposal of the material is estimated to be in excess of one billion dollars. This component was retained in accordance with EPA guidance.

Alternate Water Supply

This involves providing an alternate water supply to residences that are potentially impacted by the contaminated ground water at the site. This can be accomplished by either installing new wells in the deep aquifer constructed to ensure no cross contamination or by connecting the homes to municipal water. Based on the extent of ground water contamination at the site, it appears likely that approximately seven wells are potentially affected. These wells are located along Erial Road. The most prudent action would be to connect these homes to the municipal supply.

REMEDIAL ALTERNATIVES

The remedial components are combined to form remedial action alternatives. Outlined below are the remedial action alternatives developed for the GEMS Landfill site.

Alternative #1

- No Action

Alternative #2

- No Remedial Action
- Monitoring of Ground Water, Surface Water and Air

Alternative #3

- Soil Cap - Partial Landfill Excavation to 3:1 Side Slopes
- Cap Foundation with Toe Drain
- Active Gas Collection and Treatment
- Surface Water Diversion
- Holly Run and Briar Lake Remediation
- Security Fence

Alternative #4

- Multimedia Cap - Partial Landfill Excavation to 3:1 Slopes
- Cap Foundation with Toe Drain
- Active Gas Collection and Treatment
- Surface Water Diversion
- Holly Run and Briar Lake Remediation
- Security Fence

TML 001 1819 GML

011478

Alternative #5

°Soil Cap - No Excavation - Fill with Borrow to 3:1 Side Slopes
°Cap Foundation with Toe Drain
°Active Gas Collection and Treatment
°Surface Water Diversion
°Holly Run and Briar Lake Remediation
°Security Fence

Alternative #6

°Soil Cap - Excavation of South Side and Fill with Borrow on West and Northeast to a 3:1 Side Slope
°Cap Foundation and Toe Drain
°Active Gas Collection and Treatment
°Surface Water Diversion
°Holly Run and Briar Lake Remediation
°Security Fence

Alternative #7

°Ground Water Pumping and Treatment
°Other Actions are the same as Alternative #3

Alternative #8

°Ground Water Pumping and Treatment
°Other Actions are the same as Alternative #4

Alternative #9

°Ground Water Pumping and Treatment
°Other Actions are the same as Alternative #5

Alternative #10

°Ground Water Pumping and Treatment
°Other actions are the same as Alternative #6

Alternative #11

°Construction of an On-Site RCRA Landfill
°Excavation of the Site and Backfill
°Ground Water Pumping and Treatment
°Active Gas Collection and Treatment (RCRA Landfill)
°Surface Water Diversion
°Holly Run and Briar Lake Remediation
°Security Fence
°Ground Water Monitoring

ML 001 1820 GML

011479

Alternative #12

°Excavation of Site and Backfill
°Disposal in Off-Site RCRA Landfill
°Ground Water Pumping and Treatment
°Surface Water Diversion (During Excavation)
°Holly Run and Briar Lake Remediation (off-site disposal)

EVALUATION OF ALTERNATIVES

The National Oil and Hazardous Substance Contingency Plan (NCP), 40 CFR Part 300, Subpart F dictates a detailed evaluation of the alternatives.

The detailed analysis evaluates each alternative according to its:

- Performance (effectiveness), reliability and implementability
- Institutional constraints/issues
- Any adverse environmental or health effects
- Cost

Each alternative was evaluated and compared on the factors listed above. The evaluations are summarized below:

Alternative #1 - No Action

This alternative obviously has no constraints to implementation. The adverse public health and environmental effects caused by the landfill would continue unabated. Leachate would continue to be produced and flow into the ground and surface waters. The plume of ground water contamination would continue to migrate from the site and could contaminate residential wells. The hazards posed by the contamination of Holly Run and Briar Lake would continue unabated and probably migrate further downstream and increase the likelihood of human contact with the contaminants. Landfill gases containing hazardous substances would continue to be released to the ambient air posing an increased risk to the public health and continue to degrade the overall air quality in the area. Physical hazards and the potential for fires or explosions would remain, and the likelihood of injury to the public and fires would increase with time.

Alternative #2 - No Action with Monitoring

This alternative would involve no remedial actions and would only monitor the air, ground water, surface water. The adverse public health and environmental effects of the landfill would continue unabated as discussed in Alternative #1, but the monitoring would provide data to detect any changes in the site conditions.

GML 001 1821

Alternatives #3, 4, 5, 6

These alternatives contain the same basic remedial action components and vary only in the cap material and the method to achieve a 3:1 side slope. The basic remedial actions of the alternatives are; construction of a landfill cap, construction of a cap foundation and toe drain, an active gas collection and treatment system, surface water diversion, Holly Run and Briar Lake remediation, and installation of a security fence.

The cap foundation and toe drain are reliable and relatively easy to implement. The cap foundation helps to ensure the reliability of the cap by providing a solid foundation that would help ensure against slope failure. The toe drain would allow any leachate migrating laterally to drain from the foundation, and relieve any adverse hydrostatic pressure on the toe of the cap. In these alternatives, the leachate collected in the toe drain would be treated at the treatment facility for the proposed Holly Run IRM. This may require conversion of the IRM treatment system to a long-term system if flows in the toe drain were substantial.

Institutional issues associated with the cap foundation and toe drain would be similar to any construction project and are not expected to impede or adversely affect the implementation of this action. Substantial flows and/or highly contaminated leachate from the toe drain may require changes in the discharge permit for the pretreatment facility.

Excavation for the cap foundation would limit any potential adverse health effects during construction. The estimated capital cost of the foundation and toe drain is approximately $830,000. Annual operation and maintenance costs are considered minimal. The treatment cost of the collected leachate cannot be determined since the amount of leachate collected in the toe drain is not predictable.

The active gas collection and treatment systems involve the combination of a gravel layer over the waste and under the cap with perforated flexible PVC pipe placed in the gravel layer. The pipes are then connected to a header system and blowers which provide a negative pressure under the cap and a positive pressure to transmit the gases through the treatment system. The treatment system would be located on-site and consists of activated carbon for removal of hazardous volatile organic chemicals and flaring for the methane. This system has proven effectiveness, is relatively easy to implement, and with proper operation and maintenance, is very reliable.

GML 001 1822

The gas collection and treatment system would most likely be required by NJDEP under its solid waste regulations due to the off-site migration of methane and inherent potential hazards the methane poses. The treatment system would be required to meet the State's applicable air pollution regulations. An air discharge permit is not expected to present any adverse constraints on implementing this action.

The estimated capital cost for the active gas collection and treatment system is $880,000. The estimated annual O&M costs are $26,500.

The surface water diversion action for this alternative involves erosion and sedimentation control during construction of the cap. After the cap is in place, the sedimentation basins act primarily as storm runoff detention basins. These actions are easily implemented, effective and reliable.

The runoff and sedimentation controls during construction of the cap are expected to be required by local erosion control ordinances.

The estimated capital cost for the surface water diversion action is $283,000. The estimated annual O&M costs are considered minimal.

In these alternatives, the Holly Run and Briar Lake remediation can be integrated into the surface water diversion actions. Briar Lake now acts as a sedimentation basin. After excavation of the contaminated sediments in Holly Run and Briar Lake, Briar Lake would act as a secondary sedimentation basin, during construction of the cap, to ensure that a significant storm would not cause any substantial siltation in Holly Run or Holly Lake below Briar Lake. After construction of the cap, Holly Run and Briar Lake could then be integrated into the storm runoff control system. Since these alternatives do not contain a ground water pumping system, contaminated ground water would most likely continue to discharge to Holly Run although the quantities and concentrations of the contaminants would be expected to decrease due to the cap. Holly Run would remain a pathway for contaminants to migrate off-site. Any new sediments accumulating in Holly Run and Briar Lake would become contaminated over time.

The Holly Run and Briar Lake remediation would involve compliance with stream encroachment and dredging regulations. It is anticipated that this action will fully comply with these regulations and therefore they would not constitute a significant constraint. No significant adverse effects to public health or worker safety are expected from this action. Proper controls will be instituted to ensure minimial adverse environmental impacts during excavation of the sediments. The estimated capital cost for this action is $300,000. The annual O&M costs are expected to be minimal.

GML 001 1823

A security fence is an effective, reliable and easily implemented action to prevent unauthorized access onto the landfill. There are no adverse health or safety effects for this action. The combination of the surface water diversion, cap and security fence are likely to require permanent easements from adjacent land owners. This could present problems, if adjacent land owners are uncooperative.

These alternatives do not contain a ground water/leachate pumping and treatment system. Therefore, the plume of contaminated ground water would continue to migrate from the site and could contaminate residential wells downgradient. Although the cap would reduce the amount of leachate generated through percolation, leachate would be expected to continue being produced by the waste that is in contact with the ground water. The contaminant concentrations would be expected to render the aquifer in the area unusable for drinking water. The Cohansey/Kirkwood Aquifer would be classified as a Class II Aquifer under EPA's ground water protection strategy.

Alternative #3 - Soil Cap - Partial Excavation

The landfill cap in this alternative is composed of a 12-inch gravel layer over the waste, 30 inches of low permeability soil and 6 inches of topsoil with vegetation. The 3:1 side slopes are achieved by excavating the top edge of the landfill and placing the material on the top of the landfill to be used to bring the top to a crown with a 3% slope.

The major benefit to partial excavation is that the solid waste present on site is removed from the side slopes where the slope is greater than 3:1 and placed on the top of the landfill where there are depressions and slopes less than 3%. Using existing material and not extending the aerial extent of the landfill results in significant cost savings over other capping alternatives. The estimated capital cost of the cap for Alternative #3 is $8,921,285 while the estimated cost of the cap for Alternative #5 (no excavation) is $20,664,375. This is a cost savings of approximately $11,750,000 or 57%.

The primary function of a landfill cap is to reduce percolation of rainwater through the waste which then produces leachate. In order to evaluate the effectiveness of the various cap alternatives, the HELP model was utilized. This model is used to compare the relative benefits of each cap. The model does not necessarily show the actual effectiveness that could be realized after construction. Based on the HELP model, the soil cap would allow for 60% of the annual rainfall to infiltrate through the cap.

GML 001 1824

The partial landfill excavation does present an additional potential risk over other alternatives due to exposing of the waste to the atmosphere during excavation. Excavation would most likely enhance the release of the landfill gases. Proper precautions and controls, such as limiting the area of waste exposed, continuous air monitoring, daily cover, and having emergency containment equipment on standby, can effectively reduce the risk associated with excavation. The soil cap would not comply with RCRA guidance for final cover since it does not contain any clay or a synthetic liner.

Alternative #4 - Multimedia Cap - Partial Excavation

This alternative is the same as Alternative #3 except that a multimedia RCRA cap is installed on only the top of the landfill. This alternative attempts to comply with RCRA final cover guidance to the extent that is technically practicable. The top of the landfill is the only area where the slope would be within the guidance. The 3:1 side slope would have the soil cover.

The HELP model estimates that this would allow 52% infiltration. The addition of the RCRA cap reduces infiltration by only 8% over the complete soil cap since the RCRA cap would only be placed on top of the landfill. The estimated capital cost for this cap is $20,347,000 or 128% more than Alternative #3.

Alternative #5 - Soil Cap - No Excavation

This alternative would not excavate the top edge of the landfill to achieve the 3:1 side slope, but would utilize local borrow as fill to increase the existing slopes 3:1. In this alternative, the base of the cap is extended out and the area is then filled to bring the slopes up to 3:1. The top of the landfill is also filled to create the crown.

The advantage to this alternative is that it would not present the increased potential risk that is associated with excavating the fill. The amount of infiltration through the fill would be essentially the same as Alternative #3 since the aerial extent of the waste would not change.

The estimated capital cost of this alternative is $20,664,375. This is approximately the same as Alternative #4 and almost $12,000,000 more than Alternative #3.

This capping alternative would require the cap to extend out onto Hickstown Road on the south side of the landfill. To avoid encroachment on the roadway, a retaining wall would be constructed along 1200 feet of Hickstown Road. This structure accounts for approximately $1,000,000 of the estimated capital cost of the cap. Relocating Hickstown Road to eliminate the retaining wall is estimated to cost $740,000.

GML 001 1825

Alternative #6 - Soil Cap - Excavate Only South Side

This alternative would excavate the top edge of the south side only, to eliminate the need for a retaining wall or relocating Hickstown Road. This alternative would present the potential increased risk associated with excavating the fill but the duration of this potential risk is substantially less than Alternatives #3 & #4 since excavation would only involve one side of the landfill. All other aspects of this alternative would be the same as Alternative #3, except the cost.

The estimated capital cost for the cap in this alternative is $16,488,548, which is $7,567,263 more than Alternative #3 (partial excavation on three sides) but $4,175,827 less than Alternative #5 (no excavation).

Alternatives #7, 8, 9, 10

These alternatives are indentical to Alternatives #3, 4, 5, and 6, respectively, except that they include a ground water pumping and treatment system.

For these alternatives, a ground water pumping system, envisioned to consist of 24 pumping wells, would be implemented to lower the ground water table beneath the fill and draw the plume of contamination back to the site. With the other remedial action components, these alternatives would effectively mitigate all the routes of contamination to the environment and substantially reduce the threat to public health.

As previously discussed, the treatment system would be expected to comply with all applicable regulations for both the pre-treatment and complete treatment systems. It is likely that additional treatability and cost-effectiveness studies would have to be performed to finalize the treatment system design.

The estimated capital cost for the ground water pumping and pretreatment system is $1,382,953 with an annual O&M cost of approximately $500,000.

Alternative #11 - On-Site - RCRA Landfill

This alternative involves excavating the entire landfill and disposing of the material in a newly constructed secure landfill adjacent to the site. It would also involve remediation of the plume of contamination and of Holly Run and Briar Lake. This alternative would be more effective than all other previously discussed alternatives. By disposing of the material in a RCRA landfill, any leachate generated would be effectively controlled. The ground water pumping and treatment system could be deactivated once the contaminants are removed from the ground water.

GML 001 1826

This alternative would present the greatest short-term partial risk due to the excavation of the entire landfill.

The estimated capital cost for the entire alternative is estimated to be $162,946,000. This is approximately $138,000,000 or seven times more expensive than the next most expensive alternative previously discussed.

Alternative #12 - Off-Site RCRA Landfill

This alternative is the same as Alternative #11 except that it would dispose of the waste in an off-site RCRA landfill. This alternative should not have any greater benefits than Alternative #11. But, institutionally, it may be more implementable.

However, other constraints such as the lack of available capacity at existing off-site landfills, and the logistics of transporting 6 million cubic yards of material, may make it technically infeasible to implement this alternative.

The estimated capital cost for this alternative is $1,500,000,000 (1.5 billion).

Cost Summary

Table B shows the estimated capital and annual O&M costs for all the alternatives. The capital costs range from $0.00 (no action) to $1.5 billion for off-site disposal. The majority of the alternatives (3 to 10) range from $11.2 million to $24.2 million. Table C shows the estimated present worth costs of the alternatives. These costs range from $0.00 (no action) to $1.6 billion (off-site disposal), but the majority of the alternatives range from $11.2 million to $27 million.

The annual O&M costs on Table B for Alternatives 3, 4, 5 and 6 are all estimated to be $107,000. It is believed that the annual O&M would be expected to vary with the different caps. The variation of O&M costs cannot readily be quantified, as reflected in the table, due mainly to the unknown effects from differential settling on the cap. It is anticipated that the variation in O&M would not be significant. Also, in addition to the differential settling, the effect of the type of the cap on the amount of ground water to be pumped is not reflected in the O&M costs of Alternatives 7, 8, 9, 10. Since treatment costs are flow dependent, the annual O&M should change with corresponding reductions in infiltration of the various caps. However, the HELP model indicates only a 8% change in the infiltration. An 8% difference in infiltration would represent an even smaller percent change in the estimated pumping flow. This small flow change would not be expected to change the O&M costs significantly.

GML 001 1827

Alternatives #5 and #9 (soil cap with no excavation) have the highest capital cost of the cap alternatives, but do not have the highest present worth costs. This is because the capital costs are divided over four years (the expected construction duration) instead of three for the other alternatives. This extension results in the lower present worth cost.

STATE ACTION

The NJDEP, based on preliminary information developed during the FFS, has nearly completed the detailed design of an Initial Remedial Measure (IRM) similar to the recommended action in the FFS. The State's action consists of relocating Holly Run, pumping and treatment of the ground water, and selective grading and cover on the landfill. The State's actions are almost identical in scope to those recommended by EPA except for the selective grading and covering at the landfill. The State's design also utilizes other techniques to acheive the same cleanup goals. These differences are described below.

The State is using two 60-inch reinforced concrete pipes (RCP) in the relocation of Holly Run, as opposed to the channel EPA evaluated. Both techniques accomplish the goal of relocating and isolating Holly Run, and therefore would be technically equivalent. The State also intends to install an air stripping system with vapor phase activated carbon for groundwater/ leachate treatment. The envisioned air stripping units are slightly different in that they utilize different designs to allow for maintenance of the columns while continiuing to treat the leachate. Both are capable of treating 60 gpm at 32 ppm TVOC. The conceptual design differences are not significant and the two units are considered technically equivalent. The State intends to perform on-site regeneration of the carbon units while EPA employs off-site regeneration/disposal. Both techniques will effectively remove VOCs from the off-gas but differ in the handling/disposal of the spent activated carbon.

The ground water pumping techniques also differ. The State intends to use a well point system while EPA would ultilize pumping wells. Well points are more easily installed than pumping wells, but generally provide lower yields and therefore more wells points than wells are required. Both are expected to accomplish the desired drawdown necessary to effectively control the ground water and are considered technically equivalent.

The major difference between the actions proposed by the State and EPA is the extent of grading and cover. EPA recommends grading for surface runoff limited to the study area. The State intends to do substantial filling, grading, and adding cover over much of the landfill. EPA considered any extensive

GML 001 1828

actions related to proper capping and closure of the landfill to be beyond the scope of its Initial Remedial Measure. Actions related to capping the entire landfill are considered part of the long-term remedial action. The State's selective cover would be consistent with Alternatives #5 and #9, and to a large extent with alternatives #6 and #10. However, the State's selective cover would be removed to a large extent for alternatives #3, #4, #7 and #8. Therefore, the State's cover action would not be totally consistent with these long-term alternatives. The selective cover is not consistent with alternatives #1 and #2 since capping is not part of those alternatives, and for alternatives #11 an #12, it would have to be totally excavated.

The State of New Jersey is currently nearing completion of the design of its IRM. NJDEP has recently submitted an application for federal assistance to implement the IRM. The NJDEP intends to bid the selective cover action prior to, and separately from the other IRM components. The implementation of the selective cover portion is expected to begin in December, 1985. Construction of the remaining components should begin in January, 1986 or February, 1986.

The estimated capital and first year O&M costs for the State's actions to relocate Holly Run and the groundwater/leachate collection and treatment system are approximately $960,000.

Community Relations

In the Spring of 1983, representatives of EPA Region II went door to door to explain and answer questions concerning the emergency action taken at the GEMS site. In 1983 and 1984, the Township officials were periodically updated on the progress of the Remedial Investigation and Feasibility Study.

On April 11, 1985, representatives of EPA Region II were available from 1:00pm to 8:00pm to answer questions on all EPA activities at the site including the FFS. At approximately 7:00pm, due to the large number of people present, a public meeting format was established to address area residents' questions. The status of the FFS was announced and the public was informed that a meeting to present the results of the FFS would be forthcoming.

On May 2, 1985, a Public Meeting was held at the Gloucester Township Municipal Building to present the FFS. Representatives of the Region discussed the findings of the FFS, and along with representatives of the NJDEP, addressed the public's questions and comments. The comment period closing date of May 17, 1985 was announced along with the locations of public repositories for the FFS. The comments received on the FFS have been included in the attached Responsiveness Summary.

GML 001 1829

On August 2, 1985, the public comment period for the RI/FS began. On August 19, 1985, a public meeting was held at the Gloucester Township Municipal Building. The results of the RI/FS were presented to approximately 150 people in attendance and Alternative 8 was identified as the remedial alternative tentatively recommended by EPA and NJDEP. Several comments and statements pertaining to the site were discussed. The majority of the questions dealt with issues that were not directly related to the RI/FS or the recommended alternative. Comments from the residents concerning the recommended alternative were for the most part favorable. The attached Responsiveness Summary also addresses all the comments and questions received at the public meeting, and during the public comment period.

Recommended Remedial Action

According to 40 CFR Part 300.68 (j), cost-effective is described as the lowest cost alternative that is technically feasible and reliable and which effectively mitigates and minimizes damages to and provides adequate protection of public health, welfare, and the environment.

An evaluation of the alternatives leads to the conclusion the Alternative 8, with a modification, is the appropriate cost-effective remedial action for the GEMS Landfill site. The modification recommended is to add two feet of the clay to the side slopes. This modification substantially improves infiltration reduction effectiveness. The HELP Model estimates that this modification would allow 3% infiltration. Also, clay is more consistent with the RCRA final cover guidance than the soil cap. The capital cost for Alternative #8 with the clay cap modification is $27,365,000.

An evaluation of the alternatives for the Initial Remedial Measure leads to the conclusion that Alternative B is most appropriate. Section 300.68 of 40 CFR requires all remedial actions at National Priorities List sites be consistent with the final remedy to prevent or mitigate the migration of a release of hazardous substances to the environment. Alternative B is consistent with Alternative 8 and is the cost-effective Initial Remedial Measure. The State's proposed action including the relocation of Holly Run and the ground water collection/treatment system is technically equivalent to Alternative B, is comparable in estimated cost for capital and one year of operation and maintenance, and is consistent with the long-term remedial action. The degree of consistency of the State's proposed selective grading and cover with the recommended cap is currently unknown. Upon completion of the detailed design of the recommended cap, a determination will be made.

GML 001 1830

The recommended remedial action for the GEMS landfill site includes:

- Construction of a landfill cap. The cap will consist of a multimedia cover on the top of the landfill, and a clay cap on the side slopes. The landfill will be partially excavated to obtain 3:1 side slopes

- Implementation of a ground water pumping system to address the entire site

- Implementation of a ground water pumping system in the Fox Chase II area to address the contamination of Holly Run

- Construction of a ground water/leachate treatment system to initially treat the ground water/leachate from the Fox Chase II area, then expanded and upgraded to properly treat the ground water/leachate from the long-term ground water pumping and toe drain systems

- Surface waters controls including initially relocating and isolating Holly Run in the Fox Chase II area

- Holly Run and Briar Lake remediation

- Installation of an active gas collection and treatment system

- Construction of a security fence

- Implementation of a monitoring system

- Connecting potentially affected residences (approximately seven) to the existing municipal water supply

- Operation and Maintenance

The IRM effectively reduces the release of hazardous substances into both Holly Run and the ambient air. Observations by the NJDEP indicate a potential for contaminants to migrate beyond Briar Lake and outside of the existing fence. The data indicates a significant potential hazard associated with direct contact with the contaminants in Holly Run. The data also indicates a serious threat to the aquatic life in Holly Run. The IRM significantly reduces the potential for these exposures and is consistent with the final remedy for the site.

GML 001 1831

The recommended remedial action substantally reduces the amount of leachate being produced by the infiltration of precipitation through the clay and multimedia cap. The hazards posed by exposed waste and leachate seeps are essentially eliminated by the cap, and both the on-site and off-site hazards posed by the landfill gas are substantially reduced by the active gas ventilation system. The ground water pumping system will lower the water table below the waste and eliminate this mechanism of leachate generation. The pumping system also effectively controls any off-site migration of contaminants in the ground water and would draw the existing plume back to the site. The pumping system will eliminate the contaminant discharge into Holly Run, and the Holly Run and Briar Lake remediation will effectively eliminate the exposure to contaminated sediments. Connecting the residences to the municipal water supply would eliminate the potential human health hazard associated with consuming the ground water.

Consistency With Other Environmental Statues

It is intended that both the IRM (Alternative B) and the long-term remedial action (modified Alternative 8) will comply with all relevant standards, guidance and policy with the exception of the RCRA final cover guidance.

In order to comply with discharge critreria, it appears that the treatment system may require metals removal. The incremental costs are not expected to be significant enough to justify fund-balancing. The off-gas discharge from the IRM includes removal of the volatile organics which complies with state regulations and guidance. The off-gas from the air stripping system for the long-term system may also require removal of the volatile organics. The increased costs associated with off-gas treatment would also not be expected to be significant enough to justify fund-balancing.

The landfill cap in the recommended alternative is believed to comply with the RCRA landfill cover criteria listed in 40 CFR 264.310 (A). The recommended cap does not comply with the RCRA final cover guidance. As previously discussed, the guidance recommends 3 to 5% slopes. With the 3:1 slopes on the sides of the landfill, the RCRA final cover is technically impractical to install on the side slopes at the GEMS site.

GML 001 1832

Operable Units

The State of New Jersey has stated that it will implement its IRM within the next few months. Portions of the State's IRM are technically equivalent and consistent with the recommended long-term remedial action; specifically the construction of a ground water/leachate collection and pretreatment system, and relocation of a portion of Holly Run. Implementation of these two components would essentially constitute implementing an initial phase of the long-term remedial action.

During the design of the long-term remedial action, an evaluation to determine the feasibility of phasing the construction of the selected remedy into operable units should be conducted. Phasing of the implementation of a project of this magnitude has the benefit of potentially promoting construction efficiency as well as to distributing the project's funding requirements over the implementation duration. An analysis of the effects of differential settling on the cap should be conducted during design to attempt to predict further maintenance needs.

Operation and Maintenance

The recommended remedial action will require a significant commitment to operation and maintenance (O&M) of the ground water pumping and treatment systems, cap, security fence, surface water controls, and the monitoring system to assure the continued effectiveness of the remedy. O&M requirements will be further defined during the design of the remedial action.

Future Actions

Additional Studies

It is anticipated that, in addition to the evaluations discussed in the operable units section, further studies may be necessary to properly design the selected remedy. These studies may include but are not limited to; treatability studies for the ground water treatment system, and hydrological testing to optimize the pumping system.

3ML 001 1833

011492

Schedule	Date
EPA Action	
- Final Record of Decision	September 1985
- Obligate Funds for Design and Initial Phase (IRM)	Pending CERCLA Reauthorization or State Advance Match Funding
- Continue Responsible Party Search	Ongoing
State Action	
- Complete Design for Selective Cover	September 1985
- Complete Design for Initial Phase (IRM)	October 1985
- Initiate Long-Term Design	Pending CERCLA Reauthorization or Advance Match State Funding
- Implement Selective Cover	November 1985
- Implement Initial Phase (IRM) (Groundwater collection/treatment)	December 1985 - January 1986
- Complete Long-Term Design	Pending CERCLA Reauthorization or Advance Match State Funding

3ML 001 18 34

011493

Table A
GEMS Landfill
Pathways of Migration and Potential Hazards

Air Contamination

- Volatilization of organic chemicals from contaminated surface water and leachate seeps
- Uncontrolled discharge of landfill gases containing organic chemicals

Ground Water Contamination

- Contaminant plume in Cohansey/Kirkwood Aquifer migrating off-site
- Contaminated ground water discharging to Holly Run
- Waste in contact with ground water
- Potential for residential well contamination

Surface Water Contamination

- Holly Run and Briar Lake water and sediment contamination
- Potential for contaminant migration downstream of Briar Lake

Leachate

- Percolation into ground water
- Surface seeps

Physical Hazards

- Landfill gases potentially creating on and off-site explosive situations
- Exposed waste

GML 001 1835

011494

Table B

GEMS Site, Remedial Action Alternatives
Capital and O&M Costs

Remedial Action Alternative	Capital ($1,000)	Annual O&M ($1,000)
1. No Action	$ 0	0
2. No Action with Monitoring	0	53
3. Soil Cap with Partial Landfill Excavation*	11,209	107
4. Soil/Multimedia Cap with Partial Landfill Excavation*	22,635	107
5. Soil Cap with No Landfill Excavation*	22,952	107
6. Soil Cap with Landfill Excavation Only on the Southern Slope*	18,776	107
7. Soil Cap with Partial Landfill Excavation and Ground Water Extraction and Treatment*	12,502	601
8. Soil/Multimedia Cap with Partial Excavation and Ground Water Extraction and Treatment*	23,928	601
8-MODIFIED. Clay/multimedia cap with Partial Excavation and Ground Water Extraction and Treatment*	27,365	601
9. Soil Cap with No Landfill Excavation with Ground Water Extraction and Treatment*	24,245	601
10. Soil Cap with Landfill Excavation only on the Southern Slope with Ground Water Extraction and Treatment*	20,069	601
11. On-Site RCRA Landfill with Ground Water Treatment, Holly Run and Briar Lake Remediation, Active Gas Collection and Treatment	162,946	606
12. Off-Site Disposal with Ground Water Treatment, Holly Run and Briar Lake Remediation	1,500,000	--

NOTE: Annual O&M costs include monitoring and post closure maintenance.

*These options also include, Cap Foundation with Toe Drain, Active Gas Collection and Treatment, Holly Run and Briar Lake Remediation, Surface Water Diversion and Security Fence.

GML 001 1836

Table C

Remedial Action Alternatives
Present Worth Costs
GEMS Site

Remedial Action Alternative	Present-Worth* ($1,000)
1. No Action	$ 0
2. No Action with Monitoring	498
3. Soil Cap with Partial Landfill Excavation (3 yrs)**	11,227
4. Soil/Multimedia Cap with Partial Landfill Excavation (3 yrs)**	21,664
5. Soil Cap with No Landfill Excavation (4 yrs)**	21,011
6. Soil Cap with Landfill Excavation Only on the Southern Slope (3 yrs)**	18,124
7. Soil Cap with Partial Landfill Excavation and Ground Water Extraction and Treatment (3 yrs)**	16,772
8. Soil/Multimedia Cap with Partial Excavation with Ground Water Extraction and Treatment (3 yrs)**	28,148
8-MODIFIED. Clay/Multimedia Cap with Partial Excavation and Ground Water Extraction and Treatment (3 yrs)**	31,000
9. Soil Cap with No Landfill Excavation with Ground Water Extraction and Treatment (4 yrs)**	26,961
10. Soil Cap with Landfill Excavation only on the Southern Slope with Ground Water Extraction and Treatment (3 yrs)**	24,257
11. On-Site RCRA Landfill with Ground Water Treatment	133,048
12. Off-Site Disposal with Ground Water Treatment	1,600,000

*These costs reflect capital cost distribution over the construction duration of the respective alternatives.

(_ yrs) = Estimated Construction Duration in Years

**These options also include, Cap Foundation with Toe Drain, Active Gas Collection and Treatment, Holly Run and Briar Lake Remediation, Surface Water Diversion and Security Fence.

GML 001 1837

APPENDIX I

GML 001 1838

011497

TABLE A-1

CONCENTRATION RANGES OF CONTAMINANTS BY MEDIA
GEMS LANDFILL SITE

Contaminant	Groundwater Aquifers C - K µg/l	Groundwater Aquifers C - K Obs/Sample	Groundwater Aquifers Mt. I µg/l	Groundwater Aquifers Mt. I Obs/Sample	Residential Wells µg/l	Residential Wells Obs/Sample	Surface Water µg/l	Surface Water Obs/Sample	Sediment µg/kg	Sediment Obs/Sample	Leachate/Sediment µg/kg	Leachate/Sediment Obs/Sample
Volatiles												
Benzene	11 - 2,800	13/44	20	1/8			12 - 570	9/19	8.2	1/10	8	1/18
Toluene	7 - 1,597	15/44	65	1/8			17 - 630	10/19	290	1/10	14	1/18
Ethylbenzene	6 - 634	15/44					6 - 64	8/19	15	1/10	34	1/18
Methylene Chloride	38 - 3,155	15/44	4.4	1/8			62 - 3,200	9/19	16 - 20	2/10	11 - 804	9/18
2 Butanone	21 - 18,480	10/44					920 - 11,000	4/19	15 - 23,000	4/10	8	1/18
Total Xylene	7 - 25,569	16/44	34	1/8			120 - 220	4/19			25 - 48	2/18
Acetone	50 - 50,288	10/44					230 - 24,000	11/19	6 - 15,000	7/10	26 - 73	3/18
Chlorobenzene	5 - 111	10/44					7 - 330	8/19	7.6	1/10		
1,2-Dichloroethane	53 - 271	5/44					13 - 100	5/19				
1,1 Dichloroethane	11 - 355	10/44					9 - 33	4/19				
Chloroform	6 - 662	5/44					7 - 26	3/19				
1,2-trans-dichloroethene	12 - 816	7/44					8 - 94	6/19				
Tetrachloroethene	52	1/44										
Trichloroethene	26 - 227	4/44					20	1/19				
2 Hexanone	10 - 246	9/44					43 - 50	2/19				
Styrene	25	1/44										
Dichlorodifluoromethane	15 - 44	4/44										
Vinyl Chloride	19	1/44										
Acrolein	270	1/44										
Acrylonitrile	32	1/44										
1,1,1 Trichloroethane	3 - 24	2/44					2	1/19				
1,1,2,2-Tetrachloroethane	52	1/44										
4-Methyl-2-pentanone	7 - 1,504	12/44					44 - 1,900	10/19	97 - 3,600	3/10		
O-Xylene							7 - 220	6/19				
Chloroethane	6 - 45	3/44										
Carbondisulfide	35	1/44					1.1	1/19				
Bromodichloromethane							5	1/19				
Chloromethane											95.6	1/18

DRAFT

TABLE A 1
CONCENTRATION RANGES OF CONTAMINANTS BY MEDIA
GEMS LANDFILL SITE
PAGE TWO

Contaminant	Groundwater Aquifers C - K µg/l	Obs/Sample	Groundwater Aquifers M L µg/l	Obs/Sample	Residential Wells µg/l	Obs/Sample	Surface Water µg/l	Obs/Sample	Sediment µg/Kg	Obs/Sample	Leachate/Sediment µg/Kg	Obs/Sample
Acid Extractables												
Phenol	45 - 268		54	1/8	30	1/24	14 - 400	7/19	600	1/10		
2,4-dimethylphenol	37	1/44					16 - 22	2/19				
2-methylphenol	106	1/44					6 - 74	5/19			76	1/18
4-methylphenol	12 - 383	4/44					10 - 340	7/19	320	1/10	282	1/18
Benzoic Acid							1,400 - 1,600	3/19	5,600	1/10		
Base Neutral Extractables												
Bis(2-ethylhexyl)phthalate	6 - 38	7/44	26	1/8			40	1/19	860 - 3,800	4/10	1,000	1/18
acenaphthene									850	1/10		
Hexachloroethane	40	1/44										
1,2-dichlorobenzene	5 - 1,287	3/44					19 - 80	5/19				
1,4-dichlorobenzene	75	2/44										
Bis(2-chloroisopropyl)ether		26	1/44									
Isophorone	10 - 78	4/44					11 - 18	2/19				
naphthalene	30 - 111	5/44					10	1/19				
nitrobenzene	4 - 57	2/44										
diethyl phthalate	6 - 47	4/44										
dimethyl phthalate	34	1/44										
di-n-octyl phthalate	5 - 105	4/44	22	1/8								
aniline	30 - 526	3/44					54 - 1,200	8/19				
4-chloroaniline	6	1/44										
2-methylnaphthalene	11 - 46	3/44										
bis(2-chloroethyl)ether							56	1/19				
Fluoranthene									1400 - 8500	2/10	2,500	1/18
Benzo(a)anthracene									5700	1/10	13,000	1/18
Benzo(a)pyrene									5100	1/10	13,500	1/18

011499

GML 001 1840

TABLE A-1
CONCENTRATION RANGES OF CONTAMINANTS BY MEDIA
GEMS LANDFILL SITE
PAGE THREE

Contaminant	Groundwater Aquifers C - K µg/l	Obs/Sample	Groundwater Aquifers Mt. L µg/l	Obs/Sample	Residential Wells µg/l	Obs/Sample	Surface Water µg/l	Obs/Sample	Sediment µg/Kg	Obs/Sample	Leachate/Sediment µg/Kg	Obs/Sample
Benzo(b)fluoranthene									2700	1/10	12,000	1/18
Benzo(k)fluoranthene									1300 - 2500	2/10	12,000	1/18
Chrysene									6000		13,000	1/18
Anthracene									1300			
N-Nitrosodimethylamine												
Benzo(ghi)perylene									1,500	1/10	7,500	1/18
Fluorene									580	1/10		
Phenanthrene									6,500	1/10	1,085 - 2,000	2/18
Indeno(1,2,3-cd)pyrene									1,800	1/10	9,500	1/18
Pyrene									900 6,900	2/10	1,561 19,500	2/18
4-Chlorophenyl Phenyl Ether												
4-Bromophenyl Phenyl Ether												
bis(2-Chloroethoxy)Methane												
Benzyl Butyl Phthalate												
Dibenzo(a,h)Anthracene											2,500	1/18
Dibenzofuran												
Acenaphthylene												
Pesticides												
4,4'-DDT											0.66	1/18
4,4'-DDE											0.13	1/18
4,4'-DDD											0.33	1/18
Endosulfan Sulfate											0.85	1/18
Aroclor-1254	11	1/44										

DRAFT

TABLE A-1
CONCENTRATION RANGES OF CONTAMINANTS BY MEDIA
GEMS LANDFILL SITE
PAGE FOUR

Contaminant	Groundwater Aquifers C - K µg/l	Groundwater Aquifers C - K Obs/Sample	Groundwater Aquifers Mt. L µg/l	Groundwater Aquifers Mt. L Obs/Sample	Residential Wells µg/l	Residential Wells Obs/Sample	Surface Water µg/l	Surface Water Obs/Sample	Sediment mg/Kg	Sediment Obs/Sample	Leachate/Sediment mg/Kg	Leachate/Sediment Obs/Sample
Inorganics											1,520 - 7,880	15/17
											5 - 917	15/17
Aluminum	25 - 32,600	21/44	200	1/8	110 - 664	15/24	263 - 26,400	11/19	292 - 3,430	9/9	6.9 - 256	15/17
Chromium	10 - 102	11/44	10 - 800	2/8			12 - 41	3/19	8 - 11	9/9	0.06 - 29	15/17
Barium	20 - 3,173	21/44	200	1/8	158 - 264	3/24	100 - 2,240	11/19	5.5 - 30	6/9	3.4 - 631	15/17
Cadmium	1 - 90,500	14/44							01 - 0.54	4/19	3,050 - 24,200	15/17
Copper	2 - 654	3/44			110 - 326	5/24	223	1/19	2 - 6.2	4/9	18 - 1,600	15/17
Iron	11 - 715,000	24/44	100 - 450	7/8	80 - 3,500	21/24	1.50 - 98,800	19/19	471 - 11,300	9/9	2.3 - 90	16/17
Lead	8 - 73	21/44	1,155	1/8	6 - 21	3/24	7.7 - 542	6/19	2 - 26	8/9	30 - 2,090	15/17
Nickel	19 - 66	3/44					67	1/19			25 - 1,960	15/17
Manganese	4.5 - 8,390	34/44	15	3/34	11 - 42	17/24	30 - 458	19/19	2.7 - 31	9/9		
Zinc	5 - 36,130	43/44	10 - 980	7/8	130 - 980	4/24	10 - 501	19/19	2 - 29	9/9	0.6 - 6.8	14/17
Boron	105 - 3,800	12/44			105 - 172	9/24					1.0 - 29	9/17
Arsenic	10 - 120	12/44					10 - 60	8/19	0.6 - 2.5	5/9		
Selenium	2 - 3	4/44	2	1/8			2	1/19	0.2	2/9		
Tin	22 - 71	2/44			20	1/24	30	1/19	1.3 - 4.2	5/9		
Silver							11 - 19	5/19	0.7 - 1.3	6/9	0.1 - 5.1	17/17
Calcium	986 - 90,500	24/44	218,000	1/8	1 - 26	22/24	1,250 - 37,100	7/19				
Magnesium	150 - 33,500	25/44			1 - 7.96	20/24	1,000 - 15,800	7/9				
Sodium	1,350 - 108,000	24/44	115,000	1/8	1 - 11.2	23/24	2,150 - 137,000	7/19				
Potassium	400 - 55,700	25/44	364,000	1/8	1 - 8.6	22/24	800 - 27,600	7/19				
COD	9 - 29	9/34	21 - 99	4/8			139 - 637	7/19				
Sulfate	2 - 168	15/34	605	1/8	6 - 11.5	17/24	5.9 - 37	7/19				
Chloride	2.3 - 83	16/34	11	1/8	1 - 18	11/24	6.5 - 197	7/19				
Nitrate	0.1 - 3.32	10/34	0.10	1/8	0.04 - 9.52	13/24	0.07 - 0.49	5/19				
TDS	7 - 329	16/34	68 - 1,762	8/8			21 - 725	7/19			6.0 - 1,200	17/17
TSS	23 - 2,996	15/34	14 - 228	8/8	5 - 11	5/24	16 - 991	7/19			1.5 - 71	13/17
Ammonia			80 - 180	6/8			1,000 - 23,000	8/19	6.5 - 30	6/9		
Sulfide			130 - 690	6/8			200 - 220	2/19				

011501

GML 001 1842

DRAFT

TABLE A-1
CONCENTRATION RANGES OF CONTAMINANTS BY MEDIA
GEMS LANDFILL SITE
PAGE FIVE

Contaminant	Groundwater Aquifers C-K µg/l	Groundwater Aquifers C-K Obs/Sample	Groundwater Aquifers Mt. L µg/l	Groundwater Aquifers Mt. L Obs/Sample	Residential Wells µg/l	Residential Wells Obs/Sample	Surface Water µg/l	Surface Water Obs/Sample	Sediment mg/kg	Sediment Obs/Sample	Leachate/Sediment mg/kg	Leachate/Sediment Obs/Sample
Antimony					20	1/24					2.8 - 3.8	2/17
Bicarbonate					6 - 110	20/24						
Vanadium	4.4	1/44					22	1/19	16	1/9	52	1/17
Cyanide											0.3 - 7.3	7/17
Cobalt									3.1	1/9	2.6 - 7.2	8/17

C-K = Cohansey-Kirkwood Aquifer
Mt. L = Mt. Laurel Aquifer

APPENDIX II

GML 001 1844

011503

TABLE 5-1

ESTIMATED CANCER RISKS ASSOCIATED WITH INHALATION OF SOME CONTAMINANTS
AT THE CONCENTRATIONS OBSERVED IN ONSITE AMBIENT AIR
NJDEP SEPTEMBER, 1983 SAMPLING RESULTS[1]
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Carcinogen Determination	Carcinogenic Risk/Person		
		Minimum Concentration[1]	Mean Concentration[1]	Maximum Concentration[1]
carbon tetrachloride CAS No. 56-23-5	Human Suspected[2]	7.12×10^{-6} @ 0.03 ppb	1.42×10^{-5} @ 0.06 ppb	2.14×10^{-5} @ 0.09 ppb
1,2-dichloroethane CAS No. 107-06-2	Human Suspected[2]	*	6.99×10^{-7} @ 0.008 ppb	3.49×10^{-6} @ 0.04 ppb
1,1,1-trichloroethane CAS No. 71-55-6	Currently Being tested[3]	4.31×10^{-7} @ 0.17 ppb	1.04×10^{-6} @ 0.41 ppb	2.23×10^{-6} @ 0.88 ppb
chloroform CAS No. 67-66-3	Human Suspected[2]	2.18×10^{-5} @ 0.22 ppb	3.37×10^{-5} @ 0.34 ppb	5.46×10^{-5} @ 0.55 ppb
methylene chloride CAS No. 107-06-2	Animal Indefinite[3]	7.62×10^{-8} @ 0.12 ppb	6.35×10^{-8} @ 0.1 ppb	2.41×10^{-7} @ 0.38 ppb
trichloroethene CAS No. 79-01-6	Animal Suspected[3]	8.3×10^{-6} @ 0.28 ppb	1.16×10^{-5} @ 0.39 ppb	1.81×10^{-5} @ 0.61 ppb
benzene CAS No. 71-43-2	Human Definite[2]	9.78×10^{-5} @ 2.02 ppb	2.32×10^{-4} @ 4.80 ppb	6.27×10^{-4} @ 12.95 ppb
1,1,2-trichloroethane CAS No. 79-00-5	Animal Suspected[3]	1.82×10^{-6} @ 0.02 ppb	2.18×10^{-6} @ .024 ppb	9.1×10^{-6} @ 0.1 ppb

011504

GML 001 1845

TABLE 5-1
ESTIMATED CANCER RISKS ASSOCIATED WITH INHALATION OF SOME CONTAMINANTS
AT THE CONCENTRATIONS OBSERVED IN ONSITE AMBIENT AIR
NJDEP SEPTEMBER, 1983 SAMPLING RESULTS(1)
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY
PAGE TWO

Contaminant	Carcinogen Determination	Carcinogenic Risk/Person		
		Minimum Concentration(1)	Mean Concentration(1)	Maximum Concentration(1)
tetrachloroethene CAS No. 127-18-4	Animal Suspected(3) Human Indefinite(3)	3.1×10^{-5} @ 0.45 ppb	6.2×10^{-5} @ 0.9 ppb	1.27×10^{-4} @ 1.84 ppb
1,1,1,2-tetrachloroethane CAS No. 74-34-5	Animal Suspected(3)	3.15×10^{-6} @ 0.08 ppb	1.38×10^{-4} @ 0.35 ppb	2.56×10^{-4} @ 0.65 ppb

Notes: (*) Contaminant detected in one sample. Risk calculations for single detections were included in the maximum concentration category to assume a "worst case" scenario.

- Analytical results were obtained from a 5-day onsite ambient air sampling program conducted by NJDEP in September, 1983. (Gianti, et.al., 1984). Mean concentration is the arithmatic average of the 5-day sampling results. Non-detections are included in the calculation of the arithmatic mean.

- Cancer risk estimates provided for chemicals for which evaluations have been conducted by EPA's Carcinogenic Assessment Group (USEPA, 1984a).

- Risk estimates assume inhalation of 20 m^3 of air per day (70 kg man) (USEPA, 1980 in ICF, Inc., 1985).

Sources:
(1) Gianti, et.al., 1984
(2) USDHHS, 1983
(3) USDHHS, 1984

011505

GML 001 1846

TABLE 5-2

ESTIMATED CANCER RISKS ASSOCIATED WITH INHALATION OF SOME CONTAMINANTS
AT THE CONCENTRATIONS OBSERVED IN ONSITE AMBIENT AIR
NUS SEPTEMBER, 1983 SAMPLING RESULTS
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Carcinogen Determination	Carcinogenic Risk/Person		
		Minimum Concentration	Mean Concentration	Maximum Concentration
carbon tetrachloride CAS No. 56-23-5	Human Suspected(1)	7.59×10^{-5} @ 0.32 ppb	2.37×10^{-4} @ 1.0 ppb	3.32×10^{-4} @ 1.4 ppb
1,2-dichloroethane CAS No. 107-06-2	Human Suspected(1)	1.31×10^{-4} @ 1.5 ppb	3.67×10^{-4} @ 4.2 ppb	4.98×10^{-4} @ 5.7 ppb
1,1,1-trichloroethane CAS no. 71-55-6	Currently Being Tested(2)	8.86×10^{-6} @ 3.5 ppb	2.13×10^{-5} @ 8.4 ppb	3.04×10^{-5} @ 12 ppb
chloroform CAS No. 67-66-3	Human Suspected(1)	8.13×10^{-5} @ 0.82 ppb	2.14×10^{-4} @ 2.2 ppb	2.88×10^{-4} @ 2.9 ppb
1,1-dichlorothene CAS No. 75-35-4	Animal Positive(2) Human Indefinite(2)	*	1.19×10^{-5} @ 0.08 ppb	7.41×10^{-5} @ 0.5 ppb
methylene chloride CAS No. 107-06-2	Animal Indefinite(2)	8.26×10^{-6} @ 13 ppb	1.82×10^{-5} @ 28.7 ppb	3.11×10^{-5} @ 49 ppb
trichloroethene CAS No. 79-01-6	Animal Suspected(2)	**	7.11×10^{-6} @ 0.24 ppb	1.10×10^{-5} @ 0.37 ppb

011506

GML 001 1847

TABLE 5-2
ESTIMATED CANCER RISKS ASSOCIATED WITH INHALATION OF SOME CONTAMINANTS
AT THE CONCENTRATIONS OBSERVED IN ONSITE AMBIENT AIR
NUS SEPTEMBER, 1983 SAMPLING RESULTS
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY
PAGE TWO

Notes: (*) Contaminant detected in one sample. Risk calculations for single detections were included on the maximum concentration category to assume a "worst case" scenario.

(**) All detections were of equal concentrations and included in the maximum concentration category to assume a "worst case" scenario.

- Cancer risk estimates provided for chemicals for which evaluations have been conducted by the EPA Carcinogenic Assessment Group (USEPA, 1984d).

- Non-detections are included in the calculation of the mean (arithmatic average) onsite ambient air concentration.

- Risk estimates assume inhalation of 20 m^3 of air per day (70 kg man) (USEPA, 1980 in ICF, Inc., 1985).

Sources: (1) USDHHS, 1983
(2) USDHHS, 1984

011507

GML 001 1848

TABLE 5-3

ACUTE AND SUBCHRONIC TOXIC EFFECTS
GROUNDWATER CONTAMINANTS (ORGANIC) DETECTED IN MONITORING WELL SAMPLES
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Maximum Observed Concentration (µg/l)	EPA Health Advisory SNARLs(1)		No. of Samples Exceeding SNARL/ Total No. of Samples	
		Acute (1-day) (µg/l)	Subchronic (10-day) (µg/l)	Acute (1-day) (µg/l)	Subchronic (10-day) (µg/l)
benzene CAS No. 71-43-2	2,800	NR	230	--	4/52
trichloroethene CAS No. 79-01-6	227	2,020	200	--	2/52
xylenes CAS No. 95-47-6	25,569	12,000	1,300	1/52	1/52
1,2-trans-dichloroethene CAS No. 10061-02-6	816	2,700	270	--	2/52
methylene chloride CAS No. 72-09-2	3,155	13,000	1,300	--	5/52

Sources: (1) USEPA, 1984b

Notes: NR - Not Reported
SNARLs - Suggested No Adverse Response Levels
Only those organic compounds that exceed 1-day or 10-day SNARLs are listed.
Health Advisory Suggested No Adverse Response Levels (SNARLs) do not consider carcinogenic health risks.

011508

GML 001 1849

TABLE 5-4

CHRONIC TOXIC EFFECTS
GROUNDWATER CONTAMINANTS (ORGANIC) DETECTED IN MONITORING WELL SAMPLES
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Maximum Observed Concentration (µg/l)	Health Advisory SNARLs Long-Term (µg/l)(1)	No. of Samples Exceeding Health Advisory/ Total No. of Samples	Acceptable Daily Intake (µg/l)(2)	No. of Samples Exceeding Acceptable Daily Intake/ Total No. of Samples	Ambient Water Quality Criteria (µg/l)(3)	No. of Samples Exceeding Ambient Water Quality Criteria/ Total No. of Samples
toluene CAS No. 108-88-3	1,597	340	6/52	NL	--	NL	--
2-butanone CAS No. 78-93-3	18,480	NR	--	700	7/52	NL	--
total xylenes CAS No. 95-47-6	25,569	620	1/52	NL	--	NR	--
tetrachloroethene CAS No. 127-18-4	52	20	1/52	NR	--	NL	--
trichloroethene CAS No. 79-01-6	227	75	3/52	NR	--	NL	--
1,2-dichlorobenzene CAS No. 95-50-1	1,287	NR	--	NR	--	470	1/52
methylene chloride CAS No. 75-09-02	3,155	150	6/52	NL	--	NL	--

Notes: Only compounds which exceed long-term SNARLs, Ambient Water Quality Criteria (AWQC), or Acceptable Daily Intake (ADIs) are listed.
ADIs are calculated to reflect ingestion of 2 liters of water per day.
Criteria and guidelines which are tabulated do not consider carcinogenic health risks.
NR - Not reported.
NL - AWQC or ADIs were not listed if long-term SNARLs were available.

Sources: (1)USEPA, 1984b
(2)USEPA, 1984c
(3)USEPA, 1984d

011509
GML 001 1850

DRAFT

TABLE 5-6

PRELIMINARY PROTECTIVE CONCENTRATION LIMITS
GROUNDWATER CONTAMINANTS DETECTED IN MONITORING WELL SAMPLES
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Maximum Observed Concentration (µg/l)	Carcinogenic Designation	Carcinogenic Potency Index[4](b)	Preliminary Protective Concentration Limit (PPCL) (µg/l)[1](a)	No. of Samples Exceeding PPCL/ Total No. of Samples
benzene CAS No. 71-43-2	2,800	Human Definite[2]	4	0.67	15/52
methylene chloride CAS No. 107-06-2	3,155	Animal Indefinite[3]	0.052	(d)	NA
1,2-dichloroethane CAS No. 107-06-2	271	Human Suspected[2]	7	0.507	5/52
chloroform CAS No. 67-66-3	662	Human Suspected[2]	8	0.5	5/52
tetrachloroethene CAS No. 127-18-4	52	Animal Suspected[3] Human Indefinite[3]	6	1.0	1/52
trichloroethene CAS No. 79-01-6	227	Animal Suspected[3]	2.5	1.84	4/52
vinyl chloride CAS No. 75-01-4	19	Human Definite[2]	1	2.0	1/52
acrylonitrile CAS No. 107-13-1	32	Human Suspected[2]	10	0.146	1/52

011510

GML 001 1851

TABLE 5-6
PRELIMINARY PROTECTIVE CONCENTRATION LIMITS
GROUNDWATER CONTAMINANTS DETECTED IN MONITORING WELL SAMPLES
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY
PAGE TWO

Contaminant	Maximum Observed Concentration (µg/l)	Carcinogenic Designation	Carcinogenic Potency Index[4][b]	Preliminary Protective Concentration Limit (PPCL) (µg/l)[1][a]	No. of Samples Exceeding PPCL/ Total No. of Samples
1,1,1-trichloroethane CAS No. 71-55-6	24	Currently Being Tested[3]	0.2	21.9	1/52
1,1,2,2-tetrachloroethane CAS No. 74-34-5	52	Animal Suspected[3]	3	1.0	1/52
1,1-dichloroethene CAS No. 75-35-4	33	Animal Positive[3] Human Indefinite[3]	10	0.27	4/52
hexachloroethane CAS No. 67-72-1	40	Animal Suspected[3]	3	0.021	1/52
bis(2-ethylhexyl)phthalate CAS No. 117-81-7	40	Animal Suspected[2]	NR[c]	NR	--
arochlor-1254 CAS No. 11097-69-1	11	Human Suspected[2]	100	0.008	1/52

Notes:
(a) - Preliminary Protective Concentration Limit is a risk-based exposure criteria which, in the case of carcinogens, represents the concentration of a contaminant that would be ingested daily (assume 2 liters of water per day) without exceeding a 10^{-6} cancer risk (1 case/million people exposed).
(b) - Carcinogenic potency index is the unit cancer risk slope factor multiplied by the molecular weight of the compound (USEPA, 1984a)
(c) - A carcinogenic potency index has not been developed for bis(2-ethylhexyl)phthalate
(d) - PPCL for methylene chloride is based on an ADI
NR - Not reported
NA - Not applicable

Sources:
(1) - USEPA, 1984d
(2) - USDHHS, 1983
(3) - USDHHS, 1984
(4) - USEPA, 1984a

011511
GML 001 1852

TABLE 5-7

ESTIMATED CANCER RISKS ASSOCIATED WITH INGESTION
OF SOME CONTAMINANTS AT THE CONCENTRATIONS OBSERVED IN MONITORING WELL SAMPLES
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Carcinogenic Risk/Person(1)		
	Mean Concentration	Median Concentration	Maximum Concentration(2)
benzene CAS No. 71-43-2	7.88×10^{-4} @ 523 µg/l	1.64×10^{-4} @ 109 µg/l	4.22×10^{-3} @ 2,800 µg/l
methylene chloride CAS No. 75-09-2	2.06×10^{-5} @ 2,300 µg/l	1.73×10^{-5} @ 950 µg/l	5.76×10^{-5} @ 3,155 µg/l
1,2-dichloroethane CAS No. 107-06-2	2.30×10^{-4} @ 115 µg/l	1.98×10^{-4} @ 99 µg/l	5.42×10^{-4} @ 271 µg/l
chloroform CAS No. 67-66-3	3.73×10^{-4} @ 184 µg/l	9.14×10^{-5} @ 45 µg/l	1.34×10^{-3} @ 662 µg/l
tetrachloroethene CAS No. 127-18-4	--	--	5.28×10^{-5} @ 52 µg/l(3)
trichloroethene CAS No. 79-01-6	7.54×10^{-5} @ 137 µg/l	9.36×10^{-5} @ 170 µg/l	1.22×10^{-4} @ 222 µg/l
vinyl chloride CAS No. 75-01-4	--	--	9.64×10^{-6} @ 19 µg/l
acrylonitrile CAS No. 107-13-1	--	--	2.23×10^{-4} @ 32 µg/l(3)
1,1,1-trichloroethane CAS No. 71-55-6	6.49×10^{-7} @ 14 µg/l	6.49×10^{-7} @ 14 µg/l	1.11×10^{-6} @ 24 µg/l
1,1,2,2-tetrachloroethane CAS No. 79-34-5	--	--	2.9×10^{-5} @ 52 µg/l(3)

GML 001 1853

011510

TABLE 5-7
ESTIMATED CANCER RISKS ASSOCIATED WITH INGESTION
OF SOME CONTAMINANTS AT THE CONCENTRATIONS OBSERVED IN MONITORING WELL SAMPLES
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY
PAGE TWO

Contaminant	Carcinogenic Risk/Person(1)		
	Mean Concentration	Median Concentration	Maximum Concentration(2)
1,1-dichloroethene CAS No. 75-35-4	1.02×10^{-4} @ 24 µg/l	1.19×10^{-4} @ 28 µg/l	1.40×10^{-4} @ 33 µg/l
hexachloroethane CAS No. 67-72-1	--	--	1.65×10^{-5} @ 40 µg/l(3)
PCB-1254 CAS No. 11097-69-1	--	--	1.38×10^{-3} @ 11 µg/l(3)(4)

Notes: (1) Cancer risk estimates provided for chemicals for which evaluations have been conducted by EPA's Carcinogenic Assessment Group (USEPA, 1984a). The unit risk factor is defined as a lifetime risk of cancer to humans from daily exposure to a concentration of 1 µg/m^3 of the pollutant in air by inhalation, or to a concentration of 1 µg/l in water by ingestion (USEPA, 1984a).

(2) Probability of exposure to a single detection of a contamination in drinking water is low. Risk calculations for single detections were included in the maximum concentration category to assume a "worst case" scenario.

(3) Contaminant detected in only one sample.

(4) PCB-1254 was detected in only one monitoring well sample and was not detected in the sampling and analyses of other environmental media. The potential for exposure to PCB-1254 is considered to be low. PCB-1254 is a potent carcinogen, consequently the carcinogenic risk associated with ingestion of the maximum concentration of groundwater contaminants may be overstated.

011515

SML 001 1854

TABLE 5-8

FRESHWATER AQUATIC TOXICITY
GEMS LANDFILL SITE
CAMDEN COUNTY, NEW JERSEY

Contaminant	Maximum Observed Concentration (µg/l)	Ambient Water Quality Criteria: Acute Toxicity (µg/l)	No. of Samples Exceeding Limit/ Total No. of Samples	Chronic Toxicity (µg/l)	No. of Samples Exceeding Limit/ Total No. of Samples
chlorobenzene(1) CAS No. 108-90-7	330	250	2/19	50	3/19
chromium(1)(2)(3)	41	11	3/19	7.2	3/19
copper(2)	223	1.6*	2/19	1.1*	2/19
lead(1)(2)(3)	542	2.23*	6/19	0.09*	6/19
nickel(1)	66	275*	0/19	14.2*	1/19
zinc(1)(2)(3)	501	40.3*	13/19	47	12/19
silver(1)(2)	19	5.95*	5/19	0.12	5/19
ammonia(1)	23,000	13,900	5/19	2,760	6/19

* Results calculated from hardness values, as described in Sources.

(1) Exceeded criterion in Holly Run
(2) Exceeded criterion in Toms Branch
(3) Exceeded criterion in Stone Bridge Branch

Sources: USEPA, 1980
USEPA, 1984e

011514

GML001 1855

ATTACHMENT I

3ML 001 1856

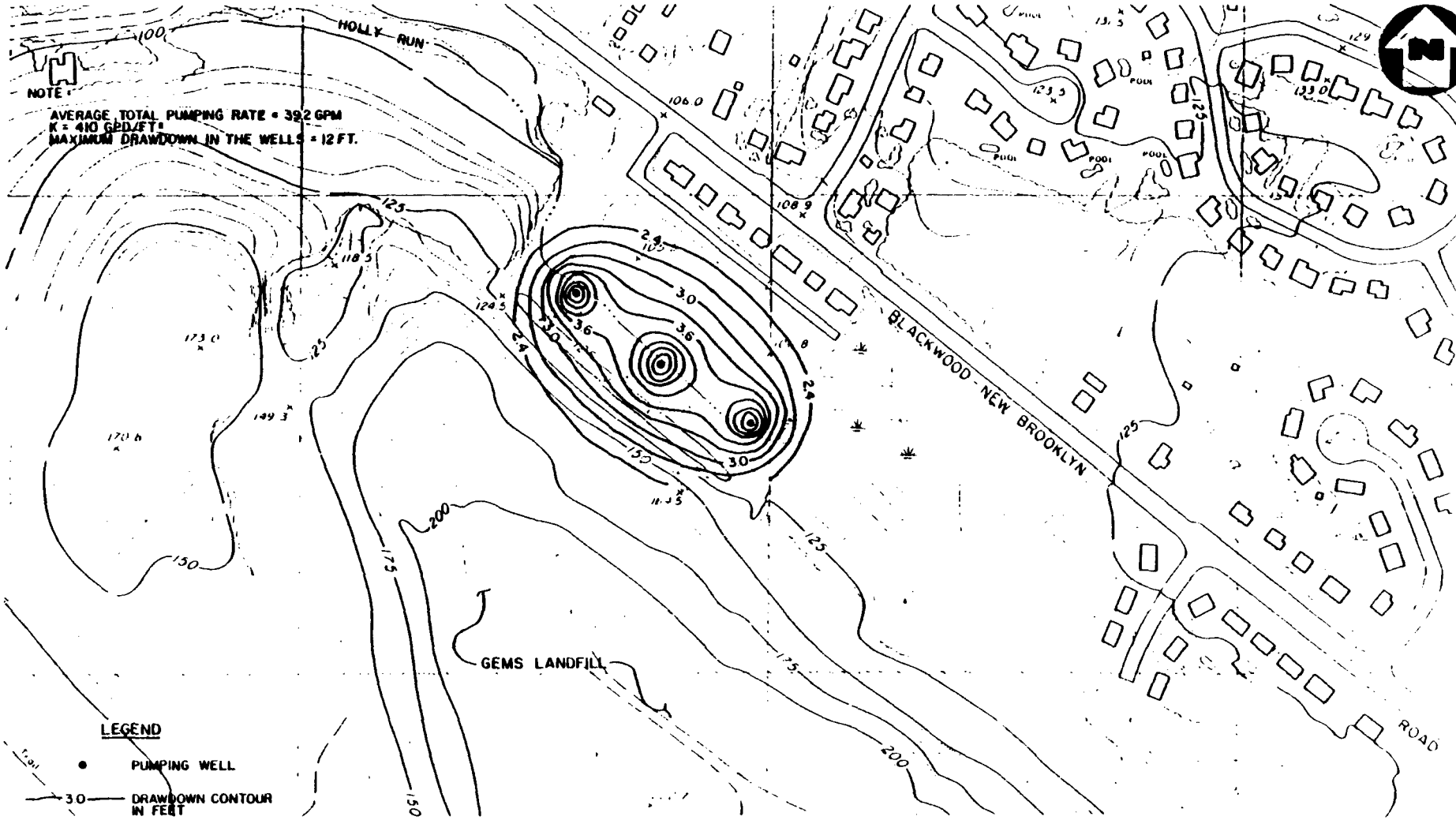


FIGURE 4-6

THREE WELL PUMPING SCHEME
GEMS LANDFILL SITE; GLOUCESTER TWP, NJ
SCALE: 1" = 200'

200 0 200
SCALE IN FEET

NUS CORPORATION
A Halliburton Company

4-19

011516

3ML 001 1857

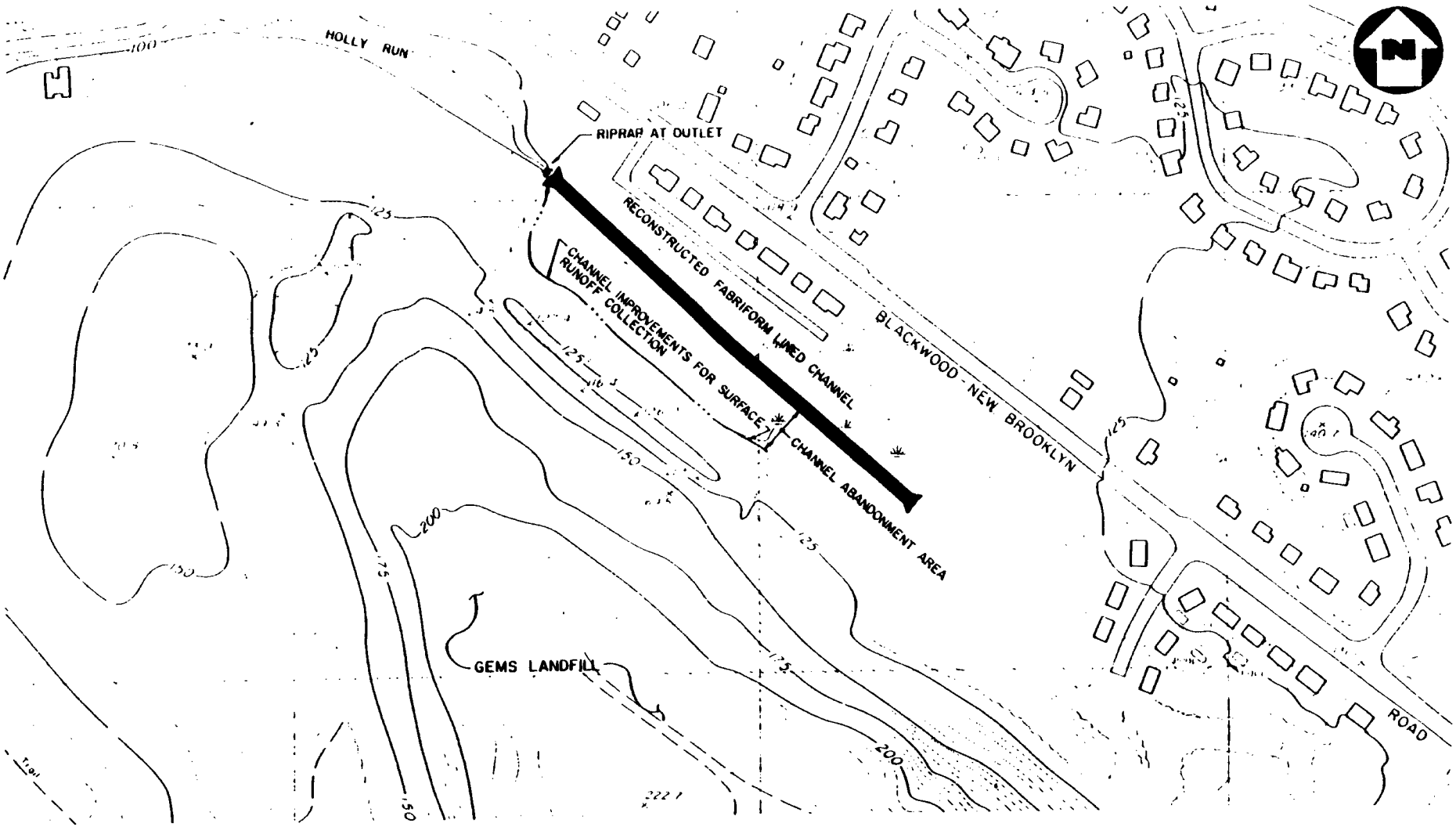


FIGURE 4-1

PROPOSED SURFACE WATER CONTROLS
GEMS LANDFILL SITE, GLOUCESTER TWP, NJ
SCALE: 1" = 200'

200 0 200
SCALE IN FEET

NUS CORPORATION
A Halliburton Company

011517

3ML 001 1858

RESPONSIVENESS SUMMARY
FOR THE
GEMS LANDFILL SITE

GLOUCESTER TOWNSHIP
CAMDEN COUNTY, NEW JERSEY

SEPTEMBER 1985

INTRODUCTION

This Responsiveness Summary for the GEMS Landfill Site outlines key community concerns regarding the Remedial Investigation/Feasibility Study Report (RI/FS) and the proposed remedial alternatives for site cleanup. These comments will be taken into consideration when the EPA makes its final selection of the proposed remedial actions. The Responsiveness Summary is prepared by EPA to address these comments and is incorproated into the Record of Decision which states the selected remedial action.

This Responsiveness Summary is divided into the following sections:

Section A. Background on Community Involvement and Concerns. This section provides a brief history of community interest revolving around the GEMS Landfill Site and of community relations activities conducted by the Environmental Protection Agency (EPA) during the Remedial Investigation/Feasibility Study (RI/FS).

Section B. Summary of Major Questions and Comments Received During the Public Comment Period and EPA Responses. This section summarizes major questions and comments made to EPA during the public meeting of August 19, 1985. Comments with the EPA responses are categorized under separate topics.

Section C. Remaining Concerns. This section discusses remaining community concerns that the Environmental Protection Agency (EPA) and the New Jersey Department of Environmental Protection (NJDEP) should be cognizant of when performing the design and construction phase of the selected remedial alternative for the GEMS Landfill Site.

A. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

The citizens living in the vicinity of the GEMS landfill have been aware of the landfill for over 20 years. Located in Gloucester Township, Camden County, New Jersey, the site consists of approximately 60 acres at the intersection of Erial and Hicktown Roads. Landfill operations ceased in November 1980, and in September 1983, the GEMS Landfill Site was included on the National Priorities List (NPL).

A Remedial Investigation/Feasibility Study was initiated in the fall of 1983 by the EPA in cooperation with the NJDEP. In the summer of 1984, an evaluation of data collected in the Holly Run area and behind the Fox Chase II

011518

development indicated that the air quality of the area and the water quality had been degraded. To better assess the degree of degradation and to better address the problems identified, the EPA and the NJDEP initiated a Focused Feasibility Study (FFS) in the fall of 1984.

In February 1985, the NJDEP initiated a remedial design--based on preliminary information of the FFS--to address the problem behind the Fox Chase II development. The scope of this design, called an Initial Remedial Measure (IRM), was presented to the public on April 11, 1985, by the NJDEP. The EPA held a meeting on May 2, 1985, in the Gloucester Township Municipal Building to explain the findings of the FFS and to present an IRM for the Fox Chase II area. This IRM was comparable to the IRM proposed by the NJDEP.

Citizen concerns in May included (a) the proposal to have the pre-treated water from the Holly Run area sent to the Municipal Utilities Authority (MUA) for further treatment, (b) the need for an evacuation plan during any remedial construction activities, and (c) the identities of the potentially responsible parties and their financial responsibility.

In August 1985, EPA released the draft RI/FS Report to the public. A public comment period was opened from August 2 to August 23, 1985. EPA presented the findings of the RI/FS and received verbal comments at a public meeting on August 19, 1985 at the Gloucester Municipal Township Building. Copies of the RI/FS Report are available at the Gloucester Township Library, the Camden County Library, the Camden County College Library, and at the EPA office in New York and the DEP office in Trenton.

B. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES

Major comments and questions raised during the GEMS Landfill Site public comment period are summarized below. Examples of the specific comments and questions raised and EPA responses are also provided. The public comment period was scheduled from August 2 to August 23, 1985 to receive input from the public on the draft Feasibility Study. However, as a result of public comments received at the August 19 meeting, EPA extended the comment period to August 31, 1985. The comments are organized by the following topics:

(1) Cost/Funding Issues
(2) Legal Issues
(3) Public Health Concerns
(4) Property Values/Red Line Zone Issues
(5) Technical/Remedial Action Considerations
(6) Administrative Issues

1. COST/FUNDING ISSUES

Several residents expressed concern over the availability of money in the Superfund program. Specifically, they wanted to know if the publicized slowdown of remedial work at selected sites indicated that the GEMS Landfill would not be cleaned up.

EPA responded that reauthorization of the Superfund bill has not yet been acted upon by Congress. The current five-year bill expires at the end of the 1985 fiscal year. EPA will begin a slowdown of remedial work at selected

SML 001 186 0

011519

sites in order to conserve funds. The NJDEP responded that the State of New Jersey will provide funding for the design of the remedial alternative should the bill not be reauthorized before September 30, 1985.

Issue: I have a question on the Superfund. What happens to the money that the government collected from 1980 to 1985 and now has?

Response: The tax generates about $300 million per year. In 1985, we expect to spend about $500 million alone. If you were to trace the funding which took place under the program, you would discover that small amounts of money were spent in the first couple of years, as we were conducting studies which were relatively inexpensive. However, as we moved to the later years, we started to implement some remedies, which were running $10-20 million apiece. At this point in time, there is not that much money left in the bank--there's somewhere between $300 and 500 million and that has to carry us until Congress reauthorizes Superfund.

2. LEGAL ISSUES

Legal topics of considerable discussion included the search for potentially responsible parties, the recovery of funds that will be expended on remedial actions, and the prosecution of any individuals guilty of disposing hazardous wastes at the GEMS landfill. EPA explained that its first priority was to clean up the site in order to protect the public health and welfare as well as the environment. The attorney representing the township answered many of the questions.

Issue: Who is ultimately going to be responsible for the attainment of the funds for cleanup of this site? I have heard rumors that eventually the Township will be billed for whatever the State or Federal government gives out for the remedial cleanup. Will someone please tell me that I'm wrong?

Response: Under Superfund, once we complete the cleanup (and the intent is to clean up the site first and to worry about recovering money secondly) an attempt will be made to identify the potentially responsible parties and to recover funds. We cannot comment further on that point right now.

Issue: You're saying that there is the potential that the Township could be sued in order that you could recover the funds you had spent?

Response: No decision has been made on whom to sue or when to sue.

3. PUBLIC HEALTH CONCERNS

Residents expressed concern over the quality of the air and the quality of the groundwater. When asked if additional air sampling would be conducted, the EPA stated that it had sampled the air in the past and was prepared to proceed as if there were a problem, rather than wait for conclusive proof. In

GML 001 1861

011520

addition, several firemen of the local fire company questioned possible health hazards when fighting a fire which might occur at the landfill. The NJDEP said that it had tried to arrange a meeting with the firemen in the past, but the meeting apparently did not get scheduled. The NJDEP stated that it will attempt to arrange another meeting.

Issue: I have asked this question at every meeting that I have ever been to with you people. When the excavation begins, is there an evacuation plan? I live in Fox Chase One; we have one way in and one way out. If this digging starts, I want to know if I have a safe way to get my family out of there.

Response: Standard operating procedure within the New Jersey Department of Environmental Protection--because the DEP will assume the lead once excavation begins--dictates that we have a contingency plan that will be developed with emergency management people both in the township and the county.

Issue: But when do we hear about it?

Response: Before any shovel goes into the ground, before any item is removed, we will have a contingency plan in place.

Issue: I am an attorney and I represent about a dozen families who bought houses in the vicinity of the GEMS landfill. My question has to do with something on page two of the handout, which said, "The NJDEP and the EPA have determined that the contaminated groundwater and surface water may pose a potential health hazard to local residents." I was wondering if someone could spell that out and tell me how much of a hazard there is and of what contaminant(s).

Response: The potential hazard we referred to is for anyone consuming groundwater or surface water. Currently, nobody is consuming the groundwater or surface water. That is where the potential comes in.

Issue: My wife works at a place across from this landfill. I read in the paper something about air contamination. Is the air contaminated with toxic elements/materials? Is there a danger of her working close to that dump?

Response: All we can tell you is what the results of our studies have shown. We cannot say that there is not a danger because our studies have not been done 24 hours a day, 365 days a year for the past 5 or 6 years. Our studies indicate that there is an air degradation problem, but not necessarily a problem that would pose imminent health hazards. There is a perceived problem out there, and landfills are very odiferous. We have not been able to actually conclusively prove that there is a public health problem or emergency caused by the air contaminants that we've been able to measure. Nevertheless, we're proceeding to try to do something as quickly as possible to mitigate the degrading air quality around the landfill.

GML 001 1862

011521

Issue: If, in 2 1/2 years, the groundwater contamination extends as far as under my house or property, will I still be able to safely live there?

Response: Unless you're drinking the water, it should not directly affect you.

Issue: You have been talking about the Cohansey Aquifer. I was under the impression that our municipal water is taken from the Cohansey Aquifer. Is that true or not?

Response: As far as we know, all of the municipal water is taken from the Mt. Laurel Aquifer.

Issue: Have you ever tested for infectious agents/micro-organisms of any kind?

Response: The biological half-lives of infectious agents outside of the body is very short. It is a very hostile environment beneath that landfill. It is hot, with the distinct absence of particular gases and the presence of toxic gases that may well in fact inhibit the micro-organisms.

Issue: We heard about the water (well) testing north of the dump. What about wells south of the dump?

Response: The wells tested south of the dump are primarily along Hicktown Road, actually southwest of the site. We tested all residential wells and in the latest round, we have found no contamination. We did have a monitoring well that showed trace contamination to the south.

Issue: Has anybody checked the city water pipes for arsenic?

Response: The State of New Jersey requires testing of municipal water supplies about three times a year. (Dave Sweeney, of the Camden County Health Department, answered that the municipal water supply is checked regularly and that arsenic is one of the compounds tested for.)

4. PROPERTY VALUES/RED LINE ZONE ISSUES

Many citizens questioned the purpose of the red line zone and the effects it had on their property values. Real estate offices and lending institutions have apparently misinterpreted the meaning of this zone, making it difficult for residents to sell their homes. The NJDEP responded to these concerns.

GML 001 1863

011522

Issue: Please explain what the red line is.

Response: The red line was drawn to outline an area around the landfill that would identify those areas requiring special consideration prior to the state granting a permit for the installation of a potable well in that zone. The red line was devised so that when someone came into the Department of Environmental Protection, somebody would pay particular attention to the fact that it (the well) was being put in close to a hazardous waste site. That's all it was intended to be used for.

Issue: Will the red line zone be extended or reduced? That zone is really affecting the property values of our homes.

Response: The red line zone is a zone that's been imposed by the State Department of Environmental Protection to indicate zones of potential hydrogeological impact. As a result of this study, the zone is being redefined and the line of demarcation will be restructured, probably within two weeks.

Issue: Have you explained that to the realtors and will you explain that to the real estate people?

Response: Yes, we have. I cannot explain what their actions are except to tell you that there is a lot of hysteria both in the real estate industry as well as the banking community concerning hazardous wastes. We have explained this (red zone) to them. We have explained it to Senator Dalton, and in turn, Senator Dalton has gone to them.

Issue: On page 2 in the handout, it is stated that contamination has migrated about 800 feet from the site. On that basis, am I correct in assuming that you will redraw or redefine the red zone?

Response: Yes, that's part of it.

Issue: Who will have the availability of the redrawn red zone? How will the real estate agencies be notified and work with this?

Response: We will have to come down here and have a meeting with the town officials to explain the demarcation of the zone and get advice as to what would be an appropriate action in terms of informing realtors and lending institutions. We're willing to do that.

Issue: Is the zone going to disappear once you cap the site and take care of pumping the groundwater.

Response: It will probably shrink a lot.

Issue: But we'll never be out if it, right?

Response: We don't know. We can't answer that.

GML 001 1864

011523

5. TECHNICAL/REMEDIAL ACTION CONSIDERATIONS

The EPA has tentatively recommended a remedial alternative for the GEMS Landfill Site. This remedial action (alternative #8) includes capping the landfill and pumping and treating the contaminated groundwater. Concerns were raised regarding the effectiveness of this remedy, the length of time to implement this remedy, and the proposed use of the Municipal Utilities Authority in treating/disposing the groundwater.

Issue: Of the alternatives here, is there a probability for #3 or #4 being selected.

Response: We have tentatively recommended #8.

Issue: You mentioned in the #8 alternative something about groundwater cleanup--that you were somehow going to pull the groundwater back. Are you referring to pulling groundwater from under our houses? Would that cause any kind of excavation problems or basement problems? Would houses collapse?

Response: Because of the depth of the groundwater where it currently exists, do not anticipate any problems that would develop with regards to your house. The water, in some areas, is about 20-30 feet deep.

Issue: Has this method of remedial action (capping) ever been utilized anywhere else. Is there an experience factor here, or are you dealing with an unknown?

Response: Caps are probably one of the most common remedies that have been used, even in non-hazardous waste landfills. We are pretty comfortable with this technology.

Issue: How fast is the plume moving away from the site?

Response: It is averaging about 10 to 15 feet per year. That varies, depending on which area/direction we are studying. It is moving much slower in the western and southern areas. The estimate changes from year to year, depending on the amount of groundwater that comes into contact with the wastes.

Issue: With regard to #8, what happens to the chemicals in the landfill?

Response: We will contain them. They will stay inside the landfill.

Issue: For how long?

Response: Hopefully forever, or until the chemicals naturally degrade. Most of these chemicals have biological half-lives.

Issue: What is the half-life of arsenic?

Response: Arsenic is obviously a very persistent compound. It will be there for a long time, that is true. But it is one of the easier ones to contain, as most heavy metals are.

GML 001 1865

011524

Issue: In solution #8, once you implement it, how long will it last?

Response: Most of the solutions that we design that involve caps have an approximate 30-year design life. The State, as part of the Superfund program, takes responsibility at its own expense, for the maintenance on anything that the government will build.

Issue: Once you come up with a definite plan that you will input, how long will it take the DEP or whoever it is who is going to do the work?

Response: The State will begin to implement its short-term action, designed to deal with some of the volatile air emissions in and around the landfill, within the next few months. That construction will probably start in early fall. While that work is ongoing, the State will presumably hire a design contractor to develop the plans needed for the actual construction work. We presume it will take about 12 months before construction for the main remedy will begin and it would take somewhere in excess of a year to complete that construction.

Issue: So you're talking about 2 1/2 years from now?

Response: Before final resolution? Actually, it will be longer if you include the treatment of groundwater and pumping, which is a very long term commitment and process. Potentially, there are three different actions that are going to be occurring at the GEMS landfill simultaneously. We will hopefully start the bidding process for the Initial Remedial Measure in early September; we expect to begin work on that IRM in early November. This IRM is designed to mitigate the impact from gases eminating from the landfill, and will include selective covering as well as a well point system to collect the leachate.

The long term remediation of this particular project is what we are discussing tonight, and that includes a design process which will probably last for about a year. But during that year there will be activity at the site.

In addition to that, some of you people realize that we've identified a potential methane problem associated with the site. People's houses will be fitted with methane detectors. You have to realize that we've been in every person's home, which is potentially impacted, with methane meters and explosimeters, and we have not detected a problem in anybody's home nor above the ground. The methane detectors will be available to us hopefully by the end of this month, and they will be fitted into the people's homes.

You should also know that DEP is officially petitioning EPA to perform what is called an Immediate Removal Action to mitigate the effects imposed by the methane. The action, if not addressed by the EPA, will be picked up by the DEP. I want to be very clear at this point in time that we have not detected any methane to cause concern in anybody's house. And there's good reason for what's happening out there. Some of you people realize that when we put the meter in the ground, we get methane readings that cause some

GML 001 1866

011525

concern. But immediately above the ground, we don't. And that's happening because the ground contains a relatively small amount of air. When that amount of methane is released to a much larger volume, it's concentration presents no hazard. But nonetheless, as the report reflects, we have not identified any imminent hazard associated with the landfill. However, we're being cautious and conservative in our approach, and we're trying to err on the side of safety.

Issue: Is the groundwater situation going to be taken care of in the 30-year period by the Municipal Utilities Authority (MUA) or is there another part of this remedial action that will take care of the groundwater?

Response: The long term groundwater pumping and treatment will be handled essentially along the same procedure that we are handling the groundwater treatment for the IRM. The two will eventually be integrated together. The steps that the State has been going through with the MUA concerning the IRM treatability study--that is, sitting down with the MUA and reviewing it, sitting down with you and listening to your concerns--these same steps will be followed again with the long-term groundwater treatment.

Issue: It seems to me that you'll be doing a new treatability study on the constituents of the groundwater that will be coming out of the landfill.

Response: We anticipate, because of the increased flow, that the State and the MUA would require a new treatability study because we are talking about essentially three times the volume, for the long-term groundwater cleanup. The bottom line is that we haven't made a decision concerning where that groundwater will go. Nobody should confuse the treatability study with the feasibility study. The treatability study is very short.

Issue: I was here at the last meeting, and I brought up the fact that if you took the water and put it in the MUA, the chemicals may affect the people. We do not want this. I want it emphasized and I want it understood. We do not want it, and if we have to take further action, we will.

Response: When we (NJDEP) looked at shipping water from the landfill to the MUA, we modeled emissions--emissions that would come from manhole covers and the sewers themselves--if we were not going to treat the groundwater, and if we were going to treat the groundwater. We can show you how those emissions would be insignificant, if not nill, and we are prepared to do that.

GML 001 1867

011526

Issue: The original study released by the NJDEP in June 1982 had approximately 40 wells that were sampled in the area. Quite a few of them had total volatiles well over the limit. What happened to them?

Response: The residential wells were not over the limit (100 ppb). The results that show volatiles over the limit for groundwater are surface water results.

Issue: Once work starts, will it stop during the winter?

Response: Hopefully not. However, weather conditions may cause us to temporarily stop remedial activity, but the site would be adequately secured for that period.

6. ADMINISTRATIVE ISSUES

Mr. Ben Stonelake, attorney for Gloucester Township, requested that EPA extend the public comment period so that township officials and the consultant hired by the township could have adequate time to review the RI/FS. Mr. Stonelake stated that the township has a vested interest in whatever remedial action is adopted for the site because they have been identified as a potentially responsible party and may be financially liable. Other concerns expressed by the citizens included the timetables for any cleanup, as well as policy decision-making processes.

Issue: How can we obtain copies of the NUS study?

Response: The report is publicly available here at the township clerk's office, at the Gloucester Township Library, the Camden County Library, the Camden County College Library, and with the Residents Against Landfills citizen's group. There is also a copy of the report at our office in New York and the State office in Trenton.

Issue: Who decides which alternative is selected?

Response: The Regional Administrator makes the final decision, taking into account results of the FS and any public comments that we receive. We will extend the public comment period to August 31.

Issue: Do you have a tentative date when work for alternative #8 will begin?

Response: The agency will extend the public comment period until August 31. The agency hopes to make a decision on the remedy during the month of September. The State has indicated that it wants to take the lead in the design and implementation of the remedy; we expect this to occur sometime late in September. The design and implementation of the remedy is going to be a long process. The design will take anywhere from 9-12 months, if not longer.

GML 001 1868

011527

Issue: When you finally develop your groundwater treatment scheme, will you be able to come before the public to explain where the leachate system will be so as not to interfere with development of real estate?

Response: We are not compelled by guidance or law to come back to you after the design process to show you what we're laying out. However we will talk to the community and local officials.

Issue: What is the location of the MUA where this leachate will be sent?

Response: Chews Landing, Glendora, but we haven't made the decision of where the leachate will be sent.

Issue: Does a plant exist now or will you have to build one.

Response: The options are to build a treatment plant onsite with direct discharge or to pretreat and go to the MUA. We haven't made a decision yet.

C. REMAINING CONCERNS

Residents expressed considerable concern over EPA and NJDEP availability in the future regarding meetings with local officials, realtors and lending institutions so as to explain the demarcation and significance of the red line zone area. NJDEP representatives stated that they would back the residents "all the way." In addition, NJDEP representatives stated that they would meet with the local firemen to explain the possible health hazards that they may face when fighting fires.

GML 001 1869

011528

Responsiveness Summary
GEMS Written Comments

In addition to the comments received at the August 19, 1985 meeting, written comments were received from several of the potential responsible parties (PRP's) and one citizen. The comments from the PRP's were both technical and legal/ administrative and are summarized below with EPA's response. The one written comment from a citizen and a letter responding to his concern is attached as part of this responsiveness summary.

TECHNICAL ISSUES

•Focused Feasibility Study (FFS)

Issue:

The remedial investigation concludes there is no immediate threat to human health therefore there is no need to implement the IRM.

Response:

Initial Remedial Measures are remedial actions taken pursuant to 40 CFR 300.68. An imminent threat to public health is not required for EPA to take action pursuant to this section. If an imminent threat to public health did exist at the site EPA could take action pursuant to 40 CFR 300.65 Immediate Removal.

Issue:

Institutional constraints, such as permits and public resistance to discharging pretreated leachate to the Gloucester Township Utilities Authority (GTUA), are extensive and may well delay the implementation of the IRM, therefore there would be no immediate benefit.

Response:

Similar institutional constraints would apply to the long-term remedial action. The long-term action has not yet been fully designed and EPA anticipates this could take over 12 months before construction of the groundwater pumping and treatment system can begin. Under the State's current schedule construction of the IRM pumping and treatment system can begin in 3-4 months. The benefit to the environment by preventing contaminants from entering Holly Run from the IRM is realized some 8 months sooner than would be from the long-term action, regardless of the institutional constraints.

GML 001 1870

Issue:

The IRM groundwater treatment system may have to be removed or abandoned if it can not be integrated into the design of a long-range treatment system.

Response:

The State of New Jersey will be the lead agency for both the IRM and the design and construction of long-term remedial action. It is realized the IRM treatment system must be designed to allow integration into the long-term treatment system in order to be consistant with the long-term remedial action. The IRM design contractor is designing the system so that it can be integregated into the long-term treatment system.

Issue:

The proposed IRM will not eliminate odors from the landfill, one of the main reasons given for implementation.

Response:

Eliminating the odors is not one of the main reasons for the IRM (see page 11 of the staff summary). Some reduction of odors caused by the organic chemicals is an additional expected benefit of the IRM.

Issue:

Priority Pollutants not removed by the air stripper may lead to an inhibition of the biological process at the GTMUA facility. The treatability study concluded that the priority pollutant loadings from the air stripper effluent were high and should be reduced prior to discharge to the GTMUA.

Response:

The study recommended, based on projected concentration and published literature, that only one priority pollutant, zinc, should be reduced prior to discharge to the GTMUA. Otherwise, the Treatability Study showed that the effluent from the air stripper does not lead to an inhibition of the biological processes at the GTMUA facility at the proposed flow rates.

GML 001 1871

The sample used for the treatability study was obtained from a galvanized steel well, and therefore the zinc concentration could be erroneous. The NJDEP intends to conduct additional studies to determine the zinc concentration in the leachate and is working with the GTMUA to determine what effect, if any, the zinc will have on the GTMUA facility.

The recommended remedy states that pretreatment is the perferred treatment method. If zinc removal is necessary it will be included in the treatment system.

Issue:

Heavy metals from the leachate may limit the GTMUA's sludge disposal options.

Response:

EPA, NJDEP, and the GTMUA are well aware of this fact and it is a major factor in determining the extent of on-site pre-treatment.

Other comments concerning the FFS submitted during the RI/FS comment period are similar to those submitted during the FFS comment period and are discussed in the FFS Responsiveness Summary.

°Remedial Investigation and Feasibility Study

Issue:

Information from EPA Region II's Technical Assistance Team (TAT) was used in the remedial investigation but the well logs and decontamination procedures were not included in the report. This information is necessary in order to determine the quality of the data in terms of proper well construction and sampling.

Response:

The Region has reviewed the TAT data in relation to the well construction and decontamination procedures to verify the quality of the data. The wells were installed and sampled according to the Region's standards and procedures at the time they were installed. EPA believes that the data does accurately show severe groundwater contamination from organic hazardous substances. The wells had galvanized steel risers and the metals samples were not filtered. This may have affected the concentration of some of the metals. The NJDEP is investigating this possibility.

GML 001 1872

Several previous studies and reports are mentioned in the RI/FS and to include all of them as appendices to the RI/FS would make it too voluminous to be used as a working document. Copies of all the previous studies and reports are and have been available for public review in EPA Region II's offices.

Issue:

A commenter noted that not all the contaminants that were mentioned as "high" or inferred as high, in the remedial investigation were over established federal standards and criteria.

Response:

The word "high" is a relative term. In the Remedial Investigation "high" is used relative to background concentrations not federal standards and criteria.

Issue:

There was a discrepancy between the geophysical surveys of the Remedial Investigation and a 1981 NJDEP study.

Response:

Since geophysical surveys provide only a relatively inaccurate indication of the presence of ground water contamination and are subjectively interpreted, discrepancies would be expected.

Issue:

The conclusions reached in the RI on the air, surface water, soil and sediment appear to be adequately interepreted.

Response:

EPA agrees.

Issue:

The conceptual plans for the cap show wide benches (12 feet) for storm water runoff control. These wide benches have a greater potential to be adversely effected by differential settling than smaller channels. "Microterracing" (smaller but more frequent channels) should be considered for the cap.

Response:

EPA agrees, and will evaluate such details during design.

GML 001 1873

Issue:

The gas collection pipe placed in the gravel layer of the cap would be subject to cracking and rupturing from differential settling. The active gas system should collect the gas with a number of vertical pipes placed into the gravel layer and connected by a header system, with flexible joints, above the landfill cover.

Response:

NJDEP will evaluate alternative active gas collection systems during design.

Issues:

The landfill gas treatment system should be converted to a gas recovery system which would utilize the gas at an energy resource.

Response:

EPA recognizes the gas as a potential energy resource, but also recognizes several legal and administrative constraints would be associated with gas recovery. These constraints may delay installation of a gas recovery system for an inordinate time period. Because of these potential delays EPA believes that a gas collection and treatment system should be installed as soon as possible. However, when and if gas recovery becomes a feasible alternative, the installed system can readily be converted to a recovery system.

Issue:

The toe drain and cap foundation should be designed so that the leachate can flow unobstructed by soil from the waste to the toe drain.

Response:

EPA agrees and will evaluate the design of the toe drain to assure unobstructed flow.

Issue:

Groundwater pumping was the only groundwater remedial action evaluated.

GML 001 1874

Response:

Groundwater containment barriers were also evaluated (Section 2.3.4 of the feasibility study) and were eliminated in the initial screening for effectiveness and reliability reasons.

Issue:

Additional groundwater modeling for the groundwater pumping system should be performed to evaluate the effects of various caps, partial slurry walls and other remediation techniques.

Response:

The model used in the study is acceptable for feasibility study purposes. This model is considered conceptual and further evaluation of the pumping system to optimize its effectiveness will be performed during design.

Issue:

The groundwater pumping system may not be necessary after the site is capped since the reduced infiltration may lower the water table below the wastes.

Response:

The purpose of the pumping system is to lower the water table and draw back the existing plume of contaminants migrating off site. Even if the cap lowers the water table the plume would continue to migrate.

Issue:

The operation and maintenance (O&M) costs for the groundwater treatment system in the feasibility study are significantly lower than cost estimates developed by Fred C. Hart Associates Inc. (HART).

Response:

EPA was unable to evaluate the reasons for the cost difference since the basis for Hart's estimate is simply "Reported Costs".

The cost presented are estimates and bench scale treatment tests will be needed to more accurately estimate O&M costs. EPA belives that the costs presented are within the range of accuracy necessary for the feasibility study.

GML 001 1875

Issue:

The quantities and costs for the cap materials are a significant expenditure and should be more accurately defined.

Response:

EPA believes the quantities and costs for the cap materials are adequately defined in the Feasibility Study and are within the range of accuracy necessary for the feasibility study.

LEGAL ISSUES

Issue:

A number of parties commented that they did not have a meaningful opportunity to comment on the RI/FS and to decide upon their involvement in the Remedial design and cleanup activities at the GEMS site.

Response:

The RI/FS documents were prepared for the GEMS site in July, 1985. On August 1, 1985, notice letters were express mailed to eleven (11) potentially responsible parties (PRPs) for the GEMS site. This letter informed each of those parties of the following, among other items:

1. That EPA believed that these parties were PRPs for the GEMS site;

2. That EPA had recently completed a RI/FS on the GEMS site;

3. That copies of the RI/FS documents were available for their review at the EPA-Region II offices and at four (4) locations in New Jersey State;

4. That any comments on the RI/FS were to be submitted no later than August 23, 1985 (this deadline was subsequently extended to August 31, 1985);

5. That EPA intended to select a remedial action for the GEMS site by mid-September 1985; and

6. That EPA would assume that the PRPs did not wish to undertake the Remedial design or remedial actions needed for the GEMS site if they did not indicate a willingness to perform these activities to EPA within 14 days after receipt of the notice letter dated August 1, 1985.

GML 001 1876

On August 1, 1985, EPA also sent approximately 500 copies of a press release to State Senator Dalton who subsequently mailed them to constituents of the District. The press release indicated that the RI/FS for the GEMS site had been completed and that copies were available for public review at four (4) named locations near the site. It also noted that a public meeting would be held concerning the site on August 19, 1985 at the Township Municipal Building and that the public comment period would extend from August 2, 1985 to August 23, 1985.

On August 2, 1985, EPA sent a press release to four (4) local newspapers at least two (2) of which subsequently published the release containing the information noted above.

On August 19, 1985, EPA held a public meeting concerning the site at the Gloucester Township Municipal Building which approximately 150 persons attended, including the counsel for GEMS, Inc. (and its principals) and the counsel for Gloucester Township. EPA informed the parties at said meeting that the deadline for comments on the RI/FS would be extended to August 31, 1985.

EPA officials subsequently met with representatives of Owens-Corning, Fibergals, Inc., E.I. Dupont de Nemourrs, Inc, and Rohm and Haas, Inc. on September 10, 1985 to discuss the GEMS site.

Although copies of the RI/FS were available for review at four (4) local repositories and at the NJDEP (Trenton, New Jersey) and EPA-Region II (New York, New York) offices, starting on August 2, 1985, EPA-Region II also mailed copies of the RI/FS to four (4) PRPs who requested copies after that date.

In addition to the Aforementioned activities, both EPA and NJDEP have conducted an extensive community relations program from 1983 leading up to the development of the draft RI/FS in July 1985. These activities included local surveys in the spring of 1983, periodic dissemination of information to Gloucester Township officials throughout 1983 and 1984, public meetings on April 11 and May 2, 1985 and solicitation of comments on the Focus Feasibility Study in May 1985.

Throughout the development of the RI/FS and after the notification of its completion on August 1, 1985 EPA has offered both the public and the PRPs for the GEMS site a meaningful opportunity to comment on environmental issues involved in the remedial alternatives evaluated for the site.

GWL 001 1877

Issue:

The City of Philadelphia which allegedly disposed of sludges or other waste material at the GEMS site should not be a responsible party subject to liability under the Comprehensive Environmental Respone, Compensation and Liability Act (CERCLA) 42 U.S.C. 9601 et. seq., where:

a. the sludge is not a hazardous waste under RCRA;

b. the level of hazardous constituents in the sludge are below "pertinent maximum contaminant levels", established under RCRA;

c. the likelihood of the sludge leaching at the site is neglibile; and

d. the presence of the sludge at the GEMS site would not affect the manner or cost of closure of the landfill.

Answer:

Municipal parties and other governmental entities are "persons" under Section 101 (21) of CERCLA and may also be liable parties under Section 107(a). EPA believes that the City of Philadelphia is a potentially responsible party which is subject to joint and several liability for response costs incurred by EPA at the GEMS site under Section 107(a) regardless of the factors noted above.

Issue:

The EPA notice letter to the PRPs dated August 1, 1985, makes no mention of how the Agency intends to comply with 104(c)(3).

Answer:

There is no statuatory or regulatory requirements that EPA describe how it intends to comply with Section 104(c)(3) in notice letters to PRPs.

Issue:

EPA itself has acknowledged that "there is no question the State of New Jersey is obligated to provide funding for well over fifty percent of the cost of the cleanup of the GEMS site."

Answer:

EPA has never taken the position either officially or unofficially that the State of New Jersey is or should be obligated to provide for more than fifty percent (50%) of the total costs for the cleanup of the GEMS site.

GML 001 1878

011537

GEMS
Focused Feasibility Study (FFS)
Responsiveness Summary
For May 1985 Comment Period

TOPIC

A. Public Comment Period

Issue:

The closing date of May 17, 1985 for Public Comment is too limited.

Discussion:

Current EPA policy requires a minimum two week (14 day) comment period for an Initial Remedial Measure (IRM). The Township recieved a copy of the Focused Feasibility Study (FFS) on April 29, 1985, 19 days prior to the close of the comment period. The findings of the FFS were presented at a public meeting on May 2, 1985, 15 days prior to the close of the comment period. EPA has accepted and addressed additional comments on the FFS during the RI/FS comment period.

Issue:

Several people indicated that the May 2, 1985 public meeting was not sufficiently advertised.

Discussion:

Local and State officials were notified of the meeting during the week prior to the meeting. The Mayor announced the May 2nd Meeting at a town meeting held the week before. The Camden Currier Post, a local daily newspaper, was informed of the meeting on April 30. EPA cannot control how or if newspapers report notices of upcoming meetings. EPA's notices to the local and state officials and the local newspaper is considered adequate notification.

B. Remedial Investigation Data

Issue:

The data gathered and subsequently evaluated to determine the need for an IRM was not presented.

GML 001 1879

011538

Discussion:

The data used to establish the need for an IRM is contained in several documents in EPA's files. Data related to NJDEP's air sampling was presented at the April 11, 1985 public information session held by the NJDEP and EPA at the Gloucester Township Municipal Building. That data and the other data used are and have been available to the public upon request.

Issue:

The data used to determine the need for the action must satisfy certain criteria outlined in Section 104(c)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Discussion:

Section 104(c)(1) refers to removal actions, not remedial actions. An IRM is a form of remedial action, and so is not limited by the criteria of Section 104(c)(1). The action EPA is proposing in this study is an Initial Remedial Measure taken pursuant to 40 CFR Part 300.68 and is considered consistent with that section.

Issue:

The action is being taken because of an "inferred air pollution problem".

Discussion:

The data indicates air quality in the area is, overall, similar to that of a heavily industrialized urban area. Since the site is not a heavily industrialized area the data indicates an air pollution problem. Although the data does not indicate an immediate action is necessary, EPA believes the data does indicate a threat of exposure to a significant health hazard.

Issue:

Since the recent reports of nosebleeds have not yet been attributed to the site, and if attributable, may be related to substances not being addressed by the IRM, they should not be used as a basis for implementing the IRM.

GML 001 1880

011539

Discussion:

The recent reports of nosebleeds are not the sole basis for implementing the IRM. EPA is of the opinion that substances released from the landfill and to be removed by the IRM may be determined to be the cause of the nosebleeds. Therefore, the reports of nosebleeds support, but are not the sole basis of, the determination that the volatile chemicals entering the environment from the study area represent a threat of exposure to a significant health hazard.

Feasibility Study

Issue:

The NJDEP and EPA IRMs appear inconsistent.

Discussion:

The NJDEP and EPA IRMs are not inconsistent and are considered technically equivalent for the relocation of Holly Run and the groundwater recovery and treatment systems. The appearance of inconsistency may stem for the use of different techniques in achieving the same goal. The IRMs do differ significantly in the extent of grading and covering being proposed. The IRMs are consistent in that they both will acheive the desired goal of removing the contaminants from Holly Run and, therefore, will eliminate the threat to public health and the environment. Further discussion of this is presented in the Staff Summaries under the State Action section.

Issue:

The need for a vapor phase carbon system to treat the air stripper off-gasses is not necessary since the pounds per day emissions of volatile organic compounds are not great enough to warrant the carbon and are equivalent to emissions from a coin operated commercial dry cleaning shop.

GML 001 1881

011540

Discussion:

One objective of the IRM is to eliminate the potential threat to the public health from volatile organic compounds (VOCs), which are currently being released into the atmosphere. The vapor phase carbon units in the groundwater/leachate treatment system reduce the release of the VOCs to the atmosphere and therefore, the carbon units are essential to accomplishing the goal of the action. In addition, the NJDEP, pursuant to NJAC 7:27-8, requires an air discharge permit for an air stripper system when the influent total volatile organic compounds (TVOC) concentration exceeds 0.1 parts per million (ppm). The TVOC concentration in the sample influent to the system is 32 ppm. This establishes the need for the permit. The NJDEP permit criteria require that the off-gas emissions be controlled if, among other criteria, the influent contains more than 1 ppm of benzene. The influent sample used in the treatability study for the system contained 1.65 ppm of benzene. This dictates that control of the off-gas will be required. The degree of control is dictated by state-of-the-art technology. Carbon adsorption is state-of-the-art technology.

Another factor in the criteria that the State uses to determine if off-gas control is necessary is when the TVOC in the off-gases are greater than 3.5 pounds per hour (lb/hr). Assuming that the commenters' calculations are correct, the average hourly emissions of TVOC would be less than 3.5 lbs/hr. However, the system is required to have control of the off-gas if any one of the criteria is exceeded, specifically the influent benzene concentration.

Issue:

Why not relocate the residents living near the landfill until the long-term remedy is complete at the local sewage treatment plant.

Discussion:

Relocating residents would remove the threat of significant public exposure but would not reduce or eliminate the threat to the environment. The purpose of the IRM is to reduce or eliminate the threat to the public health and the environment. Relocating residents has other constraints associated with it. EPA lacks authority to relocate residents in the absence of an immediate threat to human life or health. Although the data shows a potential health hazard the data

GML 001 1882

does not indicate an immediate health hazard exists, nor has a public health emergency been declared.

C. Recommended Alternative

Issue:

The workers at the sewage treatment plant and residents near the plant were concerned that the pretreated leachate would present a hazard to them.

Discussion:

Extensive comments from the workers at the sewage treatment plant and the residents who live near the plant were discussed at the May 2nd public meeting. The underlying concern in all the comments was that the leachate would present a hazard to the workers and the nearby residents.

The pretreatment unit was conceptually designed based on a treatability study of the leachate by Princeton Aqua Science. The treatability study determined that the air stripper would remove all volatile priority pollutant hazardous substances to non-detectable levels, except for methylene chloride (present after air stripping at 15 ug/l) and 1,4-dichlorobenzene (present after air stripping at 402 ug/l).

EPA is of the opinion that these compounds would not present a hazard to the workers or nearby residents since they would be at relatively low concentrations and have permissible exposure limits, set by the National Institute for Occupational Safety and Health, far greater than the concentrations expected at the treatment plant.

The recommended alternative includes pretreatment and discharge to the POTW as the preferred treatment option. However, the New Jersey Department of Health (NJDOH) is investigating what potential hazards, if any, the pretreated leachate could present to the workers and nearby residents. The findings of the NJDOH investigation will be a major factor in determining the treatment option.

GML 001 1883

011542

Issue:

The initial remedial measure should be consistent with the overall remedial action so that money is not wasted.

Discussion:

EPA regulations (40 CFR 300.68) require all remedial actions, including initial remedial actions, be consistent with the permanent remedy. Discussion of the consistency issue is presented in the staff summaries.

Issue:

If something (e.g. uncontrolled releases) should happen during the construction or operation of the treatment system, will there be evacuation plans for the area.

Discussion:

The levels of volatile organic compounds released during construction are not expected to significantly increase the potential threat to the public, but continuous monitoring will be performed during construction. Emergency plans, which may involve evacuation procedures for nearby residents, are routinely prepared for all remedial actions. Should the monitoring indicate evacuation is necessary, the emergency plans would be implemented.

During the operation of the pretreatment plant, continuous monitoring of the system will be automatically performed. If a failure in the system, which could lead to a release, occurs, the entire system would be immediately shut down to prevent any uncontrolled release. The components of the pretreatment system require the forced movement of contaminated materials either through pumps or blowers and fans. Simply shutting off the power to those pumps and fans will prevent an uncontrolled release.

Issue:

Why not delay the IRM until the overall action is determined, to ensure consistency of the IRM with the overall action, since the overall action is expected to be announced within the next two months (July 1985).

GML 001 1884

011543

Discussion:

The recommended long-term (overall) action has been announced and the IRM is consistent with the long-term action. However, EPA did not delay the IRM to ensure consistency in response to this comment. The IRM and long-term action are now being implemented together, only because of schedule and implementation changes by NJDEP has allowed the schedules to coincide.

D. Enforcement

Issue:

The Township expressed concern that EPA has not conducted a search for generators of waste disposed at the landfill.

Discussion:

For the past two years EPA has been performing a search for generators and transporters of wastes disposed at the GEMS landfill. That search has included extensive file reviews at the state, local and federal levels; interviews and issuance of information request letters to possible generators and transporters. Moreover, EPA has tracked the extensive discovery that has been conducted during judicial actions concerning the site. EPA has identified several potintially responsible parties (PRPs) and has sent them notice letters affording them the opportunity to perform the IRM. The search for additional (PRPs) is continuing.

General Public Reaction

The general public reaction to the IRM at the May 2, 1985 meeting appeared to be divided into three categories.

The proposed IRM was received favorably by the residents who live near the landfill. The workers from the sewage treatment plant and residents who live near the plant strongly and repeatedly opposed the discharge of the pretreated leachate to the sewage treatment plant. The third group appeared to be composed of Township residents who do not live near the landfill. This group seems to be favorable to the IRM but became skeptical after the Township Attorney indicated that the Township, as a potential responsible party, may be liable for the cost of the action.

As a result of the April 11 and May 2, 1985 meetings, EPA believes that the local general public supports the fact that action should be taken at the site as soon as possible. Based on the comments received there seems to be some disagreement with specific aspects of the IRM. Negative comments on the action, as a whole, were limited to a suggestion to relocate the residents nearby instead of initiating the IRM, and postponing the IRM until the overall remedy is known.

GML 001 1885

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

September 25, 1985

Mr. Arnold W. Caslin Sr.
306 Front Street
Glendora, New Jersey 08029

Dear Mr. Caslin:

Thank you for your comments regarding the Environmental Protection Agency's (EPA's) recommended remedial action for the Gloucester Environmental Mangement Services (GEMS) Landfill site. Specifically, you have expressed concern about the discharge of pretreated leachate to the Gloucester Township Municipal Utilities Authority (GTMUA) treatment plant in Chews Landing. The concerns of the citizens in the communities affected by Superfund sites are of the utmost importance to our program and the decisions we make to clean up these sites.

We understand your concern for your health and the health of your neighbors and we share that concern. Please be assured that we would not consider allowing the pretreated leachate to be discharged to the GTMUA if we believed that it presented a health hazard to you or your neighbors. The chemicals you referred to as poisons are considered hazardous substances. These substances can only be harmful if you are exposed to them at significant levels or concentrations. The most significant are the volatile organic chemicals (toluene, benzene, chlorobenzene, etc.). The pretreatment system which would be constructed at the GEMS Landfill site will reduce the levels of these chemicals to insignificant amounts before the leachate would be discharged to the GTMUA plant. EPA firmly believes that the pretreated leachate would not adversely affect the health of the you, your neighbors, or the workers at the GTMUA plant.

In addition, because of your concerns and the concerns of the workers at the plant, the New Jersey Department of Health (NJDOH) is conducting an independent evaluation to determine if the pretreated leachate presents a hazard to the workers at the plant or to the nearby public. The evaluation by the NJDOH and other considerations, which include the effects the pretreated leachate will have on GTMUA's biological treatment process and the incineration of the sludge, will be reviewed by EPA, the State, GTMUA, the workers, the Township officials, and the citizens of Gloucester Township to determine if discharging the pretreated leachate to the GTMUA is the appropriate treatment option.

GML 001 1886

011545

In response to your questions regarding who would be responsible if someone were to become ill, we can only reiterate that we believe that the discharge of the pretreated leachate to the GTMUA sewage treatment plant will not adversely affect the health of you, the workers, or your neighbors. Also, we can only state that EPA, the NJDEP and the GTMUA will be responsible for the decision to send the pretreated leachate to the treatment plant. If that is the decision, the State of New Jersey will be responsible for the operation and maintenance of the on-site treatment plant.

Thank you again for your comments. If you have any questions, please feel free to contact me at the above address or contact me at (212) 264-1873.

Sincerely yours,

Edward Putnam

Edward Putnam
Southern New Jersey Remedial Action Section

GML 001 1887

Arnold W. Caslin Sr.
306 Front Street
Glendora, N.J. 08029
August 31, 1985

Recv
91

Ed Putnam, Project Manager
Gems Landfill Site
U.S. EPA Region 2
26 Federal Plaza
New York, New York 10278

Dear Mr. Putnam:

We are writing to state that we are against having the run off waters from the Gem Lanfill in Erial, sent to the Chews Landing MUA for treatment. In doing this you are only transmitting problems with poision chemicals (such as Iron,Aluminum,Manganes,Volatiles,Lead, Chromium, Nickel, Arsenic,Base/Neutral Extractable) and other poisons such as Toluene, Benzene,Chlorobenzene,Ethyl Benzene,Xylenes,Cadmium, Chlorides, 4Methyl 2 Pentanone from one area to another. You will be helping the people of Erial and causing problems for Chews Landing, Pine Run and Glendora Areas.

How do we know what changes will happen with the chemicals,(what is prisent in the waters there now), mix with the chemicals from the MUA. Also, when they burn the sludge what fumes will be put into the air, and what damage will they do to the people.

Another question needing an answer is; Who will be reponsible (state or federal governments, who are ordering the run off waters of the Gem's Landfill into the Chews Landing MUA for treatments) if any of the people, children, adults or to the unborn children of this generation or how long into the future generations could problems be caused by tranferring these waters to the MUA for treatment, Or if the people of Chews Landing, Pine Run or Glendora become ill or develop disease from these waters being treated at the MUA or in the near future the burning of the sludge, who will be responsible. We feel that the state and or federal governments should be responible and not the manufacturers of the chemicals because the federal and state governments are ordering this to be done.

Please keep me inform as to what is going to be done.

Yours for the people,

Arnold W. Caslin Sr.

cc: President Reagan
Governor Kean
Mayor Ann Mullen
President of Township Gloucester Council
MUA Chews Landing
US Congressman Florio
US Senator Bradley
State Senator Dalton
State Assemblymen Riley
Teamster Local for MUA Workers
File

GML 001 1888

011547

BLANK, ROME, COMISKY & McCAULEY

FOUR PENN CENTER PLAZA

PHILADELPHIA, PENNSYLVANIA 19103

215-568-5500

TWX 710-670-0073 · BLARCOM

TELECOPIER 215-568-8398

1000 PENNSYLVANIA AVE., N.W.
WASHINGTON, DC 20006
202-457-7700

89 HADDON AVENUE
HADDONFIELD, NJ 08033
609-354-1400

4770 BISCAYNE BOULEVARD
MIAMI, FLORIDA 33137
305 573-9800

1401 FORUM WAY
WEST PALM BEACH, FLORIDA 33401
305 686 8100

DIRECT DIAL NUMBER
215-569-5689

September 3, 1985

Edward Putnam
GEMS Site Project Manager
Site Investigation and Compliance Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency - Region II
26 Federal Plaza
New York, NY 10278

Re: Gloucester Environmental Management Services, Inc. (GEMS) Landfill, Gloucester Township, Camden County, New Jersey

Dear Mr. Putnam:

On behalf of the Township of Gloucester, we are submitting comments on the Draft Remedial Investigation Report and Draft Feasibility Study for the GEMS Landfill, which are hereinafter collectively referred to as the "Draft RI/FS".

Initially, we wish to confirm that the Township, through its representatives, previously requested authorization to conduct the RI/FS but this request was denied because, among other things, EPA did not approve the scope of the Township's proposed study and because the Township would not submit to EPA's demand that, as a condition to being permitted to conduct the RI/FS, the Township would have to agree to finance and install whatever remedy or remedies might be recommended or required at the conclusion of the study. With regard to the latter item, it is the Township's position that it could not make any binding commitment to finance and install such remedies when they were not yet identified and the cost of such remedies were unknown. It is also the Township's position that it should not be held responsible for the investigatory costs and clean-up costs for this site and that such costs should be paid by the

GML 001 1889

011548

State of New Jersey, the site operators, and the companies that generated, transported and disposed of hazardous substances at the landfill without authorization from the Township. We believe any deficiency should then be borne by the Superfund.

After it was precluded from conducting the RI/FS, the Township made repeated requests to participate with the EPA and DEP in conducting the RI/FS and in reviewing early drafts of the RI/FS and the Focused Feasibility Study (FSS), which proposes the installation of certain immediate remedial measures (IRMs). Unfortunately, however, these requests were denied. Accordingly, the Township did not have any opportunity to review the voluminous draft RI/FS before it was received by Mayor Mullen on August 12, 1985. On several occasions before and during the public meeting on August 19, 1985, we requested an extension of the public comment period, which was originally scheduled to close on August 23, 1985.

We are grateful to acknowledge that, at the public meeting, John Frisco extended the public comment period until August 31, 1985. However, subsequent to the public meeting, we requested an additional extension until September 23, 1985 and this request was denied. On August 27, 1985, EPA Assistant Regional Counsel James Rooney advised that EPA would not grant any formal extensions beyond August 31, 1985 but that EPA would probably consider the Township's comments if they were a few days late.

We respectfully submit that EPA should conduct further analysis and should also provide some additional opportunity for further investigation, review and analysis by interested parties. However, in keeping with EPA's announced schedule, we are submitting comments on September 3, 1985, which is the first business day following August 31, 1985, which fell on the Saturday of Labor Day weekend.

The comments consist of a report by Fred C. Hart and Associates, Inc. (HART). In essence, the comments indicate that EPA has not conducted sufficient investigation and analysis to determine whether it would be appropriate or cost-effective to install a soil cap with partial landfill excavation (Alternative 3) or a multimedia cap with partial landfill excavation (Alternative 4). It is the opinion of HART that it is not necessary, appropriate or cost-effective to install the IRM now and that modelling analysis should be performed to determine whether any leachate collection or groundwater pumping and treatment will be necessary after the appropriate cap and landfill gas collection system are installed. Accordingly, we believe that EPA and DEP should postpone their plans to install the IRM now.

GML 001 1890

011549

You will note that HART concludes that the configuration of EPA's proposed gas collection system is defective and that the gas collection pipes should be realligned from a horizontal to a vertical configuration to prevent or minimize the risk of gas pipeline ruptures. We also believe that the gas collection system should be upgraded to promote more thorough collection of the landfill gas and possible use of such gas in an energy conservation project that would generate substantial revenues that could be offset against the cost of other remedial actions taken at the landfill.

HART will be conducting further studies this Fall and the results of these studies and analysis should be available in two (2) to three (3) months. The results of this work would provide information that is essential to any determination by EPA or DEP that the IRM or any specific remedy proposed in the RI/FS is necessary, appropriate or cost-effective.

Finally, HART advised that the projected costs of both the soil cap (Alternative 3) and the multimedia cap (Alternative 4) are substantially overstated, that either of the aforementioned types of landfill caps could be installed within one (1) year, and that it is not necessary to extend such a project over a three (3) year period as indicated by the RI/FS. We think it is in the best interests of the Township to conduct the additional analysis on an expedited basis. We also think that the appropriate cap could be installed next year. We believe the cap will eliminate the source of contamination of Holly Run because it will eliminate or greatly reduce the amount of leachate generated by the landfill and will eliminate or greatly reduce the scope and cost of any leachate and groundwater treatment program required at the landfill. If EPA and DEP installed the appropriate cap next year, there would be ample opportunity to monitor the impact of the cap (RI/FS Alternative 2) and conclude whether any leachate or groundwater collection and treatment is required long before the completion of the three (3) year schedule specified in the RI/FS.

In spite of the extremely short comment period on the 700 plus page, 3 volume RI/FS that was conducted by EPA over a 2 year period at a cost of over $1 million, the Township has made a good

faith effort to provide extensive, constructive comments for EPA's consideration. The Township reserves its right to supplement these comments in the future and to expand upon these comments and raise other criticisms and defenses in any cost-recovery action or other litigation that may be brought by or against the Township in the future.

Very truly yours,

BENJAMIN G. STONELAKE, JR.

BGS:cmb
cc: James Rooney, Esquire
Marty Judge, Esquire
Jorge Berkowitz

GML 001 1892

011551

EVALUATION OF
FOCUSED FEASIBILITY STUDY
REMEDIAL INVESTIGATION
FEASIBILITY STUDY

for the

GEMS LANDFILL
GLOUCESTER TOWNSHIP
CAMDEN COUNTY, N.J.

Prepared by:

Fred C. Hart Associates, Inc.
530 Fifth Avenue
New York, NY 10036

August 30, 1985

GML 001 1893

011552

EVALUATION OF GEMS FOCUSED FEASIBILITY STUDY

A review of the Focused Feasibility Study for the GEMS Landfill Site in Gloucester Township, Camden County, New Jersey (NUS Corporation, April 1985) identified a number of issues which show that it is inappropriate to implement the Immediate Remedial Measures (IRM). The issues, discussed below, are summarized as follows:

1. The GEMS Landfill RI/FS (NUS Corporation, August 1985) has concluded that there are no immediate human health effects from the landfill.

2. Institutional constraints--permits--are extensive and may well delay the implementation of the IRM. There would then be no "immediate" benefit.

3. The IRM groundwater treatment system may have to be removed or abandoned if it has not been integrated into the design of a long-range treatment solution.

4. Under current New Jersey Department of Environmental Protection (NJDEP) air pollution requirements, there is no need for the proposed carbon adsorption system to remove projected quantities of volatile organic compounds (VOCs) air-stripped from the groundwater treated at the site.

5. The proposed IRM will not eliminate odors from the landfill, one of the main reasons given for implementation.

6. There is institutional resistance as well as possible process problems associated with the use of the Gloucester Township Municipal Utilities Authority (GTMUA) wastewater treatment plant to

GML 001 1894

011553

provide biological treatment of groundwater extracted from the GEMS Landfill.

These issues are discussed in more detail below.

Immediate Risk to Public Health

The Remedial Investigation (RI) completed by NUS Corporation in August 1985 did not identify significant human exposure to landfill contaminants at the present time:

- Contaminant levels in air were similar to levels found in other locations throughout the state.

- The quality of water from residential wells adjacent to the landfill was tested and the results were within acceptable drinking water quality standards.

- There is no direct pathway between contaminated sediments in Holly Run and the local population.

- The NJDEP reported that methane detectors placed in nearby homes by the NJDEP did not detect methane in any of the homes.

Together, these factors signify that an imminent risk to the public health does not exist. Hence, HART questions the need to implement the short-term IRM.

Institutional Constraints

The Focused Feasibility Study identified eight separate permits that must be approved before the IRM can be implemented. They are:

1. State of New Jersey permits for the installation of monitoring wells.

2. State of New Jersey permits to perform pumping tests.

GML 001 1895

3. NJDEP air pollution control permits.

4. Adjustments to the GTMUA wastewater treatment plan discharge permit (NJPDES).

5. Stream relocation and encroachment permits from the NJDEP.

6. Stream relocation and encroachment permits from Corps of Engineers (COE).

7. Camden County erosion and sediment control permits.

8. Property easements from Fox Chase II land owners.

These institutional constraints must be resolved before the proposed IRM can be implemented. Most of these items will have to be addressed again when the Feasibility Study is implemented. HART anticipates that institutional constraints will significantly delay implementation of the IRM, thus negating the "immediate benefit" aspect of the IRM.

Redundancy of the IRM Groundwater Treatment

The groundwater treatment system proposed for the IRM is a two column air-stripping system designed to operate at a flow rate of 60 gpm. The flow rate of the treatment system proposed in the FS is 180 gpm; the system also contains two air-stripping columns. The IRM system must either be over-designed to be able to handle the long range flow or abandoned when it is replaced by the FS alternative. HART finds that the IRM and long-range groundwater treatment systems are redundant and recommends that, if the IRM system is installed, it should be: (1) redesigned to reflect long-range goals or (2) be postponed until long-range solutions are finalized.

Air Pollution Requirements

Based on monitoring data included in the FFS, the Township stated in its May 29, 1985 comments on the FFS (which are included as Attachment A)

GML 001 1896

that it would not be necessary to install an air pollution control system on the air-stripping column. HART has calculated that the emission of toxic volatile organics from the IRM air-stripping columns will be within the limits set by NJDEP (3.5 lbs per hour of total toxic volatile organics; 0.1 lbs per hour for individual volatile organics). It appears from HART's analysis that the proposed carbon adsorption and gas flare system would not be needed.

The concentration of methylene chloride listed in Table 1 of the Focused Feasibility Study indicates that this parameter would exceed the NJDEP limit of 0.1 lbs of toxic volatile organics. Methylene chloride, though, is a common laboratory contaminant and, as the Remedial Investigation indicates, concentrations based on single values for this parameter would be suspect. It should also be noted that air emissions based on the highest value of methylene chloride reported in the Remedial Investigation (from the NUS and TAT sampling) would be well within the NJDEP 0.1 lb per hour limit.

Odors

Odors emanating from the landfill are one of the primary reasons stated for the implementation of the Holly Run clean-up portion of the IRM. It is likely that odors are emanating from the Holly Run area but it is also likely that gases from landfill waste decomposition are leaving the landfill through the uncapped top surface of the landfill. The Holly Run IRM, then, would not attain its primary goal; that is, it would not immediately stop odors from reaching nearby residences. HART concludes, then, that the Holly Run IRM would only serve to reduce one of a number of potential odor sources.

Final Treatment for Air-Stripper Effluent

The Focused Feasibility Study proposes to discharge effluent from the air stripper columns (groundwater treatment systems) to the GTMUA wastewater treatment plant for treatment of non-volatile priority pollutants (mostly heavy metals) and conventional contaminants (BOD, SS, etc.). Problems identified with this proposal are as follow:

GML 001 1897

011556

1. Interference. The toxicity of priority pollutants may lead to an inhibition of the biological processes necessary to operate a wastewater treatment process (activated sludge and biological digestion). In extreme cases, priority pollutants can stop all biological treatment processes at a municipal wastewater treatment process. The treatability study conducted by Princeton Aqua Science (PAS) for NUS Corporation concluded that priority pollutant loadings from the groundwater treatment air-stripper were too high and should be reduced before discharge to GTMUA. The suggestion in Appendix A of the FS to discharge air stripper effluent to GTMUA during low flow periods would increase the likelihood of treatment plant interferences.

2. Pass Through. Heavy metals pass through conventional wastewater treatment plants, leaving the plants with the treated effluent or with settled sludge. Heavy metals in sludge may limit the GTMUA's sludge disposal options.

3. Institutional Constraints. Federal, state and local pretreatment programs will probably require removal of priority pollutants -- especially heavy metals -- before discharge of air stripper effluent to the GTMUA. Pretreatment processes -- if required -- should be integrated with the long-range (FS) alternative.

GML 001 1898

011557

EVALUATION OF REMEDIAL INVESTIGATION

A review of the Remedial Investigation Report for the GEMS Landfill Site (NUS Corporation, July 1985) identified a contaminant plume extending beyond the boundaries of the landfill in all directions. This plume of contamination has been modeled and the remedial action of groundwater pumping and treatment was recommended by the USEPA. The remedial investigation did not discuss the groundwater modeling in detail, as to whether other alternative remediations besides groundwater pumping are feasible. The USEPA TAT groundwater study is mentioned in the NUS report and the hydrogeochemical data and boring data are utilized. None of the TAT boring logs and well construction diagrams are presented in the appendices with the NUS information, thus not presenting a complete record for review.

Plume of Contamination

Contamination of the Cohansey-Kirkwood Aquifer was studied in two phases, the EPA TAT Groundwater Study and the NUS Study. The TAT study has documented contamination in several wells. Unfortunately, the boring logs and well construction diagrams are not included in the appendices for any of these wells. Without this information HART was not able to assess the quality of the data in terms of proper well construction. We suggest that this information be collected and that HART review the data as part of a future work effort.

The chapter on groundwater contamination in the NUS study indicates that contamination was found in several wells. In reviewing the results it appears that many of the results presented are below established groundwater standards i.e. USEPA Interim Primary Drinking Water Standards (IPDWS) and USEPA Ambient Water Quality Criteria (AWQC). Barium levels in the TAT study were noted as "high" at 842, 799, 923, and 3173 ug/l. Only the value in Well 107A of 3173 ug/l is over the limit of 1000 ug/l set by IPDWS. Phenols detected in two wells at concentrations of 268 and 45 ug/l were well below the AWQC limit of 3500 ug/l. Also noted was the presence of lead in 14 wells ranging from 11 to 73 ug/l, only two of the 14 values were above the IPDWS for the TAT study.

GML 001 1899

011558

The groundwater studies performed by NUS in two phases indicated "contaminated groundwater" that was below established federal standards in the second phase. This second phase of the NUS groundwater study indicated elevated values of phenols and naphthalene, however these still were less than the limits set by AWQC.

In conclusion it is important to look at the level of contamination in relation to water quality standards which are available. We suggest that, as part of a future work effort, HART perform a more in-depth review of reported concentrations, standards and criteria. We also suggest that the future HART work include a quality control check on the chemical values with split sample analyses.

Well Installation and Sampling Procedures

Boring logs for the site have only been presented for the NUS wells, while cross sections include the USEPA TAT data. Well construction diagrams can be found for only the NUS wells. Hydrogeochemical data was utilized from the USEPA TAT wells so it is necessary to include all the well construction diagrams for their review to assure the integrity of the data. Well construction diagrams for the NUS wells appear to have adequately taken into account the need for outside casing when casing to the deeper aquifer. The NUS groundwater monitoring wells appear to be of sound construction. No mention is made of the decontamination procedures followed for drilling, well installation and sampling.

Hydrogeology

HART judges that additional groundwater modeling is necessary to assess the impact of remedial measures other than those described by NUS. It would be helpful to take into account the surface water flow when modeling the hydrologic regime as it affects the remediation required. The only groundwater alternative which was analyzed was dewatering. Other alternatives -- which will be discussed in a following section on groundwater pumping -- should be evaluated with the model. We suggest that HART

GML 001 1900

collect and review boring logs and well construction diagrams. The cross sections available appear to be adequately interpreted.

Geophysical Survey

The surface resistivity survey appears to have adequately covered the perimeter of the landfill. The 1981 report by NJDEP states that surface and groundwater contamination is flowing northeast, south, and west from the GEMS site, based on conductivity/resistivity surveys and sampling data. The NUS study found their results did not totally coincide with the NJDEP findings (i.e., that contamination flows south and west from the site). This discrepancy should be analyzed closely, along with the fact that several of the chemical constituents considered to have elevated values in the groundwater were still below established federal standards.

Air, Surface Water, Soil and Sediment Sampling

Sampling of the surface water, soil, sediment, and air was performed by NUS in addition to the groundwater study. The conclusions reached by these studies appear to be adequately interpreted.

Summary of Remedial Investigation

The remedial investigation performed by NUS explored many aspects of potential contamination at the GEMS Landfill Site. Contamination in the groundwater from the Cohansey-Kirkwood Aquifer has been documented in several wells. The findings of the HART report indicates that not all of the contaminants that were mentioned as "high" or inferred to as high, in the NUS RI were over established federal standards, i.e. USEPA Interim Primary Drinking Water Standards and the USEPA Ambient Water Quality Criteria. A lot of the conclusions presented in the RI were based on data from the USEPA TAT groundwater study. This background data from the TAT study was not included in Appendices of the RI (i.e. well construction diagrams and boring logs). It was therefore impossible for HART to assess the data quality, not knowing if proper decontamination procedures were performed and if the wells are of sound construction. A review of this

GML 001 1901

011560

missing information in the future is recommended. The discrepancy between the geophysical surveys performed for the NUS RI and the NJDEP 1981 study should be analyzed in detail with hydrogeochemical backup data. The conclusions reached by NUS on the air, surfacewater, soil and sediment studies appear to be adequately interpreted.

GML 001 1902

011561

EVALUATION OF GEMS FEASIBILITY STUDY

The Feasibility Study (NUS Corporation, August 1985) evaluated alternative measures for the GEMS landfill. The USEPA announced at the public meeting held on August 19, 1985 that Alternative 8 of the Feasibility Study -- with modification -- will be implemented at the GEMS Landfill. This alternative has been reviewed by HART and comments regarding implementation and costs are provided later in this section. The key components of the selected alternative are described as follows:

1. Partial Excavation

   The top edge of the landfill and the bottom of the southern slope will be excavated to produce a 3:1 slope for cap installation. Excavated material will be placed on top of the landfill.

2. Multimedia Cap - Top of Landfill Only

   3% slope
   Six feet of material (top to bottom):

   2' - soil and topsoil
   Filter fabric
   1' - sand
   30 mil synthetic membrane
   2' - clay
   Filter
   1' - gravel and vents (see gas collection #4)
   Filter

3. Side Slope Cap

   6" - top soil
   30" - clay

4. Gas Collection and Treatment

   12" gravel layer with vent pipes
   4" diameter perforated PVC pipe, 200' apart (grid)
   Pump station with 4 blowers (300 CFM each)
   Gas production: up to 50,000 CFM over life of landfill
   Gas treatment: carbon adsorption and gas flare

5. Foundation and Toe Drain

   8" diameter perforated PVC pipe
   Gravel drain

GML 001 1903

011562

6. Surface Water Diversion Channels

Berms (4' at top, 11' at bottom)
Landfill runoff channels

7. Soil Erosion Control

Silt fence
Sedimentation basins

8. Security Fence

9. Remediation of Holly Run

Excavate contaminants and return to landfill
Reconstruct and re-line channel
Design new channel for 250 CFS (10 yr, 24 hr)

10. Groundwater Pumping

24 wells
Average drawdown of 25 feet
Total pumping rate = 180 gpm = 259,200 gpd
For uncapped landfill:

Maximum of 83 percent contaminant removal after 15 years
For capped landfill:

Maximum 99 percent contaminant removal after 20 years

11. Groundwater Treatment

Flow = 259,200 gpd
Processes include:
- primary settling
- lime addition
- ferric chloride addition
- flocculation
- clarification
- air stripping
- carbon adsorption (air)
- either:
  - (A) activated sludge sand filters and carbon absorption (effluent)
  - (B) discharge to municipal wastewater treatment

Each of these components were evaluated to determine whether, in HART's judgement, there are technical problems with implementation and whether the costs presented in the Feasibility Study are consistent with HART's experience on similar projects. The results are discussed separately for alternative components which HART believes have technical problems and for component costs which we judge to be inaccurate.

GML 001 1904

011563

Evaluation Results: Technical Problems

There are five components which we believe have technical problems:

Multimedia Cap
Gas Collection and Treatment System
Side Slope Cap
Foundation and Toe Drain
Groundwater Pumping

Problems are discussed as follows.

Multimedia Cap. The Feasibility Study defines two types of caps: a soils cap (Alternative 3) and a multimedia cap (Alternative 4). The alternative tentatively chosen by EPA (Public Meeting, Gloucester Township, August 19, 1985) recommends installing the multimedia cap described in the Feasibility Study for Alternative 4. It includes two feet of soil, one foot of sand, two feet of clay, synthetic membrane and filter fabric (see description of selected alternative, above). The capital cost for the Alternative 4 multimedia cap is listed in Appendix C of the Feasibility Study as $20,347,209. The cap not chosen (the soil cap described in Alternative 3 of the Feasibility Study) includes a three-foot layer of top soil and soil. The Feasibility Study estimated the cost for the Alternative 3 soils cap to be $8,921,285. The additional $11,425,924 cost of the Alternative 4 multimedia cap on the Alternative 3 soils cap is chiefly due to four factors:

1. The addition of filter fabric and synthetic membrane. (This is responsible for about 50% of the additional cost.)

2. The additional soil. (Responsible for about 30% of the additional cost.)

3. The layer of clay used in the multimedia cap which is not used in the soils cap. (Responsible for about 13% of the additional cost.)

GML 001 1905

011564

4. The additional ground. (Responsible for about 8% of the additional cost.)

The particular benefits which each of these additional components bring to the success of the project are not addressed in the Feasibility Study. That is, the description in the Feasibility Study of the performance and reliability of the Alternative 3 and Alternative 4 caps is the same. In general the benefits of each type of cap are related to the decrease in leachate collection and to the subsequent decrease in groundwater pumping and treatment. HART recommends that the groundwater modeling (proposed in a following section - SEE GROUNDWATER PUMPING) be used to optimize the selected cover design. That is, the ability of each component to reduce leachate generation and reduce or eliminate the costs of collecting and treating leachate and groundwater should be determined and compared to the cost to implement that component.

Side Slope Cap. The side slope cap proposed in the Feasibility Study consists of three feet of material including six inches of topsoil and 30" of low permeability soil. The USEPA changed the material requirements for the 30" layer from topsoil to clay. No synthetic liner would be used because of the steepness of the slope. The problem with the side slope cap lies in the configuration of the drainage collection trenches. These trenches are approximately twelve feet wide benches cut into the side of the landfill. Differential settling has led to problems with benches such as these at other solid waste landfills. Settling creates large depressed areas, which fill with runoff. The runoff contained in these areas overflow over the sides of the landfill creating gullies and eroding other benches further down the slope. Operating hazardous waste landfills have begun implementing a different side slope cap design. The new design -- called microterracing -- uses smaller but more frequent trenches to channel stormwater and to dissipate some of the energy of the stormwater running down the slope. The technique has been used successfully at a number of secure hazardous waste landfills in the northeast. HART recommends that microterracing or another side slope alternative be investigated for the GEMS Landfill.

GML 001 1906

011565

Gas Collection and Treatment System. The gas collection and treatment system proposed in the FS (Figure 3-3 in the FS) consists of horizontal 4" diameter perforated PVC pipe placed in a grid approximately 200 feet apart over the top of the landfill. The pipe will be located within a 12" deep layer of gravel directly overlaying the landfill waste. The GEMS Landfill is essentially a solid waste landfill and, as such, can be expected to settle and compress at different rates. The gravel layer will also settle differentially and, as a result, the pipes will bend, compress and shear. Venting will be uneven and areas of the landfill may not be vented. HART recommends that the proposed grid system of horizontal pipes be replaced with vertical gas collection pipes located over the top of the landfill. The system would not be susceptible to structural failure from settling and can be designed to provide the same collection capacity as that of the Feasibility Study gas collection system.

The Feasibility Study proposes a treatment system for the gas collected from the landfill. Gas from solid waste landfills can also be recovered and used for its heating content or for on-site generation of electricity. This is becoming a common practice at an increasing number of landfills, reuse of the gas generated from the GEMS Landfill is preferable to treatment for economic and environmental reasons: gas recovery does not generate a hazardous waste, as does gas treatment (i.e., pollutant saturated carbon), and gas recovery generates an income-producing resource (gas or electricity). HART recommends that a gas recovery system be investigated for the GEMS Landfill as a replacement for the Feasibility Study gas treatment system.

Foundation and Toe Drain. The Feasibility Study proposes a specific foundation and toe drain design for the bottom of the side slope to be used only on the northeast and west slopes of the GEMS Landfill. A cross section of the drain is shown in Figure 3-2 of the Feasibility Study. The cross-section shows that gravel collection trench separated from the waste by a wedge of original soil. The flow of leachate from the waste to the gravel is impaired by this soil wedge. HART recommends that the design be revised to create a more direct pathway for leachate to move from the waste to the gravel drain.

GML 001 1907

Groundwater Pumping. On August 19, 1985 the USEPA announced at the public meeting that Alternative 8 of the Feasibility Study -- with modification -- will be implemented at the GEMS landfill. Groundwater pumping and treatment is included in the proposed remediation for the GEMS site. The groundwater system has been modeled in conjunction with the NUS study. In order to evaluate the effectiveness of groundwater pumping over other remedial technologies several factors should be taken into account:

1) The effect of capping the landfill will not only reduce the amount of water infiltrating into the landfill but can also effect the direction of a contaminant plume. The plume could possibly be more laminar in flow if the landfill is capped.

2) In groundwater modeling there was no mention as to whether a partial slurry wall or some other remediation was analyzed in the model. It appears that just groundwater removal was taken into account.

3) There are the other alternatives to having 24 wells around the site pumping for 10 years. Was an analysis provided with other scenarios, i.e. 8 wells pumping for 30 years?

4) Perhaps no groundwater pumping would be necessary as the local aquifer conditions might change once the site is capped. The water table underneath the landfill might be lower due to less infiltration of leachate, creating the condition that the wastes are not in contact directly with the groundwater.

In conclusion, HART recommends that additional groundwater modeling to be undertaken. The modeling would explore alternative remedial measures and combinations of various remediations.

Evaluation Results: Cost Item

The cost of alternative components as presented in the Feasibility Study were reviewed to determine whether they are consistent with HART's

GML 001 1908

experience with similar projects. The review revealed inconsistencies with the Feasibility Study costs for the multimedia cap and for the groundwater treatment system. The costs are discussed as follows:

Groundwater Treatment Costs. Capital and annual operation and maintenance (O & M) costs are presented in Appendix C of the Feasibility Study for the twelve alternatives considered in the report. Annual O & M Costs for groundwater pumping and treatment can be determined by comparing O & M Costs for Alternative 4 and Alternative 8. Alternative 8 by definition comprises the same remedial actions contained in Alternative 4 with the addition of groundwater pumping and treatment. The difference in annual O & M Costs between Alternative 8 and Alternative 4 represents the O & M Costs for groundwater pumping and treatment:

Annual O & M Cost Alternative No. 8 =	$601,000
Annual O & M Cost Alternative No. 4 =	107,000

Annual O & M Cost of Groundwater Pumping & Treatment = $494,000

The Annual O & M cost of groundwater pumping (180 gpm) was estimated to be $8,500 using USEPA Cost Curves (EPA - 430/9-78-009) and a five percent yearly inflation rate. The Annual O & M Cost given in the Feasibility Study for groundwater treatment alone, then is $485,500 ($494,000-$8,500).

Other solid waste facilities have provided HART with actual Unit O & M Costs for the treatment of leachate. Unit O & M Costs for complete on-site groundwater treatment following the air stripper were reported to be $0.045/gallon. This is Option 1 in the Feasibility Study which includes activated sludge, clarification, sand filtration and carbon absorption. Unit O & M Costs reported by HART for pretreatment of groundwater and for municipal wastewater treatment plant user charges are:

On-site Groundwater Pretreatment Unit O & M Cost =	$0.034/gallon
Municipal Wastewater Treatment Plant User Charges =	0.010/gallon
(HART) Total Unit O & M Charge (Option 1) =	$0.044/gallon

GML 001 1909

The O & M Cost to treat the 259,000 gpd projected groundwater flow for the GEMS landfill using Feasibility Study Costs and Costs from similar HART projects are as follows:

Option		HART Costs		Feasibility Study	
No.	Description	Unit (¢)	Total ($ x 1,000)	Unit (¢)	Total ($ x 1,000)
1	Pretreatment and GTMUA Discharge	$0.044	$4,160	(1)	(1)
2	Complete on-site Treatment	$0.045	$4,260	$0.005	$485

(1) Costs not given in Feasibility Study for Option No. 1.

Present worth values (30 years, 10% interest) of HART and Feasibility Study costs are:

HART Present Worth O & M Cost (Option 1) = $39,200,000
HART Present Worth O & M Cost (Option 2) = $40,160,000
Feasibility Study Present Worth O & M Cost (Option 2) = $4,570,000

If costs for the GEMS Landfill cleanup are closer to the costs estimated by HART than they are to the Feasibility Study Costs, then attention should be paid to measures which could significantly decrease the amount of groundwater pumped and treated under the long term remediation measure. Other groundwater remediation measures referred to in the evaluation of the Remedial Investigation (previous section) become an increasingly important item of study because of the potential to decrease contaminated groundwater volumes pumped to treatment and thereby decrease the apparently significant annual O & M Cost.

Multimedia Cap Costs. The discussion of the technical problems associated with the multimedia cap outlined an $11 million dollar cost differential between the Alternative 4 multimedia cap and the Alternative 3 soil

GML 001 1910

cap. The difference in cost was mainly due to filter fabric, synthetic membrane, soil, clay and gravel. HART questions the unit costs and item quantities for some of the components. For example, revegetation costs for the multimedia cap are listed in Appendix C of the Feasibility Study as approximately $3,000 an acre (including overhead), whereas recent HART projects have reported contractors bid costs for revegetation closer to $1,000 an acre. There also seems to be some inconsistencies in the item quantities used to estimate the cost of each cap type. For example, the quantity needed to construct the 24" soil and topsoil layer in the multimedia cap is given in Appendix C of the Feasibility Study as 470,000 cubic yards; the cost is given as approximately 4 million dollars. On the other hand, the quantity of soil and topsoil needed for the Alternative 3 soil cap (a 36" layer) is listed as 312,000 cubic yards for a cost of about 2.5 million dollars. The area to be covered is the same for both alternatives and the reason for the discrepancy (i.e. Alternative 3 quantities and costs for soil and topsoil should be greater than Alternative 4 quantities and costs) is not apparent from the information given in the Feasibility Study. Because of the importance of the cap in the success of the project and because of the magnitude of the costs associated with capping, HART recommends that a separate cost study be conducted to more accurately define item quantities and costs for the multimedia and soil caps.

GML 001 1911

011570

ATTACHMENT A

LETTER

TO: Mr. Ed Putnam, Project manager
GEMS Landfill Site
New Jersey Remedial Action branch
U.S. Environmental protection Agency
Region II

FROM: Benjamin G. Stonelake, Esq.

FOR: Township of Gloucester
Comden County, NJ

DATE: May 20, 1985

RE: Comments on Draft Focused Feasibility Study (FFS) for the GEMS Landfill Site.

GML 001 1912

011571

BLANK, ROME, COMISKY & McCAULEY
FOUR PENN CENTER PLAZA
PHILADELPHIA, PENNSYLVANIA 19103
215-569-5500
TWX 710-670-1073 · BLARCOM
TELECOPIER 215-564-8399

2000 PENNSYLVANIA AVE. N. W
WASHINGTON, DC 20006
202-457-7700

89 HADDON AVENUE
HADDONFIELD, NJ 08033
609-354-1400

4770 BISCAYNE BOULEVARD
MIAMI, FLORIDA 33137
305-573-5500

1665 PALM BEACH LAKES BLVD.
WEST PALM BEACH, FLORIDA 33401
305-686-6100

DIRECT DIAL NUMBER:
215-569-5689

May 20, 1985

Mr. Ed Putnam, Project Manager
GEMS Landfill Site
New Jersey Remedial Action Branch
U. S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, N. Y. 10007

Re: Comments on Draft Focused Feasibility Study (FFS) for the GEMS Landfill Site

Dear Mr. Putnam:

On behalf of the Township of Gloucester, we are hereby submitting the following comments and objections to the draft Focused Feasibility Study (FFS) for the GEMS Landfill site. Initially, I wish to confirm our conversation immediately prior to EPA's public meeting on the draft FFS on May 2, 1985. During that conversation, I objected to the extremely short notice that EPA gave to the Township and the apparent inadequacy of the notice, given the fact that very few residents from the community were in attendance. I also registered our very grave concern that EPA, contrary to existing agency policy, had refused to permit the Township to participate in the FFS process and that EPA, contrary to an earlier commitment to U.S. District Court Judge Stanley Brotman, has failed to conduct a search for generators of waste disposed at the GEMS Landfill who would be responsible for payment of the costs of investigation and cleanup. During that conversation, I also objected to the limited public comment that EPA established stating that interested parties should be able to submit comments beyond the May 17, 1985 date, which EPA established for closing the comment period on the draft FFS. In response to my latter comment, you stated that the Township could have an additional few days to submit comments but that EPA wished to close the public comment period as quickly as possible. Without waiving the Township's right to contest the adequacy of EPA past procedures and activities, including the EPA's refusal to permit the Township to participate in the FFS process and the inordinately short comment period on the draft FFS, we submit the following limited comments

GML 001 1913

and objections to the activities proposed in the draft FFS. We specifically reserve the right to raise these objections and additional objections in any proceeding by EPA for reimbursement of response costs or any other EPA action or proceeding pertaining to the GEMS Landfill.

To date, EPA has not published, cited or otherwise released any environmental data that justifies the implementation of the interim remedial measures recommended in the draft FFS. More specifically, neither the draft FFS nor any other EPA documents presented to the Township states that the proposed interim remedial actions are necessary to: (i) prevent, limit or mitigate an emergency; (ii) prevent an immediate risk to public health or welfare or the environment; and (iii) that such actions will not otherwise be provided on a timely basis. Section 104(c)(1) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) prohibits EPA from implementing the draft FFS unless EPA can satisfy all three of the foregoing criteria. Otherwise, EPA must await completion of the Remedial Investigation/Feasibility Study (RI/FS) that is currently in progress, and satisfy all other requirements of Section 104 of CERCLA and the National Contingency Plan (NCP) prior to implementing the measures proposed in the draft FFS.

Assuming that EPA proceeds to implement the draft FFS contrary to Section 104(c)(1) of CERCLA, and without waiving the Township's right to contest such action now or in the future, the Township submits the following additional comments. Since EPA predicts that the RI/FS will be completed in July or August, 1985, we believe that the proposed stream diversion and groundwater treatment programs should not be implemented until it can be determined whether such programs will be consistent with the final remedy proposed by the RI/FS. We feel it is particularly important to note here that in response to one of my questions at the public meeting on May 2, 1985, Mr. John Frisco, Chief, New Jersey Remedial Action Branch, US EPA, Region II, said that he could not now state that the interim remedy proposed in the draft FFS would be consistent with the final remedy that will be proposed in the RI/FS. Given this uncertainty, we feel it is inappropriate to spend several million dollars on an interim remedy that might be inconsistent with the final remedy which will be proposed in approximately three months at the conclusion of an RI/FS on which EPA is spending more than $1,000,000 to prepare and complete.

Additionally, we have been advised that the principal reason why EPA and NJ DEP intend to implement the draft FFS is because of an "inferred air pollution problem" in the vicinity of the

GML 001 1914

landfill. In all candor, DEP representatives told Township residents during a public meeting on April 11, 1985 that it had conducted extensive air quality monitoring in the residential neighborhood adjacent to the landfill and that it had not been able to document any significant air contamination that could be attributed to the landfill. During that meeting, representatives of DEP and the New Jersey Department of Health also told the residents that the level of air contaminants detected in the neighborhood were comparable to the level of air contaminants found at other locations throughout the state and that, therefore, the limited air contamination observed in the neighborhood could not be attributed to the GEMS landfill. We acknowledge that DEP also reported at the public meeting on April 11 that it had received numerous reports of nosebleeds and that DEP believed that these reports were concentrated in a very small area in a neighborhood adjacent to the landfill. For this reason, DEP representatives said they inferred that such problem was caused by contamination from the landfill, despite the fact that DEP's air quality survey did not detect any significant air contamination that could be attributed to the landfill.

Assuming, without acknowledging, that these nosebleeds could be attributed to the landfill, they may not be attributable to any non-methane hydrocarbons. Since the remedies proposed for the draft FFS are intended to address non-methane hydrocarbons that are allegedly dissolved in the groundwater regime, we suspect that the remedy proposed in the draft FFS would not mitigate the alleged nosebleed problem. We understand that DEP has conducted tests to assess methane gas migration from the landfill and that DEP has reported that it has found evidence of such migration. Accordingly, we would recommend that EPA investigate the possible need for a passive or active methane gas recovery system at the landfill.

Finally, we question the need to install a carbon adsorption system to treat the off-gases from the proposed aeration stripping towers. If we accept as accurate the reported concentrations of volatile organic compounds (VOCs) reported in table 1-1 of the draft FFS, and we assume that the relative concentrations of these compounds will remain constant in all of the leachate pumped from the proposed recovery wells, we estimate that the average density of the contaminants would be 8.72 pounds per gallon of contaminants that will be removed from the aeration stripping towers. Assuming, also, that the draft FFS accurately predicts that it will be necessary to pump and treat 86,000 gallons per day (gpd) of groundwater that is contaminated with leachate at maximum, average and minimum VOC concentrations of 32 ppm, 11 ppm, and 2 ppm, respectively, and also assuming that the proposed strippers remove all VOCs from the groundwater, we

estimate that the maximum, average and minimum volumes of VOC's removed will be 2.75 gpd, 0.946 gpd, and 0.17 gpd, respectively. Multiplying the weighted-average density referenced above times these volumetric estimates, we conclude that, if EPA and DEP's environmental data and projections are correct, the combined maximum, average and minimum VOC emissions from both aeration stripping towers would be approximately 23.98 lbs. per day, 8.25 lbs. per day and 1.48 lbs. per day, respectively. These VOC emissions would not warrant the installation of a carbon adsorption system to treat air pollution emissions from the strippers. Assuming, without admitting, that EPA and DEP's projections are correct, we conclude that the combined VOC average emissions from both towers would be roughly equivalent to the VOC emissions from a coin-operated, commercial dry cleaning shop and that such emissions would disperse rapidly when they were emitted from the top of the stripping towers.

For the above reasons, we object to the draft FFS and we urge EPA to expedite the completion of the RI/FS before it decides whether to implement the remedies proposed in the draft FFS. If the RI/FS reasonably concludes that some or all of the remedies proposed in the draft FFS are appropriate, we may agree that such remedies should be implemented as soon as possible after completion of the RI/FS.

Sincerely yours,

BENJAMIN G. STONELAKE, JR.

BGS/ln

cc: Mayor Ann Mullen
Nicholas Trabosh, Esquire
Charles G. Palumbo, Esquire
Dr. Jorge Berkowitz
Marty Judge, Esquire
Mr. David Henderson
Mr. John Frisco

GML 001 1916

011575

Appendix B
Resolution of Agency Comments on the Prefinal (90%) Design
GEMS Site Phase II
January 1996

At a meeting on September 19, 1995 and a conference call on December 21, 1995, representatives of the New Jersey Department of Environmental Protection (NJDEP), the U.S. Environmental Protection Agency (USEPA), and the GEMS Site Phase II Group, discussed the agencies' comments on the prefinal design for the GEMS site Phase II remedy. The NJDEP's comments were provided in a letter dated April 3, 1995, and the USEPA's comments were provided in a letter dated April 17, 1995. This attachment documents the agreements reached regarding these comments.

Both the NJDEP and the USEPA indicated that the comments were provided for the Group's consideration while completing the final design and are advisory in nature. The NJDEP also noted that its comments reflected the Department's future assumption of operating responsibility and its desire for a smooth turnover and a well functioning system.

A number of the NJDEP and USEPA comments are minor or reflect the prefinal nature of the design at the time of the review (e.g., missing portions of specifications). These comments are not specifically discussed and all agreed that these will simply be reviewed as an aid during the preparation of the final design. The discussions of specific comments are summarized below, with the comment (or the relevant portion thereof) provided first followed by a summary of the discussions and agreements.

NJDEP Comments

Drawings

Comment – Sheet 6921-006 Piping and Instrument Diagram (3 of 3). Has the DEP accepted the release of Air Emissions from the Tanks (ie the vents) and from the Air Stripper without any emission controls?

Discussion – The Group has prepared a draft air permit equivalency application that proposes the use of a carbon unit on the venting system for the equalization tank, as a pilot operation, while collecting data on actual air emissions. The modeling performed for the preparation of the permit equivalency application indicates that emissions controls should not be required. The use of carbon during a pilot period provides a prudent approach while collecting actual operating data at the equalization tank, the unit from which the majority of air emissions will occur. A decision regarding the need for long-term emissions controls will be made based on the pilot operations data. The NJDEP representatives were in agreement with this approach.

Comment – Sheet 6921-015 Groundwater Extraction Well & Miscellaneous Details. The use of stainless steel well screens mated to black iron riser pipes, as a cost savings option may be misleading. Due to the galvanic potential between the two different types of metals and the high electrical conductivity of the ground water in the area, the potential for significant corrosion at the point of contact of the two dissimilar types of metal is significant ....

Discussion -- This issue had been considered in the design. The choice of electrode for welding the dissimilar metals and a zinc anode will be used to control the potential for corrosion. These are standard techniques in the industry. The NJDEP agreed, but suggested that the Group may still wish to consider PVC as an alternative.

Comment -- Sheet 6921-015 Groundwater Extraction Well & Miscellaneous Details. Also, below grade plumbing should be constructed to meet UST requirements (eg double walled, leak detection).

Discussion -- Double contained piping has not been used in the design where piping is within the zone of capture. A release would be consistent with the underlying groundwater being extracted and the release would be re-collected in the extraction system. The extraction system provides secondary containment. The NJDEP agreed.

Comment -- General. Fire protection systems must be included (carbon dioxide and/or water). Department of Community Affairs has requirements for these systems and they will also issue the Building Permit Equivalent.

Discussion -- The Group's building design consultant, based on relevant codes, believes that a fire protection system is not necessary. Further, the Department of Community Affairs (DCA) will not necessarily be involved. For some recent, similar projects, the DCA has relegated permitting to the local community. The Group agreed to look further at the need for a fire protection system during the final design. The NJDEP believes we should have one.

Comment -- General. Are there any plans for filling or landscaping Briar Lake when/if it dries up due to the diversion of the Underdrain.

Discussion -- The lake is not expected to become dry and landscaping around the lake is not included in the design. Restoration was completed as a part of Phase I. The NJDEP indicated that this was an item it had considered and was offered as a thought. Additional restoration and landscaping are not requirements being imposed by the Department.

Specifications

Comment -- General Comments. All Specifications (if appropriate) must match those of the Phase I remediation (ie topsoil, grass).

Discussion -- The NJDEP's interest here is to minimize the number of differences between Phase I and Phase II for ease of future operations. The NJDEP, for example, indicated that it would be useful to have only one topsoil specification for material delivered to the site. The NJDEP also noted that consistency of paint specifications would be important to minimize the number of paint types required for maintenance. The Group agreed to check the Phase I specifications for consistency during the final design.

Engineering Report

Comment -- The November 1991 FFS by TAMS considered discharge to the MUAs via a connection on Erial Road. The concerns at that time were: (1) the existing

Erial Road Pump Station would require reconstruction because of insufficient pumping capacity, and (2) that impeller changes at the Cherrywood Station would be needed. Neither of these concerns have been raised by Eckenfelder. These costs were important factors in the DEP's decision to discharge directly to surface water and should be considered.

Discussion – The Group has maintained contact with the Gloucester Township Municipal Utilities Authority (GTMUA) and verified its requirements for a discharge. The GTMUA will require an upgrade to the Erial Road pump station for a discharge to the Erial Road sewer. This upgrade amounts to replacement of the pumps to the Authority's new standard (submersible units) and increasing their capacity. The costs are not significant and have been considered in the Group's evaluation of discharge alternatives. The NJDEP agreed that if the discharge requirements are met and the approach is cost effective, then no further action should be necessary relative to this comment.

Comment – The DEP is considering Gamma logging the existing monitor wells to help and determine the best depth at which to set performance monitoring wells.

Discussion – The NJDEP has completed gamma logging of the wells and will be using the information to refine the screened intervals of water quality monitoring wells. The NJDEP has since indicated a preference for independently monitoring the upper and lower portions of the Cohansey Sand. This issue is discussed further under the USEPA comments.

USEPA Comments

As a general note, the Agency's comments include requirements for several additional submittals such as a schedule, field sampling plan, and contingency plan. All agreed that additional submittals will now be governed by the requirements of the Consent Decree (e.g., the Remedial Action Work Plan).

Engineering Report

Comment – The Report failed to include a schedule for construction. This schedule would identify major tasks, determine their duration, and establish milestone dates.

Discussion – Apart from the general note above, the schedule will identify only major activities and durations, not actual dates (which are not yet known). A detailed construction schedule would be prepared by the construction contractor.

Comment – Page 3-4. Further justify the fact that the modeling should not address the Kirkwood formation.

Discussion – The USEPA has considered this item further and in light of the discussions at the meeting held on November 1, 1995, this is no longer an issue. The USEPA, however, at the time of the discussion was still considering comments regarding the vertical placement of monitoring wells in the Cohansey Sand and provided further comment on this aspect with the revised performance standard language that was prepared in response to the Group's last set of comments. The Agency's comments were presented in a letter dated December 21, 1995 from William Tucker, Esq. to John Goldsmith, Esq.. The Group subsequently agreed to the modifications in this letter regarding placement of wells.

Comment -- Page 5-5. Are these pipes double-lined? If not, this should be required.

Discussion -- This discussion was the same as for the similar comment made by the NJDEP. The USEPA also agreed that double contained piping would not be necessary within the zone of capture of the groundwater extraction system.

Comment -- Page 5-19. According to the last paragraph within section 5.2.3, effluent holding tank water could be returned to the equalization tank for further pre-treatment, should the tank contents be found to require further pre-treatment to meet the CCMUA requirements. Instead, consideration might be given to an effluent tank farm. This option would serve to reduce interruptions of the pre-treatment system.

Discussion -- The discussions clarified that discharge is not on a batch basis predicated on sampling results. Effluent sampling is on a routine program. This is the norm for a discharge to a utility authority. On this basis the USEPA agreed that a tank farm would not be necessary. This discussion also related to the later USEPA comment on Drawings 005 and 006.

Comment -- PP.5-16 thru -19 (Sections 5.2.3.7 thru 5.2.4.1). The locations (i.e., outside/inside the treatment building) of the various tanks are unclear. Clarify. Also, is the clarifier out-of-doors?

Discussion -- The discussion focused on the USEPA's concern that the maintenance of the clarifier will be problematic because it will be outside. ECKENFELDER INC. believes that the clarifier will function well and can be maintained reasonably well outside. The USEPA remained concerned. The Group agreed to look at this item again during the final design.

Drawings

Comment -- 005/006. The influent tank appears to be too small for the operating capacity of the pre-treatment system. Thus, the system is without the surcharge capacity to sustain the extracted groundwater while the pre-treatment system is either down for maintenance/not processing.

Discussion -- There has been considerable discussion with the USEPA regarding the issue of down time relative to performance standard language. The Group reiterated the discussion regarding the storage capacity within the aquifer adjacent to the Holly Run underdrain and the time available to re-establish capture when the system is down for maintenance. As a result of this discussion, all agreed that additional influent storage capacity would not be required and that the final performance standard language would address the issue of continuity of operations.

Comment -- 014. To avoid air emission/odor problems, air diffusers and aeration at the influent tank will most likely require carbon adsorption at the roof vent of T-1.

Discussion -- The discussion was as described above for the NJDEP comment regarding air emissions. The USEPA agreed that the issue would be dealt with as a part of the air permit equivalency, but remains convinced that emissions controls will be required. The carbon units to be used during the pilot operation will be shown on the piping and instrumentation diagrams.

Comment -- A-1. Pre-fab building does not include vent/air exchangers for within the process area. Specifications also fail to address air exchange. Air dispersion modeling (with obstructions in place) is recommended.

Discussion -- The discussions clarified that the building is pressurized to address the issue of potential gas migration from the adjacent landfill. Therefore, air exchange/modeling is not relevant. The USEPA agreed.

Cost Estimate

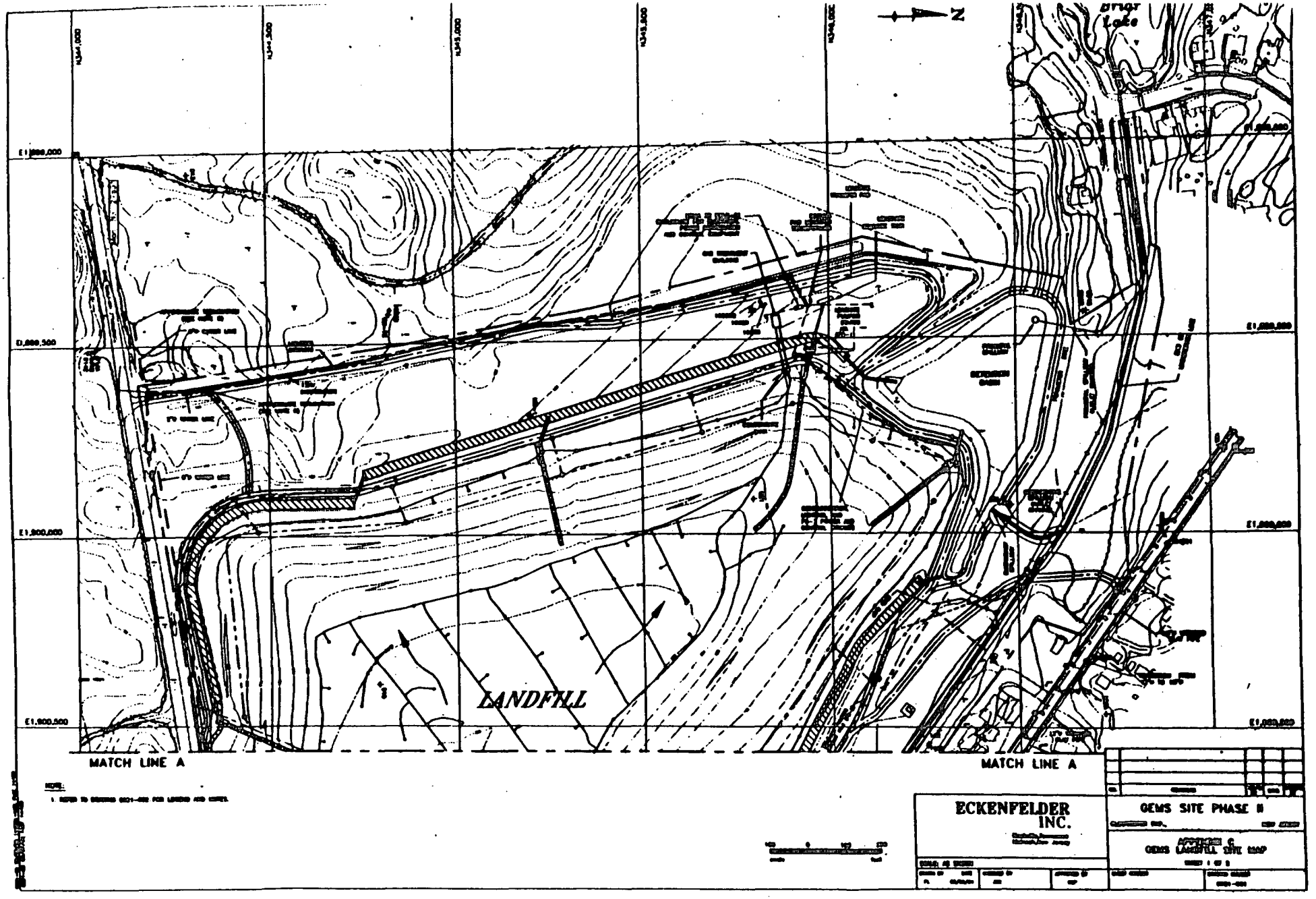
Comment -- The proposed pre-treatment facility will most likely require an operator with an N-4 license, contrary to what the design currently provides for.

Discussion -- The plant has been ranked in accordance with the NJDEP criteria for defining the operator requirements. The USEPA maintained that an N-4 rather than an N-2 operator would be required. All agreed that confirmation of operator requirements will ultimately be provided by the NJDEP.

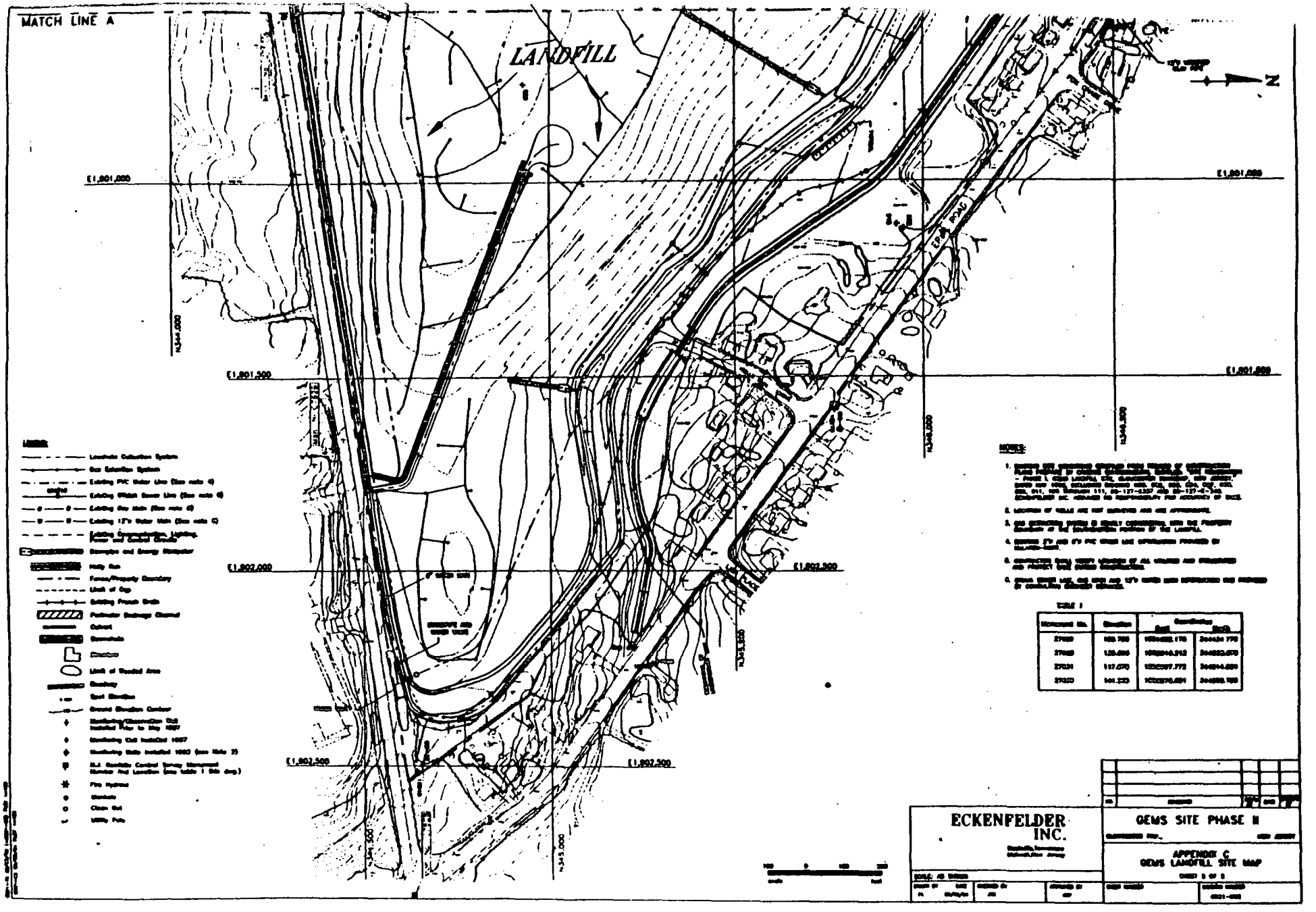
Proposed Mitigation of Impacts to Swamp Pink colonies Near the GEMS Landfill

Comment -- Finally, you may also need to expand the proposed water quality monitoring, given the modified groundwater extraction and pre-treatment system. While conditions within the shallow monitoring wells at locations 1008 and 901 have improved, the deep wells at these locations are highly contaminated. These deep wells are located either within or just outside the portion of the plume which will not be captured (i.e., under the 4-well operating scenario). Consideration should be given to monitoring within the deep portion of the formation in the areas of these wells, as well as downgradient from location 901 to ensure that this contamination is not escaping.

Discussion -- The issue of additional downgradient monitoring wells was discussed at the November 1, 1995 meeting. The Agency will not be requiring any additional wells in this regard. As to the issue of the depth intervals for monitoring, this also relates to the NJDEP comment regarding the gamma logging of wells and is addressed in the USEPA's December 21, 1995 letter. Subsequent to the meeting, the Group agreed to make the modifications noted in this letter regarding the depth intervals for the wells.



N
Briar Lake
E1,900,000
E1,900,500
LANDFILL
MATCH LINE A
MATCH LINE A
NOTE:
1. REFER TO DRAWING 0021-002 FOR LEGEND AND NOTES.
ECKENFELDER INC.
GEMS SITE PHASE II
APPENDIX C
GEMS LANDFILL SITE MAP


MATCH LINE A
LANDFILL
E1,901,000
E1,901,500
E1,902,000
E1,902,500
N344,000
N345,000
N346,000
N346,500
N
NOTES:
ECKENFELDER INC.
GEMS SITE PHASE II
APPENDIX C
GEMS LANDFILL SITE MAP

APPENDIX D

SETTLING OWNER AND OPERATORS

TOWNSHIP OF GLOUCESTER

AMADEI SAND & GRAVEL, INC.

GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC.

TOTAL FOR ALL OWNER AND OPERATORS ——$6,803,162.38

(Principal of $6,750,000, plus interest of $53,162.38 through 9/27/96)

ATTACHMENT "D" (GENERATORS)

Active Oil Service

Air Products and Chemicals, Inc., together with its past and present divisions, subsidiaries, parents and affiliates as well as the past and present shareholders, officers, directors and employees of each of them.

American Cyanamid Company and Cytec Industries Inc., together with their past and present affiliates, subsidiaries and respective directors, officers and employees.

Camden Iron and Metal, Inc.

Campbell Soup Company

City of Philadelphia and Curtis T. Bedwell and Sons, Inc.

Crown Cork & Seal Company, Inc. and Crown Beverage Packaging, Inc. (for Continental Can Company)

Daubert Industries, Inc.

E. I. du Pont de Nemours and Company

Nabisco Brands, Inc., for itself and on behalf of H.B. Fuller, as prior owners of Paisley Products

Litton Industries, Inc. on behalf of itself and Western Atlas Inc., as successor to Litton Industrial Automation Systems, Inc. and on behalf of Cole Steel and Joyce International, Inc.

Morton International, Inc. and Cincinnati Milacron Chemicals, Inc.

NL Industries, Inc.

Owens Corning

Rohm and Haas Company, together with its past and present divisions, subsidiaries, parents and affiliates as well as the past and present shareholders, officers, directors and employees of each of them.

SCM Corporation, including its Glidden Division, Glidden Coatings & Resins

Shell Oil Company and its subsidiaries and affiliates

Solvents Recovery Service of New England, Inc. and Solvents Recovery Service of New Jersey, Inc.

Zeneca Inc. (f/k/a ICI Americas Inc.)

TOTAL PRINCIPAL AMOUNT TO BE CONTRIBUTED: $14,500,000.00
TOTAL PRINCIPAL AMOUNT INCLUDING INTEREST THROUGH 9/27/96: $14,564,029.14

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II[1]	COMBINED AMOUNT INTO PHASES I & II[2]
A.E. Staley Manufacturing Company, for itself and its former division Staley Chemical Co.	$0	$140,091.12
Albanil Dyestuff Corporation	$ 32,228.38	$ 32,228.38
Amerada Hess Corporation	$0	$0
American Inks & Coatings Corp. formerly known as American Lacquer Solvents Corp.	$167,882.79	$167,882.79
American National Can Company	$0	$140,091.12
American Packaging Corporation	$103,127.79	$103,127.79
Arsynco, Inc.	$ 24,092.54	$ 24,092.54
Ashland Inc., formerly known as Ashland Oil, Inc. and Ashland Chemical Company	$ 94,160.93	$ 94,160.93
AT&T Corp. (improperly pleaded	$196,113.56	$196,113.56

---

[1] The column represents the settlement monies deposited to the Phase II Trust, not including interest accrued since July 22, 1996.

[2] This represents the "Raw Amount Paid into Phase II" plus the amount transferred to the Phase I Trust as part of the Phase I settlement in March 1989. The figures in this column are not necessarily proportional to the parties' internal allocations. The Generators reallocated not just Phase I and Phase II settlement costs, but also administrative and engineering expenses. Some parties settled Phase I or paid over time for administrative expenses based on early high allocations. In some cases, the overpayors' high administrative and engineering assessments subsumed their reallocated settlement shares. This is reflected in what may be perceived as low settlement numbers for some parties. In actuality, the overall payments for Phase I, Phase II, and administrative costs are proportional. Parties with $0 in this column that are not Late Settlors overpaid to such an extent that their payments would appear to be negative. Their reallocated shares were proportional to those of other parties. Parties that overpaid in Phase I were out-of-pocket their amounts until Phase II reallocation redressed the overpayment without credit for six one-half years of interest.

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II	COMBINED AMOUNT INTO PHASES I & II
as Western Electric Company, Inc.)		
Bell Atlantic-Pennsylvania, Inc.	$ 44,202.82	$ 44,202.82
Borden, Inc.	$0	$747,152.62
BP America Inc., on behalf of BP North America Petroleum, Inc., BP Exploration and Oil, Inc., or any other related or affiliated companies.	$ 95,917.55	$ 95,917.55
Breyers Ice Cream/Kraft Foods, Inc.	$ 59,856.53	$ 59,856.53
Bridgestone/Firestone, Inc.	$270,185.64	$270,185.64
Bristol-Myers Squibb Company and E.R. Squibb & Sons, Inc.	$ 40,807.88	$ 40,807.88
Bundy Corporation (with respect to itself and the National Rolling Mills Plant)	$ 46,016.87	$186,107.99
Callery Chemical, a Division of Mine Safety Appliances Company, and Mine Safety Appliances Company	$0	$142,091.12
CBS, Inc.	$ 62,981.51	$ 62,981.51
Central Boiler Repair Company, Inc.	$ 40,851.68	$ 40,851.68
CertainTeed Corporation	$0	$140,091.12
Chemical Leaman Tank Lines, Inc.	$244,328.82	$244,328.82
Chester Hide & Skin Corp., f/k/a Chester Packing Corporation	$ 21,787.56	$ 21,787.56
Chevron U.S.A. Inc. and Kewanee Industries, Inc.	$0	$140,091.12
Chicago Bridge & Iron Company*	$0	$0
Chrysler Corporation	$194,332.10	$194,332.10

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II	COMBINED AMOUNT INTO PHASES I & II
Clifton Adhesives, Inc.	$ 29,940.81	$ 29,940.81
Colonial Heights Packaging Inc. (successor by merger to Polymer Industries, Inc.)	$214,160.64	$214,160.64
Croda Inks Corporation, corporate successor to Richardson Ink Company	$ 52,233.94	$ 52,233.94
Cumberland County Medical Center (n/k/a Cumberland Manor) and Cumberland County (to, and only to, the extent its liability is based upon the Cumberland County Medical Center)	$ 21,787.56	$ 21,787.56
Dairy Pak, a division of Champion International Corporation	$ 27,995.56	$ 27,995.56
DeSoto, Inc.	$ 22,653.06	$162,744.18
Dock Resins Corporation	$0	$140,091.12
Elf Atochem North America, Inc. (together with its past and present related companies, including Polyrex, Inc.)	$0	$1,120,728.91
Esschem, Inc. (formerly known as Sartomer Resins, Inc.; Sartomer Industries, Inc.; and Leksi, Inc.)	$ 57,881.62	$197,972.74
Exide Corporation, its officers, directors, employees, agents, subsidiaries and affiliates	$ 24,593.89	$ 24,593.89
Food Haulers, Inc.	$ 24,593.89	$ 24,593.89
Fred Heinselman & Sons, Inc.	$0	$140,091.12
General Electric Company and Radio Corporation of America (RCA)	$217,574.69	$217,574.69
General Metalcraft, Inc.	$0	$140,091.12

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II	COMBINED AMOUNT INTO PHASES I & II
The Gilbert Spruance Company	$187,119.09	$187,119.09
Gimbels Bros., Inc. (BATUS, Inc.)	$ 30,865.71	$ 30,865.71
Gold Cooperage, t/a Prospect Industries	$ 27,234.45	$ 27,234.45
Hatco Corporation	$ 48,818.41	$ 48,818.41
Hercules Incorporated	$ 50,520.13	$ 50,520.13
Hoffman-La Roche Inc.	$ 20,256.88	$ 20,256.88
The Hospital of the Philadelphia College of Osteopathic Medicine	$ 28,396.45	$ 28,396.45
International Flavors & Fragrances, Inc.	$0	$140,091.12
Kerr Group, Inc.	$149,365.97	$149,365.97
Kirschner Brothers Oil Co.	$ 46,480.13	$ 46,480.13
KTK Steel Drum Corp.	$0	$140,091.12
Louderback Transportation Company	$ 34,875.78	$ 34,875.78
M.A. Bruder & Sons, Incorporated	$ 15,013.08	$ 15,013.08
Magid Corporation	$ 36,321.06	$ 36,321.06
Mallinckrodt Baker, Inc. (formerly J.T. Baker Inc.)	$ 63,830.82	$ 63,830.82
Mannington Resilient Floors, Division of Mannington Mills, Inc.	$150,860.41	$290,951.53
Marisol, Inc.	$ 72,231.56	$212,322.68
Matlack, Inc.	$ 51,013.61	$ 51,013.61
McCorquodale Color Card, Inc.	$ 60,112.20	$ 60,112.20
Merck & Co., Inc.	$ 19,976.01	$160,067.13
Michael's Industrial Disposal	$ 27,234.45	$ 27,234.45

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II	COMBINED AMOUNT INTO PHASES I & II
Service		
Mobil Oil Corporation	$ 19,173.05	$ 19,173.05
Monsanto Company	$0	$140,091.12
Moore Products Co.	$0	$140,091.12
National Vulcanized Fibers	$182,606.64[3]	$322,697.76
News America Publications, Inc. (formerly known as Triangle Publications)	$0	$560,364.46
New York Twist Drill/Drico, Inc. and any parent, subsidiary or related corporations, affiliated entities, and any agents, servants, officers, directors, shareholders, partners, employees, attorneys, representatives, predecessors, successors and assigns	$155,544.94	$155,544.94
Occidental Chemical Corporation on behalf of itself and on behalf of Parker Chemical Company	$0	$140,091.12
PECO Energy Company (f/k/a Philadelphia Electric Company)	$173,175.94	$173,175.94
Penn Petroleum Products Co., Inc.*	$0	$0
Pfizer Inc., together with its past and present division, subsidiaries, parents and affiliates as well as the past and present shareholders,	$ 88,814.00	$228,905.12

[3] NVF has signed the Consent Decree and committed to the settlement. As of September 27, 1996, the settlement monies have not been tendered. NVF is currently in bankruptcy. Its share must be tendered by the Payment Date under the Consent Decree, with 4% interest from July 19, 1996.

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II	COMBINED AMOUNT INTO PHASES I & II
officers, directors and employees of each of them.		
Philadelphia Newspapers, Inc.	$0	$140,091.12
Public Service Electric and Gas Company	$0	$140,091.12
Reagent Chemical & Research, Inc.	$ 17,212.17	$ 17,212.17
Reliance Insurance Company	$ 23,071.72	$ 23,071.72
Rhone-Poulenc Inc. formerly known as Rhodia Inc.	$ 68,608.68	$ 68,608.68
Rollins Environmental Services (NJ) Inc.	$ 36,219.90	$176,311.02
Sandoz Chemicals Corporation	$0	$560,364.46
Sears, Roebuck and Co.	$ 35,247.46	$ 35,247.46
Sequa Corporation on behalf of General Printing Ink	$0	$140,091.12
Texaco Inc.	$0	$140,091.12
The Sherwin-Williams Company	$207,585.53	$207,585.53
Tyco Industries, Inc.	$0	$140,091.12
Unisys Corporation on its own behalf and on behalf of Ford New Holland, Inc., successor to the New Holland Division of Sperry Corporation	$185,181.47	$185,181.47
Vineland Chemical Co., Inc.	$ 34,382.83	$314,565.06
W.R. Grace & Co. Conn.	$0	$140,091.12
Westinghouse Electric Corp.	$ 99,958.40	$ 99,958.40
Weyerhaeuser Company	$ 26,479.29	$ 26,479.29
Witco Corporation	$ 57,649.34	$ 57,649.34

ATTACHMENT "E" (GENERATORS)

PARTY	RAW AMOUNT INTO PHASE II	COMBINED AMOUNT INTO PHASES I & II
Wyeth Laboratories, Inc., together with its past and present divisions, subsidiaries, parents and affiliates as well as the past and present shareholders, officers, directors and employees of each of them and Ekco Products Inc. together with its past and present divisions, subsidiaries, parents and affiliates as well as the past and present shareholders, officers, directors and employees of each of them	$176,217.09	$316,308.21

Net Principal Amount into Phase II Trust:

$2,250,000.00*

Amount Including Interest into Phase II Trust:

$2,259,967.46*

---

* Denotes Late Settlor. By agreement of parties, funds were paid outside of the Phase II Trust and distributed to the Liaison Groups.

** Amounts include $182,606.64 plus Interest Not Yet Tendered by NVP

APPENDIX E - MUNICIPALITIES GROUP PAYMENTS

	ENTITY	ASSESSMENT	TAX ID
1.	Ancora Psychiatric Hospital	$14,285.72	21-6000928 - 62
2.	Asbury Park Board of Education	$14,285.72	21-6000111
3.	Atlantic City, City of	$14,285.72	21-6000040
4.	Audubon Board of Education	$14,285.72	21-6000119
5.	Audubon, Borough of	$63,112.00	21-6000059
6.	Audubon Mutual Housing Corp	$25,000.00	22-2190170
7.	Audubon Park Board of Education	$14,285.72	21-6004467
8.	Bellmawr, Borough of	$100,403.00	21-6000079
9.	Berlin, Borough of	$25,000.00	21-6000085
10.	Beverly City Board of Education	$14,285.72	21-6000134
11.	Bordentown Regional School District	$14,285.72	22-1734827
12.	Bridgeton Board of Education	$14,285.72	21-6000144
13.	Brooklawn, Borough of	$29,186.00	21-6000389
14.	Burlington, County of	$14,285.72	21-6000107
15.	Camden, City of	$443,181.72	21-6000418
16.	Camden, County of	$14,285.72	21-6000504
17.	Cherry Hill Township Board of Education	$14,285.72	21-6000181
18.	Cherry Hill, Township of	$123,978.72	21-6999523
19.	Chesilhurst, Borough of	$25,000.00	22-2069774
20.	Cinnaminson Board of Education	$14,285.72	21-6000275
21.	Clayton, Borough of	$25,000.00	21-6000475
22.	Clementon, Borough of	$38,810.00	21-6000477
23.	The College of New Jersey (formerly known as Trenton State College)	$14,285.72	2-2797398
24.	Collingswood, Borough of	$25,000.00	21-6000484

25.	Delaware, County of	$73,565.00	23-6003046
26.	Deptford Board of Education	$14,285.72	21-6000342
27.	East Windsor Regional School Board (incorrectly impleaded as Hightstown Board of Education)	$14,285.72	21-6000208
28.	Elk Board of Education	$14,285.72	21-6000251
29.	Evesham Township Board of Education	$14,285.72	21-6000238
30.	Gibbsboro Board of Education	$14,285.72	21-6000193
31.	Gibbsboro, Borough of	$87,241.00	21-6008131
32.	Glassboro Board of Education	$14,285.72	21-6000195
33.	Haddon Heights, Borough of	$124,983.00	21-6000677
34.	Haddonfield Board of Education	$14,285.72	21-6000200
35.	Haddonfield, Borough of	$25,000.00	21-6000681
36.	Hamilton Township Board of Education	$14,285.72	21-6000323
37.	Hamilton, Township of	$14,285.72	21-6000691
38.	Hammonton, Town of	$25,000.00	21-6000699
39.	Harrison Board of Education	$14,285.72	21-600261
40.	Highland Park Board of Education	$14,285.72	22-6001980
41.	Hi-Nella, Borough of	$25,000.00	22-2071024
42.	Laurel Springs, Borough of	$29,047.00	21-6000787
43.	Lawnside Board of Education	$14,285.72	21-6000224
44.	Lawnside, Borough of *	$39,842.00	21-6000789
45.	Lawrence Township Board of Education	$14,285.72	21-6000225
46.	Lindenwold, Borough of	$111,876.00	21-6000798
47.	Mannington Board of Education	$14,285.72	21-6000304
48.	Mantua, Township of	$14,285.72	21-6000825
49.	Maple Shade Board of Education	$14,285.72	21-6000234
50.	Maple Shade, Township of	$119,849.00	21-6000827

51.	Medford Lakes Board of Education	$14,285.72	21-6006178
52.	Middle Twp Bd of Ed	$14,285.72	21-6000158
53.	Millville City Board of Education	$14,285.72	21-6000248
54.	Monmouth, County of	$14,285.72	21-6000881
55.	Moorestown Board of Education	$14,285.72	21-6000252
56.	Moorestown, Township of	$14,285.72	21-6000896
57.	Mt. Ephraim, Borough of	$73,782.00	21-6000901
58.	Mount Laurel Board of Education	$14,285.72	21-6000240
59.	New Jersey Turnpike Authority	$14,285.72	22-6002951
60.	North Wildwood Board of Education	$14,285.72	21-6000268
61.	Oaklyn Board of Education	$14,285.72	21-6000269
62.	Oaklyn, Borough of	$40,994.00	21-6000950
63.	Ocean, County of	$14,285.72	21-6000954
64.	Palmyra, Borough of	$25,000.00	21-6000983
65.	Paulsboro Board of Education	$14,285.72	21-6000278
66.	Paulsboro, Borough of	$14,285.72	21-6000989
67.	Pennsauken Board of Education	$14,285.72	21-6000247
68.	Perth Amboy Board of Education	$14,285.72	22-6002208
69.	Perth Amboy, City of	$14,285.72	22-6002206
70.	Pine Hill Board of Education	$14,285.72	21-6000284
71.	Pine Hill, Borough of	$319,063.00	21-6001011
72.	Pitman Board of Education	$14,285.72	21-6000285
73.	Pitman, Borough of	$45,139.72	21-6001013
74.	Princeton Regional Schools	$14,285.72	22-1817947
75.	Riverside Board of Education	$14,285.72	21-6000297
76.	Rowan College of New Jersey (formerly known as Glassboro State College)	$14,285.72	22-2764819
77.	Runnemede, Borough of *	$168,483.00	21-6001081

78.	Salem City Board of Education *	$14,285.72	21-6000305
79.	Shrewsbury Board of Education	$14,285.72	21-6000315
80.	Somerdale, Borough of	$14,285.72	21-6001195
81.	Springfield Board of Education	$14,285.72	21-6000214
82.	Stafford Board of Education	$14,285.72	21-6000232
83.	Stratford, Borough of	$116,019.00	21-6005408
84.	Swedesboro, Borough of	$14,285.72	21-6001225
85.	Teaneck Board of Education	$14,285.72	22-6002337
86.	Trenton Psychiatric Hospital	$14,285.72	21-6000928 - 67
87.	Upper Darby, Township of	$72,801.00	23-6004593
88.	Upper Deerfield Board of Education	$14,285.72	21-6000308
89.	Vineland, City of	$14,285.72	21-6001670
90.	Voorhees, Township of	$143,505.00	21-0736046
91.	Washington Township of	$228,721.00	21-6001338
92.	Waterford, Township of	$119,156.00	21-6001341
93.	Wenonah, Borough of	$26,261.00	21-6001345
94.	West Windsor Board of Education	$14,285.72	22-1893736
95.	Wharton Board of Education	$14,285.72	22-6002410
96.	Wildwood, City of	$14,285.72	21 6001360
97.	Willingboro Board of Education	$14,285.72	21-6000132
98.	Woodbury Board of Education	$14,285.72	21-6000350
99.	Woodbury Heights, Borough of	$56,981.72	21-6001371
100.	Woodlynne Board of Education	$14,285.72	21-6000354
101.	Woodlynne, Borough of	$36,169.00	21-6001375

* The Borough of Lawnside, the Borough of Runnemede and the Salem Board of Education are pledged to contribute the amounts set forth above, but are currently making only partial payment as agreed to by the State of New Jersey, Department of Environmental Protection.

WILSON, ELSER, MOSKOWITZ, EDELMAN & DICKER
NEWARK, NJ

GEMS FEDERAL CLEANUP ACTION
TRANSPORTER GROUP SETTLEMENT LOG

EXHIBIT E

Transporter	Amount Paid
A&B Drum Company, Inc.	$283,475.52
ABC Detachable Container Inc.	$3,749.26
Ace Service Corporation	$29,219.84
Richard N. Alburger	$3,749.26
American Waste Removal, Inc.	$113,390.21
Atlantic Carting Corporation	$6,025.59
Atlantic Disposal Service, Inc. n/k/a ACR of South Jersey, Inc., its successors, subsidiaries, affiliates, and related companies together with its past, present and future owners, directors, officers, shareholders and employees	$18,992.90
N. Bantivoglio's Sons, Inc.	$6,025.59
Dan Bittner, Inc. & Dan Bittner	$12,720.70
Gus Bittner, Inc. & Gus Bittner	$11,406.98
Alice Brenner and Bernhard Brenner a/k/a Ben Brenner and/or d/b/a A.Brenner	$10,042.65
Albert Brewin	$6,025.59
Charles W. Castner	$18,749.26
Stuart A. Cathcart t/a William A. Cathcart & Son	$3,749.26
Central Jersey Disposal Co., Inc.	$263,390.21
Crispin Brothers Rubbish Removal	$3,749.26
Daeche & Co., Inc, its successors, subsidiaries, affiliates, and related companies together with its past, present and future owners, directors, officers, shareholders and employees	$3,749.26
Dolan Demolition Contractors, Inc.	$12,720.71

Transporter	Amount Paid
Thomas M. Durkin & Sons, Inc., its successors, subsidiaries, affiliates, and related companies together with its past, present and future owners, directors, officers, shareholders and employees	$11,406.98
BFI of Port Richmond, Inc. formerly American Waste-A-Way Corp., successor to Eastern Industrial Corp.	$12,051.19
F.H. Carting Company, Inc./Frederick G. Harrison, Jr.	$15,171.84
R. Fanelle's Sons a/k/a R. Fanelle's Sons Inc. formerly known as Rocco Fanelle's Sons	$15,000.00[1]
Marilyn Clyde, t/a Garden State Removal Co.	$31,025.59
Geppert Bros., Inc.	$18,992.90
Gloucester Township MUA	$0
Globe Disposal Company, Inc./Ogden Waste Removal Co./ Waste Techniques Corp.	$9,103.10
Grill Corp.	$49,289.58[2]
Haines & Kibblehouse	$6,025.59
Robert Hargrove Enterprises	$50,000.00
W. Hargrove Demolition Co.	$12,988.50
John Harrington	$15,000.00
Haulroads, Inc.	$36,000.00
Robert Hawthorne, Inc.	$12,720.70
H.J. Homan Company, Inc.	$164,193.69
A.L. Hyde Company	$103,347.55
Jones & Johnson Enterprises, Inc./Disposal Corporation of America, Inc.	$6,025.59
Frank Kanopka/Richard's Rubbish Removal	$3,749.26

---

[1] Pursuant to agreement of counsel, these settlement funds will be put into trust to be divided amongst the groups, with the check made payable to Carpenter, Bennett & Morrissey, liaison counsel for the generators.

[2] Grill Corp. has signed the Consent Decree and committed to the settlement. As of September 30, 1996 the settlement monies have not been tendered. Grill Corp. is currently in bankruptcy. Its share must be tendered by the payment date under the Consent Decree, with 4% interest from July 19, 1996.

Transporter	Amount Paid
Kasper Brothers Inc.	$12,720.70[3]
Frank Kull, Inc., its successors, subsidiaries, affiliates, and related companies together with its past, present and future owners, directors, officers, shareholders and employees	$104,017.06
William Lawrenson/William Lawrenson, Jr. Inc.	$5,690.84
Herman Liedtka, Inc.	$8,703.63
Manor Care, Inc. and Portfolio One as successor by merger to Almo Anti-Pollution Services Corp. and Almo Tank Cleaning and Maintenance Co., as well as Manor Care Inc. and Portfolio One's successors, subsidiaries, affiliates, and related companies together with Manor Care and Portfolio One's predecessor, affiliated companies, their past, present and future owners, directors, officers, shareholders and employees	$49,336.58
A. Marianni's Sons, Inc.	$6,025.59
A.J. Mitchell, A.J. Mitchell d/b/a Mitchell's Waste Removal and /or Mitchell's Waste Removal, its successors, subsidiaries, affiliates, and related companies together with its past, present and future owners, directors, officers, shareholders and employees	$12,720.70
Mobile Dredging & Pumping Co.	$162,951.19
Modern Way Refuse Container Service, Inc.	$45,515.52
Paul C. Murphy, Inc. (Now named BFI of Mt. Laurel, N.J., Inc.) a New Jersey Corporation	$3,749.26
New Deal Lumber and Millwork Co., Inc., of NJ	$18,749.26
Northeast Disposal Co. Inc.	$ 3,749.26
Arthur J. Ogren, Inc.	$ 3,749.26
William Pecarsky Co.	$ 6,025.59[4]
V. Ponte & Sons Inc.	$11,406.98
Orville Reagle	$3,749.26

[3] This amount does not include the court ordered 4% penalty assessed for payment after July 19, 1996. Kasper paid a $42.47 penalty which was wired to the trust.

[4] William Pecarsky still owes 4% interest.

Transporter	Amount Paid
Reimer Sanitary Rubbish Removal/William Reimer	$6,025.29
Samuel H. Jones, Jr. Individually and T/A S-J Transportation Company and/or T/A S-J Leasing Company	$300,000.00[5]
Simon Wrecking Co., Inc.	$18,749.26
Son Don, Inc.	$3,749.26
Mike Spano & Sons / Mike Spano & Sons, Inc.	$3,749.26
Victory Brick & Block	$10,000.00[6]
Waste Management, Inc., on behalf of itself and all of its affiliates, subsidiaries or related entities, including, but not limited to, Instant Disposal Service Northeast Disposal Company, Inc., Nu-Way Trash Removal Corp., O'Connor Corp., Penn Sanitation, SCA Services, Inc., Tri-County Hauling, Waste Disposal, Schiavo Brothers Inc., and Waste Automation Corp.	$113,788.80
Waszen Container Service, its successors, subsidiaries, affiliates, and related companies together with its past, present and future owners, directors, officers, shareholders and employees	$3,749.26
William D. Wynne Contractors, Inc.	$24,905.78

[5] $75,000.00 of S.J. Transportation's contribution will go to J. Heppard pursuant to prior agreement.

[6] Pursuant to agreement of counsel, these settlement funds will be put into trust to be divided amongst the groups, with the check made payable to Carpenter, Bennitt & Morrissey, liaison counsel for the generators.

Transporter	Amount Paid
TOTAL PRINCIPAL PAID BY TRANSPORTER GROUP	$2,176,412.56[7]
TOTAL INTEREST PAID	$9,084.22
TOTAL PRINCIPAL AND INTEREST PAID BY TRANSPORTER GROUP	$2,185,496.78

[7] This amount represents the "Principal Amount paid into Phase II" by the transporter group. The true total amount of all individual contributions in Exhibit E is actually $2,175,412.12, not including interest payments. The forty-four cent (.44) discrepancy is due to a mathematical error where William Reimer paid thirty cents (.30) less than its allocated share to the GEMS Phase II Trust, plus rounding issues. William Lawrenson Jr.'s check in the amount of $948.46 was returned to our offices because of a error by the bank. Lawrenson will remake a check in the amount of $ 948.46. Because a surplus exists, this amount was included in the overall payment of $2,185,496.78. The transporter group will share in a rebate proportional to the amount they settled for in GEMS Phase II. Lawrenson will not receive a rebate attributable to the $948.46. Reimer will likewise have to contribute an additional thirty cents (.30). Other than these issues, the overall payments for Phase II are proportional.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
290 BROADWAY
NEW YORK, NEW YORK 10007-1866

CONFIDENTIAL
ATTORNEY WORK-PRODUCT
ATTORNEY-CLIENT PRIVILEGED
PREDECISIONAL/DELIBERATIVE
CONFIDENTIAL SETTLEMENT
COMMUNICATION

NOV 18 1996

EXPRESS MAIL

Alex Beehler, Esq.
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice, 11th Floor
1425 New York Avenue, N.W.
Washington, D.C. 20005

Re: GEMS Superfund Site: NJDEP v. GEMS, et al.

Dear Alex:

Enclosed are what appear to be original, signed copies of the two Trust Agreements for attachment to the GEMS decree. Although you were copied on Keith Lynott's cover letter for these, I am forwarding these originals to you for attachment to the decree which will be lodged.

I have reviewed these documents and have several comments, which I would like to discuss with you before we accept these for lodging of the decree. Please call me at (212) 637-3139 when you receive this letter. Thanks.

Sincerely,

William C. Tucker
Assistant Regional Counsel
New Jersey Superfund Branch

encl.

cc: Sharon Atkinson, ERRD (w/encl.)

McCARTER & ENGLISH

MEMORANDUM

TO: Persons on Attached Distribution List

FROM: Keith E. Lynott

DATE: November 13, 1996

RE: GEMS Phase II Trust Agreements

Enclosed are executed copies of the following documents:

1. GEMS Phase II Trust Agreement; and
2. GEMS Phase II De Minimis Trust Agreement.

K.E. Lynott

RECEIVED

NOV 1 5 1996

DISTRIBUTION LIST

Alex Beehler, Esq.	by Federal Express
William C. Tucker, Esq.	by Federal Express
Edward Devine, Esq.	by Federal Express
Robert V. Paschon, Esq.	by Federal Express
John A. Yacovelle, Esq.	by Federal Express
John F. Lynch, Jr., Esq.	by hand
John D. Goldsmith, Esq.	by hand
Steven P. Picco, Esq.	by Federal Express
Jeffrey P. Heppard, Esq.	by Federal Express
Barbard Hopkinson, Esq.	by hand
John S. Fitzpatrick, Esq.	by Federal Express
Maria J. Dittmar, Esq.	by hand

MESB:670468.1

GEMS PHASE II DE MINIMIS TRUST AGREEMENT

This GEMS Phase II De Minimis Trust Agreement ("Agreement"), entered into as of October 1, 1996 by and between the De Minimis Settling Defendants, through their respective Liaison Counsel, and the Trustees, as such parties are hereinafter defined.

WHEREAS, the De Minimis Settling Defendants have entered into a Consent Decree with the United States and the State pursuant to which the Settling Defendants have agreed to finance (or, in the case of the Reopener Settling Defendants, to finance and perform) certain response actions at the Site, to reimburse the United States and the State for certain response costs incurred or to be incurred in the future, to provide full and final compensation for any natural resource damages associated with the Site and to resolve claims arising from payments made or to be made by the State from the Spill Compensation Fund or the Sanitary Landfill Facility Closure and Contingency Fund;

WHEREAS, the Parties to the Consent Decree have agreed that the De Minimis Settling Defendants meet the criteria set forth in Section 122(g) of CERCLA authorizing de minimis settlements and the settlement embodied in the Consent Decree is intended to be a final settlement of all future claims involving the De Minimis Settling Defendants;

WHEREAS, under applicable law, (i) the Consent Decree must be lodged with the Court for a period of at least thirty (30) days during which the public is permitted to comment upon the Consent Decree; and (ii) upon the motion of the United States and approval by the Court, the Consent Decree may thereafter be entered by the Court;

WHEREAS, the De Minimis Settling Defendants agreed to establish this De Minimis Trust prior to the time of lodging of the Consent Decree and to pay into the De Minimis Trust certain funds as described more fully in Appendix E to the Consent Decree, which funds, and all earnings and profits thereon, less any payments and distributions made by the Trustees pursuant to this Agreement, shall be used, upon the entry of the Consent Decree, for the purposes set forth in the Consent Decree, including without limitation, Paragraph 48 thereof;

WHEREAS, the De Minimis Settling Defendants, acting through their duly authorized liaison counsel, have designated four Trustees, and the Trustees are willing to act as Trustees as provided under this Agreement;

NOW, THEREFORE, the De Minimis Settling Defendants and the Trustees agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) All capitalized terms used but not defined herein shall have the same meaning given to them in the Consent Decree.

(b) The term "Trustees" means the Trustees designated by the De Minimis Settling Defendants as provided herein, including any successor Trustees. The names, addresses and titles of the Trustees are:

(i) Robert V. Paschon, Esq.
Paschon & Feurey
954 Route 166
Toms River, New Jersey 08653-6562

(ii) John F. Lynch, Jr., Esq.
Carpenter, Bennett & Morrissey
Three Gateway Center
Newark, New Jersey 07102-4079

(iii) Steven J. Picco, Esq.
Picco Herbert Kennedy
50 West State Street
P.O. Box 1388
Trenton, New Jersey 08607

(iv) John A. Yacovelle, Esq.
8438 Mackall Road
St. Leonard, Maryland 20685

(c) The term "Beneficiaries" means the United States and the State.

Section 2. Name and Purpose of the De Minimis Trust. This De Minimis Trust shall be known as the GEMS Site Phase II De Minimis Trust. The purpose of this De Minimis Trust is to obtain, hold, invest, and disburse funds necessary to satisfy the obligations of the De Minimis Settling Defendants pursuant to the Consent Decree. The purpose of this De Minimis Trust is limited to the matters set forth in this Agreement, and this Agreement shall not be construed to confer upon the Trustees any authority to carry on any business or activity for profit or to divide the earnings and profits on the Trust Funds among the De Minimis Settling Defendants (except as specifically set forth herein).

Section 3. Establishment of the De Minimis Trust. The De Minimis Settling Defendants and the Trustees hereby establish a Trust, in an amount equal to the initial contributions of the De Minimis Settling Defendants (the "Initial Total Contribution"), as reflected on Appendix E to the Consent Decree, for the benefit of the United States and the State. The Initial

Total Contribution, together with all earnings and profits thereon, less any payments or distributions made by the Trustees pursuant to this Agreement, are referred to herein as the "Trust Funds." The Trustees agree to hold such Trust Funds In Trust as hereinafter provided. Contributions made or to be made by the De Minimis Settling Defendants shall not be construed as fines, penalties or monetary sanctions. The De Minimis Settling Defendants and the Trustees intend that no third party shall have access to the Trust Funds.

Section 4. Designation of the Trustees; Governance. There shall be four (4) Trustees. Each Trustee shall have one (1) vote. The Trustees shall take action only upon the majority vote of all Trustees then in office. Any action may be taken by the Trustees without a meeting if all the Trustees then in office consent to the action in writing and such written consents are filed with the records of the Trustees. Any actions taken by the Trustees shall be reflected in a written resolution, which resolution shall be signed by all Trustees in accordance with their vote on the issue, provided, however, that it shall not be necessary for the resolution to be executed prior to action being taken. In the event that the Trustees are deadlocked on any issue, they shall promptly submit the dispute to a disinterested neutral party, not a sitting judicial officer, selected by the United States District Court for the District of New Jersey for resolution. Said submission shall be in writing and may be accompanied by affidavits and other supporting papers. In no event, however, shall the resolution of any given issue include the presentation of live testimony, or include a plenary hearing. The disinterested neutral party's resolution of the issue shall be made in writing, within twenty (20) calendar days of the submission and shall be binding. The foregoing notwithstanding, nothing contained in this Section 4 shall prohibit a majority of the Trustees from determining to apply to the Court for resolution of any such dispute.

Section 5. Payments to the United States and the State Under the Consent Decree; Reimbursement Payments; Refund Payment.

(a) Within thirty (30) days of the effective date of the Consent Decree (as such term is defined in the Consent Decree) (the "Payment Date"), the Trustees shall make the payments required by Paragraph 48(b)(i-v) of the Consent Decree from the Trust Funds. Such payments shall be made first from the Trust Funds contributed by the De Minimis Settling Defendants pursuant to this Agreement and then, to the extent necessary, from the funds contributed by the Reopener Settling Defendants pursuant to the GEMS Phase II Trust Agreement.

(b) The foregoing notwithstanding, in the event the Consent Decree is not entered by the Court before April 1, 1997, the Trustees shall distribute to the De Minimis Settling

Defendants, on a quarterly basis, eighty percent (80%) of all earnings on the Trust Funds that accrue on and after April 1, 1997 through the date of termination of this Agreement or the Payment Date (the "Periodic Reimbursement Payments"). Each group of De Minimis Settling Defendants shall receive a percentage of the Periodic Reimbursement Payment equal to the percentage of the Initial Total Contribution paid by that group, as reflected on Appendix E to the Consent Decree. Payments to the De Minimis Settling Defendants pursuant to this Section 5(b) shall be made, by group, through the groups' respective liaison counsel at the addresses set forth in Section 19 of this Agreement within thirty (30) days of the close of each calendar quarter following April 1, 1997 (e.g., by July 30, 1997, for the calendar quarter ended June 30, 1997).

(c) The foregoing notwithstanding, within ninety (90) days of receipt of written notice given by the De Minimis Settling Defendants (or any of them) that the Consent Decree will not be entered, has terminated or is otherwise void as a result of (i) a determination by the United States pursuant to Paragraph 113 of the Consent Decree or otherwise to withhold its consent to the Consent Decree; (ii) a determination by the Court pursuant to Paragraph 114 of the Consent Decree or otherwise not to enter the Consent Decree (or to vacate the entry of the Consent Decree); or (iii) the Consent Decree is not lodged or entered by the Court by January 1, 1998, and the De Minimis Settling Defendants are able to withdraw from the Consent Decree, the Trustees shall refund the Trust Funds to the De Minimis Settling Defendants ("Refund Payment") and this Agreement shall terminate. Each group of De Minimis Settling Defendants shall receive a percentage of the Refund Payment equal to the percentage of the Initial Total Contribution paid by that group, as reflected on Appendix E to the Consent Decree. Payments to the De Minimis Settling Defendants pursuant to this Section 5(c) shall be made, by group, through the groups' respective liaison counsel at the addresses set forth in Section 19 of this Agreement.

Section 6. Grantor Trust Status, Taxpayer Identification Number, Tax Returns and Expenses.

(a) The parties intend that the De Minimis Trust shall be treated as an "environmental remediation trust" for purposes of the Internal Revenue Code of 1986, as amended, and the related Treasury Regulations. Accordingly, each De Minimis Settling Defendant shall be treated as the owner of its pro rata share of the De Minimis Trust, and each De Minimis Settling Defendant shall be responsible for the payment of all federal, state and local income taxes attributable to income earned from its interest in the De Minimis Trust (as reflected on the grantor statements described below).

(b) The Trustees shall obtain a taxpayer identification number for the De Minimis Trust and shall be responsible for the preparation of all tax returns for the De Minimis Trust, including a Federal Form 1041, U.S. Income Tax Return for Estates and Trusts, and a New Jersey Form NJ-1041, Gross Income Tax Fiduciary Return, upon which the Trustees shall designate the De Minimis Trust as a "grantor type trust." On or before March 15 of each year, the Trustees shall prepare and distribute to each of the De Minimis Settling Defendants a grantor statement of income, deductions and credits with respect to the immediately preceding calendar year for each of the De Minimis Settling Defendants based upon its percentage ownership interest in the De Minimis Trust. The grantor statements prepared by the Trustees shall be attached to the applicable tax returns filed by the Trustees on behalf of the De Minimis Trust. Each of the De Minimis Settling Defendants shall be severally responsible for the payment of its own tax liability, if any, in respect of the De Minimis Trust, which shall be based upon its grantor statement.

(c) All expenses, other than taxes, incurred by the Trustees in connection with the administration of this De Minimis Trust, including fees for services rendered to the Trustees, shall be paid directly from Trust Funds (and reflected proportionately on the grantor statements prepared by the Trustees).

Section 7. Powers of the Trustees and Trust Fund Management.

(a) In the administration of the De Minimis Trust, the Trustees shall, to the greatest extent possible, invest and reinvest the Trust Funds in secure investments, such as, but not limited to, Treasury certificates and Treasury bills of the United States, provided however, that the Trustees shall maintain sufficient liquidity of the assets of the Trust in secure accounts to permit such payments as are required to be made pursuant to this Agreement and the Consent Decree. The Trustees shall invest and reinvest the principal and income of the De Minimis Trust and keep the De Minimis Trust invested as a single fund, without distinction between principal and income.

(b) Each Trustee does hereby contract, agree, and covenant that he will administer the De Minimis Trust in the manner provided in this Agreement. In investing, reinvesting, exchanging, selling and managing the Trust Funds, the Trustees shall discharge their duties with respect to such Trust Funds solely in the interest of the De Minimis Settling Defendants and the Beneficiaries and for the accomplishment of the purposes and objectives of this Agreement and with the care, skill, prudence and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with

such matters, would use in the conduct of an enterprise of a like character and with like aims. The Trustees may engage the services of an investment advisor or manager, may rely on the advice of such advisor or manager, and may delegate investment decision-making authority to such advisor or manager with respect to management of the Trust Funds. The Trustees shall not be personally liable for any action or inaction taken in good faith reliance on the advice of such advisor or manager, nor for delegation in good faith of investment decision-making authority to such advisor or manager.

Section 8. Other Express Powers of the Trustees. This Agreement shall be construed to confer upon the Trustees all powers and authority necessary to administer the De Minimis Trust. Without in any way limiting the powers and discretion conferred upon the Trustees by the other provisions of this Agreement or by law, the Trustees are expressly authorized and empowered:

(a) To incur and pay any and all reasonable charges, taxes and expenses upon or connected with the De Minimis Trust in the discharge of their fiduciary obligations under this Agreement. All such payments shall be made using the assets of the De Minimis Trust.

(b) To hold and retain all or any part of the Trust Funds in the form in which such funds may be received by the Trustees, as long as they shall deem such action to be advisable, notwithstanding that the same may not be authorized by the laws of any state or rules of any court for the investment of trust funds, and without any liability for any loss of principal or income by reason of such retention.

(c) Notwithstanding any other provision in this Agreement, to at all times hold, manage, invest, and reinvest the assets of the Fund in a manner designed to preserve the accrued income and principal of the De Minimis Trust for the purposes of the De Minimis Trust.

(d) To engage the services of (and pay reasonable compensation to) an investment advisor, accountants, agents, managers, or other consultants with respect to the management of investments of the De Minimis Trust, the management of the De Minimis Trust, or any other matters.

(e) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers granted to the Trustees pursuant to this Agreement.

(f) To renew or extend the time of payments of any obligation payable to or by the De Minimis Trust for such periods of time and on such terms as the Trustees shall determine.

(g) To institute and defend litigation in the name of the De Minimis Trust and to compromise or otherwise adjust all claims in favor of or against the De Minimis Trust.

(h) To make, execute, acknowledge and deliver any and all contracts or agreements necessary to fulfill the purposes or accomplish the objectives of this Agreement.

(i) To do any and all other acts which they shall deem proper to effectuate the purposes of this Agreement and to exercise the powers specifically conferred upon them by this Agreement.

Section 9. Additional Duties of the Trustees. Notwithstanding anything herein to the contrary, the Trustees are hereby directed to do the following in addition to the duties set forth in other provisions of this Agreement:

(a) Prior to the entry of the Consent Decree, the Trustees shall prepare or cause to be prepared quarterly financial reports describing the manner in which all of the assets of the De Minimis Trust are then invested and the current market value of such assets, as well as the obligations, income, and expenses of the De Minimis Trust. The Trustees shall provide copies of such reports in the manner set forth in Section 19 of this Agreement to the Settling Defendants.

(b) During the term of the De Minimis Trust, the Trustees shall, within sixty (60) days following the close of any calendar year, prepare or cause to be prepared an annual financial statement with respect to such immediately preceding calendar year describing the income, deductions, credits, investments and disbursements of the De Minimis Trust for such period, including the market value of such assets for such period. All annual financial statements shall be prepared on an accrual basis, and shall be in accordance with Generally Accepted Accounting Principles, applied on a consistent basis. The Trustees shall provide copies of such statements to the Settling Defendants in the manner set forth in Section 19 of this Agreement.

(c) The Trustees shall maintain or cause to be maintained records of all actions taken by the Trustees with respect to matters arising out of this Agreement or the administration of the De Minimis Trust. The Trustees shall provide copies of such records to the Settling Defendants upon request. Upon termination of this Trust, the Trustees shall transmit copies of such records, together with all other records

of the Trustees relating to the De Minimis Trust, to the Settling Defendants.

Section 10. Advice of Counsel. The Trustees may from time to time consult with counsel, who may be counsel to the Settling Defendants, or any of them, with respect to any questions arising as to the construction of this Agreement, the construction of or compliance with the Consent Decree or any action to be taken hereunder or thereunder. The Trustees shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustees shall not be entitled to compensation from the De Minimis Trust for their services hereunder.

Section 12. Successor Trustees. A Trustee or Trustees may resign by delivery of his/her resignation in writing to each group of De Minimis Settling Defendants in the manner specified in Section 19 of this Agreement, with a copy of such resignation to each group of Reopener Settling Defendants. The De Minimis Settling Defendants may replace a Trustee or Trustees by delivery of notice in writing of such removal to such Trustee or Trustees in the manner specified in Section 19 of this Agreement, with a copy of such notice to the Reopener Settling Defendants. The foregoing notwithstanding, any such resignation or replacement shall not be effective until the De Minimis Settling Defendants have appointed a successor Trustee or Trustees and this successor accepts the appointment. If for any reason the De Minimis Settling Defendants cannot or do not act in the event of the resignation of a Trustee or Trustees within sixty (60) days of receipt of a written resignation, the remaining Trustees may apply to the United States District Court for the District of New Jersey for the appointment of a successor Trustee or Trustees or for instruction. Acceptance of appointment as a successor Trustee shall be in writing delivered to the De Minimis Settling Defendants and the present Trustees in the manner specified in Section 19 of this Agreement, with a copy of such notice to the Reopener Settling Defendants. The successor Trustee shall specify the date on which he/she assumes administration of the De Minimis Trust in such writing. Upon the acceptance of appointment by any successor Trustee, title to the Trust Funds shall thereupon be vested in said successor Trustee, jointly with the remaining Trustees, if any, without the necessity of any conveyance or instrument. Each successor Trustee shall have all of the rights, powers, duties, authority, and privileges of a Trustee as if initially named as a Trustee hereunder. A copy of each instrument of resignation, removal, appointment and acceptance of appointment shall be attached to an executed counterpart of this Agreement in the custody of the liaison counsel for the Generators group of De Minimis Settling Defendants. Any expense incurred by the Trustees as a result of

any of the acts contemplated by this Section 12 shall be paid as provided in Section 6(c) of this Agreement. The De Minimis Settling Defendants shall give notice to the United States and the State of any replacement of a Trustee or Trustees in the manner and within the time provided by Paragraph 43(a) of the Consent Decree.

Section 13. Amendment to Agreement. This Agreement may be amended, altered or revoked from time to time by an instrument in writing executed by the De Minimis Settling Defendants, the United States and the State.

Section 14. Irrevocability and Termination. Subject to the right of the parties hereto to amend this Agreement, as provided in Section 13 hereof, this De Minimis Trust shall be irrevocable and shall continue until terminated. This De Minimis Trust shall terminate automatically (i) upon the distribution by the Trustees of all of the assets of the De Minimis Trust pursuant to Paragraph 48 of the Consent Decree and Section 5(a) of this Agreement; or (ii) pursuant to Section 5(c) of this Agreement. Upon termination of this De Minimis Trust pursuant to Section 5(c) of this Agreement, the Trustees shall liquidate the assets of the De Minimis Trust and thereupon distribute the remaining trust property, less any final expenses of the De Minimis Trust, to the De Minimis Settling Defendants in the manner set forth in Section 5(c) of this Agreement.

Section 15. Immunity and Indemnification. The Trustees and any successor Trustees shall not incur personal liability of any nature in connection with any act or omission, taken or performed in good faith, in the administration of this De Minimis Trust or in carrying out any directions by the De Minimis Settling Defendants, the United States or the State issued in accordance with this Agreement. The Trustees and any successor Trustees shall be indemnified and saved harmless by the Generators group of De Minimis Settling Defendants and the De Minimis Trust from and against any personal liability (including, without limitation, reasonable attorney's fees and costs of defense) to which the Trustees may be subjected by reason of any alleged or actual act, conduct, or failure to act in their official capacity, taken or performed in good faith. The parties to this Agreement acknowledge that funds contributed to the settlement that is reflected in the Consent Decree by or on behalf of R. Fanelle's Sons, Victory Brick & Block Co., Penn Petroleum Co. and Chicago Bridge & Iron Co. will be rebated to the groups of Settling Defendants ("Rebate Funds") in the manner agreed upon by such groups. The Liaison Counsel for the Transporters group of De Minimis Settling Defendants and the Municipalities group of De Minimis Settling Defendants shall recommend to their respective groups that such groups agree to contribute to the De Minimis Trust, out of the share of Rebate Funds due to such groups, funds sufficient to enable the Trustees

to purchase a policy or policies of errors and omissions insurance covering the Trustees (or successor Trustees) for actions taken or performed in good faith while in office, with limits of coverage not to exceed the principal amount contributed by such groups to the settlement as reflected on Appendix E to the Consent Decree. In the event the foregoing groups of De Minimis Settling Defendants decline to contribute their respective shares of Rebate Funds to the De Minimis Trust for the purposes set forth in the preceding sentence, the Rebate Funds paid to such groups are insufficient to purchase the insurance described in the preceding sentence, or the Trustees are otherwise unable to procure such insurance, the Trustees may apply to the Court for further direction with respect to the subject matter of this Section 15. In the event of such application to the Court, the Liaison Counsel for such groups of De Minimis Settling Defendants shall hold any Rebate Funds received by them pending the issuance of instructions by the Court.

Section 16. Binding Effect. This Agreement shall be binding upon the parties hereto and their successors and permitted assigns.

Section 17. Interests Not Transferable or Assignable or Subject to Claims of Creditors.

The interest of the De Minimis Settling Defendants herein is not transferable, except to a successor trust, corporation or corporations, and any such transferee corporation shall assume the obligations of the transferring De Minimis Settling Defendant by executing such documents as the Trustees may require. The interest of any De Minimis Settling Defendant in the Trust Funds shall not be subject to anticipation or assignment, nor subject to the claims of any creditor of any De Minimis Settling Defendant, and any interest reserved to any De Minimis Settling Defendant shall be made available to the De Minimis Settling Defendant only upon termination of this Trust pursuant to Section 5(c) of this Agreement.

Section 18. Entire Agreement. This Agreement sets forth the entire agreement between the parties hereto with respect to the subject matter hereof. If any of the terms and provisions of any other agreement (excluding any amendment to this Agreement) between any of the Parties hereto conflict or are inconsistent with any of the terms and provisions of this Agreement, the terms and provisions of this Agreement shall govern and control in all respects.

Section 19. Notices.

(a) Any notice or other communication to any party hereto or to the State or the United States or to the Reopener

Settling Defendants pursuant to any provision of this Agreement shall be effective only if it is in writing and if delivered personally, by facsimile, or mailed, postage prepaid, registered mail, return receipt requested, addressed as follows:

If to the Trustees:

Robert V. Paschon, Esq.
Paschon & Feurey
954 Route 166
Toms River, NJ 08653-6562

Telephone No.: 908-341-3900
Facsimile No.: 908-505-8711

John A. Yacovelle, Esq.
8438 Mackall Road
St. Leonard, Maryland 20685

Telephone No.: 410-586-0524
Facsimile No.: 410-586-0524

John F. Lynch, Jr., Esq.
Carpenter, Bennett & Morrissey
Three Gateway Center
Newark, New Jersey 07102-4079

Telephone No.: 201-622-7711
Facsimile No.: 201-622-5314

Steven J. Picco, Esq.
Picco Herbert Kennedy
50 West State Street
P.O. Box 1388
Trenton, New Jersey 08607

Telephone No.: 609-393-2400
Facsimile No.: 609-393-2475

If to the United States:

EPA Project Coordinator--GEMS
Superfund Site
Emergency & Remedial Response
Division
United States Environmental
Protection Agency
Region II, 19th Floor

290 Broadway
New York, NY 10007

Telephone No.: 212-637-4426
Facsimile No.: 212-637-4393

Chief, Environmental Enforcement
Section
Environment and Natural Resources
Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044
Re: DOJ # 90-11-2-292A

Telephone No.: 202-514-4353
Facsimile No.: 202-514-0097

Chief, New Jersey Superfund Branch
Office of Regional Counsel
United States Environmental
Protection Agency
Region II, 17th Floor
290 Broadway
New York, NY 10007
Attn: GEMS Superfund Site Attorney

Telephone No.: 212-637-3118
Facsimile No.: 212-637-3096

If to the State:

Edward Devine, Esq.
Deputy Attorney General
State of New Jersey
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
25 Market Street
CN 093
Trenton, NJ 08625-0093

Telephone No.: 609-984-5065
Facsimile No.: 609-984-9315

Section Chief
Hazardous Site Litigation Section
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN 093
Trenton, NJ 08625-0093

Telephone No.: 609-984-4863
Facsimile No.: 609-984-9315

Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection and Energy
401 East State Street, 6th Floor
CN 028
Trenton, NJ 08625-0028

Telephone No.: 609-633-1480
Facsimile No.: 609-633-1454

If to Generators:

John F. Lynch, Esq.
Carpenter, Bennett & Morrissey
Three Gateway Center
100 Mulberry Street
Newark, NJ 07102-4079

Telephone No.: 201-622-7711
Facsimile No.: 201-622-5314

If to Owner:

William S. Greenberg, Esq.
McCarter & English
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102-4096

Telephone No.: 201-622-4444
Facsimile No.: 201-624-7070

If to Operators:

Jeffrey P. Heppard, Esq.
Kenney & Kearney
220 Lake Drive East
Box 5034
Cherry Hills, NJ 08034

Telephone No.: 609-779-7000
Facsimile No.: 609-779-1342

If to Transporters: Barbara Hopkinson Kelly, Esq.

Wilson, Elser, Moskowitz,
Edelman & Dicker
Two Gateway Center
Twelfth Floor
Newark, NJ 07102

Telephone No.: 201-624-0800
Facsimile No.: 201-624-0808

If to Municipalities:

John S. Fitzpatrick, Esq.
Fitzpatrick, Reilly,
Supple & Gaul
Murray Hill Officenter
571 Central Avenue
New Providence, NJ 07974

Telephone No.: 908-665-1166
Facsimile No.: 908-665-9137

(b) Each group of Settling Defendants, the United States and the State may at any time or times change the individual(s) to whom or the place to which such notice or other communications are to be addressed, on ten (10) days' prior written notice to all other groups of Settling Defendants, the United States and the State, given in the manner required by Section 19(a) hereof.

(c) Unless otherwise specified herein, any notice or other communication shall be deemed received on the same day as the delivery of a facsimile and three (3) business days after being mailed by registered or certified mail, postage prepaid, return receipt requested.

Section 20. Governing Law. This Agreement shall be governed by and construed in accordance with the domestic substantive laws of the State of New Jersey without regard for any choice or conflict of laws rule or provision that would result in the application of the domestic substantive law of any other jurisdiction. The foregoing notwithstanding, federal law shall apply to questions arising under CERCLA or the NCP promulgated thereunder.

Section 21. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Section 22. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. It is agreed that neither the act of entering into this Agreement, nor any contribution to the De Minimis Trust, nor any action taken under this Agreement shall be deemed to constitute an admission of any liability or fault on the part of the Trustees or the De Minimis Settling Defendants, or any of them, with respect to the Site or otherwise, nor does it constitute a commitment or agreement, either expressed or implied, by any or all of them to undertake any further activities outside the scope of the Consent Decree.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

Dated: 9/27/96

Robert V. Paschon, Trustee

Dated: 9/27/96

John F. Lynch, Jr., Trustee

Dated: 8/24/96

John A. Yacovelle, Trustee

Dated:

Steven J. Picco, Trustee

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

Dated: _____

Robert V. Paschon, Trustee

Dated: _____

John F. Lynch, Jr., Trustee

Dated: _____

John A. Yacovelle, Trustee

Dated: 5/26/96 _____

Steven J. Picco, Trustee

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

FOR THE TRANSPORTERS

Wilson, Elser, Moskowitz, Edelman & Dicker

Dated: 9/27/96

By _____
Barbara Hopkinson Kelly

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

FOR THE MUNICIPALITIES

Fitzpatrick, Reilly,
Supple & Gaul

Dated: September 27, 1996

By: _____
John S. Fitzpatrick

MESB:645383.

GEMS PHASE II TRUST AGREEMENT

This GEMS Phase II Trust Agreement ("Agreement"), entered into as of September 27, 1996 by and between the Reopener Settling Defendants, through their respective Liaison Counsel, and the Trustees, as such parties are hereinafter defined.

WHEREAS, the Reopener Settling Defendants have entered into a Consent Decree with the United States and the State pursuant to which the Settling Defendants have agreed to finance (or, in the case of the Reopener Settling Defendants, to finance and perform) certain response actions at the Site, to reimburse the United States and the State for certain response costs incurred or to be incurred in the future, to provide full and final compensation for any natural resource damages associated with the Site and to resolve claims arising from payments made or to be made by the State from the Spill Compensation Fund or the Sanitary Landfill Facility Closure and Contingency Fund;

WHEREAS, under applicable law, (i) the Consent Decree must be lodged with the Court for a period of at least thirty (30) days during which the public is permitted to comment upon the Consent Decree; and (ii) upon the motion of the United States and approval by the Court, the Consent Decree may thereafter be entered by the Court;

WHEREAS, the Reopener Settling Defendants agreed to establish this Trust prior to the time of lodging of the Consent Decree and to pay into the Trust certain funds as described more fully in Appendix D to the Consent Decree, which funds, and all earnings and profits thereon, less any payments and distributions made by the Trustees pursuant to this Agreement, shall be used, upon the entry of the Consent Decree, to reimburse the United States and the State for response costs and natural resource damages, to resolve claims arising from payments made or to be made by the State from the Spill Compensation Fund or the Sanitary Landfill Facility Closure and Contingency Fund and to fund the performance of RSD Work by the Reopener Settling Defendants in accordance with, and as more fully described in, the Consent Decree;

WHEREAS, the Consent Decree requires the Reopener Settling Defendants to maintain the Trust during the performance of the RSD Work to ensure the availability of sufficient funds to secure the obligations of the Reopener Settling Defendants to perform and finance the RSD Work in accordance with the Consent Decree;

WHEREAS, the Reopener Settling Defendants, acting through their duly authorized liaison counsel, have designated four Trustees, and the Trustees are willing to act as Trustees as provided under this Agreement.

NOW, THEREFORE, the Reopener Settling Defendants and the Trustees agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) All capitalized terms used but not defined herein shall have the same meaning given to them in the Consent Decree.

(b) The term "Trustees" means the Trustees designated by the Reopener Settling Defendants as provided herein, including any successor Trustees. The names, addresses and titles of the Trustees are:

(i) Robert V. Paschon, Esq.
Paschon & Feurey
954 Route 166
Toms River, New Jersey 08653-6562

(ii) John F. Lynch, Jr., Esq.
Carpenter, Bennett & Morrissey
Three Gateway Center
Newark, New Jersey 07102-4079

(iii) Steven J. Picco, Esq.
Picco Herbert Kennedy
50 West State Street
P.O. Box 1388
Trenton, New Jersey 08607

(iv) John A. Yacovelle, Esq.
8438 Mackall Road
St. Leonard, Maryland 20685

(c) The term "Beneficiaries" means the United States and the State.

Section 2. Name and Purpose of the Trust. This Trust shall be known as the GEMS Site Phase II Trust. The purpose of the Trust is to obtain, hold, invest, and disburse funds necessary to satisfy the obligations of the Reopener Settling Defendants pursuant to the Consent Decree and to enter into contracts and agreements for the performance of the RSD Work at the Site. To fulfill this purpose, the Trustees shall thoroughly familiarize themselves with the terms of the Consent Decree and its Appendices, and shall take all actions, consistent with the authority granted to them pursuant to this Agreement, that are necessary to ensure that the obligations of the Consent Decree are fully satisfied. The purpose of this Trust is limited to the matters set forth in this Agreement, and this Agreement shall not be construed to confer upon the Trustees any authority to carry on any business or activity for profit or to divide the earnings

and profits on the Trust Funds among the Settling Defendants (except as specifically set forth herein).

Section 3. Establishment of the Trust. The Settling Defendants and the Trustees hereby establish a Trust, in an amount equal to the initial contributions of the Reopener Settling Defendants (the "Initial Total Contribution"), as reflected on Appendix D to the Consent Decree, for the benefit of the United States and the State. The Initial Total Contribution and any subsequent contributions to the Trust, together with all earnings and profits thereon, less any payments or distributions made by the Trustees pursuant to this Agreement, are referred to herein as the "Trust Funds." The Trustees agree to hold such Trust Funds In Trust as hereinafter provided. Contributions made or to be made by the Reopener Settling Defendants shall not be construed as fines, penalties or monetary sanctions. The Reopener Settling Defendants and the Trustees intend that no third party shall have access to the Trust Funds except as expressly herein provided.

Section 4. Designation of the Trustees; Governance. There shall be four (4) Trustees: two (2) appointed by the Generators group of Reopener Settling Defendants, one (1) appointed by the Owner Settling Defendant and one (1) appointed by the Operators group of Settling Defendants. A particular group shall have the right to remove a Trustee or Trustees appointed by that group at any time, and shall likewise have the right to appoint a new Trustee or Trustees in order to fill any vacancies created. Each Trustee shall have one (1) vote. The Trustees shall take action only upon the majority vote of all Trustees then in office. Any action may be taken by the Trustees without a meeting if all the Trustees then in office consent to the action in writing and such written consents are filed with the records of the Trustees. Any actions taken by the Trustees shall be reflected in a written resolution, which resolution shall be signed by all Trustees in accordance with their vote on the issue, provided, however, that it shall not be necessary for the resolution to be executed prior to action being taken. In the event that the Trustees are deadlocked on any issue, they shall promptly submit the dispute to a disinterested neutral party, not a sitting judicial officer, selected by the United States District Court for the District of New Jersey for resolution. Said submission shall be in writing and may be accompanied by affidavits and other supporting papers. In no event, however, shall the resolution of any given issue include the presentation of live testimony, or include a plenary hearing. The disinterested neutral party's resolution of the issue shall be made in writing, within twenty (20) calendar days of the submission and shall be binding. The foregoing notwithstanding, nothing contained in this Section 4 shall prohibit a majority of the Trustees from determining to apply to the Court for resolution of any such dispute.

Section 5. Payments to the United States and the State Under the Consent Decree; Reimbursement Payments; Refund Payment.

(a) Within thirty (30) days of the effective date of the Consent Decree (as such term is defined in the Consent Decree) (the "Payment Date"), the Trustees shall make such distributions of Trust Funds as are necessary to satisfy the requirements of Paragraph 48(b)(i-v) of the Consent Decree. Such distributions shall be made only after the assets of the GEMS Site Phase II De Minimis Trust have been exhausted. If, following such distributions, the total amount of Trust Funds exceeds $16.5 million, the Trustees shall distribute such excess amount to the Settling Defendants. Each group of Settling Defendants shall receive a percentage of such excess amount equal to the percentage paid by that group of the sum of: (i) the Initial Total Contribution determined pursuant to Section 3 of the GEMS Phase II De Minimis Trust Agreement; and (ii) the Initial Total Contribution determined pursuant to Section 3 of this Agreement. Payments to the Settling Defendants pursuant to this Section 5(a) shall be made, by group, through the groups' respective liaison counsel at the addresses set forth in Section 24 of this Agreement.

(b) The foregoing notwithstanding, in the event the Consent Decree is not entered by the Court before April 1, 1997, the Trustees shall distribute to the Reopener Settling Defendants, on a quarterly basis, eighty percent (80%) of all earnings on the Trust Funds that accrue on and after April 1, 1997 through the date of termination of this Agreement or the Payment Date (the "Periodic Reimbursement Payments"). Each group of Reopener Settling Defendants shall receive a percentage of the Periodic Reimbursement Payment equal to the percentage of the Initial Total Contribution paid by that group, as reflected on Appendix D to the Consent Decree. Payments to the Reopener Settling Defendants pursuant to this Section 5(b) shall be made, by group, through the groups' respective liaison counsel at the addresses set forth in Section 24 of this Agreement within thirty (30) days of the close of each calendar quarter following April 1, 1997 (e.g., by July 30, 1997, for the calendar quarter ended June 30, 1997).

(c) The foregoing notwithstanding, within ninety (90) days of receipt of written notice given by the Reopener Settling Defendants (or any of them) that the Consent Decree will not be entered, has terminated or is otherwise void as a result of (i) a determination by the United States pursuant to Paragraph 113 of the Consent Decree or otherwise to withhold its consent to the Consent Decree; (ii) a determination by the Court pursuant to Paragraph 114 of the Consent Decree or otherwise not to enter the Consent Decree (or to vacate the entry of the Consent Decree); or (iii) the Consent Decree is not lodged or entered by the Court by January 1, 1998, and the Reopener Settling Defendants are able to

withdraw from the Consent Decree, the Trustees shall refund the Trust Funds to the Reopener Settling Defendants ("Refund Payment") and this Agreement shall terminate. Each group of Reopener Settling Defendants shall receive a percentage of the Refund Payment equal to the percentage of the Initial Total Contribution paid by that group, as reflected on Appendix D to the Consent Decree. Payments to the Reopener Settling Defendants pursuant to this Section 5(c) shall be made, by group, through the groups' respective liaison counsel at the addresses set forth in Section 24 of this Agreement.

Section 6. Performance of the RSD Work Pursuant to the Consent Decree. Upon the entry of the Consent Decree by the Court, the Trustees shall pay or apply such part (or all) of the income or principal of the Trust as they deem advisable to pay the costs of performing the RSD Work in accordance with the terms of the Consent Decree and shall take such other actions as they deem advisable to effectuate the Reopener Settling Defendants' obligations under the Consent Decree, including without limitation, the obligation to perform the RSD Work in accordance with the Consent Decree. Without limiting the generality of the foregoing, the Trustees shall (a) use the Trust Funds to: (i) pay contractors selected for the performance of RSD Work in accordance with the Consent Decree, the Remedial Design Report and the Remedial Action Workplan; (ii) pay any other expenses necessary to effectuate the completion of the RSD Work pursuant to the Consent Decree; (iii) pay Future Response Costs due and owing to the United States or the State pursuant to Paragraph 49 of the Consent Decree; (b) supervise and guide such contractor's performance of such work, including as appropriate the engagement of an oversight contractor; and (c) take any other incidental actions required to effectuate the Reopener Settling Defendants' obligations under the Consent Decree.

Section 7. Material Failure. In accordance with the terms and conditions of Paragraph 79 of the Consent Decree, in the event the United States determines that the Reopener Settling Defendants have ceased implementation of any portion of the RSD Work or are seriously or repeatedly deficient or late in their performance of the RSD Work or are implementing the RSD Work in a manner which may cause an endangerment to human health or the environment, the Trustees shall, in accordance with the written instructions of the United States given the manner set forth in Section 14 of this Agreement, disburse funds from the Trust to enable the United States to perform the RSD Work in accordance with the Consent Decree.

Section 8. Grantor Trust Status, Taxpayer Identification Number, Tax Returns and Expenses.

(a) The parties intend that the Trust shall be treated as an "environmental remediation trust" for purposes of the

Internal Revenue Code of 1986, as amended, and the related Treasury Regulations. Accordingly, each Reopener Settling Defendant shall be treated as the owner of its pro rata share of the Trust, and each Reopener Settling Defendant shall be responsible for the payment of all federal, state and local income taxes attributable to income earned from its interest in the Trust (as reflected on the grantor statements described below).

(b) The Trustees shall obtain a taxpayer identification number for the Trust and shall be responsible for the preparation of all tax returns for the Trust, including a Federal Form 1041, U.S. Income Tax Return for Estates and Trusts, and a New Jersey Form NJ-1041, Gross Income Tax Fiduciary Return, upon which the Trustees shall designate the Trust as a "grantor type trust." On or before March 15 of each year, the Trustees shall prepare and distribute to each of the Reopener Settling Defendants a grantor statement of income, deductions and credits with respect to the immediately preceding calendar year for each of the Reopener Settling Defendants based upon its percentage ownership interest in the Trust. The grantor statements prepared by the Trustees shall be attached to the applicable tax returns filed by the Trustees on behalf of the Trust. Each of the Reopener Settling Defendants shall be severally responsible for the payment of its own tax liability, if any, in respect of the Trust, which shall be based upon its grantor statement.

(c) All expenses, other than taxes, incurred by the Trustees in connection with the administration of this Trust, including fees for services rendered to the Trustees, the compensation of the Trustees and all other proper charges and disbursements of the Trustees, shall be paid directly from Trust Funds (and reflected proportionately on the grantor statements prepared by the Trustees).

Section 9. Additional Funding. In accordance with the terms and conditions of Paragraph 43(c) of the Consent Decree, additional funds to those described in Section 3 of this Agreement may be required to complete the RSD Work and to pay outstanding Future Response Costs in accordance with the Consent Decree. As set forth in Paragraph 43(c) of the Consent Decree and Section 12 of this Agreement, the Trustees shall review the funds available in the Trust and the estimated costs of completing the RSD Work at the Site in accordance with the Consent Decree. If the assets of the Trust (including projected earnings thereon) are less than such estimated costs to complete the RSD Work, the Trustees shall determine the amount of additional funds that are necessary to maintain sufficient assets in the Trust (giving effect to projected earnings thereon) to fund the performance of RSD Work in accordance with the Consent Decree. In accordance with Paragraph 43(c) of the Consent Decree (including, without limitation, Paragraph 43(c)(iv)), the

Trustees shall make demand in writing upon the Reopener Settling Defendants for contributions to the Trust for such additional funds. The apportionment of this amount shall be determined by allocation by and among the Reopener Settling Defendants or as may be determined by the Court. In the event that any Reopener Settling Defendant fails to make any contribution required hereunder in a timely fashion, the Trustees shall promptly demand that the remaining Reopener Settling Defendants pay such shortfall. All contributions by the Reopener Settling Defendants to the Trust shall be made in immediately available funds.

Section 10. Powers of the Trustees and Trust Fund Management.

(a) In the administration of the Trust, the Trustees shall, to the greatest extent possible, invest and reinvest the Trust Funds in secure investments, such as, but not limited to, Treasury certificates and Treasury bills of the United States, provided however, that the Trustees shall maintain sufficient liquidity of the assets of the Trust in secure accounts to permit such payments as are required to be made pursuant to this Agreement and the Consent Decree. The Trustees shall invest and reinvest the principal and income of the Trust and keep the Trust invested as a single fund, without distinction between principal and income. The foregoing notwithstanding, after the distributions required by Section 5(a) hereof have been made, the Trustees may establish and maintain segregated sub-accounts consisting of the remaining Trust Funds attributable to the initial and any subsequent contributions of the Reopener Generators group of Settling Defendants, the Operators group of Settling Defendants and the Owner Settling Defendant, respectively. The Trustees shall invest and reinvest the funds in such sub-accounts in the manner provided in this Section 10, provided however, that the Trustees may also invest the Trust Funds in any of such sub-accounts in obligations of any state of the United States of America or any political subdivision thereof or any agency or instrumentality of any state or political subdivision thereof, which shall be rated "Aa" or higher by Moody's Investors Service, Inc. or "AA" or higher by Standard & Poor's Corporation and (i) the interest on which is not includable for Federal income tax purposes in the gross income of the owners thereof pursuant to Section 103 of the Code; and (ii) the interest on which is not an item of tax preference under Section 57 of the Code for purposes of computing the Federal alternative minimum tax.

(b) Each Trustee does hereby contract, agree, and covenant that he will administer the Trust in the manner provided in this Agreement. In investing, reinvesting, exchanging, selling and managing the Trust Funds, the Trustees shall discharge their duties with respect to such Trust Funds solely in the interest of the Reopener Settling Defendants and

the Beneficiaries and for the accomplishment of the purposes and objectives of this Agreement and with the care, skill, prudence and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims. The Trustees may engage the services of an investment advisor or manager, may rely on the advice of such advisor or manager, and may delegate investment decision-making authority to such advisor or manager with respect to management of the Trust Funds. The Trustees shall not be personally liable for any action or inaction taken in good faith reliance on the advice of such advisor or manager, nor for delegation in good faith of investment decision-making authority to such advisor or manager.

Section 11. Other Express Powers of the Trustees. This Agreement shall be construed to confer upon the Trustees all powers and authority necessary to administer the Trust. Without in any way limiting the powers and discretion conferred upon the Trustees by the other provisions of this Agreement or by law, the Trustees are expressly authorized and empowered:

(a) To incur and pay any and all reasonable charges, taxes and expenses upon or connected with the Trust in the discharge of their fiduciary obligations under this Agreement. All such payments shall be made using the assets of the Trust.

(b) To hold and retain all or any part of the Trust Funds in the form in which such funds may be received by the Trustees, as long as they shall deem such action to be advisable, notwithstanding that the same may not be authorized by the laws of any state or rules of any court for the investment of trust funds, and without any liability for any loss of principal or income by reason of such retention.

(c) Notwithstanding any other provision in this Agreement, to at all times hold, manage, invest, and reinvest the assets of the Trust in a manner designed to preserve the accrued income and principal of the Trust for the purposes of the Trust.

(d) To engage the services of (and pay reasonable compensation to) an investment advisor, accountants, agents, managers, or other consultants with respect to the management of investments of the Trust, the management of the Trust, or any other matters.

(e) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers granted to the Trustees pursuant to this Agreement.

(f) To renew or extend the time of payments of any obligation payable to or by the Trust for such periods of time and on such terms as the Trustees shall determine.

(g) To institute and defend litigation in the name of the Trust or on behalf of or in the name of all Reopener Settling Defendants, including without limitation, dispute resolution proceedings pursuant to Section XX of the Consent Decree, and to compromise or otherwise adjust all claims in favor of or against the Trust.

(h) To make, execute, acknowledge and deliver any and all contracts or agreements necessary to fulfill the purposes or accomplish the objectives of this Agreement.

(i) To do any and all other acts which they shall deem proper to effectuate the purposes of this Agreement and to exercise the powers specifically conferred upon them by this Agreement.

Section 12. Annual Valuation. During the term of the Trust, the Trustees shall, within sixty (60) days following the close of each calendar year, furnish to the Reopener Settling Defendants a statement confirming the amount of funds available in the Trust and the estimated costs of completing the remaining RSD Work at the Site. Any securities in the Trust shall be valued at market value as of the close of such calendar year. The failure of the Reopener Settling Defendants to object in writing to the Trustees within ninety (90) days after the statement has been furnished to the Reopener Settling Defendants shall constitute a conclusively binding assent by the Reopener Settling Defendants, barring them from asserting any claim or liability against the Trustees with respect to matters disclosed in the statement.

Section 13. Additional Duties of the Trustees. Notwithstanding anything herein to the contrary, the Trustees are hereby directed to do the following in addition to the duties set forth in other provisions of this Agreement:

(a) Prior to the entry of the Consent Decree and during the performance of the construction phase of the RSD Work, the Trustees shall prepare or cause to be prepared quarterly financial reports describing the manner in which all of the assets of the Trust are then invested and the current market value of such assets, as well as the obligations, income, and expenses of the Trust. The Trustees shall provide copies of such reports in the manner set forth in Section 24 of this Agreement to (i) the Settling Defendants prior to entry of the Consent Decree; and (ii) the Reopener Settling Defendants following entry of the Consent Decree.

(b) During the term of the Trust, the Trustees shall, within sixty (60) days following the close of each calendar year, prepare or cause to be prepared an annual financial statement with respect to such immediately preceding calendar year describing the income, deductions, credits, investments and disbursements of the Trust for such period, including the market value of such assets for such period. All annual financial statements shall be prepared on an accrual basis, and shall be in accordance with Generally Accepted Accounting Principles, applied on a consistent basis. The Trustees shall provide copies of such statements to the Reopener Settling Defendants in the manner set forth in Section 24 of this Agreement.

(c) The Trustees shall maintain or cause to be maintained records of all actions taken by the Trustees with respect to matters arising out of this Agreement or the administration of the Trust. The Trustees shall provide copies of such records to the Reopener Settling Defendants upon request. Upon termination of this Trust, the Trustees shall transmit copies of such records, together with all other records of the Trustees relating to the Trust, to the Reopener Settling Defendants.

Section 14. Instructions to the Trustees. The Trustees shall act in their discretion on behalf of the Reopener Settling Defendants in accordance with the Trustees' powers and duties described in this Agreement, except to the extent that any group of Reopener Settling Defendants provides written orders, requests or instructions to its designated Trustee or Trustees with respect to any particular matter, in which event, such Trustee or Trustees shall act in accordance with such orders, requests or instructions. The Trustees shall be fully protected in acting without further inquiry in accordance with the orders, requests or instructions of the appropriate group of Reopener Settling Defendants. In the event the United States assumes the performance of the RSD Work pursuant to the Consent Decree and Section 7 of this Agreement, all orders, requests and instructions by the United States to the Trustees shall be in writing, signed by the Director of the Emergency and Remedial Response Division, EPA Region II or his/her designee and the Trustees shall act, and shall be fully protected in acting, in accordance with such orders, requests and instructions. The Trustees shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or termination of the authority of any person to act on behalf of the Reopener Settling Defendants or the United States hereunder has occurred. The Trustees shall have no duty to act in the absence of such orders, requests and instructions from the Reopener Settling Defendants and/or the United States or the State, except as provided herein.

Section 15. Advice of Counsel. The Trustees may from time to time consult with counsel, who may be counsel to the Reopener Settling Defendants, or any of them, with respect to any questions arising as to the construction of this Agreement, the construction of or compliance with the Consent Decree or any action to be taken hereunder or thereunder. The Trustees shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 16. Trustee Compensation. The Trustees shall be entitled to compensation from the Trust for services rendered on behalf of the Trust. Such compensation, intended to cover all routine oversight services, shall consist of $2,000 for each meeting of the Trustees attended by such Trustee. Compensation for additional services rendered by any particular Trustee may be authorized by a majority vote of all other Trustees. Notwithstanding any other provision of this Agreement to the contrary, this Section 16 may be modified from time to time by a vote of the majority of the Trustees on thirty days' prior written notice to the Reopener Settling Defendants.

Section 17. Successor Trustees. A Trustee or Trustees designated by a group of Reopener Settling Defendants may resign by delivery of his/her resignation in writing to each group of Reopener Settling Defendants in the manner specified in Section 24 of this Agreement. Any such group may replace its designated Trustee or Trustees by delivery of notice in writing of such removal to such Trustee or Trustees and to the other groups of Reopener Settling Defendants in the manner specified in Section 24 of this Agreement. The foregoing notwithstanding, any such resignation or replacement shall not be effective until the appropriate group of Reopener Settling Defendants has appointed a successor Trustee or Trustees and this successor accepts the appointment. If for any reason the Reopener Settling Defendants cannot or do not act in the event of the resignation of a Trustee or Trustees within sixty (60) days of receipt of a written resignation, the remaining Trustees may apply to the United States District Court for the District of New Jersey for the appointment of a successor Trustee or Trustees or for instruction. Acceptance of appointment as a successor Trustee shall be in writing delivered to the Reopener Settling Defendants and the present Trustees in the manner specified in Section 24 of this Agreement. The successor Trustee shall specify the date on which he/she assumes administration of the Trust in such writing. Upon the acceptance of appointment by any successor Trustee, title to the Trust Funds shall thereupon be vested in said successor Trustee, jointly with the remaining Trustees, if any, without the necessity of any conveyance or instrument. Each successor Trustee shall have all of the rights, powers, duties, authority, and privileges of a Trustee as if initially named as a Trustee hereunder. A copy of each instrument of resignation, removal, appointment and acceptance of appointment shall be

attached to an executed counterpart of this Agreement in the custody of the liaison counsel for the Generators group of Reopener Settling Defendants. Any expense incurred by the Trustees as a result of any of the acts contemplated by this Section 17 shall be paid as provided in Section 8(c) of this Agreement. The Reopener Settling Defendants shall give notice to the United States and the State of any replacement of a Trustee or Trustees in the manner and within the time provided by Paragraph 43(a) of the Consent Decree.

Section 18. Amendment to Agreement. Except as set forth in Section 16 of this Agreement, this Agreement may be amended, altered or revoked from time to time by an instrument in writing executed by the Reopener Settling Defendants, the United States and the State.

Section 19. Irrevocability and Termination. Subject to the right of the parties hereto to amend this Agreement, as provided in Sections 16 and 18 hereof, this Trust shall be irrevocable and shall continue until terminated by the written agreement of the Reopener Settling Defendants, the United States and the State or pursuant to Section 5(c) of this Agreement. Upon termination of this Trust, the Trustees shall liquidate the assets of the Trust and thereupon distribute the remaining trust property, less any final expenses of the Trust, to (i) the Reopener Settling Defendants pursuant to Section 5(c) of this Agreement, if such termination occurs prior to the entry of the Consent Decree; or (ii) the State, if such termination occurs following the entry of the Consent Decree.

Section 20. Immunity and Indemnification. The Trustees and any successor Trustees shall not incur personal liability of any nature in connection with any act or omission, taken or performed in good faith, in the administration of this Trust or in carrying out any directions by the Reopener Settling Defendants, the United States or the State issued in accordance with this Agreement. The Trustees and any successor Trustees shall be indemnified and saved harmless by the Reopener Settling Defendants and the Trust from and against any personal liability (including, without limitation, reasonable attorney's fees and costs of defense) to which the Trustees may be subjected by reason of any alleged or actual act, conduct, or failure to act in their official capacity, taken or performed in good faith, including but not limited to any liability arising out of the ownership, removal, transfer, handling, disposal or redisposal of any Waste Materials from or at the Site.

Section 21. Binding Effect. This Agreement shall be binding upon the parties hereto and their successors and permitted assigns.

Section 22. Interests Not Transferable or Assignable or Subject to Claims of Creditors.

The interest of the Reopener Settling Defendants herein, and their obligation to provide funds under this Agreement, is not transferable, except to a successor trust, corporation or corporations, and any such transferee corporation shall assume the obligations of the transferring Reopener Settling Defendant by executing such documents as the Trustees may require. The interest of any Reopener Settling Defendant in the Trust Funds shall not be subject to anticipation or assignment, nor subject to the claims of any creditor of any Reopener Settling Defendant, and any interest reserved to any Reopener Settling Defendant shall be made available to the Reopener Settling Defendant only upon termination of this Trust pursuant to Section 5(c) of this Agreement.

Section 23. Entire Agreement. This Agreement sets forth the entire agreement between the parties hereto with respect to the subject matter hereof. If any of the terms and provisions of any other agreement (excluding any amendment to this Agreement) between any of the Parties hereto conflict or are inconsistent with any of the terms and provisions of this Agreement, the terms and provisions of this Agreement shall govern and control in all respects.

Section 24. Notices.

(a) Any notice or other communication to any party hereto, to the State or the United States or to the De Minimis Settling Defendants pursuant to any provision of this Agreement shall be effective only if it is in writing and if delivered personally, by facsimile, or mailed, postage prepaid, registered mail, return receipt requested, addressed as follows:

If to the Trustees:

Robert V. Paschon, Esq.
Paschon & Feurey
954 Route 166
Toms River, NJ 08653-6562

Telephone No.: 908-341-3900
Facsimile No.: 908-505-8711

John A. Yacovelle, Esq.
8438 Mackall Road
St. Leonard, Maryland 20685

Telephone No.: 410-586-0524
Facsimile No.: 410-586-0524

John F. Lynch, Jr., Esq.
Carpenter, Bennett & Morrissey
Three Gateway Center
Newark, New Jersey 07102-4079

Telephone No.: 201-622-7711
Facsimile No.: 201-622-5314

Steven J. Picco, Esq.
Picco Herbert Kennedy
50 West State Street
P.O. Box 1388
Trenton, New Jersey 08607

Telephone No.: 609-393-2400
Facsimile No.: 609-393-2475

If to the United States:

EPA Project Coordinator--GEMS
Superfund Site
Emergency & Remedial Response
Division
United States Environmental
Protection Agency
Region II, 19th Floor
290 Broadway
New York, NY 10007

Telephone No.: 212-637-4426
Facsimile No.: 212-637-4393

Chief, Environmental Enforcement
Section
Environment and Natural Resources
Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044
Re: DOJ # 90-11-2-292A

Telephone No.: 202-514-4353
Facsimile No.: 202-514-0097

Chief, New Jersey Superfund Branch
Office of Regional Counsel
United States Environmental

Protection Agency
Region II, 17th Floor
290 Broadway
New York, NY 10007
Attn: GEMS Superfund Site Attorney

Telephone No.: 212-637-3118
Facsimile No.: 212-637-3096

If to the State:

Edward Devine, Esq.
Deputy Attorney General
State of New Jersey
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
25 Market Street
CN 093
Trenton, NJ 08625-0093

Telephone No.: 609-984-5065
Facsimile No.: 609-984-9315

Section Chief
Hazardous Site Litigation Section
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN 093
Trenton, NJ 08625-0093

Telephone No.: 609-984-4863
Facsimile No.: 609-984-9315

Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection and Energy
401 East State Street, 6th Floor
CN 028
Trenton, NJ 08625-0028

Telephone No.: 609-633-1480
Facsimile No.: 609-633-1454

If to Generators:

John F. Lynch, Esq.
Carpenter, Bennett & Morrissey

Three Gateway Center
100 Mulberry Street
Newark, NJ 07102-4079

Telephone No.: 201-622-7711
Facsimile No.: 201-622-5314

If to Owner:

William S. Greenberg, Esq.
McCarter & English
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102-4096

Telephone No.: 201-622-4444
Facsimile No.: 201-624-7070

If to Operators:

Jeffrey P. Heppard, Esq.
Kenney & Kearney
220 Lake Drive East
Box 5034
Cherry Hills, NJ 08034

Telephone No.: 609-779-7000
Facsimile No.: 609-779-1342

If to Transporters:

Barbara Hopkinson Kelly, Esq.
Wilson, Elser, Moskowitz,
Edelman & Dicker
Two Gateway Center
Twelfth Floor
Newark, NJ 07102

Telephone No.: 201-624-0800
Facsimile No.: 201-624-0808

If to Municipalities:

John S. Fitzpatrick, Esq.
Fitzpatrick, Reilly,
Supple & Gaul
Murray Hill Officenter
571 Central Avenue
New Providence, NJ 07974

Telephone No.: 908-665-1166
Facsimile No.: 908-665-9137

(b) Each group of Settling Defendants, the United States and the State may at any time or times change the individual(s) to whom or the place to which such notice or other communications are to be addressed, on ten (10) days' prior written notice to all other groups of Settling Defendants, the United States and the State, given in the manner required by Section 24(a) hereof.

(c) Unless otherwise specified herein, any notice or other communication shall be deemed received on the same day as the delivery of a facsimile and three (3) business days after being mailed by registered or certified mail, postage prepaid, return receipt requested.

Section 25. Governing Law. This Agreement shall be governed by and construed in accordance with the domestic substantive laws of the State of New Jersey without regard for any choice or conflict of laws rule or provision that would result in the application of the domestic substantive law of any other jurisdiction. The foregoing notwithstanding, federal law shall apply to questions arising under CERCLA or the NCP promulgated thereunder.

Section 26. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Section 27. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. It is agreed that neither the act of entering into this Agreement, nor any contribution to the Trust, nor any action taken under this Agreement shall be deemed to constitute an admission of any liability or fault on the part of the Trustees or the Reopener Settling Defendants, or any of them, with respect to the Site or otherwise, nor does it constitute a commitment or agreement, either expressed or implied, by any or all of them to undertake any further activities outside the scope of the RSD Work or the Consent Decree.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

Dated: 9/27/96

Robert V. Paschon, Trustee

Dated: 9/27/96

John F. Lynch, Jr., Trustee

Dated: 8/24/96

John A. Yacovelle, Trustee

Dated:

Steven J. Picco, Trustee

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

Dated: _____

Robert V. Paschon, Trustee

Dated: _____

John F. Lynch, Jr., Trustee

Dated: _____

John A. Yacovelle, Trustee

Dated: 9/26/96 _____

Steven J. Picco, Trustee

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

FOR THE GENERATORS

Carpenter, Bennett & Morrissey

Dated: 9/27/96

By: _____
John F. Lynch, Jr.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers, duly authorized, and their corporate seals to be hereunto affixed and attested, as of the date first above written.

FOR THE TOWNSHIP OF GLOUCESTER

Dated: 9/5/96

By: Sandra Love
Sandra Love, Mayor

Appendix G
Performance Monitoring
GEMS Site Phase II Remediation

Hydraulic Monitoring

Hydraulic performance monitoring will be performed at the locations shown on Figure 1 of this appendix and as summarized in Table 1 attached. The program includes hydraulic monitoring at a total of 11 locations using 20 wells/piezometers in the Cohansey Sand (upper or lower) and seven piezometers in the Kirkwood Formation. The well locations are primarily setup as "gradient control pairs" to establish the orientation of the groundwater contours to the extraction system and thus, whether flow is inward. The frequency of hydraulic monitoring will be as follows:

Months One through Three

Water level measurements will be taken manually and using an automatic data logger. The frequency of measurements will be as follows:

- Using automatic data loggers, once every hour in piezometer pairs 6/7, 9/10, and 12/13, for the three-month period. These piezometer pairs will also be used for long-term assessment of system performance, as described below. Piezometer pair locations are as shown on Figure 1 and include locations within the upper Cohansey Sand, the lower Cohansey Sand and the Kirkwood Formation.

- Manually, once each day for the first week, in the other piezometers/wells included in the program.

- Manually, twice per week during weeks two through four in each of the other piezometers/wells included in the program.

- Manually, once per week for the remaining two months of the initial three-month period in each of the other piezometers/wells included in the program.

A progress report will be prepared at the end of the three-month period to document performance monitoring and establish whether the system is operating as necessary or whether adjustments must be made.

Months Four through Six

The automatic data loggers will continue to be used in piezometer pairs 6/7, 9/10, and 12/13. Other water level measurements in the program will be performed manually. The frequency of manual water level measurements will be once every two weeks if containment is established during the prior three months or once every week if further data are needed to confirm containment or if adjustments to system operation (e.g., flow rate) are made.

A followup progress report will be submitted at the end of the six-month period.

Month Seven and Beyond

The automatic data loggers will continue to be used in piezometer pairs 6/7, 9/10, and 12/13. Other water level measurements in the program will be performed manually once per month through month 24 and once per quarter thereafter. An annual report will be submitted that will summarize the hydraulic performance data with appropriate maps illustrating the degree of containment. Data will be submitted quarterly following validation, but without a formal report.

Data from the first year of water level measurements will be used to establish the head difference in piezometer pairs 6/7, 9/10, and 12/13 against which to compare measurements for the purpose of assessing system performance. The first annual progress report will provide a discussion of the criteria for assessing system performance using these piezometer pairs. Data from the automatic data loggers will also be retrieved during each manual water level measurement round and plotted to provide a graphical comparison of the head difference between each of the piezometer pairs. Vertical gradients between the Kirkwood

and Cohansey formations will be assessed in a similar fashion at each of the seven couplets which contain a Kirkwood piezometer. This information will be incorporated into the site-wide assessment of groundwater flow directions during operation of the GWES. Graphical output will be submitted with the progress reports.

To assess the position of the capture zone during operation of the GWES, groundwater elevations from the hydraulic monitoring program will be contoured. These data, along with the coordinates of the wells, will be entered into a contouring program such as Surfer or Surface Display Systems (SDS). This software will interpolate between data points and produce a gridded data set. The program will then generate an objective contour map from the gridded data. The capture zone will then be identified and drawn on the contour map by visually identifying the outer-most flow path which terminates at an extraction well or the Holly Run underdrain. This flow path represents the limit of capture. The capture zone will be compared to the extent of the plume boundary to be captured (i.e., as influenced by protection of Swamp Pink) to assess system performance. Maps produced from this exercise will be submitted with hydraulic monitoring progress reports.

Groundwater Monitoring.

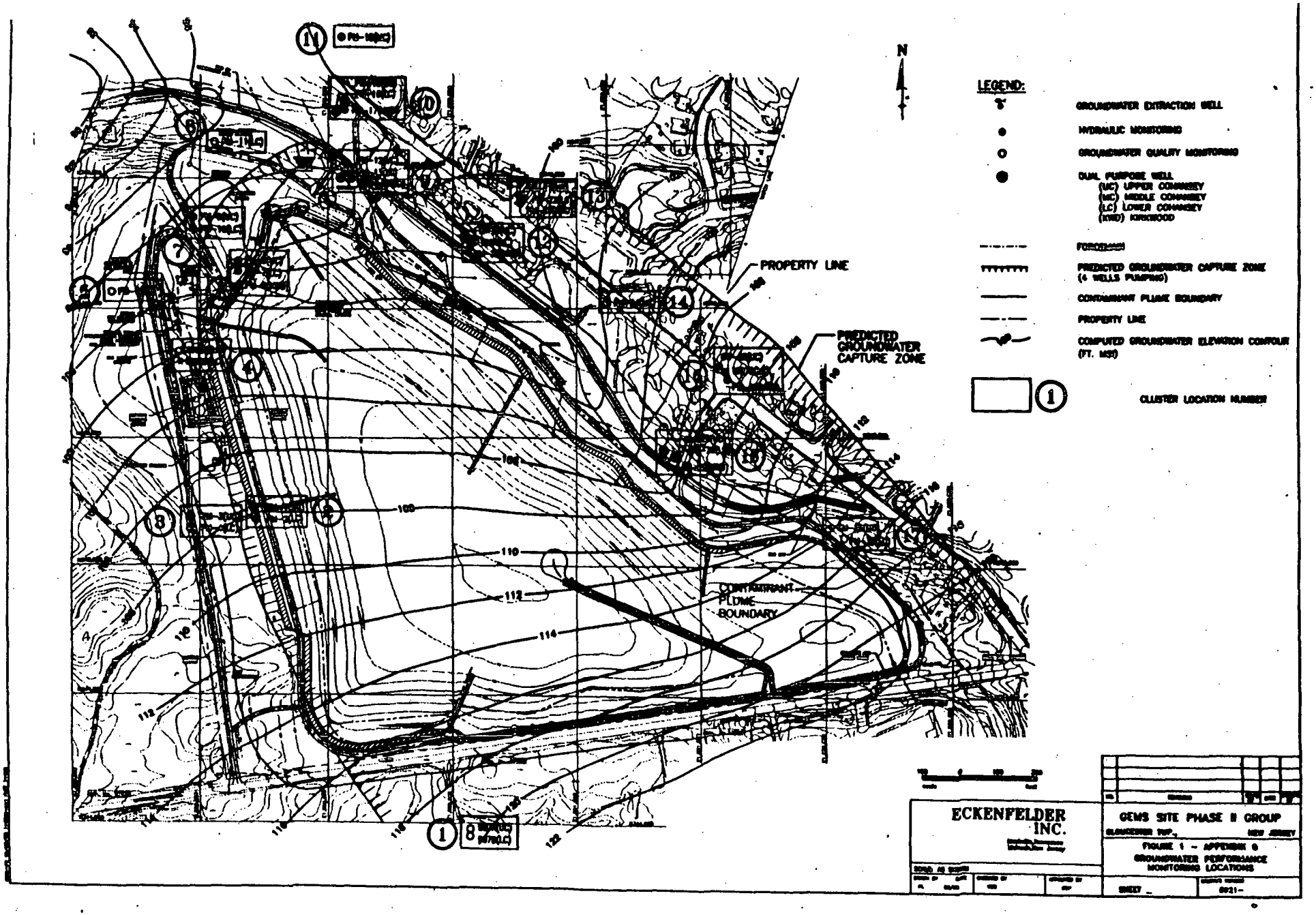
Groundwater quality trend monitoring will be performed using new and existing wells as shown on Figure 1 of this appendix and as summarized in Table 1 attached. A total of 21 wells will be included in the program; nine in the upper Cohansey Sand, one in the Middle Cohansey Sand, and eleven in the lower Cohansey Sand. Monitoring will be performed on a quarterly basis for the first year of operation and semi-annually thereafter. Every fourth monitoring event (starting with the first (e.g., first, fifth, ninth events, etc.)) will include testing for the Target Compound List (TCL) volatile and semivolatile compounds, the Target Analyte List (TAL) and the conventional parameters of pH, specific conductance, TDS, COD, TOC, chloride, ammonia, and sulfate. The other routine quarterly (during the first year only) and semi-annual events will include testing for an abbreviated list of indicator parameters. Selection of the indicator list will be refined following acquisition of initial test data, however, on the basis of existing data the program is expected to include the TCL volatile organic constituents, cadmium, chromium, arsenic, and the conventional parameters of pH, specific conductance, TDS, and COD. The analytical

program, including QA/QC protocol, will follow methods described in the USEPA "Test Methods for Evaluating Solid Waste", SW-846, Third Edition and "Standard Methods for the Examination of Water and Wastewater", 18th edition, published by APHA, AWWA, and WEF.

TABLE 1 OF APPENDIX G

GROUNDWATER PERFORMANCE MONITORING LOCATIONS

Cluster Location Number	Well Number	Representative Zone	Primary Monitoring Objective: Hydraulic	Primary Monitoring Objective: Water Quality	New/Existing Well
1	907A	Upper Cohansey (UC)		X	Existing
	907B	Lower Cohansey (LC)		X	Existing
2	PM-1	UC	X	X	New
	PM-2	LC	X	X	New
3	PM-3	UC	X	X	New
	PM-4	LC	X	X	New
4	1008S	UC		X	Existing
	1008D	LC		X	Existing
5	PM-5	LC		X	New
6	PM-6	UC	X		New
	PM-7	LC	X		New
	PM-8	(Kirkwood) KWD	X		New
7	PM-9	UC	X		New
	PM-10	LC	X		New
8	PM-11	LC		X	New
9	PM-12	UC	X	X	New
	PM-13	LC	X	X	New
	PM-14	KWD	X		New
10	PM-15	UC	X	X	New
	PM-16	LC	X	X	New
	PM-17	KWD	X		New
11	PM-18	UC	X		New
12	PM-19	UC	X	X	New
	102A	LC	X	X	Existing
	PM-20	KWD	X		New
13	PM-21	UC	X		New
	PM-22	LC	X		New
	PM-23	KWD	X		New
14	PM-24	UC		X	New
15	PM-25	UC	X	X	New
	PM-26	LC	X	X	New
	PM-27	KWD	X		New
16	GW-4R	UC	X		Existing
	1007D	LC	X		Existing
	PM-28	KWD	X		New
17	PM-29	UC		X	New
	PM-30	LC		X	New


N
LEGEND:
GROUNDWATER EXTRACTION WELL
HYDRAULIC MONITORING
GROUNDWATER QUALITY MONITORING
DUAL PURPOSE WELL
(UC) UPPER COHANSEY
(MC) MIDDLE COHANSEY
(LC) LOWER COHANSEY
(KWD) KIRKWOOD
FORCEMAIN
PREDICTED GROUNDWATER CAPTURE ZONE (4 WELLS PUMPING)
CONTAMINANT PLUME BOUNDARY
PROPERTY LINE
COMPUTED GROUNDWATER ELEVATION CONTOUR (FT. MSL)
CLUSTER LOCATION NUMBER
PROPERTY LINE
PREDICTED GROUNDWATER CAPTURE ZONE
CONTAMINANT PLUME BOUNDARY
ECKENFELDER INC.
GEMS SITE PHASE II GROUP
GLOUCESTER TWP., NEW JERSEY
FIGURE 1 - APPENDIX B
GROUNDWATER PERFORMANCE MONITORING LOCATIONS
SHEET
6921-

H

Prepared By:

_____

DAVID C. PATTERSON, ESQ.

SEWER SERVICE AGREEMENT

THIS AGREEMENT made the day of , 1996, by and between the Gloucester Township Municipal Utilities Authority (hereinafter referred to as "Authority") a Municipal Corporation of the State of New Jersey with its principal office at P.O. Box 216, Glendora, NJ 08029 and GEMS SITE PHASE II TRUST, referred to herein as the "Trust"

WITNESSETH:

WHEREAS, the Authority is a public body created pursuant to N.J.S.A. 40:14B-4 for the purpose, among others, of acquiring, constructing, maintaining, operating and/or improving works for the collection of sewage waste and to enter into contracts related to said purpose; and

WHEREAS, the Trust consists of the monetary contributions of certain named direct and third party defendants in various classifications in the matter captioned State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al, Civil Action 84-152 (hereinafter referred to as "GEMS Sanitary Landfill Litigation") who have chosen to enter into a Consent Decree (the "Consent Decree") with the United States Environmental Protection Agency (the "EPA") and

the New Jersey Department of Environmental Protection (the "DEP"); and

WHEREAS, said litigation concerns principally the liability and responsibility for proper remedial and closure action and reimbursement of response costs at the GEMS Landfill in the Township of Gloucester, Camden County, New Jersey; and

WHEREAS, the Township of Gloucester and the Authority are both named as Defendants in that litigation in various classifications; and

WHEREAS, the Consent Decree has been lodged with the Court to resolve the GEMS Sanitary Landfill litigation which involves contributions from certain Defendants for the work to be undertaken at the landfill; and

WHEREAS, part of the proposed groundwater treatment program involves utilizing the Authority collection facility for receiving wastewater that conforms to CCMUA pre-treatment standards from the GEMS Landfill; and

WHEREAS, it has been represented to the Authority that a favorable decision to accept the wastewater will reduce the cost of compliance with the terms of the Consent Decree; and

WHEREAS, the Township of Gloucester as the owner of the landfill has requested that the Authority assist in resolving this litigation by agreeing to accept the wastewater from the GEMS Landfill ;and

WHEREAS, certain contributors to the Trust are in the process of preparing final plans and specifications for a wastewater facility to be located at the GEMS Landfill; and

WHEREAS, the Authority has been involved in negotiations with representatives of certain defendants regarding the use of its sewage collection facilities for connection into the on-site wastewater facility, which wastewater will ultimately be treated by the Camden County Municipal Utilities Authority ("CCMUA"); and

WHEREAS, as previously indicated in Resolution 12-88-181 adopted by the Authority on December 14, 1988, the Authority has agreed that it appears to be in the best interest of the residents of the Township of Gloucester to proceed to enter into an agreement with the Trust for this purpose in order to reduce and minimize the overall financial exposure of the Township in this litigation and to proceed to effect an appropriate environmental remediation and closure plan at the GEMS Landfill.

NOW, THEREFORE, FOR AND IN CONSIDERATION of the mutual covenants and promises of the parties as set forth herein, the parties hereto agree as follows:

1. The Whereas clauses set forth hereinabove are hereby incorporated into the body of this Agreement.

2. Upon submission of a proper and complete application by the Trust to the Authority pursuant to N.J.S.A. 40:14B-61, the Authority hereby agrees to approve the connection into its sewage collection system of the pre-treatment wastewater facility to be

located at the GEMS Landfill. The Trust must submit said application together with final plans and specifications to the Authority within 12 months of the entry of the Consent Decree and construction of the on-site facility must be commenced within twenty-four (24) months from EPA approval of the remedial design, or such other time as agreed to by the parties; otherwise, this Agreement shall terminate and be of no further legal effect. It is also agreed and understood that this wastewater flow through the Authority sewage collection system is ultimately to be treated at the CCMUA wastewater plant in Camden, New Jersey, and is subject to the approval of the CCMUA. Nothing in this Agreement shall be construed to require the Trust to construct a wastewater facility to specifications beyond those required to meet CCMUA pre-treatment standards or the terms of the Consent Decree. It is further understood and agreed that nothing in this Agreement is intended to vest with the Authority the right to approve plans and specifications that have been previously approved by the EPA in conformity with the provisions of the Consent Decree, except that the Authority shall review and approve such plans and specifications from the standpoint of conformity with the requirements of Schedule "B" attached to this Agreement, and the Authority's approval of such plans and specifications in that regard shall not be unreasonably withheld.

3. The Trust agrees to pay the Authority an annual service charge, payable quarterly, based on actual wastewater flow into

the Authority sewage collection system in accordance with the formula set forth on Schedule "A" attached hereto.

4. The parties hereto agree that the sewer charge to the Trust effective the date of connection shall be calculated in accordance with the formula specified on Schedule "A" attached hereto. The Authority shall bill the Trust quarterly based on metered flow as calculated in Schedule "A". The Trust agrees to pay all quarterly service charges within 30 days of the due date. Any payment not made within 30 days shall bear interest at the statutory rate of 18% per annum from the due date thereof, until the date of payment.

5. It is further agreed and understood that the annual sewer rate charged by the Authority to the public which is included in the formula set forth on Schedule "A" may be increased or decreased as determined by the Authority in accordance with applicable law for the administration, operation and maintenance of its sewage collection system. Any change in these sewer rates will not be implemented until after 30 day advance written notice thereof has been given to the Trust and in compliance with N.J.S.A.40:14B-23.

6. The Trust further agrees to pay the Authority a one-time connection fee of $400,000. The connection fee will be paid as follows:

$200,000 shall be paid to fund improvements to the existing pump station, which are described in Schedule "B". The Trust shall pay this sum on the following progress schedule:

i. $20,000 not later than 14 days after entry of the Consent Order, for engineering and legal fees;

ii. $50,000 upon execution of a contract with the lowest qualified bidder chosen to do the pump station improvement;

iii. $30,000 upon completion of 30 percent (30%) of the pump station project based on the Authority Consulting Engineer's certification.

iv. $50,000 upon completion of sixty percent (60%) of the pump station project based on the Authority Consulting Engineer's certification

v. $30,000 upon completion of ninety (90%) of the pump station project based on the Authority Consulting Engineer's certification.

vi. $20,000 upon final completion of all work, tested and ready for operation.

As a further condition of each progress payment listed above, Authority shall provide Trust with a written certification of its licensed Professional Engineer that the work has been performed in accordance with the approved plans and specifications.

The actual progress payments will be paid by the Trust as follows. The parties acknowledge that the Trust meets monthly. Payments can only be processed if the Authority submits the required Authority Engineer certification(s) in advance of the monthly Trust meeting so that same can be reviewed and approved by the Trust's Engineer, which approval shall not be unreasonably withheld, and the payment can be placed on the meeting agenda.

Payment will be made within ten (10) business days after the occurrence of the Trust meeting that approves the progress payment, which approval shall not be unreasonably withheld. Once the Authority has awarded the bid for this work the Trust shall be obligated to make the $200,000.00 payment pursuant to the process set forth above.

If the Authority has not completed the pump station improvements by December 31, 1998, or such other date that is ninety days prior to the date that has been established by the Consent Order or subsequent agreement with the EPA for commencement of wastewater discharge from the landfill, whichever is earlier, the Trust may, at its option, complete the pump station improvement and deduct all costs of that completion from any remaining portion of the connection fee that would otherwise be paid to the Authority pursuant to this Agreement. The Authority shall provide the Trust with all necessary access to allow this work to be done.

The Trust shall pay an additional $200,000 (less any amount deducted for finishing the pump station improvement due to the Authority's failure to timely complete those improvements as required herein) on the date of physical connection to the Authority sewage collection system. If the Trust does not physically connect to the Authority sewage collection system, this $200,000 payment will not be made. Nothing in this Agreement

shall require the Trust to connect to the Authority sewage collection system.

Apart from the subparagraphs described above, there shall be no other charges to the Trust for connection into the Authority system, nor any other charges to the Trust from the Authority, now, or in the future, whatsoever, except the annual user charge described in paragraph 3 above, or possible CCMUA surcharges as described in paragraph 7 below.

7. Any legally assessed surcharges to the Authority by the CCMUA for accepting the wastewater discharge from the GEMS Landfill shall be paid by the Trust. The Authority shall provide immediate written notice to the Trust of such a surcharge. The surcharge will be added to the quarterly sewer service charge billing statement to the Trust from the Authority.

8. As of the date of this Agreement it is proposed that no more than an average of 264,000 gpd will flow from the GEMS Landfill through the Authority sewage collection system and into the CCMUA Treatment Plant. The Trust agrees that no additional flow shall be permitted into the Authority sewage collection system until such additional flow has been approved by the Authority, the CCMUA and any other necessary regulatory agencies. The Trust further agrees that the connection to the Authority sewage collection system shall be made in strict compliance with any and all rules and regulations promulgated by the EPA and the

DEP, the CCMUA, the Authority and any other governmental agency having appropriate jurisdiction.

9. The Trust shall install and construct, in accordance with plans and specifications prepared by its Professional Engineer licensed in the State of New Jersey, an on-site wastewater facility complying with the requirements of the Consent Decree which will connect into the Authority at the point of connection approved and designated by the Authority in accordance with Schedule "B" annexed hereto. All costs associated with the design, engineering, approval and permit process, installation/construction, review of plans and inspection of construction of the on-site wastewater facility and the connection into the Authority sewage collection system shall be the sole responsibility of the Trust.

10. The plans and specifications as prepared by the Trust's Professional Engineer for the on-site wastewater facility and the connection into the Authority sewage collection system have been reviewed by the Authority and include the recommendations from the Authority which are set forth on Exhibit "B" attached hereto. The Authority shall in no event be required to perform the obligations under this Agreement until it has reviewed the final plans and specifications for compliance with Schedule "B" and until a Consent Decree has been entered in the GEMS Sanitary Landfill Litigation to which the Authority is a party. Such Agreement shall terminate and have no force and effect on the same date as

the Trust, January 1, 1998, in the event the Consent Decree is not lodged with the Court. Notwithstanding any other provision in this Agreement that may be construed to the contrary, neither the Trust nor the Authority will be required to perform in this Agreement in any respect unless the Consent Decree is entered by the Court.

11. The Trust shall notify the Authority when a bid has been received and awarded for said work and when the work is to commence. The Authority agrees that it shall have the capacity in its sewer collection system to accept the wastewater from the GEMS Landfill in an amount not to exceed a maximum flow of 264,000 gpd on the date of physical connection of the on-site wastewater facility into the Authority sewer collection system.

12. All equipment, piping and other appurtenances related to the on-site wastewater facility and to the point of the connection of the GEMS Landfill into the Authority sewage collection system shall remain the property of the Trust and it shall have the sole responsibility for all operation, maintenance, repair and replacement of said equipment, piping and appurtenances.

13. The Authority Consulting Engineer shall inspect the connection point of said system into the Authority sewage collection system in order to determine that same has been made in accordance with the plans and specifications. Should the Authority Engineer determine, in accordance with recognized and acceptable industry standards that the work, or any part of it, is

unsatisfactory or incomplete as relates to the connection of said on-site pre-treatment wastewater facility into the Authority sewage collection system, he shall specify in writing what is required to correct or complete the work. The Trust agrees that said correction shall be made of such work at its own cost and expenses. The Trust further agrees that upon completion of construction of its on-site facilities a written certification will be provided from its licensed Professional Engineer that said work has been performed in accordance with the approved plans and specifications.

14. A set of as-built drawings of the on-site wastewater facility and the connection of same into the Authority sewage collection system shall be filed with the Authority.

15. The Trust shall be required to install emergency equipment, which will include a pressure valve/switch, or other acceptable equivalent means in order to control the wastewater flow into the Authority sewage collection system. In the event the on-site wastewater system is found to be functioning improperly so as to not meet the pre-treatment standards then imposed by the CCMUA, the Trust shall be required to take any and all action necessary to correct the problem. Notice of any improper functioning shall be immediately provided to the Authority. Until such time as the improper functioning of the system is corrected in a satisfactory manner, the Trust shall cease all flow and discharge into the Authority sewage collection

system. In addition, the Authority has the right to have installed a plug valve proximate to the conveyance system in Erial Road for use in emergency situations. An emergency situation shall be defined as when the EPA or NJDEP require the shutdown of the system or an event occurs which would impair the integrity of the Authority Sewage Collection System or adversely affect the health and safety of the Township residents or Authority employees. These type situations would include, but not be limited to, the following occurrences (either on the GEMS Landfill or Authority property), overflowing of wetwells, main breaks, pump station failures, generator failures, pumping beyond allowable rate, and Acts of God. The Authority will notice the Trust immediately of any emergency situation and give the Trust the opportunity to correct same if it involves the on-site wastewater facility, unless the situation requires immediate action by the Authority. In the event the Trust does not take corrective action within a reasonable time period for the type problem to be corrected, the Authority shall then have the right to utilize the plug valve to discontinue flow from the on-site wastewater facility. Where the problem occurs in the Authority system, the Authority will take such action as is necessary to correct the problem including use of the plug valve, and notify the Trust of same immediately. The Trust will attend any public meetings held for the purpose of discussing the nature of the problem and how it

is being resolved to the benefit and protection of the Authority and Township residents.

16. When requested, the Trust shall provide the Authority with all EPA and DEP reports and other regulatory agency reports relating to the operation of the on-site wastewater facility.

17. The Authority shall accept no wastewater flow from the on-site wastewater facility which violates any agreement between the Authority and the CCMUA, any discharge or pre-treatment parameter of the Authority or the CCMUA, any condition or approval granted to the Trust by the Authority, the CCMUA or other regulatory agency, or in an manner violates the provisions of N.J.S.A. 40:14B-60(b). No by-product from the on-site wastewater facility i.e., sludge, shall be accepted by the Authority into its sewage collection facility. The Trust shall take all necessary measures in the design, construction, operation, maintenance and repair of its system to prevent improper discharges from entering the Authority sewage collection system.

18. The Trust agrees and consents to comply with all Orders and Notices of Penalty which may be served upon it by any Federal, State, County or Local regulatory agency in regard to its on-site wastewater operation. A copy of such Order and Notice shall be provided to the Authority.

19. In the event a penalty or fine imposed on the Authority by any regulatory agency is solely caused by the wastewater from

the GEMS Landfill, the costs of contesting and satisfying the fine or penalty shall become the responsibility of the Trust.

20. The Trust shall provide and maintain, or cause to be provided and maintained by its contractors and subcontractors performing services at the Site, comprehensive general liability insurance coverage in an amount of not less than $1 million combined single limit per policy. Such policy shall name the Authority as an additional insured. A copy of the policy or Certificate of Insurance shall be filed with the Authority prior to commencement of construction.

The Trust shall also use its best efforts to provide and maintain the same insurance coverage following construction and prior to start-up operation of the on-site system, which shall be continued for so long as this Agreement remains in effect. In the event such insurance is obtained, continued wilful failure to then maintain such insurance coverage shall be cause for immediate termination of this Agreement and the cessation of any wastewater flow and discharge from the GEMS Landfill into the Authority Sewerage Collection System.

Any policy of insurance referenced hereinabove shall contain a provision which requires at least 14 days notice in writing to the Authority prior to any cancellation, expiration or non-renewal of the insurance as required in this Agreement.

21. The Trust agrees to indemnify and hold harmless the Authority, its officials, officers, agents and employees, from any

claim or claims by any party arising out of the design, construction, maintenance operation, repair, replacement or closing of the on-site wastewater facility imposed by any governmental agency, Federal, State or County having jurisdiction over this matter, including any claims for penalties imposed by reason of the violation of any Federal, State or Local laws or the violation of any rules or regulations of any governmental agency. The Trust also agrees to defend, indemnify and save the Authority harmless from any and all suits, judgments, costs, expenses and claims on account of breach of contact, damaged real or personal property or personal injuries, including death, which may be sustained by the Authority, the Authority's officials, officers, employees or agents, members of the general public and third parties, which solely arise out of the design, construction, maintenance, operation, repair, replacement or closing of the on-site pre-treatment wastewater facility. Costs for which the Trust shall be responsible shall include, but will not be limited to, costs of investigation, expert witnesses, court costs, reasonable counsel fees and judgments. The Trust agrees that the Authority shall not be liable to any person, including the Trust, for any loss, damage or injury to person or property caused by the Trust's breach of this Agreement. The Trust will not be obligated to indemnify where the Authority errors or omissions have contributed to the events in question.

22. The Trust shall provide the Authority on a continuing basis with all OSHA and Right To Know information as required by law.

23. The Trust shall make available to the Authority on reasonable notice its discharge monitoring reports ("DMR's") and any other monitoring reports required by the EPA or DEP or the CCMUA. Any information provided to the Authority hereunder shall be kept confidential by it except as otherwise required by law.

24. To the extent required by New Jersey Law and the Consent Decree, the Trust shall have appropriate personnel on the site to properly operate, repair and maintain the on-site pre-treatment wastewater facility.

25. This Agreement by the Authority to accept the wastewater from the GEMS Landfill in no way is an admission of any liability or responsibility with respect to the GEMS Sanitary Landfill litigation nor does it waive any defenses raised or rights of the Authority with respect to that litigation.

26. Upon the execution of this Agreement, the Authority shall be considered a Phase II Settling Party in the GEMS Sanitary Landfill litigation and shall be dismissed from the litigation, with prejudice, as to any and all present and/or future claims, together with third party claims, and not obligated to pay any further settlement monies as part of the present litigation.

27. This Agreement is subject to an endorsing Resolution from the Governing Body of the Township of Gloucester.

28. This Agreement is made and is subject to the provisions of the outstanding Bond Indenture of the Authority and the covenants thereof as the same may from time to time be interpreted by the Bond Counsel to the Authority. Nothing herein shall be construed in any manner which shall be inconsistent with any opinion rendered by the said Bond Counsel. The Authority has not received an opinion of Bond Counsel that this Agreement is violative of any provision of the Bond Indenture. The Authority represents that, to the best of its knowledge and belief, the Bond Indenture does not preclude the Authority from entering into and performing this Agreement.

29. As required, the Trust will employ a New Jersey Licensed Professional Engineer with regard to the on-site wastewater facility design and construction.

30. In the event of the termination of this Agreement in accordance with Paragraph 37 hereof, or termination for any other reason, the Trust or its assignee agrees to remove any and all connections that have been made into the Authority sewage collection system at its own cost, and all such work at the point of connection shall be done in the manner designated and approved by and under the supervision and control of the Authority and subject to the inspection and approval of the Authority's Consulting Engineer.

31. The Trust shall not enter into any agreement with, nor permit any other party or parties to connect into the Authority sewage collection system.

32. It is understood and agreed that nothing herein contained shall be construed to give the Trust any right, title or interest in or to any part or portion of the sewerage system of the Authority or any of its appurtenances, additions, appendages, connections or equipment of such system, and that the full and complete title and interest therein and thereto shall remain vested in the Authority.

33. It is agreed and understood that the Authority shall not be under any obligation to the Trust to alter, enlarge, extend or in any respect change the whole or any portion of its sewerage system. However, if as the sole result of any additional flow approved to enter the Authority sewage collection system from the GEMS Landfill it is determined that the Authority sewage collection system must be upgraded and/or improved in order to accommodate such increased flow in excess of the Authority Consulting Engineer flow chart, the Trust shall pay the proportionate cost of upgrading and improving the Authority sewage collection system to accommodate this additional flow.

34. This Agreement shall continue in effect for a period of 30 years unless revoked by the Trust through giving the Authority at least 90 days written notice in advance of its intention and desire to terminate this Agreement, unless otherwise agreed. In

the event the Agreement is not terminated on the expiration date, it shall automatically renew for 12 month periods with the right to terminate by either party on 60 days advance written notice.

35. The parties specifically acknowledge that the terms of this Agreement were negotiated and agreed to based upon the existing design of the CCMUA Regional Collection and Treatment System and the terms of the Service Agreement entered into between the CCMUA and the various Municipalities and Authorities in Camden County. In the event that the design of the Regional Sewer System is modified or in the event the provisions of the Service Agreement are amended or modified at any time in the future, each party hereto reserves the right to petition the other party to amend, modify or revise this Agreement as necessitated by the changes referred to above. In the event the other party fails to negotiate a reasonable modification or revision, as necessary, the other party reserves the right to petition a Court of competent jurisdiction to amend, modify or revise this Agreement.

36. This Agreement constitutes and expresses the whole agreement of the parties hereto with reference to the subject matter hereof and to any of the matters or things herein provided for or hereinbefore discussed or mentioned in reference to the subject matter hereof; all prior promises, undertakings, representations, agreements, understandings and arrangements relative thereto being herein merged.

37. This Agreement may not be modified, altered, amended or changed except by an instrument in writing duly and validly executed by the parties hereof.

38. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforcement of any other provision.

39. This Agreement was made and executed in the State of New Jersey and shall be governed by, enforced in and construed in accordance to the laws of the State of New Jersey. The parties agree that this Agreement was entered into as part of a judicially managed settlement and agree that any Court having continuing jurisdiction over the GEMS matter shall have jurisdiction over any disputes arising out of this Agreement.

40. Failure to insist upon strict compliance with any terms, covenants or conditions thereof shall not be deemed a waiver of such term, covenant or condition.

41. This Agreement shall be binding upon and enure to the benefit of the parties and their respective legal or personal representatives, heirs, executors, administrators, successors and assigns. The Authority acknowledges and consents to a future assignment of the benefits and obligations of this Agreement from the Trust to the State of New Jersey or any subdivision thereof, or to another third party subject to the reasonable approval of the Authority if such an assignment occurs consistent with the Consent Decree or otherwise

42. All notices, requests and other communications hereunder shall be in writing and shall be sent by registered or certified United States Mail, return receipt requested, postage pre-paid, addressed as follows:

If intended for Gloucester Township MUA:

c/o Chairman
P.O. Box 216
Glendora, NJ 08029

If intended for Trust:

Name and Address to be provided on date
this Agreement is executed by the Trust

Any party may designate a different party or entity or place to or at which notices shall be given by delivering a written notice to that effect to the other party, which notice shall be effective after the same is actually received by the other party. In lieu of mailing, the parties may deliver any such notice, document or papers to the aforesaid addresses by personal delivery.

43. Each party signing this Agreement represents that it has received formal authorization permitting it to execute this Agreement. A copy of said authorization is attached hereto. This Agreement may be signed in counterpart with each counterpart being considered an original.

IN WITNESS WHEREOF, the parties hereto have each caused the due execution and attestation hereof by its duly authorized officers or representatives as of the date and year aforesaid.

GLOUCESTER TOWNSHIP MUNICIPAL
UTILITIES AUTHORITY

BY: _____

ATTEST:

_____
DORA M. GUEVARA, Recording Secretary

GEMS SITE PHASE II TRUST

ATTEST:

BY: _____

_____

BY: _____

_____

BY: _____

_____

BY: _____

_____

IN WITNESS WHEREOF, the parties hereto have each caused the due execution and attestation hereof by its duly authorized officers or representatives as of the date and year aforesaid.

GLOUCESTER TOWNSHIP MUNICIPAL UTILITIES AUTHORITY

BY: _____

ATTEST:

_____
DORA M. GUEVARA, Recording Secretary

GEMS SITE PHASE II TRUST

ATTEST:

BY: _____

BY: _____

BY: _____

BY: _____

SCHEDULE "A"

$$\frac{200 \text{ gpm}}{1600 \text{ gpm}} \times \frac{\text{metered flow gpd}}{300 \text{ gpd connection}} \times \text{Authority Annual Service Charge} = \text{Annual Service Charge}$$

SCHEDULE "B"

The discharge connection of the treatment system to Erial Road may be made within the zone of 3400 feet from the existing lift station in any easterly direction. The connection must be made with a "doghouse" manhole and not to an existing manhole. The pumpage from the landfill shall be programmed as follows:

1) 350 gpm from 2:00 a.m. to 7:00 a.m.

2) 150 gpm from 9:00 a.m. to 12:00 a.m.

3) A varying rate of 150 gpm to 350 gpm from 12:00 a.m. to 2:00 a.m. and 350 gpm to 150 gpm from 7:00 a.m. to 9:00 a.m.

The existing lift station near the intersection of Erial Road and College Drive shall be converted from a wet well/dry well station to a submersible pump station. The Trustee will submit for review and approval by the Authority the method of metering the discharge of the treated effluent, which system shall be attached to the effluent line of the on-site wastewater facilities. The Trust shall also submit flow calculations to the Authority on a 30 day basis.

Connection shall be proportioned by average conveyance capacity used by the landfill discharge and calculated as follows:

1) Conveyance pipe capacity - 1600 gpm;

2) Landfill average discharge - 20 gpm;

3) Average daily flow for one (1) connection unit - 300 gpm

4) Total daily flow - 264,000 gallons

APPENDIX I

Malcolm Pirnie, October 1985, Gas Migration Report

NUS, April 1986, Final Remedial Investigation Report, Volumes I & II

NUS, April 1986, Final Feasibility Study Report

New Jersey Department of Environmental Protection (NJDEP), August 29, 1986, GEMS Landfill Site Specific Request for Proposal

TAMS CONSULTANTS, Inc., July 24, 1987, Field Quality Assurance Project Plan (for Pre-Design Work)

TAMS CONSULTANTS, Inc., August 4, 1987, Field Sampling and Testing Plan (for Pre-Design Work)

TAMS CONSULTANTS, Inc., March 1988, Field Sampling and Testing Report for the Remedial Design of the GEMS Landfill Site, Gloucester Township, New Jersey

Agency for Toxic Substances and Disease Registry (ATSDR), June 5, 1989, Health Assessment

NJDEP, 1991, Pre-Design Groundwater, Surface Water and Sediment Sampling Results

TAMS CONSULTANTS, Inc., March 1991, 95% Submittal - Phase 2 Design, consisting of Design Drawings; Technical Specifications; Technical Reports and Cost Estimate

November 1991, Focused Feasibility Study Report for Groundwater/Leachate Extraction, Treatment and Discharge, Phase II - Site Remediation

ALLIANCE TECHNOLOGIES CORPORATION, April 29, 1992, Technical Review of Focused Feasibility Study Report

TAMS CONSULTANTS, Inc., May 1993, Phase II Re-Design Review of Construction & As-Built Drawings & Groundwater Modeling Verification

NJDEPE, Summer 1993, Groundwater, Surface Water and Sediment Sampling Results

Peroxidation Systems, Inc. (PSI), June 25, 1993, Confidential Process Assessment (of the perox-pure™ Process for the Destruction of Organic Contaminants in Groundwater), as amended by August 16, 1993 letter from PSI to Mike Thiyagaram of TAMS CONSULTANTS, Inc.

Birdsall Engineering, Inc., February 10, 1994, Drawings for Goundwater/Leachate Treatment Facility

ZIMPRO ENVIRONMENTAL, INC., May 1994, GEMS Landfill Groundwater Testing

TAMS CONSULTANTS, Inc., October 1994, Drawings for Groundwater Extraction and Collection System

USEPA, October 1994, Groundwater, Surface Water and Sediment Sampling Results

Birdsall Engineering, Inc., October 1994, Technical Bid Specification for Goundwater/Leachate Treatment Facility

TAMS CONSULTANTS, Inc., February 1995, Technical Specifications, Phase II Groundwater Extraction and Collection System

TAMS CONSULTANTS, Inc., June 1995, Impact of Groundwater Extraction on Swamp Pink Colonies

A.C. Schultes, February 1975, Technical Data, Amadei Sand & Gravel, Inc., 4" Landfill Observation Well Nos. 1 and 2.

Wehran Engineering Corp., December 6, 1976, Closure Plan and results of test borings
(submitted to NJDEP, Solid Waste Admin.)

M. Disko Associates, November 1977, Short Term Addition For Gloucester Sanitary Landfill ...
(submitted to NJDEP, Solid Waste Admin.)

NJDEP, Solid Waste Admin., April 27, 1981, Re: March 1981 GEMS sampling data.

NJDEP, Solid Waste Admin., June 22, 1981, Re: May 1981 GEMS sampling data.

Stablex-Reutter, Inc., April 19, 1982, Re: March 9, 1982 GEMS sampling data
(submitted to NJDEP).

Stablex-Reutter, Inc., April 13, 1982, Re: March 12, 1981 sampling of waste samples.
(Submitted to NJDEP)

Stablex-Reutter, Inc., July 1, 1981, Re: May 28, 1981 sampling data.
(Submitted to NJDEP)

Stablex-Reutter, Inc., July 28, 1981, Re: May 28, 1981 sampling data.
(Submitted to NJDEP)

Stablex-Reutter, Inc., July 23, 1981, Re: June 3, 1981 sampling data.
(Submitted to NJDEP)

Environmental Measurements & Analysis, May 12, 1982, Results of May 3, 4 and 5, 1982 sampling.
(For Camden County Dept. of Solid Waste Mgmt.)

United States Testing Company, Inc., September 1, 1982, Results of Soil Sampling.
(For Gloucester Township)

Environmental Measurements & Analysis, July 1980, Environmental Assessment Study of GEMS Landfill Site.
(For Gloucester Township)

NJDEP, Trip Report, GEMS Soil Atmosphere Testing, April 9-13, 1984.

NJDEP, Hazardous Site Mitigation Administration, January 13, 1984, A Preliminary Assessment of the Air Quality in the Vicinity of the GEMS Landfill.

N.J. Dept. of Health, Environmental Health Hazard Evaluation Program, Winter 1981-1982 and Summer 1982, Environmental Air Sampling Both Within and Outside of Homes Located Near GEMS Landfill.

NJDOH, Environmental Health Hazard Evaluation Program, December, 1982, Report: Briar Lake Health Survey - Appendum (sic) To "A Health Survey of the Population Living Near the GEMS Landfill."

NJDOH, Environmental Health Protection Program, 1985, Survey of Health Complaints Near GEMS Landfill.

ATSDR, U.S. Public Health Service, December 7, 1988, Health Assessment For GEMS Landfill ... (DRAFT)

NJDEP, August 7, 1980 Analytical Results of Surface Water Samples - Vicinity of GEMS.

Applied Geotechnical and Environmental Service Corp., Water Quality Reports from Monitoring Wells #1 and #2, September 11, 1978; December 4, 1978; March 30, 1979; June 5, 1979; September 19, 1979; December 10, 1979; March 20, 1979; June 26, 1980; September 26, 1980.
(Submitted to NJDEP)

NJDOH, Stream or Waste Water Analysis near GEMS Landfill, June 24, 1980; September 18, 1980.

NUS Corp., July, 1985, Remedial Investigation Report/Feasibility Study (4 volumes).
(For EPA)

NJDEP, Division of Water Resources, September 14, 1990, Memorandum, SIU Permit Equivalent.

NJDEP, Division of Publicly-Funded Site Remediation, April 8, 1995, GEMS Landfill Site Phase II Pre-Final Design Documents.

NUS, April 1985, Focused Feasibility Study.

TAMS, August, 1991, Focused Feasibility Study Report for Groundwater/Leachate Extraction and Treatment - Phase II Site Remediation
(For NJDEP)

Eckenfelder, Inc., August 1992, GEMS Phase lI Site Remediation Groundwater Discharge Treatment and Discharge Alternatives Cost Evaluation Report.

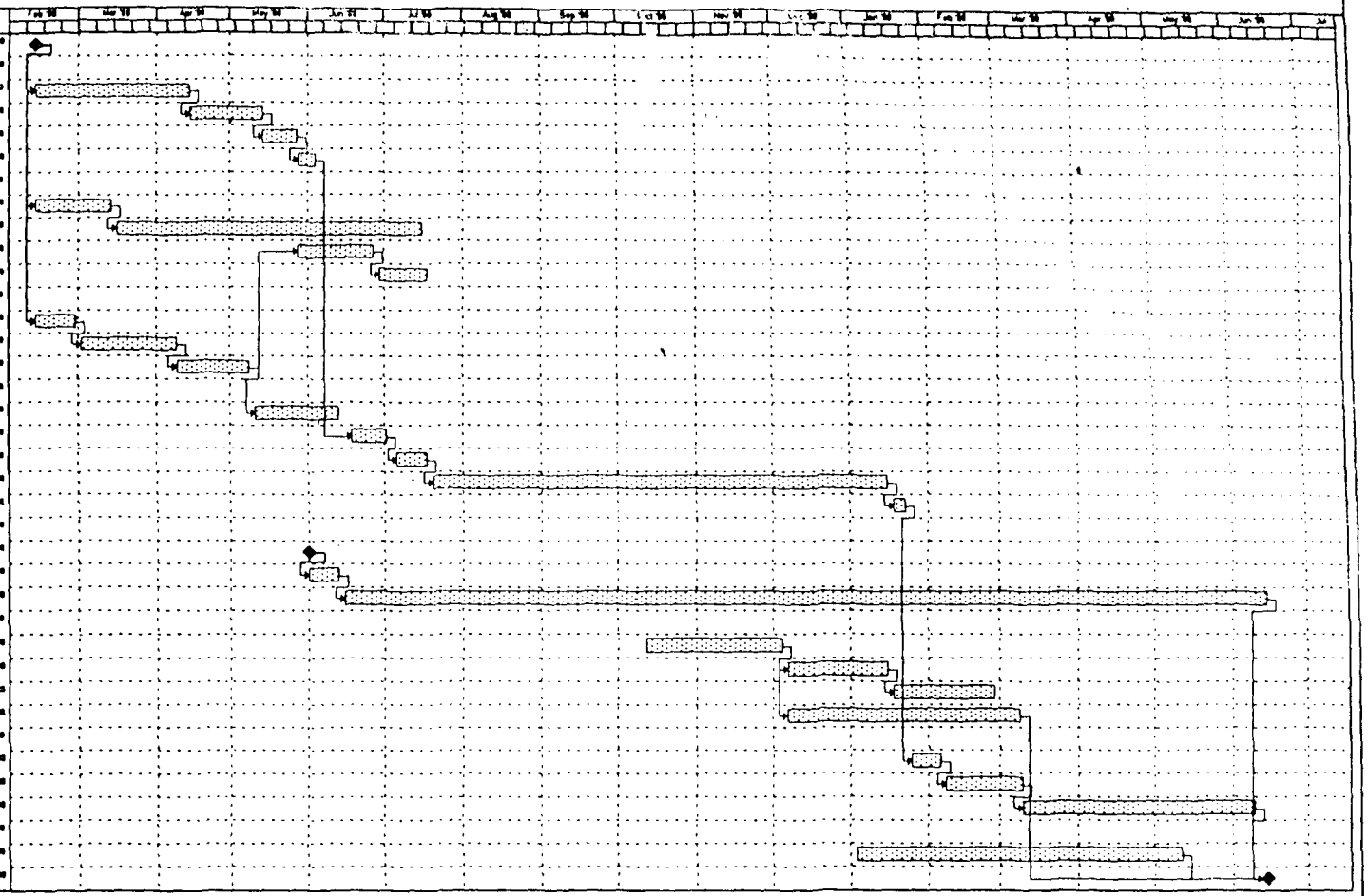
Eckenfelder, Inc., February 1995, Proposed Mitigation of Impacts to Swamp Pink Colonies Near the GEMS Landfill.

APPENDIX J

EVENT	REOPENER SETTLING DEFENDANT (RSD) ACTION	DURATION
Consent Decree Entry (effective date)	Name Supervisory Professional	10 days
EPA Issues Authorization to Proceed	Submit Proposed Final Remedial Design (RD)	45 days
EPA Approves RD	Submit Remedial Action Work Plan (RAWP)	60 days
EPA Approves RAWP	Award Construction Contract	45 days
Contract Award	Schedule Pre-Work Conference with EPA	14 days
Pre-Work Conference Held	Begin Remedial Action (RA)	10 days

REMEDIAL ACTION WORK PLAN
PLANNING SCHEDULE

ID	Task Name	Start	Finish
1	EPA APPROVAL OF DESIGN MODIFICATION	3/13/98	3/13/98
2	REMEDIAL ACTION WORK PLAN	3/13/98	[illegible]
3	PREPARE & SUBMIT RAWP	3/13/98	4/13/98
4	EPA RVW & COMMENT	4/14/98	5/13/98
5	FINAL RAWP SUBMITTAL	5/14/98	5/27/98
6	EPA APPROVAL	5/29/98	6/3/98
7	PERMITS	3/13/98	7/17/98
8	PREPARE & SUBMIT ENGINEERING PERMITS	3/13/98	3/13/98
9	APPROVAL OF ENGINEERING PERMITS	3/16/98	7/16/98
10	PREPARE & SUBMIT CONSTRUCTION PERMITS	5/29/98	6/29/98
11	APPROVAL OF CONSTRUCTION PERMITS	6/29/98	7/17/98
12	CONTRACTOR SELECTION	3/13/98	[illegible]
13	FINALIZE BID PACKAGES	3/13/98	3/27/98
14	CONTRACTOR BIDDING PROCESS	3/30/98	4/9/98
15	FINAL CONTRACTOR SELECTION	4/9/98	5/8/98
16	CONSTRUCTION PHASE	5/11/98	1/22/99
17	PREPARE & SUBMIT HASP	5/11/98	5/12/98
18	PRE-WORK CONFERENCE	6/15/98	7/1/98
19	CONTRACTOR MOBILIZATION	7/6/98	7/17/98
20	CONSTRUCT MODIFIED DESIGN	7/20/98	1/15/99
21	TESTING & COMPLETION	1/18/99	1/22/99
22	SWAMP PINK MONITORING PLAN	8/1/98	8/14/98
23	ACCESS TO REFERENCE COLONY	8/1/98	8/1/98
24	SITE SETUP AT REFERENCE COLONY	8/1/98	8/12/98
25	BASELINE MONITORING	8/15/98	8/14/98
26	GROUNDWATER PERFORMANCE MONITORING	10/13/98	[illegible]
27	OW CONTRACTOR SELECTION	10/13/98	12/4/98
28	PREPARE & SUBMIT OW RAWP	12/7/98	1/15/99
29	EPA APPROVAL OF OW RAWP	1/18/99	2/26/99
30	PROCUREMENT & SETUP	12/7/98	3/9/99
31	CERTIFICATION APPLICATION	1/2/99	[illegible]
32	INITIAL INSPECTION DATE	1/25/99	3/5/99
33	PREPARE & SUBMIT CERTIFICATION APPLICATION	3/8/99	3/9/99
34	EPA APPROVAL OF CERTIFICATION APPLICATION	3/10/99	3/9/99
35	STARTUP EXTRACTION AND TREATMENT PHASE	1/4/99	8/14/99
36	PHASE I O&M CONTRACTOR SELECTION	1/4/99	5/11/99
37	STARTUP OPERATIONS	8/14/99	8/14/99



Project: GEMS LANDFILL
Date: 5/27/98
de maximis Inc.

Task: [illegible]

Page 1

APPENDIX K

Natural Resource Damages Monitoring and Compliance Plan

Gems Landfill Superfund Site
Uplands-- Planting, Monitoring and Maintenance

1. Woodlands

Reopener Settling Defendants shall not cause any substantial change in the present condition of the woodlands surrounding the landfill which currently provides nesting, roosting, and perching sites for resident and migratory birds.

2. Landfill Cover Planting, Maintenance and Monitoring Plan

For purposes of this Appendix, a "bare spot" shall be defined as an area totally or substantially devoid of vegetative cover. For purposes of implementing the requirements of this Appendix, the Reopener Settling Defendants shall establish a grid overlay on the vegetative cap to identify each 10,000 square foot area; provided, however, if the distance between any two bare spots is less than 100 feet, the bare spots will be presumed to fall within the same 10,000 square foot area, regardless of the fact that they may be located in different grids.

a. Reopener Settling Defendants shall monitor the vegetative cap of the landfill on a monthly basis for the first ten (10) years of the Operations and Maintenance Period to insure that the following conditions are met with regard to each 10,000 square foot section of turf on the landfill cap:

   1. there shall be no bare spots in excess of three (3) square feet;
   2. bare spots larger than one (1) square foot shall not cover more than 10% of the total area; and
   3. bare spots larger than six (6) square inches shall not cover more than 15% of the total area.

b. If Reopener Settling Defendants determine that there are bare spots in excess of the criteria specified above, they shall notify the Trustees of their observations and reseed and fertilize all of the bare spots in the applicable 10,000 square foot area. In all reseeding efforts, Reopener Settling Defendants shall use a "Conservation Mix for Dry Areas" which shall consist of the following seeds in the following proportions:

40% Rebel II or Falcon Tall Fescue
35% Reliant II or Aurora Hard Fescue
10% Fortress or Ensylva Strong Creeping Red Fescue
5% Repel II or Citation II Peremial Ryegrass
4% Streaker or Common Red Top
5% Kanlow or Common Switchgrass
1% Ladino or Dutch White Clover

c. The reseeded areas shall be monitored pursuant to the criteria established in Section 2.a. above and reseeded as appropriate.

d. In order to avoid impact to ground nesting birds, and in order to preserve the integrity of the topsoil-over-sand earth cover over the cap from injury due to tractor operations, unless otherwise approved by the Trustees, Reopener Settling Defendants shall not mow the vegetative cap unless that is necessary to maintain the coverage required by this section. If mowing is required to cure or prevent the occurrence of bare spots as described herein, such mowing shall be conducted once per year between mid-August and mid-September unless otherwise approved by the Trustees. The Trustees and the Reopener Settling Defendants recognize the requirement that the growth of deep-rooted plants must be suppressed to maintain the integrity of the earth cover and cap beneath; such suppression is to be accomplished by plant specific cutting, plant specific application of commercially available broad leaf weed killers, or such other means as my be approved by the Trustees.

Comprehensive Environmental Response, Compensation and Liability Act--Natural Resource Damage/Endangered Species Act (CERCLA--NRD/ESA)
Monitoring Plan for
Swamp Pink (*Helonias bullata*) Populations
in the vicinity of the
GEMS Landfill Superfund Site
Gloucester Twsp., Camden Co., NJ
(hereinafter referred to as the "Swamp Pink Monitoring Plan")

March 1997

TABLE OF CONTENTS

	Page
INTRODUCTION	1
OBJECTIVES	2
SPECIES DESCRIPTION	2
METHODS	4
Preliminary Survey	
Transect Establishment	
CHARACTERIZATION AND MONITORING OF BIOLOGICAL ENVIRONMENT	5
Forest Structure and Composition	
Canopy Species	
Shrub Species	
Herbaceous Species	
Animal Species	
SWAMP PINK DEMOGRAPHIC SAMPLING	6
CHARACTERIZATION OF PHYSICAL ENVIRONMENT	7
Insolation	
Groundwater Monitoring	
Edaphic Conditions	
ANALYSIS	9
REPORTING	9
CERCLA-NRD NOTIFICATION/INFORMAL DISPUTE RESOLUTION PROCESS	10
LITERATURE CITED	12

LIST OF FIGURES

Number

1 Site Environs

2 Colony III & Reference Wetlands Locations

3 Sampling Transects and Quadrat Layouts

LIST OF TABLES

Number

1 Biological and Physical Monitoring Parameters

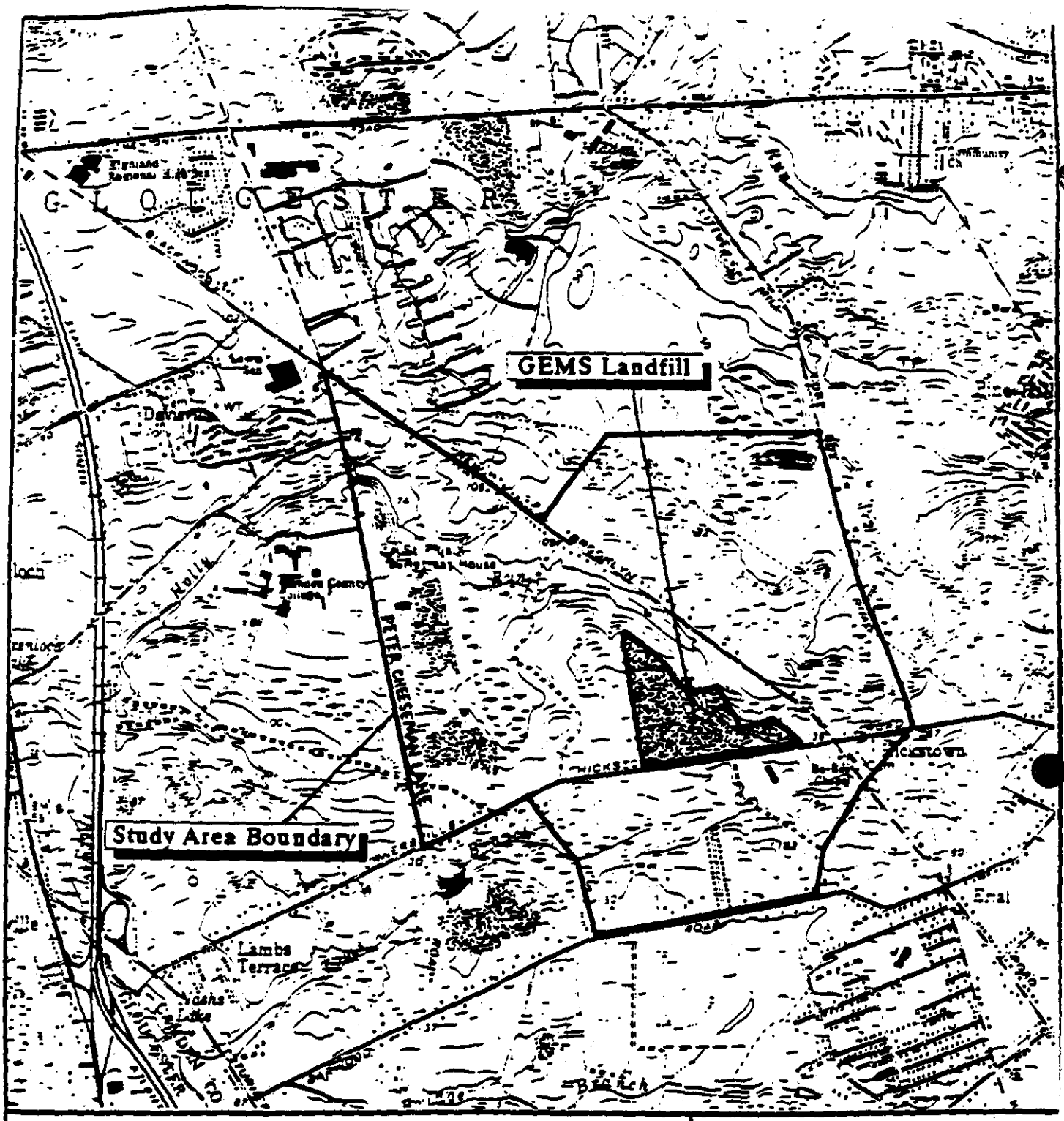
INTRODUCTION

The planned remedial action for ground water at the Gloucester Environmental Management Services, Inc. (GEMS) Landfill Site (see Figure 1) in Gloucester Township, Camden County, New Jersey will include the installation of a groundwater extraction and on-site pre-treatment system to contain the underlying ground water contaminant plume. A detailed biological assessment (BA) of the swamp pink (Helonias bullata L.) population in a study area around the GEMS site, prepared for the U.S. Environmental Protection Agency, Region II (USEPA), by Amy S. Greene Environmental Consultants, Inc. in 1995, identified seven swamp pink colonies within the area that could potentially be affected by the originally proposed groundwater drawdown around the GEMS facility. Drawdown modeling indicated that implementation of the remedial action had a potential for altering the hydrology of the palustrine forested wetlands in the study area and negatively affecting the swamp pink populations within those wetlands.

The Responsible Party's modified remedy plan has addressed the potential impacts of the drawdown to the adjacent wetlands by reducing the area of drawdown. The BA indicated that the potential impact would be greatest at Colony III, since the proposed remedy is estimated to result in a drawdown of prevailing groundwater levels of 0.5 feet within 600 feet of the margin of the colony nearest the landfill. The following monitoring plan has been developed to minimize the potential for impacts and to ensure that, in the event of any impact, or indications of a potential for impacts occurring, reliable data will be available to allow appropriate actions to be taken.

The Consent Decree document contains a performance standard that requires the USEPA, in coordination with the U. S. Fish and Wildlife Service (USFWS), to determine whether and how modifications to the groundwater extraction system will be made to avoid adverse impacts to the swamp pink.

The Operations and Maintenance Plan for the project, which will be developed during construction of the system, will specify the detailed criteria to be used by the USEPA, in coordination with the USFWS, to determine the potential adverse impacts to the swamp pink. In addition, this document will include a range of potential modifications to the operation of the groundwater extraction system, consistent with Paragraph 11.c of the Consent Decree, that may be taken should an impact be identified. Any such corrective action would be taken at the direction of the USEPA following coordination with the USFWS; provided, however, that nothing in this paragraph shall affect the rights of the parties pursuant to Paragraph 80 of the Consent Decree.



0 2000'

FIGURE 1
SWAMP PINK SURVEY
STUDY AREA

GEMS Landfill
Gloucester Township
Camden County, NJ

Unless otherwise decided by the USEPA and USFWS, the frequency of the vegetative monitoring will be as described within the body of this Plan for the first five years, after which time it will be reduced to annual monitoring. This is in line with the USFWS's 1991 Recovery Plan. The monitoring program will continue for the 30-year life of the remedy. It will be set up and run for the years -1 through 10 by the Responsible Party Group. This will include a year of monitoring prior to start-up of the remedy to establish baseline conditions, and the first ten years of operation. The State of New Jersey (New Jersey Department of Environmental Protection) will assume responsibility for its operation for years 11 - 30.

OBJECTIVES

This monitoring plan addresses any potential short-term, long-term, and cumulative effects of the remedial action on the swamp pink colonies in the wetlands in the vicinity of the landfill.

Thc objectives of the Plan are as follows:

1. To provide the guidelines for monitoring the hydrological conditions and parameters for swamp pink demographics in both the wetland containing Colony III and a reference wetland, before and during groundwater remediation activities;

2. To specify how any adverse short- and/or long-term changes in the ecological conditions in the monitored wetlands would be detected; and

3. To specify the requirements for reporting the results of these various types of monitoring.

SPECIES DESCRIPTION

Swamp pink was designated as a Federally listed threatened species by the USFWS throughout its range in 1988 due to both population decline and serious threats to its habitats (USFWS, 1988). It is an obligate wetland species occurring along streams and seepage areas in freshwater forested and other wetland habitats. As discussed in the USFWS Swamp Pink Recovery Plan (1991), the primary threat to the species is loss and degradation of its wetland habitat due to encroaching development, sedimentation, pollution, succession, and wetland drainage.

Swamp pink is a perennial herb with thick, stocky rhizomes. Its leaves, which form a basal rosette, are smooth, evergreen, oblong-spatulate or oblanceolate, parallel-veined, and attenuated at the base. A stout hollow stem arises from the rosette and may grow to a height of 20 to 90 centimeters (cm) at the time of flowering, and to 1.5 meters (m) at seed maturation. The stalk is terminated by a simple, short, dense, bractless, 3- to 8-cm long raceme. The infloresence consists of 30 to 50 fragrant flowers (Sutter, 1982, 1984). The fruit capsule is papery, 3 to 5 millimeters (mm) long and 8 to 10 mm wide, with an inverted heart shape, consisting of many ovules. The rootstock is stout and fibrous. Plants bloom as early as March and often last until May. Seed set occurs in June.

Swamp pink populations range in size from a few to several thousand plants: A recently discovered population in North Carolina contains in excess of 100,000 individual rosettes (USFWS, 1991). In the State of New Jersey, a total of 139 records and 71 occurrences account for over half of the world population of the species (USFWS, 1991).

Habitat suitability appears to be determined primarily by the presence of a constant water supply. Habitats are generally groundwater-influenced, perennially saturated, and rarely inundated by floodwaters (Rawinski and Cassin, 1986). In New Jersey, habitats are primarily red maple (Acer rubrum L.) or Atlantic white cedar (Chamaecyparis thyoides) swamps, with a mucky substrate and a variable canopy. There tends to be consistent dispersion of plants within swamp populations, relative to other habitats, indicating the influence of water availability (USFWS, 1991). Sutter (1982) indicated that populations in North Carolina occurred within a fairly limited range of soil pH of between 4.2 and 4.9.

Populations may not be uniform. Portions of the colonies often exhibit extremely dense plant spacing. Densities of up to 56 rosettes/m^2 are not uncommon (Sutter, 1982). Peterson (1990) found that New Jersey populations were similarly clumped in distribution, probably due to rhizomatous connections or limited seed dispersal.

While seed set and germination rates tend to be very high, seedling survival and establishment are low (Maddox, 1990), which probably contributes to low colonization rates in new habitats. Relatively few plants within a population appear to set flowers within a given year (Sutter, 1982, 1984). Sutter (1982) estimated that 6 percent or less of plants in a given population may set flowers in North Carolina, while Maddox (1990) estimated between 12 and 15 percent. The factors influencing flowering are not well understood.

METHODS

The preliminary guidelines for population monitoring from Appendix A of the USFWS's 1991 Recovery Plan will be followed to define a colony as a unit of plants separated from other colonies by a physical boundary (e.g., road, unsuitable habitat), and a population as one or more colonies. In the absence of genetic information, populations are described as those plants occupying a given geographic area or watershed.

Review of the BA and accompanying maps identified Colony III (see Figure 2) as the colony most likely to be directly affected by groundwater drawdown due to the modified remedy. This colony will be monitored, along with a reference colony, located outside the watershed, that will serve as a control and help to differentiate regional effects from those due to drawdown from the remedial action.
While the "Campus" wetlands site (see Figure 2) has been identified as the preferred area for use as the reference colony, should its use not be feasible, another suitable reference site will be chosen in coordination with the USFWS.

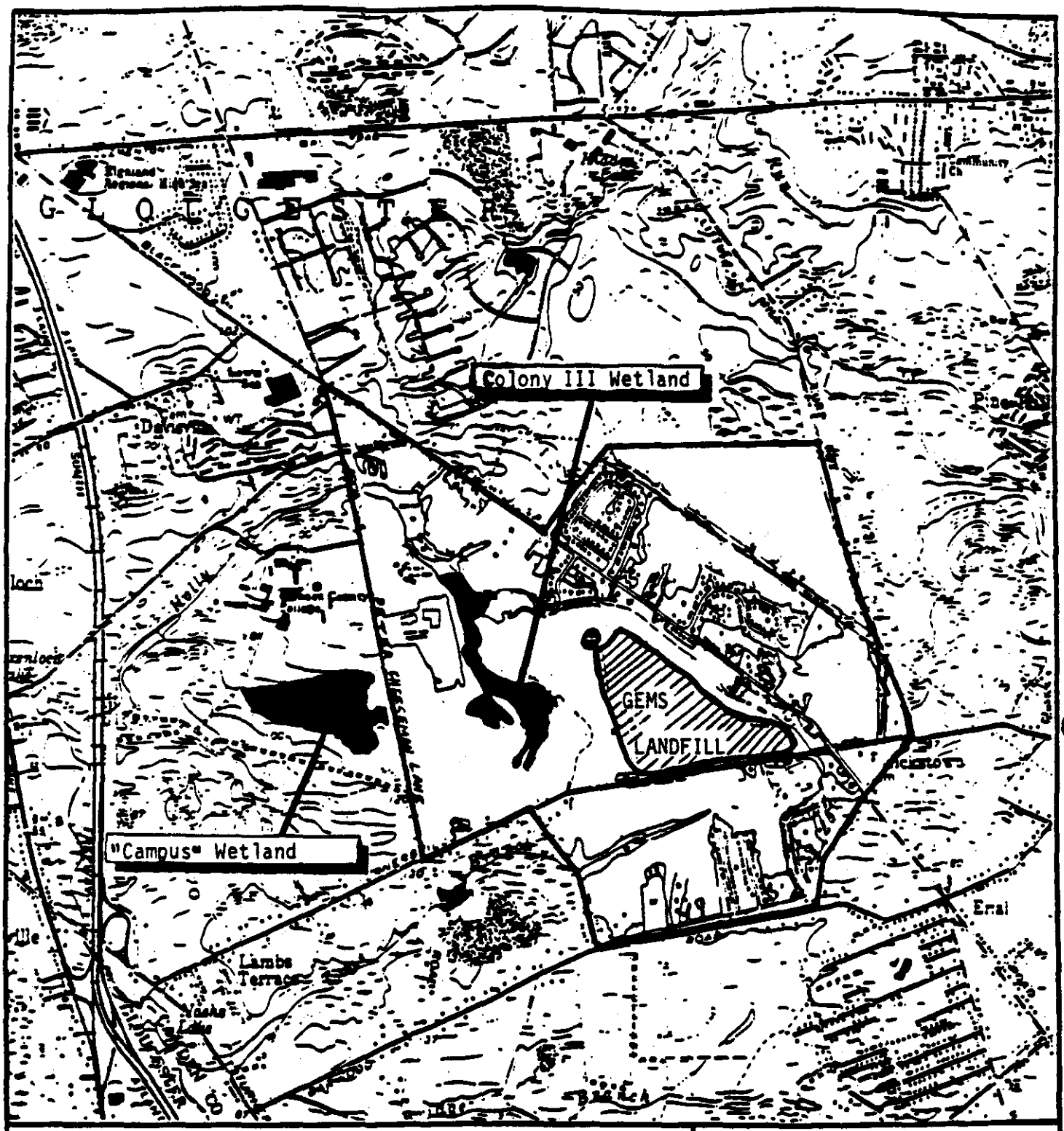
Preliminary Survey

A preliminary survey of both colony sites will be conducted to identify representative transect locations and sampling areas. Preliminary data collection will also include establishment of permanent plots and markers for time-series photography.

In order to detect ecological changes in the wetlands that may result from the remedial action, data will be gathered before and after the start of the remediation in both the potentially affected wetland and the reference wetland. Baseline conditions of both the demographics of monitored populations and the hydrology must be set before meaningful conclusions about possible effects of the remediation can be drawn. For example, deviations in the seasonal cycle from a "normal" hydrologic regime can dramatically affect wetland herbaceous communities, often more so than the actual magnitude of the deviation (Adamus and Brandt, 1990). Thus, a full year of data will be collected from Colony III and the reference wetland to establish baseline conditions and to detect naturally occurring trends throughout the seasons.

Transect Establishment

Trampling of vegetation and compaction of wetland soils during a single visit can create subtle changes in plant communities that may be detected in subsequent visits. In



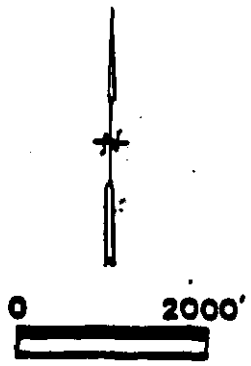


FIGURE 2

COLONY III & REFERENCE WETLAND LOCATIONS

GEMS Landfill
Gloucester Township
Camden County, NJ

order to facilitate repeated sampling of the swamp pink colonies, and minimize disturbance of the plants themselves, a number of permanent belt transects will be established prior to the initial, pre-remediation sampling period. These transects (see Figure 3) will be established perpendicular to the prevailing topography, spanning the likely stress gradient, and extend across the width of the wetland corridor and into the adjacent upland area. The transects will be placed subjectively to capture a range of characteristic assemblages of species as determined during the initial site reconnaissance.

CHARACTERIZATION AND MONITORING OF THE BIOLOGICAL ENVIRONMENT

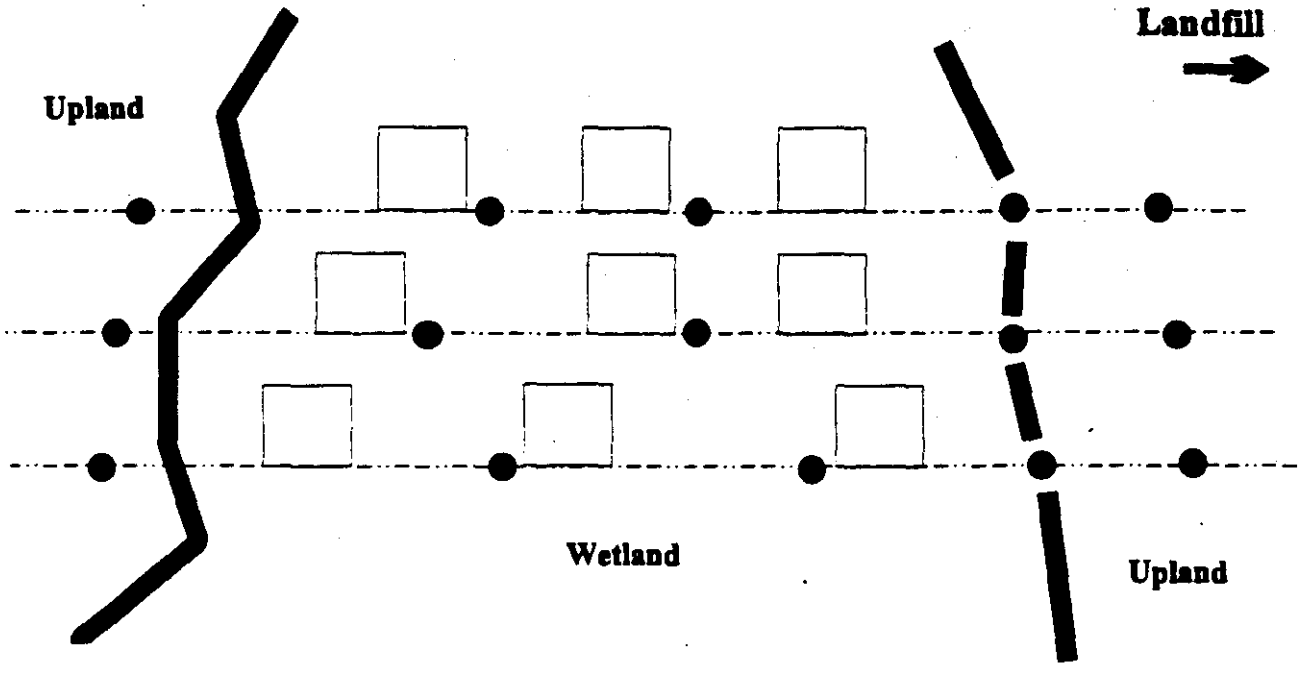
Forest Structure and Composition

Canopy Species

Canopy species will be recorded in three 100 m^2 quadrats on each of the three sampling transects, for a total of nine quadrats (See Figure 3). All of these will be separated by at least 30 m. All trees (i.e., woody vegetation 10 cm or more in diameter at breast height [dbh]) will be recorded by species and measured for dbh using a metal diameter tape and for height using a hand-held clinometer. Crown cover of canopy trees will be estimated using a spherical densiometer. From these measurements, the following will be calculated for each species in each plot and each stand: density in stems/hectare (ha); frequency; basal area (m^2/ha); and an importance value (the average of relative density + relative frequency + relative basal area). Sampling of the canopy species will occur in September of each year. The measurement of tree height and diameter at breast height (dbh) will be performed every five years after the baseline monitoring, unless some significant event occurs that would warrant an additional, interim measurement.

Shrub Species

Two 5 m X 5 m plots will be established within each of the nine 100 m^2 quadrats (for a total of 18 such plots per colony) to characterize the shrub layer (see Figure 3). Within each of these shrub sampling plots, all shrubs and small saplings (from 1.4 cm to 4 cm dbh at 1.4 m above the ground) will be counted and measured for dbh (or basal diameter at 10 cm from the ground in the case of shrubs) and height. In addition, the total number of stems and percent coverage of shrubs (i.e., an ocular estimate) will be recorded by species. To minimize impacts to vegetation,



Detail of a 100 m^2 Quadrat:

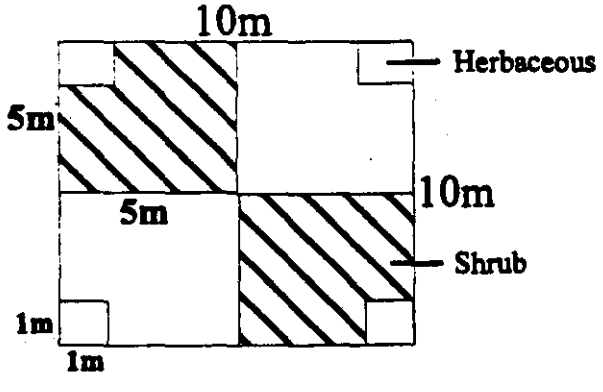


Figure 3

Sampling Transects & Quadrat Layout

- Sampling Transect
- Piezometer
- Wetland Margin (Ecotone)
- Quadrat (location generalized)
- Demographic Sampling Plot

full sampling will occur in September, while ocular estimates only will be recorded during the remainder of the quarterly visits (i.e., in March, May/June, and December). Additional sampling will be implemented only if there is significant change in the vegetative community.

Herbaceous Species

Herbaceous and seedling cover (less than 1.0 m in height) will be estimated in each of four 1 m X 1 m plots established within each 100 m^2 quadrat, for a total of 36 herbaceous plots per colony (see Figure 3). All plants will be recorded by species and percent cover (Daubenmire, 1959). For dominant species (i.e., those which make up greater than 30 percent of the cover), the number of stems and the stem height will be recorded. In addition, the USFWS indicator status of all species will be noted. Herbaceous sampling will occur in March, May/June, September and December of each year.

Animal Species

Sightings and evidence of animal species utilization of the wetlands will be noted during all field inspections.

SWAMP PINK DEMOGRAPHIC SAMPLING

No attempt will be made to estimate biomass of swamp pink or associated vegetation, since this would entail destructive sampling, which would likely have adverse effects on the swamp pink populations.

Monitoring metrics will include demographic parameters of the swamp pink colonies and the herbaceous community surrounding them, in order to track changes in species composition. While the herbaceous communities of forested wetlands tend to be depauperate (Golet et al., 1993) and species-level data in low diversity communities tend to poorly characterize ecological changes (Adamus and Brandt, 1990), wetlands in disturbed watersheds may be populated by uncharacteristic herbaceous species that replace endemic species (Ehrenfeld, 1983). Changes in water quality or quantity that effect successional processes may adversely effect swamp pink populations (Gordon, 1989). Off-site disturbances tend to threaten the health and vigor of swamp pink. Peterson (1990) showed that New Jersey populations subjected to off-site disturbances had fewer and smaller leaves.

Sampling of swamp pink colonies will emphasize population dynamics and the condition of individual rosettes. Non-destructive sampling will be employed. The potential for disturbance to the colonies increases with the number of visits for monitoring. Following USFWS guidance (USFWS, 1991), four visits per year, for the first five years, will be conducted to detect subtle changes in demography and habitat, unless hydrologic monitoring suggests the need to increase the frequency of these inspections.

Two 1 m X 1 m swamp pink sampling plots will be placed within each 100 m^2 quadrat to provide representative rosette densities (see Figure 3). The corners will be permanently marked for identification. A total of 18 plots per colony will be monitored. All rosettes within a plot will be counted to determine rosette density (rosettes/m^2). A photograph will be taken, on a quarterly basis, to document the swamp pink and associated vegetation in each plot. The counts will specify the number of seedlings, juveniles, flowering adults, non-flowering adults, percent flowering rosettes, and percent setting seed. These counts will be taken in late spring, since more than one flowering cohort may be present in the population. In addition, ten randomly selected rosettes in each plot will be measured for height, the number of leaves per rosette will be counted, and a measure of the length and width (at the widest point) of each of the leaves will be taken. These parameters will be recorded four times per year in March, May/June (during flowering), September and December. For each flowering rosette, both scape length (i.e., the length of stalk) and raceme length (i.e., the flowering portion of the stalk) will be recorded. The condition of the tagged plants will be assessed using Munsell plant color charts. Additional observations on drying, wilting, or other discoloration of leaves, and on predation will also be recorded. A fish eye lens will be placed in the center of the plot to record canopy coverage on a quarterly basis. All of these parameters will be evaluated based on a set of criteria that will be considered as indicating potential stress to swamp pink. These criteria will be detailed within the Operations and Maintenance Plan.

CHARACTERIZATION OF THE PHYSICAL ENVIRONMENT

Insolation

The availability of light will be measured quarterly throughout the growing season in order to assess the changes in light availability to both established plants and seedlings. Measurements will be made at the corner and center of each canopy sampling plot. Available light will

be measured at the forest floor and at 2 m from the floor using an ExtechR hand-held photometer as an index of photosynthetically active radiation (PAR). All light measurements will be made at midday on clear, sunny days and expressed as a percentage of ambient light measured in the open, near the study site, at the start and end of each sampling period. While point sampling of ambient light provides little information concerning fine-scale variation in insolation over time, in concert with estimates of ground layer and canopy cover, the method provides an approximation of the light environment experienced by plants that is comparable between study sites.

Groundwater Monitoring

Piezometers will be placed along each transect, perpendicular to the groundwater transition, from the upland, through the wetland, and into the upland area adjacent to the far side of the swamp pink colony (See Figure 3). Three transects will be established in both Colony III and the reference colony. For each transect, one piezometer will be placed in the upland between the modeled 0.5-foot drawdown contour and the wetland margin, one in the ecotone, two in the wetland proper, and one on the far side of the wetland for a total of five piezometers per transect. The two piezometers in the wetlands will be located adjacent to the herbaceous and shrub monitoring plots.

Piezometers will consist of PVC piping 2 meters long and 8.5 cm in diameter, inserted into a 1.9-meter hole created using a soil auger. The bottom 1.7 meter of piping will be well-perforated to facilitate flow from the surrounding soil, and the above-ground end capped to prevent entry of surface runoff and precipitation. A collar flange will be installed at the soil surface to prevent flow between the piezometer and the soil column. Only a minimal length of each piezometer will be allowed to protrude above the soil surface so as not to call attention to the swamp pink colonies. This measure will help avoid potential vandalism or other disturbance of the piezometer location.

Monitoring of the water level in Colony III and in another colony will begin prior to the placement of the pumping wells to establish baseline water table positions and to track possible water table fluctuation not related to the remediation to confirm seasonal groundwater highs and lows. Groundwater level data will be collected from one transect, at each wetland, weekly from March through October, and biweekly (every two weeks) for the remainder of the year. The other transects will be monitored biweekly, year-round. Additional data, such as the temperature and pH of the groundwater, will be measured (using hand-held probes) at

least twice per month. Water levels will be tabulated and graphed as weekly and monthly averages. A Davis Weather Monitor II will be installed at the GEMS Landfill to collect temperature and rainfall data. If significant rainfall occurs on scheduled recording dates, the recording will be postponed for at least 48 hours. Where surface water occurs above the soil surface, its depth will be measured with a stainless steel meter stick placed adjacent to the affected piezometer.

Edaphic Conditions

Soils in the monitored wetlands will be characterized by soil logs recorded in the 10 m X 10 m forest quadrats. In each subplot used to characterize the herbaceous communities in the monitored wetlands, soil and soil water pH and temperature will be measured using hand-held probes, biweekly, from March through October, and quarterly throughout the rest of the year. A single soil sample (from the rooting zone) from each of the 100 m^2 quadrats at both colonies, will be collected annually, and analyzed for soil nutrients, organic matter, cation exchange capacity, and soil conductivity.

More details on the field methods, sampling procedures, and custody, including the quality assurance and quality control protocols for the data, to be used for the fieldwork outlined above, will be contained in the Remedial Action Work Plan for the project.

ANALYSIS

Data from repeated sampling of the population will be analyzed using repeated measures analysis of variance in order to detect any gradual temporal divergence between colonies (Travis and Sutter, 1986). Analysis of multiple character traits (e.g., leaf length, plant height) will proceed using modified significance levels and/or principal components of analysis to examine covariance patterns. Where appropriate, directional tests for differences between colonies (i.e., a null hypothesis of a detectable, directional difference in Colony III as a result of the remediation) will be used to increase the statistical power (Sokal and Rohlf, 1981).

REPORTING

Hydrogeological and meteorological data will be submitted to USEPA, and the USFWS representing the U. S. Department of the Interior ("DOI"), and the New Jersey Department of

Environmental Protection's Office of Natural Resource Damages ("NJONRD") (DOI and NJONRD shall be referred to collectively as "the Trustees") on a monthly basis, while vegetative data will be submitted quarterly, for the first year unless data suggests that a reduction in the frequency of reporting is warranted. USEPA may reduce reporting frequency, only if the Trustees and USFWS agree in writing to such a reduction. Annual reports, which will include an analysis of the year's data, will be submitted to the USEPA and the USFWS (representing DOI) and NJONRD within 60 days of the end of each calendar year. Upon request from the Trustees and/or USFWS to USEPA, USEPA will provide the Trustees and/or USFWS, at any time, full access to all original field notes including raw data. Any adjustments to the operation of the groundwater system will occur at the direction of USEPA, after consultation with the USFWS, pursuant to Section VI.11.c of the Consent Decree. Independently, the Trustees may initiate at any time the CERCLA-NRD Notification/Informal Dispute Resolution Process set forth below. If the Trustees believe that further adjustments to the operation of the groundwater system are warranted, they will pursue such adjustments through the CERCLA-NRD Notification/Informal Dispute Resolution Process Section, below.

CERCLA-NRD NOTIFICATION/INFORMAL DISPUTE RESOLUTION PROCESS

If, as a result of their analysis of any of the data provided pursuant to the Swamp Pink Monitoring Plan, or independently-obtained data or reports, the Trustees determine that the operation of the groundwater extraction system is or may be adversely impacting or compromising the swamp pink in the area of the Site, the Trustees shall notify USEPA immediately. USEPA and the Trustees shall arrange to meet (in person or by telephone) as soon as possible at which time the party which identified the problem shall explain its concerns, and USEPA and the Trustees shall review and discuss the situation to determine the existence, nature and extent of the problem and possible corrective actions which may be taken. If USEPA, after discussion with the Trustees, determines that an adjustment of the operation of the groundwater extraction system which might protect the swamp pink may be made without sacrificing the success of the remedy, such change in the operation of the groundwater system will be made pursuant to Section VI.11.c of the Consent Decree. If, within thirty (30) days of the initial notice, above, USEPA and the Trustees cannot reach agreement on further action which can be taken to both protect the swamp pink and successfully implement the remedy, the Informal Dispute Resolution Process shall be deemed to be concluded. The USEPA and the Trustees shall

then follow the procedures identified in the Comprehensive Environmental Response, Compensation and Liability Act -- Natural Resource Damages (CERCLA-NRD) Formal Dispute Resolution Agreement; provided, however, that it is understood and agreed that the CERCLA-NRD Formal Dispute Resolution Agreement process is separate from, and does not supersede, the authorities and responsibilities of any parties pursuant to Section 7 of the Endangered Species Act, 16 U.S.C. § 1536, and the regulations promulgated pursuant thereto.

TABLE 1

BIOLOGICAL & PHYSICAL MONITORING PARAMETERS

Biological	Frequency
Canopy Sampling	Sept. (w/ tree height & dbh every 5 yrs. to follow baseline)
Shrub Sampling	Sept. (w/ ocular estimates recorded in Mar., May/June & Dec.)
Herbaceous Sampling	Quarterly (Mar., May/June, Sept. & Dec.)
Animal Species*	Ea. field inspection
Demographic Sampling	Quarterly (Mar., May/June, Sept. & Dec.)

Physical	Frequency
Light Measurements	Quarterly during the growing season (Mar. to Oct.)
Water Level Monitoring	Weekly during the growing season, & biweekly (every two weeks) for the remainder of the yr. for 1 transect per wetland, & biweekly for the remaining 2 transects per wetland.
Soil Monitoring	Biweekly during the growing season & quarterly during the remainder of the yr. (soil & soil water pH & temp.). Annually (soil sample).

* Sightings & evidence of only.

LITERATURE CITED

Adamus, P. R. and K. Brandt. 1991. Impacts on quality of inland wetlands of the United States: a survey of indicators, techniques, and applications of community-level biomonitoring data. USEPA, Environmental Research Laboratory, Corvallis, OR. 198 pp.

Amy S. Greene Environmental Consultants, Inc. July 1995. Biological Assessment of Potential Remedial Action Impacts on Swamp Pink (Helonias bullata) Populations in the Vicinity of the GEMS Landfill Superfund Site, Gloucester Township, Camden County, New Jersey. Report prepared for USEPA Region II, New York, NY. (unpublished).

Daubenmire, R. 1968. Plant communities: a textbook of plant synecology. Harper and Row, New York, NY. 300 pp.

Ehrenfeld, J. G. 1983. The effects of changes in land-use on swamps of the New Jersey Pine Barrens. Biol. Conserv. 25: 353-375.

Golet, F. C., A. J. K. Calhoun, W. R. DeRagon, D. J. Lowry and A. J. Gold. 1993. Ecology of red maple swamps in the glaciated northeast: a community profile. Biological Report 12. U.S. Fish and Wildlife Service, Washington, DC.

Gordon, T. 1989. Survey of historic populations of Helonias bullata in New Jersey. NJDEP, Office of Natural Lands Mgmt. Trenton, NJ.

Maddox, D. 1990. Helonias bullata recovery research: interim report. Maryland Nat. Heritage Program, Annapolis, MD.

Peterson, C. J. 1992. Impact assessment of six extant populations of Helonias bullata in New Jersey. NJDEP, Office of Natural Lands Management. Trenton, NJ.

Rawinski, T. and J. J. Cassin. 1986. Range-wide status summary of Helonias bullata. Unpublished report to USFWS.

Sokal, R. R. and F. J. Rohlf. 1981. Biometry. 2nd Ed. W. J. Freeman, San Francisco, CA.

Sutter, R. 1982. The distribution and reproductive biology of Helonias bullata L. in North Carolina. North Carolina Dept. Agric., Plant Industry Division, Raleigh, NC.

Sutter, R. 1984. The status of Helonias bullata L. (Liliaceae) in the Southern Appalachians. Castanea 49: 9-16.

Travis, J. and R. Sutter. 1986. Experimental designs and statistical methods for demographic studies of rare plants. Nat. Areas. Jour. 6: 3-12.

U.S. Fish and Wildlife Service. 1988. Determination of Helonias bullata to be a threatened species. 50 CFR Pt. 17. Fed. Reg. 53:175.

U.S. Fish and Wildlife Service. 1991. Swamp pink (Helonias bullata) recovery plan. Newton Corner, MA. 56 pp.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: MAR 31 1997

SUBJECT: OCTOBER 1996 SWAMP PINK MONITORING PLAN (APPENDIX L TO PROPOSED GEMS LF CONSENT DECREE); RESPONSES TO COMMENTS REC'D. DURING DOJ COMMENT PERIOD

FROM: Sharon L. Atkinson, Project Manager
Emergency & Remedial Response Division

TO: Patricia C. Hick,
Office of Regional Counsel

The U.S. Department of Justice (DOJ) held a public comment period from Tuesday, January 21, through Friday, February 21, 1997, for interested parties to comment on the proposed consent decree in United States v. Air Products and Chemicals, et al., Civil Action No. 92-03860 (JBS) (consolidated with Civil Action No. 84-0152 (JBS)). The consent decree was lodged on Thursday, January 2, 1997 with the United States District court for the District of New Jersey.

The proposed remedy may have an impact on a number of colonies of Swamp Pink (*Helonias bullata*), a federally listed threatened and state-listed endangered plant species in the vicinity of the GEMS landfill site. In order to address the possible impact, the parties to the consent decree developed a Swamp Pink Monitoring Plan, which was attached to the decree as Appendix L. The Plan requires both hydrologic and vegetative monitoring to evaluate changes in the environment attributed to operation of the groundwater extraction system. Based on this information, the U.S. Environmental Protection Agency (EPA), in consultation with the U.S. Fish & Wildlife Service (FWS) will determine whether or not the remedy has an impact, and what, if any, changes or additional actions should be taken as part of the remedial action to mitigate the impact.

This memorandum provides a summary of the comments and concerns regarding the monitoring plan raised during the public comment period, and the United States' responses to those comments and concerns. The responses were coordinated among representatives from EPA and FWS, and the Natural Resources Trustees, U.S. Department of the Interior (DOI) and the New Jersey Department of Environmental Protections' Office of Natural Resource Damages (NJONRD).

FREQUENCY OF SAMPLING

CH2MHill criticized the Plan for not allowing a change in the frequency of monitoring before a period of five years. They recommended that the Plan be amended to provide not only an opportunity for change in the frequency of monitoring, but the level of detail required, at some earlier point in time.

The United States does not believe that enough information will be available prior to completion of five years of sampling. While we recognize that this requires a considerable amount of data collection, especially during the baseline year and first year of operation, we believe that this amount of information is necessary to assure that any problems are identified as soon as they arise

and before any impacts occur to the plant populations. Because the feasibility of a modification to the monitoring frequency cannot be determined until work is underway and the practical problems are known, it is inappropriate to modify the frequency at this time.

The governments are also concerned about impacts from monitoring efforts to plants (i.e., from trampling). The criteria for determining potential adverse impacts to the plants will be specified within the forthcoming Operations and Maintenance Plan for the project. EPA, in coordination with the FWS, has the responsibility to utilize these criteria to ensure that there are not impacts to the plants. Should we determine that any impacts are being caused by the actual monitoring efforts, we expect that the Remedial Action Work Plan, which will address the field methods, sampling procedures, etc., would provide for modifications to the frequency of the monitoring. In addition, we trust that any contractor hired by the Reopener Settling Defendants will show good professional judgment and employ sound techniques in making the effort to ensure that this does not occur.

USE OF REFERENCE COLONY FOR DATA ANALYSIS

The State University of New Jersey, Rutgers, Department of Landscape Architecture (Rutgers) suggested that the proposed analysis of variance between the two populations (i.e., Colony III & the reference colony) is problematic (if the comparison will be important in deciding whether the drawdown is affecting Colony III). Comparison of the populations represents a pseudoreplicated design and, as such, trends can be studied within each population, but no statistically useful comparison can be made between the populations.

This approach is consistent with the work done by Peterson (NJDEP, 1992), as well as the work that the State of New Jersey has done in other studies of Swamp Pink. Statistically significant parameters from Peterson formed the basis for this Plan. A portion of the proposed reference colony (the "Campus" Swamp Pink Colony) served as the reference colony in the Peterson study. The State has also conducted studies based on data from a single season for several populations.

TRANSECT ESTABLISHMENT

Rutgers suggested that the method for placement of the transects should provide for a random component (i.e., adopt a stratified random design where appropriate areas are selected subjectively, followed by the random placement of transects within these areas).

The United States agrees conceptually with the commenter that randomness is required. It was always our intention to include a random component, although it was considered too fine a detail to be addressed specifically within the Plan. We feel that this detail would be more appropriately addressed in the submittal required pursuant to the Remedial Action Work Plan for the project that will be developed following completion of the design.

The method as proposed in the Swamp Pink Monitoring Plan is subjective with a degree of randomness. We expect that the general vicinity of the lines will be determined subjectively, while the actual location of the lines will be identified with a random component.

CHARACTERIZATION & MONITORING OF CANOPY & SHRUB SPECIES

Biostar Associates Inc. (Biostar) & Rutgers questioned the usefulness of collecting information regarding the canopy and shrub species to determine effects associated with the groundwater extraction system drawdown, and called for a reduction or elimination of the proposed annual sampling of these species.

The commenters may have misunderstood the purpose of the monitoring of these species. The purpose is simply to characterize the biological environment, including the canopy and shrub species, in order to establish the conditions of these layers during the initial years of operation of the system. A comparison of subsequently collected data with this baseline data would enable us to determine whether any changes to the Swamp Pink stem from factors other than the groundwater extraction system. Thus, this monitoring is not intended to only characterize the effects associated with the hydrologic changes resulting from the extraction system, but to provide data that will aid in evaluating stresses caused by other factors (e.g., herbivory and natural events such as ice storms).

However, based on these comments, the United States is willing to modify the frequency of sampling relating to the canopy species. The United States will omit the post-baseline annual measurement of tree height and diameter at breast height (dbh), and substitute a requirement that these measurements be performed every five years after the baseline monitoring, unless some significant event occurs that would warrant an additional, interim measurement.

At this time, no change to the frequency of sampling of the shrub species is warranted. Three of the four quarterly visits require only ocular estimates, which already represents a measure to reduce impacts to the vegetation. Any change in frequency would have to be supported by substantial data, gathered over several years.

Rutgers suggested that consideration be given to the use of low altitude air photos or stratified monitoring points around the colonies in place of the proposed biological monitoring in an effort to provide better data with fewer impacts.

The United States believes that if such photographs were commercially available and viable for this purpose, they would be a more costly alternative than that outlined in the Swamp Pink Monitoring Plan and would provide less reliable data. Furthermore, the likelihood of impacts due to this monitoring is already low as the actual monitoring, as distinguished from ocular estimates, only occurs annually.

SWAMP PINK DEMOGRAPHIC SAMPLING

CH2MHill and Biostar questioned the usefulness of collecting plant counts and measurements on a quarterly basis to determine effects associated with the groundwater extraction system drawdown. They feel that emphasis should be given to the less-instrusive sampling collection proposed (e.g., photography and visual observation) over the proposed count and measurement activity, and called for either a reduction in the number of sampling points or the frequency of this proposed sampling. It was also suggested that annual or semiannual sampling be supplemented with quarterly visits limited to photography and visual observation.

The commenters may have misunderstood the purpose of this activity. As with the collection of the canopy and shrub species data, the Swamp Pink data will allow us to distinguish between effects caused by the drawdown and those caused by other environmental factors. As with the concerns about impacts of sampling mentioned above, we expect that the Reopener Settling Defendants will obtain the services of a responsible contractor who will be sensitive to the need to preserve the condition of the plants. Furthermore, it is important to recognize that the information collected will vary by quarter as appropriate (e.g., we would not be looking for flowers or a measurement of growth rate during the December field visit). The specific information to be collected by quarter was again a detail too fine to be addressed within this Plan.

Rutgers questioned the use of demographic sampling plots for determining rosette densities.

The rosette density count is simply for reporting the information for that sampling plot and its changes over time. This information will not be used to reach any density estimates for the populations as a whole.

INSOLATION

Rutgers and Biostar questioned the efficiency and validity of the proposed biweekly sampling for light within the canopy sampling plots and called for either the elimination or substantial reduction in frequency of this proposed activity.

The United States agrees that a reduction to quarterly sampling is allowable. This activity can be conducted concurrently with the proposed biological environmental monitoring of the shrub plots.

EDAPHIC CONDITIONS

Biostar, CH2MHill, and Rutgers questioned the validity of the proposed soil data (pH and temperature) analysis as a basis of determining affects to the swamp pink from the

groundwater extraction system. They propose a reduction in the frequency of the collection of this data from weekly during the growing season (i.e, from March through October) and biweekly during the remainder of the year (i.e., November through February), to quarterly. Biostar also suggested that this data be collected from outside the herbaceous sampling subplots and demographic sampling plots versus within the herbaceous subplots as proposed.

The United States agrees that some reduction in the frequency of these measurements can be allowed. Consequently, the Swamp Pink Monitoring Plan will be changed to require biweekly sampling for these parameters during the growing season, and quarterly sampling during non-growing season, at one point per quadrat, which point shall be located just adjacent to a swamp pink demographic sampling plot. This biweekly sampling shall be concurrent with the water level monitoring and the quarterly sampling with the biological environmental monitoring at the shrub plots.

Peterson, C. J. 1992. Impact assessment of six extant populations of Helonias bullata in New Jersey. NJDEP, Office of Natural Lands Management. Trenton, NJ.

Based on the comments received by DOJ in response to the October 1996 Swamp Pink Monitoring Plan & the governments' coordinated response to those comments, the Plan shall be modified as follows:

Title Page
The date of October 1996 shall be changed to March 1997.

Pg. 2, Par. 1 - INTRODUCTION
Modify the first sentence to introduce the sentence starting with the phrase "Unless otherwise decided by the USEPA and USFWS,"

Pg. 5, Par. 2 - Canopy Species
The following sentence will be added to the end of this paragraph: "The measurement of tree height and diameter at breast height (dbh) will be performed every five years after the baseline monitoring, unless some significant event occurs that would warrant an additional, interim measurement."

Pg. 7, Par. 3 - Insolation
Within the first sentence, "biweekly (every two weeks)" shall be replaced with "quarterly."

Pg. 9, Par. 2 - Edaphic Conditions
Within the second sentence, "weekly" shall be replaced with "biweekly" and "biweekly" with "quarterly."

TABLE 1 - BIOLOGICAL & PHYSICAL MONITORING PARAMETERS

Frequency

Canopy Sampling:

The following will be added to follow "Sept.": "(w/ tree height & dbh every 5 yrs. to follow baseline)"

Light Measurements:

Replace "Biweekly (every two weeks)" with "quarterly."

Soil Monitoring:

Replace "weekly" with "biweekly" and "biweekly" with "quarterly."

REOPENERS
Generators

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ACTIVE OIL SERVICE, INC.

Date: X 7-3-96

X Janet A. Sauer
SIGNATURE BY:
JANET A. SAUER

President
(Title)

110 Riverside Road
Newark, New Jersey 07104
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: JANET A. SAUER
(Please type)

Title: PRESIDENT

Address: 110 Riverside Road
Newark, New Jersey 07104

Tel. Number:

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Air Products and Chemicals, Inc.
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

James H. Agger
(Name -- please type)

Vice President, General Counsel & Secretary
(Title)

Law Group
7201 Hamilton Boulevard
(Address) Allentown, PA 18195-1501

Agent authorized to accept service on behalf of above-signed settling party:

Name: Stephen S. Ferrara
(Please type)

Title: Attorney

Address: Air Products and Chemicals, Inc.
Law Group
7201 Hamilton Boulevard
Allentown, PA 18195-1501

Tel. Number: 610-481-7352

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Cytec Industries Inc., on behalf of itself and on behalf of American Cyanamid Company
(Name of settling party -- please type)

Date: July 23, 1996

SIGNATURE

Raymond L. Hillard
(Name -- please type)

Director, Environmental Services
(Title)

Cytec Industries Inc.
Foot of Tremley Point Road, P.O.Box 31, Linden, N.J. 07036
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Karen E. Koster
(Please type)

Title: Attorney

Address: Cytec Industries Inc.
5 Garret Mountain Plaza, West Paterson, N.J. 07424

Tel. Number: (201) 357-3216

RECEIVED JUL 26 1996

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Camden Iron & Metal, Inc.
(Name of settling party -- please type)

Date: 8-21-96

SIGNATURE

Michael Buttil
(Name -- please type)

Treasurer
(Title)

1500 South Sixth St.
Camden, NJ 08101
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joseph W. McGuire
(Please type)

Title: Attorney of Law

Address: 1230 Brace Road
Cherry Hill, NJ 08034

Tel. Number: 609-429-8956

RECEIVED
AUG 26 19
KELLEY, JASON, McGUIRE & SPAGNOLI

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Campbell Soup Company
(Name of settling party -- please type)

Date: July 8, 1996

SIGNATURE

Norma B. Carter
(Name -- please type)

Deputy General Counsel
(Title)

Campbell Place
Camden, NJ 08103
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Linda A. Toepel
(Please type)

Title: Paralegal

Address: Campbell Place
Camden, NJ 08103

Tel. Number: (609) 342-3933

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CITY OF PHILADELPHIA
(Name of settling party -- please type)

Date: JULY 31, 1996

Robert A. Sutton
SIGNATURE

ROBERT A. SUTTON
(Name -- please type)

DEPUTY CITY SOLICITOR
(Title)

1600 ARCH STREET _ 8th FL.
Philadelphia, PA 19103-2081
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: BRENDA J. BENSON
(Please type)

Title: CLAIMS COORDINATOR

Address: 1101 MARKET STREET - 9th Fl.
Philadelphia, PA 19107

Tel. Number: (215) 686-5293

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Curtis T. Bedwell & Sons, Inc.
(Name of settling party
-- please type)

Date: July 12, 1996

Mark Bedwell
SIGNATURE

Mark Bedwell
(Name -- please type)

Secretary/Treasurer
(Title)

P.O. Box 690, West Chester, PA 19381
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: LEO B. DUBLER
(Please type)

Title: ATTORNEY

Address: 24 SOUTH BROAD STREET
WOODBURY, NJ 08096

Tel. Number: (609) 845-4277

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of the State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to Gloucester Environmental Management Services Superfund Site.

FOR CROWN CORK & SEAL COMPANY, INC.

Date: July 30, 1996

WILLIAM T. GALLAGHER
Assistant General Counsel

CROWN CORK & SEAL COMPANY, INC.
9300 Ashton Road
Philadelphia, PA 19136

Agent authorized to accept service on behalf of above-signed settling party:

WILLIAM T. GALLAGHER
Assistant General Counsel

CROWN CORK & SEAL COMPANY, INC.
9300 Ashton Road
Philadelphia, PA 19136

(215) 698-5383

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR DAUBERT INDUSTRIES, INC.
(Name of settling party -- please type)

Date: July 15, 1996

S.A. Scott
SIGNATURE

SIDNEY A. SCOTT
(Name -- please type)

Chief Financial Officer
(Title)

Daubert Industries, Inc.
One Westbrook Corporate Center, Suite 1000
Westchester, Illinois 60154
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: JOHN R. COSBEY
(Please type)

Title: Vice President
Daubert Industries, Inc.

Address: One Westbrook Corporate Center, Suite 1000
Westchester, Illinois 60154

Tel. Number: (708) 409-5000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR _____
(Name of settling party -- please type)

Date: 7/8/96

Bernard J. Reilly
SIGNATURE

Bernard J. Reilly
(Name -- please type)

Corporate Counsel
(Title)

E. I. duPont de Nemours & Co.
Legal D8068
(Address)
1007 Market St.
Wilmington, DE 19898

Agent authorized to accept service on behalf of above-signed settling party:

Name: Bernard J. Reilly
(Please type)

Title: Corporate Counsel

Address: E. I. du Pont de Nemours & Co.
~~1007 Market St., Wilmin~~gton, DE 19898

Tel. Number: ~~(302) 774-5445~~

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Nabisco Holdings Corp. (formerly Nabisco Brands, Inc.) in behalf of itself and Paisley Products, Inc.
(Name of settling party -- please type)

Date: July 8, 1996

SIGNATURE

John F. Manfredi
(Name -- please type)

Senior Vice President
(Title)

7 Campus Drive
Parsippany, NJ 07054
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Prentice-Hall Corporation System, NJ, Inc.
(Please type)

Title:

Address: 150 West State Street
Trenton, NJ 08608

Tel. Number: (609) 771-1800

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Litton Industries, Inc. on behalf of itself and Western Atlas Inc., as successor to Litton Industrial Automation Systems, Inc. and on behalf of Cole Steel and Joyce International, Inc.
(Name of settling party -- please type)

Date: July 9, 1996

Theodore F. Craver
SIGNATURE

Theodore F. Craver
(Name -- please type)

Staff Vice President; Director of Trade Regulations and Environmental Affairs
(Title)

Litton Industries, Inc.
1725 Jefferson Davis Highway, Suite 601
Arlington, VA 22202
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Jill M. Palmer
(Please type)

Title: Senior Environmental Counsel

Address: Litton Industries, Inc.
1725 Jefferson Davis Highway, Suite 601
Arlington, VA 22202

Tel. Number: 703-413-3918

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Morton International, Inc.
(Name of settling party -- please type)

Date: 7/22/96

Walanski
SIGNATURE

Kenneth A. Walanski
(Name -- please type)

Director, Environmental Affairs
(Title)

100 North Riverside Plaza
Chicago, IL 60606
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Robert C. Mitchell
(Please type)

Title: Litigation Counsel
Morton International, Inc.

Address: 100 N. Riverside Plaza
Chicago, IL 60606

Tel. Number: (312)807-2913

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR NL Industries, Inc.
(Name of settling party -- please type)

Date: 3/20/96

David B. Garten
SIGNATURE

David B. Garten
(Name -- please type)

Vice President
(Title)

16825 Northchase Dr., Suite 1200
Houston, TX 77060
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: CSC Networks/Prentice Hall Legal & Financial Services
(Please type)

Title: 1013 Centre Road

Address: Wilmington, Delaware 19805-1297

Tel. Number: 302-998-0595

Bartlit Beck Herman Palenchar & Scott
Attn: Marcus A. Martin, Esq.
The Kittridge Building
511 Sixteenth Street, Suite 700
Denver, CO 80202
(303) 592-3180

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Owens Corning
(Name of settling party -- please type)

Date: July 8, 1996

Joyce A. Graves
SIGNATURE

Joyce A. Graves
(Name -- please type)

Case Management Specialist
(Title)

Fiberglas Tower
Toledo, Ohio 43659
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Daniel H. Squire
(Please type)

Title: WILMER, CUTLER & PICKERING

Address: 2445 M Street, N. W.
Washington, D. C. 20037-1420

Tel. Number: (202) 663-6060

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Rohm and Haas Company
(Name of settling party -- please type)

Date: July 15, 1996

SIGNATURE

Robert P. Vogel
(Name -- please type)

Vice President and General Counsel
(Title)

100 Independence Mall West
Philadelphia, PA 19106-2399
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Ellen S. Friedell
(Please type)

Title: Assistant General Counsel

Address: 100 Independence Mall West
Philadelphia, PA 19106-2399

Tel. Number: (215) 592-3000

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR SCM Corporation, including its Glidden Division, Glidden Coatings & Resins
(Name of settling party -- please type)

Date: 7/11/96

SIGNATURE

Stuart G. Breslow
(Name -- please type)

Assistant Secretary
(Title)

7 St. Paul Street
Baltimore, Maryland 21202
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Bonnie A. Barnett
(Please type) Bonnie A. Barnett

Title: Esquire

Address: 1345 Chestnut Street
Phila., PA 19107

Tel. Number: (215) 988-2916

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR SHELL OIL COMPANY
(Name of settling party -- please type)

Date: August 1, 1986

SIGNATURE

G. A. Thompson
(Name -- please type)

Manager Remediation
(Title)

P.O. Box 2463
Houston, TX 77252-2463
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: William C. Lowrey
(Please type)

Title: Senior Counsel

Address: P.O. Box 2463
Houston, TX 77242-2463

Tel. Number: 713-241-1678

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR SRSNE
(Name of settling party -- please type)

Date: 7/11/96

SIGNATURE

David I. Boll
(Name -- please type)

President
(Title)

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James Stewart, Esq.
(Please type,

Title: Director

Address: Lowenstein, Sandler, Kohl, Fisher & Boylan
65 Livingston Avenue, Roseland, NJ 07068

Tel. Number: (201) 992-8700

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR SOLVENTS RECOVERY SERVICE OF NEW JERSEY, INC.
(Name of settling party -- please type)

Date: July 11, 1996

Laurence M Rudnick
SIGNATURE

Laurence M. Rudnick
(Name -- please type)

Secretary/Treasurer
(Title)

1000 N. Randall Road
Elgin, IL 60123-7857
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James Stewart, Esq.
(Please type)

Title: Attorney

Address: Lowenstein, Sandler, Kohl, Fisher & Boylan
65 Livingston Avenue
Roseland, NJ 07068-1791

Tel. Number: (201) 992-8700

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Zeneca Inc. (formerly known as ICI Americas Inc.)
(Name of settling party -- please type)

Date: _____

SIGNATURE

Joseph C. Kelly
(Name -- please type)

Assistant General Counsel
(Title)

1800 Concord Pike, P. O. Box 15438
Wilmington, DE 19850-5438
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Luke W. Mette
(Please type)

Title: Attorney

Address: Zeneca Inc., 1800 Concord Pike, P. O. Box 15438 Wilmington, DE 19850-5438

Tel. Number: (302) 886-3690

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

DEMINIMIS

BRENNAN & BERNARDIN
A Professional Corporation
434 Haddon Avenue
Post Office Box 356
Collingswood, NJ 08108
(609) 854-0999
Attorneys for Borough of Woodlynne

STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, Plaintiff, v. GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC., et al, Defendants. GLOUCESTER ENVIRONMENTAL MANAGEMENT SERVICES, INC., et al, 3rd Party Plaintiffs, v. TOWNSHIP OF GLOUCESTER, a municipal corporation of the State of New Jersey, et al, 3rd Party Defendants, and TOWNSHIP OF GLOUCESTER, a municipal corporation of the State of New Jersey, et al, 3rd Party Plaintiff, v. CITY AND COUNTY OF PHILADELPHIA, et al,	UNITED STATES DISTRICT COURT DISTRICT OF NEW JERSEY Civil Action No: 84-0152 (SSB)

VILLE, BOROUGH OF WOODBURY :
HEIGHTS, CITY OF BURLINGTON, :
TOWNSHIP OF EVESHAM, TOWNSHIP :
OF MAPLE SHADE, TOWNSHIP OF :
MEDFORD, BOROUGH OF PALMYRA, :
CITY OF ATLANTIC CITY, TOWN- :
SHIP OF HAMMONTON, CITY OF :
VINELAND, TOWNSHIP OF UPPER :
DARBY, COUNTY OF DELAWARE, :
:
3rd Party Defendants, :
:
and :
:
BOARD OF EDUCATION OF THE CITY:
OF ASBURY PARK; BOARD OF EDU- :
CATION OF THE BOROUGH OF :
AUDUBON; BOARD OF EDUCATION OF:
THE BOROUGH OF AUDUBON PARK, :
BOARD OF EDUCATION OF THE CITY:
OF BEVERLY; BOARD OF EDUCATION:
OF THE TOWNSHIP OF BORDENTOWN,:
BOARD OF EDUCATION OF THE CITY:
OF BRIDGETON; BOARD OF EDUCA- :
TION OF THE CITY OF BURLINGTON:
BOARD OF EDUCATION OF THE :
TOWNSHIP OF CHERRY HILL, :
CINNAMINSON SCHOOL DISTRICT; :
BOARD OF EDUCATION OF THE :
BOROUGH OF DEAL, BOARD OF :
EDUCATION OF THE TOWNSHIP OF :
DELAWARE; BOARD OF EDUCATION :
OF THE TOWNSHIP OF DEPTFORD, :
BOARD OF EDUCATION OF THE :
TOWNSHIP OF ELK; BOARD OF EDU-:
CATION OF THE TOWNSHIP OF :
EVESHAM; BOARD OF EDUCATION OF:
THE BOROUGH OF GIBBSBORO; :
BOARD OF EDUCATION OF THE :
BOROUGH OF GLASSBORO; BOARD OF:
EDUCATION OF THE BOROUGH OF :
HADDONFIELD; BOARD OF EDUCA- :
TION OF THE TOWNSHIP OF HAMIL-:
TON; TOWNSHIP OF HAMILTON; :
BOARD OF EDUCATION OF THE :
TOWNSHIP OF HARRISON; BOARD OF:
EDUCATION OF THE BOROUGH OF :
HIGHLAND; BOARD OF EDUCATION :
OF THE BOROUGH OF HIGHTSTOWN; :
BOARD OF EDUCATION OF THE :
BOROUGH OF LAWNSIDE; BOARD OF :
EDUCATION OF THE TOWNSHIP OF :
LAWRENCE; BOARD OF EDUCATION :
OF THE TOWNSHIP OF MANNINGTON,:

BOARD OF EDUCATION OF THE :
TOWNSHIP OF MANTUA; TOWNSHIP :
OF MANTUA; BOARD OF EDUCATION :
OF THE TOWNSHIP OF MAPLE SHADE:
BOARD OF EDUCATION OF THE :
BOROUGH OF MEDFORD; BOARD OF :
EDUCATION OF THE TOWNSHIP OF :
MIDDLE, BOARD OF EDUCATION OF :
THE TOWNSHIP OF MILLVILLE, :
BOARD OF EDUCATION OF THE :
TOWNSHIP OF MOORESTOWN; TOWN- :
SHIP OF MOORESTOWN; BOARD OF :
EDUCATION OF THE TOWNSHIP OF :
MT. LAUREL; BOARD OF EDUCATION:
OF THE CITY OF NORTH WILDWOOD,:
BOARD OF EDUCATION OF THE :
BOROUGH OF OAKLYN, BOARD OF :
EDUCATION OF THE BOROUGH OF :
PAULSBORO, BOROUGH OF PAULS- :
BORO, BOARD OF EDUCATION OF :
THE TOWNSHIP OF PENNSAUKEN, :
TOWNSHIP OF PENNSAUKEN, BOARD :
OF EDUCATION OF THE CITY OF :
PERTH AMBOY; CITY OF PERTH :
AMBOY; BOARD OF EDUCATION OF :
THE BOROUGH OF PINE HILL; :
BOARD OF EDUCATION OF THE :
BOROUGH OF PITMAN; BOROUGH OF :
PITMAN; PRINCETON REGIONAL :
SCHOOL DISTRICT; RIVERSIDE :
SCHOOL DISTRICT; BOARD OF EDU-:
CATION OF THE CITY OF SALEM; :
BOARD OF EDUCATION OF THE :
BOROUGH OF SHREWSBURY; SPRING-:
FIELD SCHOOL DISTRICT; BOARD :
OF EDUCATION OF THE BOROUGH OF:
STAFFORD; BOARD OF EDUCATION :
OF THE BOROUGH OF STOCKTON; :
BOROUGH OF SWEDESBORO; TEANECK:
SCHOOL DISTRICT; BOARD OF :
EDUCATION OF THE CITY OF :
TRENTON; BOARD OF EDUCATION OF:
THE TOWNSHIP OF UPPER DARBY; :
WARREN HILLS REGIONAL BOARD OF:
EDUCATION; BOARD OF EDUCATION :
OF THE TOWNSHIP OF WASHINGTON,:
TOWNSHIP OF WEST DEPTFORD; :
BOARD OF EDUCATION OF THE TOWN:
SHIP OF WEST WINDSOR; BOARD OF:
EDUCATION OF THE BOROUGH OF :
WHARTON; CITY OF WILDWOOD; :
BOARD OF EDUCATION OF THE :
TOWNSHIP OF WILLINGBORO; BOARD:
OF EDUCATION OF THE CITY OF :

3rd Party Defendants, :
:
and :
:
OWENS-CORNING FIBERGLAS CORP- :
ORATION; SHERWIN-WILLIAMS COM-:
PANY; JOYCE INTERNATIONAL, :
INC.; SEQYA CORPORATION, (in- :
correctly denominated as SUN :
CHEMICAL CORPORATION), CER- :
TAINTEED CORPORATION; AMERICAN:
NATIONAL CAN COMPANY; N.L. :
INDUSTRIES, INC.; AIR PRODUCTS:
AND CHEMICALS, INC.; DeSOTO, :
INC.; THE GILBERT SPRUANCE CO.:
PUBLIC SERVICE ELECTRIC & GAS :
CO.; SHELL OIL CO.; MORTON :
THIOKOL, INC., :
:
3rd Party Plaintiffs, :
:
v. :
:
BOROUGH OF AUDUBON, BOROUGH OF:
AUDUBON PARK, BOROUGH OF BAR- :
RINGTON, BOROUGH OF BELLMAWR, :
BOROUGH OF BERLIN, BOROUGH OF :
BROOKLAWN, CITY OF CAMDEN, :
TOWNSHIP OF CHERRY HILL, BOR- :
OUGH OF CHESILHURST, BOROUGH :
OF CLAYTON, BOROUGH OF CLEMEN-:
TON, BOROUGH OF COLLINGSWOOD, :
BOROUGH OF GIBBSBORO, CITY OF :
GLOUCESTER, TOWNSHIP OF HADDON:
BOROUGH OF HADDONFIELD, BOR- :
OUGH OF HADDON HTS., BOROUGH :
OF HI-NELLA, BOROUGH OF LAUREL:
SPRINGS, BOROUGH OF LAWNSIDE, :
BOROUGH OF LINDENWOLD, BOROUGH:
OF MAGNOLIA, BOROUGH OF MER- :
CHANTVILLE, BOROUGH OF MOUNT :
EPHRAIM, BOROUGH OF OAKLYN, :
TOWNSHIP OF PENNSAUKEN, BOR- :
OUGH OF PINE HILL, BOROUGH OF :
RUNNEMEDE, BOROUGH OF SOMER- :
DALE, BOROUGH OF STRATFORD, :
TOWNSHIP OF VOORHEES, TOWNSHIP:
OF WATERFORD, TOWNSHIP OF :
WINSLOW, BOROUGH OF WOODLYNNE,:
TOWNSHIP OF DEPTFORD, BOROUGH :
OF GLASSBORO, TOWNSHIP OF :
MONROE, BOROUGH OF PITMAN, :
TOWNSHP OF WASHINGOTN, BOROUGH:
OF WENONAH, BOROUGH OF WEST- :

WOODBURY; CITY OF WOODBURY; BOARD OF EDUCATION OF THE BOROUGH OF WOODLYNNE; COUNTY OF BURLINGTON; COUNTY OF CAMDEN; COUNTY OF CUMBERLAND, COUNTY OF GLOUCESTER; COUNTY OF MERCER; COUNTY OF MONMOUTH, COUNTY OF OCEAN; ANCORA PSYCHIATRIC HOSPITAL; GLASSBORO STATE COLLEGE; NEW JERSEY STATE HOSPITAL; NEW JERSEY TURNPIKE AUTHORITY; RUTGERS, THE STATE UNIVERSITY; and TRENTON STATE TEACHERS' COLLEGE;

Additional 3rd Party Defendants.

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al, relating to the Gloucester Environmental Management Services Superfund Site.

BRENNAN & BERNARDIN
A Professional Corporation
BOROUGH OF WOODLYNNE

DATED: 07/03/96

MICHAEL G. BRENNAN
Attorney for Borough of Woodlynne
Post Office Box 356
Collingswood, NJ 08108

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Michael G. Brennan, Esquire
Title:	Attorney for Borough of Woodlynne
Address:	Post Office Box 356 Collingswood, NJ 08108
Telephone:	(609) 854-0999

22. 637. ~~3126~~ 3096

Ms. Malone

September 20, 1996

United States Environmental Protection Agency
Attn: Patricia Hick, Esq.
Office of Regional Counsel
Region II
290 Broadway
17th Floor
New York, NY 10007-1866

Re: NJDEP v. GEMS
Civil Action No. 84-0152 (JBS) (GEMS I)
Civil Action No. 92-3860 (JBS) (GEMS II)
Our Client: Borough of Woodlynne

Dear Ms. Hick:

Pursuant to our telephone discussion today, enclosed please find two (2) executed copies of the signature page for the proposed Consent Decree on behalf of our client, The Borough of Woodlynne.

Very truly yours,

BRENNAN & BERNARDIN
A Professional Corporation

Michael G. Brennan

MGB/smo
Enclosures (2)

THE UNDERSIGNED PARTY enters into this Consent Decree int he matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

For the BOROUGH OF WOODLYNNE

DATED:

MICHAEL G. BRENNAN
Attorney for the Borough of Woodlynne
434 Haddon Avenue
Post Office Box 356
Collingswood, NJ 08108

Agent authorized to accept service on behalf of above-signed settling party;

MICHAEL G. BRENNAN
Attorney for the Borough of Woodlynne
434 Haddon Avenue
Post Office Box 356
Collingswood, NJ 08108

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

Whereas defendant ABC Detachable Container, Inc., has been dissolved and is no longer in business, and its principals are either deceased and/or retired and unable to sign the proposed Consent Decree, the Consent Decree is hereby signed by **H. Frank Carpentier, Esq.**, an attorney retained by the Liberty Mutual Insurance Company to represent ABC Detachable Container, Inc., its assured, with the understanding that the signing by said attorney is done solely and for the limited purpose of facilitating settlement, and does not further obligate said attorney in any way, and does not obligate the Liberty Mutual Insurance Company in any way beyond its contractual obligations set forth in its policy of insurance with the aforesaid ABC Detachable Container Inc.

For ABC Detachable Container Inc.

Date: July 17, 1994

H. Frank Carpentier
SIGNATURE

H. Frank Carpentier

Attorney at Law
(Title)

4001 Rt 66 at the G S Parkway
P.O. Box 1229
Asbury Park, New Jersey 07712

Agent authorized to accept service on behalf of above-signed settling party:

Name:	H. Frank Carpentier
Title:	Attorney at Law
Address:	4001 Rt. 66 at the G S Parkway P.O. Box 1229 Asbury Park. New Jersey 07712
Tel. Number	(908) 922-9500

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR A&B DRUM COMPANY, INC.
(Name of settling party -- please type)

Date: 7/23/94

SIGNATURE

WILLIAM MORGAN
(Name -- please type)

DIRECTOR OF AUTO/LIABILITY CLAIMS
(Title)

PENNSYLVANIA NATIONAL INSURANCE CO.
1900 Derry Street, Harrisburg, PA 17105
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: MICHAEL T. COLLINS
(Please type)

Title: Attorney-at-law

Address: 22nd St. & Long Beach Blvd.
Ship Bottom, NJ 08008

Tel. Number: (609) 494-2136

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Ace Service Corporation
(Name of settling party -- please type)

Date: September 12, 1996

SIGNATURE

Stephanie E. Fox, Esq.
(Name -- please type)

Attorney for Ace Service Corporation
(Title) Amdur, Boyle & Maggs
P.O. Box 190
Oakhurst, N.J. 07755

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Amdur, Boyle & Maggs
(Please type)

Title: ~~Attorneys for Ace Service~~ Corporation

Address: P.O. Box 190
Oakhurst, N.J. 07755

Tel. Number: (908) 389-3800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Richard N. Alburger

(Name of settling party -- please type)

Date: 7/17/96

SIGNATURE

Alan R. Kutner

(Name -- please type)

Esquire

(Title)

GSB Building Suite 300
Belmont & City Line Avenues

Bala Cynwyd, PA 19004

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for Richard N. Alburger

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR American Waste Removal, Inc.
(Name of settling party -- please type)

Date: September 12, 1996

SIGNATURE

Steven Antinoff
(Name -- please type)

Attorney-At-Law
(Title)

1236 Brace Road, Suite E
Cherry Hill, New Jersey 08034
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John R. Gercke
(Please type)

Title: Attorney-At-Law

Address: 1236 Brace Road, Suite E
Cherry Hill, New Jersey 08034

Tel. Number: (609) 795-5800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Atlantic Carting Corporation

Date: 9/10/96

SIGNATURE

Gregory W. Boyle

Attorney for Atlantic Carting Corp.

4000 Route 66
Tinton Falls, NJ 07753-7308

(908) 922-3300

Agent authorized to accept service on behalf of above-signed settling party:

Name: Gregory W. Boyle, Esq.

Title: Attorney for Atlantic Carting Corp.

Address: 4000 Route 66
Tinton Falls, NJ 07753-7308

Tel. Number: (908) 922-3300

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc. et al., and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

For: Atlantic Disposal Service, Inc.
(n/k/a ACR of South Jersey, Inc.)
its successors, subsidiaries, affiliates and related companies, together with its past, present and future owners, directors, officers, shareholders, and employees.

Date: 18 July 1996 _____
SIGNATURE

Alvin H. White
(Name -- please type)

President
(Title)

P.O. Box 1037, Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Sandford F. Schmidt, Esquire
Title:	Attorney
Address:	29 Union Street, Medford, NJ 08055
Tel. Number:	(609) 714-0600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR N. Bantivoglio's Sons, Inc.
(Name of settling party -- please type)

Date: 7/16/96

SIGNATURE

Elliott Yampell
(Name -- please type)

Attorney
(Title)

131 Kings Highway East
Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Elliott Yampell
(Please type)

Title: Attorney

Address: 131 Kings Highway East
Haddonfield, NJ 08033

Tel. Number: (609) 795-0495

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Dan Bittner, Inc. & Dan Bittner
(Name of settling party -- please type)

Date: September 10, 1996

SIGNATURE

John P. Montemurro, Esquire
(Name -- please type)

Attorney for Dan Bittner, Inc. & Dan Bittner
(Title)

20 E. Redman Avenue
Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John P. Montemurro, Esquire
(Please type)

Title: Attorney for Dan Bittner, Inc. & Dan Bittner

Address: 20 E. Redman Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 429-0333

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Gus Bittner, Inc. & Gus Bittner
(Name of settling party -- please type)

Date: September 10, 1996

SIGNATURE

John P. Montemurro, Esquire
(Name -- please type)

Attorney for Gus Bittner, Inc. & Gus Bittner
(Title)

20 E. Redman Avenue
Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John P. Montemurro, Esquire
(Please type)

Title: Attorney for Gus Bittner, Inc. & Gus Bittner

Address: 20 E. Redman Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 429-0333

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

Alice Brenner and Bernhard Brenner a/k/a
Ben Brenner and/or d/b/a A. Brenner

FOR _____
(Name of settling party
-- please type)

Date: July 1996

Mark Rosen
SIGNATURE

Mark R. Rosen
(Name -- please type)

Attorney
(Title)
MESIROV GELMAN JAFFE CRAMER & JAMIESON
1735 Market Street, Phila., PA 19103

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Mark R. Rosen
(Please type)

Title: Attorney
MESIROV GELMAN JAFFE CRAMER & JAMIESON

Address: 1735 Market Street
Philadelphia, PA 19103

Tel. Number: (215) 994-1276

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Albert Brewin
(Name of settling party -- please type)

Date: 7/19/96

Albert Brewin
SIGNATURE

Albert Brewin
(Name -- please type)

President
(Title)

1244 Gibbsboro Road
Kirkwood, NJ 08043
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Stephen E. Siegrist, Esquire of Murphy & O'Connor
(Please type)

Title: Counsel for Albert Brewin

Address: MURPHY & O"CONNOR
65 Haddon Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 795-6111

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Charles W. Castner
(Name of settling party -- please type)

Date: July 17, 1996

SIGNATURE

WALTER G. LUGER, ESQ.
(Name -- please type)

for Charles W. Castner
(Title)

Attorney

CARELLA, BYRNE, BAIN, GILFILLAN,
(Address)
CECCHI, STEWART & OLSTEIN
6 Becker Farm Road
Roseland, New Jersey 07068

Agent authorized to accept service on behalf of above-signed settling party:

Name: Walter G. Luger, Esq.
(Please type)

Title: Attorney

Address: CARELLA, BYRNE, BAIN, GILFILLAN,
CECCHI, STEWART & OLSTEIN
6 Becker Farm Road
Roseland, New Jersey 07068

Tel. Number: (201) 994-1700

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR William A. Cathcart
Stuart A. Cathcart t/a William A. Cathcart & Son
(Name of settling party -- please type)

Date: July 24-96

Stuart A Cathcart
SIGNATURE

Stuart A. Cathcart
(Name -- please type)

Former owner
(Title)

508 Broad Intend Rd
Collingswood N.J 08012
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Sandra C. Hymowitz, Esquire
(Please type)

Title: Attorney

Address: Woodland Falls Corporate Park, 200 Lake Drive East
Suite 206, Cherry Hill, NJ 08002

Tel. Number: (609) 482-7869

TOTAL P.03

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CENTRAL JERSEY DISPOSAL CO., INC.
(Name of settling party -- please type)

Date: 7/10/96

SIGNATURE

ROBERT J. GREENBAUM
(Name -- please type)

ATTORNEY
(Title)

Budd Larner Gross Rosenbaum Greenberg & Sade
150 John F. Kennedy Parkway, Short Hills, New Jersey 07078
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: ROBERT J. GREENBAUM
(Please type)

Title: Attorney

Address: 150 John F. Kennedy Parkway
Short Hills, New Jersey 07078

Tel. Number: (201) 379-4800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Crispin Brothers Rubbish Removal
(Name of settling party -- please type)

Date: September 12, 1996

SIGNATURE

Steven Antinoff
(Name -- please type)

Attorney-At-Law
(Title)

1236 Brace Road, Suite E
Cherry Hill, New Jersey 08034
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John R. Gercke
(Please type)

Title: Attorney-At-Law

Address: 1236 Brace Road, Suite E
Cherry Hill, New Jersey 08034

Tel. Number: (609) 795-5800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Daeche & Company Inc.
(Name of settling party -- please type)

Date: 9/10/96

SIGNATURE

Larry G. Daeche
(Name -- please type)

President
(Title)

4945 Wellington St., Phila., PA 19135
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Larry G. Daeche
(Please type)

Title: President

Address: 4945 Wellington St.
Phila., PA 19135

Tel. Number: (215) 624-2554

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Thomas M. Durkin & Sons, Inc.
(Name of settling party -- please type)

Date: September 9, 1996

SIGNATURE

Donald M. Durkin
(Name -- please type)

Vice President
(Title)

3030 Grant Avenue
Philadelphia, PA 19114
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Donald M. Durkin
(Please type)

Title: Vice President

Address: 3030 Grant Avenue
Philadelphia, PA 19114

Tel. Number: (215) 464-2400

SEP 9 9 29 AM '96
THOMAS M DURKIN & SONS

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR N. Bantivoglio's Sons, Inc.
(Name of settling party -- please type)

Date: 7/16/96

SIGNATURE

Elliott Yampell
(Name -- please type)

Attorney
(Title)

131 Kings Highway East
Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Elliott Yampell
(Please type)

Title: Attorney

Address: 131 Kings Highway East
Haddonfield, NJ 08033

Tel. Number: (609) 795-0495

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Dan Bittner, Inc. & Dan Bittner
(Name of settling party -- please type)

Date: September 10, 1996

SIGNATURE

John P. Montemurro, Esquire
(Name -- please type)

Attorney for Dan Bittner, Inc. & Dan Bittner
(Title)

20 E. Redman Avenue
Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John P. Montemurro, Esquire
(Please type)

Title: Attorney for Dan Bittner, Inc. & Dan Bittner

Address: 20 E. Redman Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 429-0333

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Gus Bittner, Inc. & Gus Bittner
(Name of settling party -- please type)

Date: September 10, 1996

SIGNATURE

John P. Montemurro, Esquire
(Name -- please type)

Attorney for Gus Bittner, Inc. & Gus Bittner
(Title)

20 E. Redman Avenue
Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John P. Montemurro, Esquire
(Please type)

Title: Attorney for Gus Bittner, Inc. & Gus Bittner

Address: 20 E. Redman Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 429-0333

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

Alice Brenner and Bernhard Brenner a/k/a
Ben Brenner and/or d/b/a A. Brenner

FOR _____
(Name of settling party
-- please type)

Date: July 1996

Mark Rosen
SIGNATURE

Mark R. Rosen
(Name -- please type)

Attorney
(Title)
MESIROV GELMAN JAFFE CRAMER & JAMIESON
1735 Market Street, Phila., PA 19103

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Mark R. Rosen
(Please type)

Title: Attorney
MESIROV GELMAN JAFFE CRAMER & JAMIESON

Address: 1735 Market Street
Philadelphia, PA 19103

Tel. Number: (215) 994-1276

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Albert Brewin
(Name of settling party -- please type)

Date: 7/19/96

Albert Brewin
SIGNATURE

Albert Brewin
(Name -- please type)

President
(Title)

1244 Gibbsboro Road
Kirkwood, NJ 08043
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Stephen E. Siegrist, Esquire of Murphy & O'Connor
(Please type)

Title: Counsel for Albert Brewin

Address: MURPHY & O"CONNOR
65 Haddon Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 795-6111

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Dolan Demolition Contractors, Inc.
(Name of settling party -- please type)

Date: Sept. 10, 1996

SIGNATURE

Patrick F. McAndrew, Esq.
(Name -- please type)

Attorney for settling party
(Title)

29 Union Street, Medford, NJ 08055
(Address)

609-953-9555

Agent authorized to accept service on behalf of above-signed settling party:

Name: Patrick F. McAndrew, Esq.
(Please type)

Title: Counsel for Dolan Contractors

Address: 29 Union Street
Medford, NJ 08055

Tel. Number: 609-953-9555

TOTAL P.04

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR F. H. Carting Company, Inc.
Frederick G. Harrison, Jr.
(Name of settling party -- please type)

Date: 7-26-1996

SIGNATURE

Frederick G Harrison Jr
(Name -- please type)
Frederick G. Harrison, Jr.
V. Pres.
(Title)

231 Dutch Rd
Marlton N.J. 08053
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Sandra C. Hymowitz, Esquire
(Please type)

Title: Attorney

Address: Woodland Falls Corporate Park, 200 Lake Drive East
Suite 206, Cherry Hill, NJ 08002

Tel. Number: (609) 482-7869

TOTAL P.03

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Marilyn Clyde,t/a Garden State Removal Co.
(Name of settling party -- please type)

Date: September 10, 1996

Marilyn J. Clyde
SIGNATURE

Marilyn Clyde
(Name -- please type)

Owner
(Title)

P.O. Box 336
Moorestown, N.J. 08057
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Marilyn Clyde
(Please type)

Title: Owner

Address: P.O. Box 336
Moorestown, N.J. 08057

Tel. Number: (609) 2610556

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR R. FANELLE'S SONS, also known as R. FANELLE'S SONS, INC., formerly known as ROCCO FANELLE'S SONS
(Name of settling party -- please type)

Date: September 25, 1996

Thomas J. Fanelle
SIGNATURE

Thomas J. Fanelle
(Name -- please type)

Vice President of R. Fanelle's Sons, Inc.
(Title)

1466 Ferry Avenue
Camden, New Jersey 08104
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joseph A. Manfredi, Esq.
(Please type)

Title: Attorney for R. Fanelle's Sons, Inc.
Hartlaub, Dotten, Connelly & Terry

Address: 336 Main Street, P.O. Box 25
Bedminster, New Jersey 07921

Tel. Number: (908) 719-0680

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR R. FANELLE'S SONS, also known as R. FANELLE'S SONS, INC., formerly known as ROCCO FANELLE'S SONS
(Name of settling party -- please type)

Date: September 25, 1996

SIGNATURE

Thomas J. Fanelle
(Name -- please type)

Vice President of R. Fanelle's Sons, Inc.
(Title)

1466 Ferry Avenue
Camden, New Jersey 08104
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joseph A. Manfredi, Esq.
(Please type)

Title: Attorney for R. Fanelle's Sons, Inc.
Hartlaub, Dotten, Connelly & Terry

Address: 336 Main Street, P.O. Box 25
Bedminster, New Jersey 07921

Tel. Number: (908) 719-0680

RECEIVED SEP 13 1996

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Geppert Bros., Inc.
(Name of settling party -- please type)

Date: September 12, 1996

William A. Geppert Jr.
SIGNATURE

William A. Geppert, Jr.
(Name -- please type)

Secretary
(Title)

3101 Trewigstown Road
Colma, PA 18915
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: William A. Geppert, Jr.
(Please type)

Title: Secretary

Address: 3101 Trewigstown Road
Colma, PA 18915

Tel. Number: (215) 822-7900 124

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR GLOUCESTER TOWNSHIP MUA
(Name of settling party -- please type)

Date: 7/18/96

Elmer Eldridge
SIGNATURE

Elmer Eldridge, Chairman
(Name -- please type)

Chairman
(Title)

Landing Road, P.O. Box 216, Glendora,NJ
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Nathan M. Edelstein, Esq.
(Please type)

Title: Authorized Agent

Address: 3131 Princeton Pike
Lawrenceville, NJ

Tel. Number: 609 896-2900

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Waste Techniques Corporation

(Name of settling party -- please type)

Date: 8/1/96

Frank Keel

SIGNATURE

Frank Keel

(Name -- please type)

President

(Title)

3400 North Ocean Drive

Singer Island, FL 33404

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for Waste Techniques Corporation

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Ogden Waste Removal Company

(Name of settling party -- please type)

Date: 9/13/96

SIGNATURE

Earl Kelly

(Name -- please type)

President of Globe Disposal Co.,

Successor to Ogden Waste Removal Company

(Title)

P.O. Box 60325

King of Prussia, PA 19406

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for Ogden Waste Removal Company

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Globe Disposal Company, Inc.

(Name of settling party -- please type)

Date: 8/1/96

Frank Keel

SIGNATURE

Frank Keel

(Name -- please type)

President

(Title)

3400 North Ocean Drive

Singer Island, FL 33404

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for Globe Disposal Company, Inc.

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Grill Corp.
(Name of settling party -- please type)

Date: 9/10/96

SIGNATURE

James B. Ventantonio
(Name -- please type)

Attorney
(Title)

Ventantonio & Wildenhain
95 Mt. Bethel Rd., Warren, NJ 07059
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James B. Ventantonio
(Please type)

Title: Attorney

Address: Ventantonio & Wildenhain
95 Mt. Bethel Rd., Warren, NJ 07059

Tel. Number: (908) 757-3900

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Haines & Kibblehouse
(Name of settling party -- please type)

Date: July 15, 1996

Frank J Comensky
SIGNATURE

Frank J Comensky
(Name -- please type)

Risk Manager
(Title)

2052 Lucon Rd
Skippack Pa 19474
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: William R. Powers, Jr.
(Please type)

Title: Attorney

Address: 7 E. Main Street
Moorestown, N.J. 08057

Tel. Number: 609-235-4700

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Robert Hargrove Enterprises
(Name of settling party -- please type)

Date: July 17, 1996

SIGNATURE

Walter G. Luger, Esq.
(Name -- please type)

for Robert Hargrove Enterprises
(Title)

Attorney

CARELLA, BYRNE, BAIN, GILFILLAN,
(Address)
CECCHI, STEWART & OLSTEIN
6 Becker Farm Road
Roseland, New Jersey 07068

Agent authorized to accept service on behalf of above-signed settling party:

Name: Walter G. Luger, Esq.
(Please type)

Title: Attorney

Address: CARELLA, BYRNE, BAIN, GILFILLAN,
CECCHI, STEWART & OLSTEIN
~~Telephone Number:~~ 6 Becker Farm Road
Roseland, New Jersey 07068

Tel. Number: (201) 994-1700

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

For THE ORIGINAL W. HARGROVE WRECKING CO.

DATED: 07/03/96

MICHAEL G. BRENNAN
Attorney for The Original W. Hargrove Wrecking Co.
434 Haddon Avenue
Post Office Box 356
Collingswood, NJ 08108

Agent authorized to accept service on behalf of above-signed settling party:

MICHAEL G. BRENNAN
Attorney for The Original W. Hargrove Wrecking Co.
434 Haddon Avenue
Post Office box 356
Collingswood, NJ 08108
(609) 854-0999

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR JOHN HARRINGTON

(Name of settling party -- please type)

Date: 7/31/96

John Harrington

SIGNATURE

John Harrington

(Name -- please type)

Owner

(Title)

714 West Madison Avenue

Magnolia, NJ 08049

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for JOHN HARRINGTON

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

C:\FORMS\LASTPAGE.FOR

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR HAULROADS, INC.
(Name of settling party -- please type)

Date: August 12, 1996

SIGNATURE

John Callahan, Jr.
(Name -- please type)

Former President
(Title)

215 N. Black Horse Pike
Blackwood, NJ
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John Callahan, Jr.
(Please type)

Title: Former President

Address: 215 N. Black Horse Pike
Blackwood, NJ

Tel. Number: 609-228-2121

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Robert Hawthorne, Inc.
(Name of settling party -- please type)

Date: 9-12-96

SIGNATURE

JUNE H. HYDUK
(Name -- please type)

SECRETARY-TREASURER
(Title)

2900 E. ORTHODOX ST.,
PHILA, PA 19137
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: JOHN R. EMBICK, ESQ.
(Please type)

Title: ATTORNEY

Address: KITTREDGE, DONLEY, ELSON, FULLEM & EMBICK
421 CHESTNUT STRET, PHILA., PA 19106

Tel. Number: (215) 829-9900

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR H.J. Homan Company, Inc.
(Name of settling party -- please type)

Date: 7/19/96

Frank J. Acconey
SIGNATURE

Frank Acconey
(Name -- please type)

President
(Title)

434 Haddon Avenue, Box 356
Collingswood, NJ 08108
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Michael G. Brennan, Esquire
(Please type)

Title: Personal Counsel

Address: Brennan and Bernardin
434 Haddon Avenue
Collingswood, NJ 08108

Tel. Number: (609) 854-0999

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR A. L. Hyde Company
(Name of settling party -- please type)

Date: 7-22-96

SIGNATURE

Robert J. Gold
(Name -- please type)

Vice President, Finance
(Title)

1 Main Street
Grenloch, NJ 08032
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Mr. John E. Griffith, Jr.
(Please type)

Title: Attorney

Address:

Tel. Number:

Piper & Marbury LLP
36 South Charles Street
Baltimore, MD 21201-3018
Phone 410-539-2530
Fax 410-539-0489

** TOTAL PAGE.003 **

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Jones & Johnson Enterprises, Inc. / Disposal Corporation of America, Inc.

(Name of settling party -- please type)

Date: 7/24/96

James F. Jones
SIGNATURE

James Jones

(Name -- please type)

President, Jones & Johnson Enterprises, Inc. / Vice President, Disposal Corporation of America, Inc.

(Title)

3433 Moore Street

Philadelphia, PA 19145

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for Jones & Johnson Enterprises, Inc. / Disposal Corporation of America, Inc.

Address: 2207 Chestnut Street
Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Frank Kanopka/Richard's Rubbish Removal

Date: 9/10/96

SIGNATURE

Gregory W. Boyle

Attorney for Frank Kanopka/Richard's Rubbish Removal

4000 Route 66
Tinton Falls, NJ 07753-7308
(908) 922-3300

Agent authorized to accept service on behalf of above-signed settling party:

Name: Gregory W. Boyle

Title: Attorney for Frank Kanopka/Richard's Rubbish Removal

Address: 4000 Route 66
Tinton Falls, NJ 07753-7308

Tel. Number: (908) 922-3300

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Kasper Brothers Inc.
(Name of settling party -- please type)

Date: 7/19/96

SIGNATURE

DAVID A. CHRISTIE, JR.
(Name -- please type)

Attorney for Kasper Brothers
(Title)

188 E. Bergen Place, P.O. Box 550
Red Bank, NJ 07701
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

KASPER BROTHERS, INC.

Name: _____
(Please type)

Title: Attorney for Kasper Brothers

Address: Wolff, Helies & Duggan
188 E. Bergen Place
Red Bank, NJ 07701

Tel. Number: 908-747-3322

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR FRANK KULL, INC.
(Name of settling party -- please type)

Date: 9/6/96

Frank Kull
SIGNATURE

Frank Kull
(Name -- please type)

President
(Title)

114 Jarvis Road
Erial, NJ 08081
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Robert L. Messick, Esq.
(Please type)

Title: Attorney

Address: 41 Grove St.
Haddonfield, NJ 08033

Tel. Number: (609) 429 2236

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR William Lawrenson / William Lawrenson, Jr. Inc.

(Name of settling party -- please type)

Date: 7-29-96

William Lawrenson Jr.
SIGNATURE

William Lawrenson, Jr.

(Name -- please type)

Owner / President

(Title)

P.O. Box 5008

Deptford, NJ 08096

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for William Lawrenson / William Lawrenson, Jr. Inc.

Address: 2207 Chestnut Street
Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR William Lawrenson, Sr., Inc.

(Name of settling party -- please type)

Date: 8/5/96

William J. Lawrenson Sr.
SIGNATURE

William Lawrenson, Sr.

(Name -- please type)

Owner

(Title)

4900 N.W. 53 St.

Ft. Lauderdale, FL 33319

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for William Lawrenson, Sr., Inc.

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Herman Liedtka, Inc.
(Name of settling party -- please type)

Date: September 10, 1996

Herman W. Liedtka
SIGNATURE

Herman W. Liedtka
(Name -- please type)

Vice President
(Title)

P. O. Box 313
Crosswicks, N.J. 08510
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Henry G. Tutek
(Please type)

Title: Agent for Service

Address: 325 Farnsworth Avenue
Bordentown, N.J. 08505

Tel. Number: (609) 298-2000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Manor Care, Inc. and Portfolio One as succesor by merger to Almo Anti-Pollution Services Corp. and Almo Tank Cleaning and Maintenance Co.

(Name of settling party -- please type)

Date: September 11, 1996

SIGNATURE

James H. Rempe
(Name -- please type)

Senior Vice President
(Title)

10750 Columbia Pike
Silver Spring, MD 20901
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James H. Rempe
(Please type)

Title: Senior Vice President

Address: 10750 Columbia Pike
Silver Spring, MD 20901

Tel. Number: (301) 905-4239

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR A. Marianni's Sons, Inc.

(Name of settling party -- please type)

Date: 7/25/96

James Marianni President
SIGNATURE

James Marianni

(Name -- please type)

President

(Title)

2942 Easat Tioga Street

Philadelphia, PA 19134

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for A. Marianni's Sons, Inc.

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Mitchell's Waste Removal
(Name of settling party -- please type)

Date: 7-16-96

Albert J Mitchell
SIGNATURE

Albert J. Mitchell
(Name -- please type)

Owner
(Title)

330 N. Woodbury Rd
Pitman, NJ 08071
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Albert J. Mitchell
(Please type)

Title: Owner

Address: 330 N. Woodbury Road
Pitman, N.J. 08071

Tel. Number:

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR MOBILE DREDGING & PUMPING CO.
(Name of settling party -- please type)

Date: July 19, 1996

SIGNATURE

Howard A. Harris
(Name -- please type)

President
(Title)

3100 Bethel Road
Chester, PA 19013-1488
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Raymond T. Reott
(Please type)

Title: Attorney

Address: JENNER & BLOCK, One IBM Plaza
Chicago, IL 60611

Tel. Number: (312) 222-9350

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Modern Way Refuse Container Service, Inc.
(Name of settling party -- please type)

Date: September 12, 1996

SIGNATURE

Steven Antinoff
(Name -- please type)

Attorney-At-Law
(Title)

1236 Brace Road, Suite E
Cherry Hill, New Jersey 08034
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John R. Gercke
(Please type)

Title: Attorney-At-Law

Address: 1236 Brace Road, Suite E
Cherry Hill, New Jersey 08034

Tel. Number: (609) 795-5800

Recycled paper

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et. al., and United States v. Air Products & Chemicals, Inc., et. al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR: Paul C. Murphy, Inc.
(Now named BFI of Mt. Laurel, N.J., Inc.),
A New Jersey Company

Date: 7-16-96

Gerald K. Burger
Vice President
757 North Eldridge
Houston, Texas 77079

Agent authorized to accept service on behalf of above signed settling party:

Name:	The Corporation Trust Company
Title:	Registered Agent
Address:	820 Bear Tavern Road, 3rd Floor West Trenton, New Jersey 88628

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR NEW DEAL LUMBER AND MILLWORK CO., Inc. OF NJ
(Name of settling party -- please type)

Date: July 18, 1996

SIGNATURE

Sol Farbstein
(Name -- please type)

President
(Title)

560 S. Black Horse Pike
Blackwood, NJ 08012
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Wayne C. Streitz
(Please type)

Title: Attorney

Address: 10 Pitman Avenue
Pitman, NJ 08071

Tel. Number: (609) 589 - 6300

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ARTHUR J. OGREN, INC.
(Name of settling party -- please type)

Date: 9/12/96

SIGNATURE

MELVILLE D. LIDE, ESQUIRE
(Name -- please type)

Attorney-of-record
(Title)

78 West Park Avenue Suite 8
P.O.Box 310, Vineland, NJ 08360
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Arthur J. Ogren, Jr.
(Please type)

Title: President, Arthur J. Ogren, Inc.

Address: 210 East Garden Road, Vineland, NJ 08360

Tel. Number: 609-692-4226

RECEIVED SEP 13 1996

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR WILLIAM PECARSKY CO
(Name of settling party -- please type)

Date: 9/11/96

SIGNATURE

DANIEL K. NEWMAN
(Name -- please type)

ATTORNEY
(Title)

622 EAGLE ROCK AVE., WEST ORANGE, NJ 07052
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: DANIEL K. NEWMAN
(Please type)

Title: ATTORNEY

Address: 622 EAGLE ROCK AVE. WEST ORANGE NJ 07052

Tel. Number:

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR V Ponte & Sons Inc
(Name of settling party -- please type)

Date: July 23, 1996

SIGNATURE

Frank Ponte
(Name -- please type)

President
(Title)

111 Paterson Ave Hoboken NJ 07030
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Frank Ponte
(Please type)

Title: President

Address: 111 Paterson Ave., Hoboken, NJ 07030

Tel. Number: 201-656-5142

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Orville Reagle
(Name of settling party -- please type)

Date: 7/19/96

Stephen E. Siegrist, Esq
SIGNATURE Attorney for Orville Reagle, deceased

Stephen E. Siegrist, Esquire
(Name -- please type)

Attorney for Orville Reagle, deceased
(Title)

MURPHY & O'CONNOR
65 Haddon Avenue, Haddonfield, NJ 08033
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Stephen E. Siegrist, Esquire of Murphy & O'Connor
(Please type)

Title: Counsel for Orville Reagle, deceased

Address: MURPHY & O'CONNOR
65 Haddon Avenue
Haddonfield, NJ 08033

Tel. Number: (609) 795-6111

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR William Riemer
Riemer Sanitary Rubbish Removal
(Name of settling party -- please type)

Date: July 26 1992

SIGNATURE

(Name -- please type)
William Riemer

(Title)
EMPLOYEE

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Sandra C. Hymowitz, Esquire
(Please type)

Title: Attorney

Address: Woodland Falls Corporate Park, 200 Lake Drive East
Suite 206, Cherry Hill, NJ 08002

Tel. Number: (609) 482-7869

TOTAL P.03

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Samuel H. Jones, Jr. Individually and T/A S-J Transportation Company and/or T/A S-J Leasing Company
(Name of settling party -- please type)

Date: September 11, 1996

SIGNATURE

Arthur Montano
(Name -- please type)

Attorney for Settling Party
(Title)

Two Executive Campus, Suite 400
Route 70 & Cuthbert Boulevard
Cherry Hill, NJ 08002
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Samuel H. Jones, Jr.
(Please type)

Title: Owner

Address: P.O. Box 169
Woodstown, NJ 08098

Tel. Number: 609-769-2741

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR SIMON WRECKING CO., INC.
(Name of settling party -- please type)

Date: 7/19/96

SIGNATURE

Steven N. Yermish, Esq.
(Name -- please type)

Attorney for Simon Wrecking Co., Inc.
(Title)

40 Darby Road
Paoli, PA 19301
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Steven N. Yermish, Esquire
(Please type)

Title: Attorney-at-law

Address: 40 Darby Road, Paoli, PA 19301

Tel. Number: (610) 640-1200

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environment Protection v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al, relating to the Gloucester Environmental Management Services Superfund Site.

For Son Don, Inc.
(Settling Party)

Date: JULY 18TH 1996

Dominic Pantarelli
(Signature)

Dominic Pantarelli

President
(Title)

Johnson Road, Sicklerville, NJ 08080
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Thomas H. Ward, Esquire
Title:	Attorney
Address:	36 Euclid St., P.O. Box 685, Woodbury, NJ 08096
Telephone Number:	609-853-7770

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Enviromental Protection. v. Gloucester Environmentla Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Mike Spano & Sons / Mike Spano & Sons, Inc.

(Name of settling party -- please type)

Date: 8-8-96

Alfonso Spano

SIGNATURE

Alfonso Spano

(Name -- please type)

Owner / Vice President

(Title)

1932 East York Street

Philadelphia, PA 19125

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David F. Michelman, Esquire
(Please Type)

Title: Attorney for Mike Spano & Sons / Mike Spano & Sons, Inc.

Address: 2207 Chestnut Street

Philadelphia, Pennsylvania 19103

Tel. Number: (215) 557-0557

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Victory Brick & Block, Inc.
(Name of settling party -- please type)

Date: 9/25/96

Gladys K Connors
SIGNATURE

Gladys Connors
(Name -- please type)

Secretary/Treasurer
(Title)

1215 Berlin-Haddonfield Road
Voorhees, NJ 08043
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Frank S. Blatcher
(Please type)

Title: Attorney for Victory Brick & Block, Inc.

Address: 216 S. Orange Street
Media, PA 19063

Tel. Number: (610)565-9600

SEP - 2 1996

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

For: Waste Management, Inc., on behalf of itself and all of its affiliates, subsidiaries or related entities, including, but not limited to, Instant Disposal Service, Inc., Northeast Disposal Company, Inc., Nu-Way Trash Removal Corp., O'Connor Corp., Penn Sanitation, SCA Services, Inc., Tri-County Hauling, Waste Disposal, Schiavo Brothers, Inc., and Waste Automation Corp.

Date: 9/11/96

PETER J. KELLY, ESQ.

Title: Vice President and Associate General Counsel-Environmental

Waste Management, Inc.
3003 Butterfield Road
Oak Brook, IL 60521

Agent authorized to accept service on behalf of above-signed settling parties:

Name:	Peter J. Kelly, Esq.
Title:	Vice President and Associate General Counsel-Environmental
Address:	Waste Management, Inc. 3003 Butterfield Road Oak Brook, IL 60521
Telephone No.	(708) 572-8838

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Steve Waszen
(Name of settling party -- please type)

Date: 9/13/96

SIGNATURE

DAVID JACOBY - David Jacoby
(Name -- please type)

Attorney for Steve Waszen
(Title)

41 S Haddon Ave
Haddonfield, N.J.
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David Jacoby, Esquire
(Please type)

Title: Attorney for Steve WAszen

Address: 41 South Haddon Avenue
Haddonfield, NJ 08033

Tel. Number: 609-429-1100

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environment Protection v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al, relating to the Gloucester Environmental Management Services Superfund Site.

For William D. Wynne Contractors, Inc.
(Settling Party)

Date: [illegible] 17, 199[illegible]

(Signature)

William D. Wynne

President
(Title)

741 Heritage Road, Sewell, NJ 08080
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Thomas H. Ward, Esquire
Title:	Attorney
Address:	36 Euclid St., P.O. Box 685, Woodbury, NJ 08096
Telephone Number:	609-853-7770

F:\WPDOCS\THW\348THW\CONSENT.DEC-1

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR A.E. Staley Manufacturing Company, for itself and its former division Staley Chemical Co.
(Name of settling party -- please type)

Date: July 11, 1996

SIGNATURE

J. Patrick Mohan
(Name -- please type)

Executive Vice President
(Title)

2200 E. Eldorado Street
Decatur, IL 62521
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Marc W. Larson
(Please type)

Title: Corporate Counsel, A.E. Staley Manufacturing Company

Address: 2200 E. Eldorado Street
Decatur, IL 62521

Tel. Number: (217) 423-4411

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Albanil Dyestuff Corporation
(Name of settling party -- please type)

Date: JULY 1 1996

SIGNATURE

Robert Weiss
(Name -- please type)

Secretary
(Title)

20 Linden Avenue East, P.O. Box 5179,
Greenville Station
Jersey City, new Jersey 07305
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Barbara S. Jentis
(Please type)

Title: Attorney

Address: Starr, Gern, Davison & Rubin, P.C.
103 Eisenhower Parkway
Roseland, New Jersey 07068

Tel. Number: 201-403-9200

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR AMERADA HESS CORPORATION
(Name of settling party -- please type)

Date: 7-11-96

F. Lamar Clark
SIGNATURE

F. Lamar Clark
(Name -- please type)

Senior Vice President
(Title)

1 Hess Plaza
Woodbridge, N.J. 07095
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Douglas E. Friedman
(Please type)

Title: Associate General Counsel and Vice President

Address: 1 Hess Plaza, Woodbridge, N.J. 07095

Tel. Number: 908-750-6000

State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al.
Consent Decree Signature Page

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR AMERICAN INKS & COATINGS CORP.
(Name of settling party
-- please type)

Date: 9/11/96

SIGNATURE

William P. Rimel, III
(Name -- please type)

President
(Title)

P. O. Box 803
Valley Forge, PA 19482
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: THEODORE E. BAKER
(Please type)

Title: ATTORNEY

Address: LUMMIS, KRELL & BAKER
56 Fayette, Box 257, Bridgeton, NJ 08302

Tel. Number: (609) 455-6000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR American National Can Company
(Name of settling party
-- please type)

Date: July 1, 1996

SIGNATURE

Eileen Burns Lerum
(Name -- please type)

Assistant General Counsel
(Title)

8770 W. Bryn Mawr Avenue
Chicago, IL 60631
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Eileen Burns Lerum
(Please type)

Title: Assistant General Counsel

Address: 8770 W. Bryn Mawr Avenue
Chicago, IL 60631

Tel. Number: (312) 399-8695

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR American Packaging Corporation
(Name of settling party -- please type)

Date: 7/12/96

SIGNATURE

James D. Mossholder
(Name -- please type)

Secretary/Treasurer
(Title)

2900 Grant Avenue
Philadelphia, PA 19114
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Carl B. Everett (Saul, Ewing, Remick & Saul)
(Please type)

Title: Esquire

Address: 3800 Centre Square West
Philadelphia, PA 19102

Tel. Number: (215) 972-7777

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ARSYNCO, INC.
(Name of settling party -- please type)

Date: JULY 8, 1996

SIGNATURE

DONALD HOROWITZ
(Name -- please type)

SECRETARY/TREASURER
(Title)

P.O. BOX 8
CARLSTADT, NJ 07072
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: DAVID HIRD
(Please type)

Title: ATTORNEY

Address: c/o WEIL, GOTSHAL & MANGES
1615 L STREET, NW
WASHINGTON, DC 20036

Tel. Number: (202) 682-7190

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ASHLAND CHEMICAL COMPANY, Division of ASHLAND INC., formerly known as ASHLAND OIL, IN
(Name of settling party -- please type)

Date: July 3, 1996

SIGNATURE

SCOTTY B. PATRICK
(Name -- please type)

GROUP VICE PRESIDENT
(Title)

P.O. BOX 2219
COLUMBUS, OH 43216
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: STEPHEN W. LEERMAKERS
(Please type)

Title: SENIOR LITIGATION COUNSEL

Address: P.O. BOX 2219, COLUMBUS, OH 43216

Tel. Number: 614/790-4261

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Lucent Technologies Inc. for and in place of AT&T Corp. and AT&T Technologies Inc. formerly Western Electric Company Inc.
(Name of settling party -- please type)

Date: 7/9/96

Roy J. Femenella
SIGNATURE

Roy J. Femenella
(Name -- please type)

Global EH&S Operations Director
(Title)

131 Morristown Road
Basking Ridge, NJ 07920
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Kenneth R. Arnold
(Please type)

Title: Attorney

Address: 131 Morristown Road
Basking Ridge, NJ 07920

Tel. Number: 908-204-8448

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Bell Atlantic-Pennsylvania, Inc.
(Name of settling party -- please type)

Date: July 11, 1996

SIGNATURE

Daniel E. Monagle
(Name -- please type)

Assistant General Counsel
(Title)

1717 Arch St. 32 NW, Philadelphia, PA 19103
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Daniel E. Monagle
(Please type)

Title: Assistant General Counsel

Address: 1717 Arch St. 32NW, Philadelphia, PA 19103

Tel. Number: 215 963-6004

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BORDEN, INC.
(Name of settling party -- please type)

Date: July 3, 1996

Sharon L. Post
SIGNATURE

Sharon L. Post
(Name -- please type)

Environmental Counsel
(Title)

180 E. Broad St.
Columbus, OH 43215
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Richard A. Levao, Esq.
(Please type)

Title: Attorney

Address: Shanley & Fisher, P.C.
131 Madison Ave.
Morristown, NJ 07962-1979

Tel. Number: 201-285-1000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BP America Inc., on behalf of BP North America Petroleum Inc., BP Exploration & Oil Inc., or any other related or affiliated companies
(Name of settling party -- please type)

Date: 7/10/96

SIGNATURE

D. J. Atton
(Name -- please type)

VP NE Company
(Title)

200 Public Square, 7-4801-V
Cleveland, Ohio 44114-2375
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: C. R. Pinzone
(Please type)

Title: Counsel

Address: 200 Public Square, 11-3356-C
Cleveland, Ohio 44114-2375

Tel. Number: (216) 586-8298

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Breyers Ice Cream/Kraft Foods, Inc.
(Name of settling party
-- please type)

Date: 7-10-96

x Philip M. McAndrew
SIGNATURE

Philip M. McAndrew
(Name -- please type)

Assoc. Director
(Title)

Kraft Foods Kraft Court
Glenview IL 60025
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Bressler, Amery & Ross, P.C.
Donald J. Camerson II, Esq.
(Please type)

Title: Attorney for Breyers Ice Cream/Kraft Foods, Inc.

Address: P.O. Box 1980
Morristown, NJ 07962

Tel. Number: (201) 514-1200

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BRIDGESTONE/FIRESTONE, INC.
(Name of settling party -- please type)

Date: July 18, 1996

SIGNATURE

James k. Vines
(Name -- please type)

General Counsel - Environmental
(Title)

50 Century Blvd.
Nashville, TN 37214
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Christopher R. Gibson, Esquire
(Please type)

Title: Counsel for Bridgestone/Firestone, Inc.

Address: Archer & Greiner
One Centennial Square
P.O. Box 3000
Haddonfield, N.J. 08033-0968

Tel. Number: 609/795-2121

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Bristol-Myers Squibb Company and E.R. Squibb & Sons, Inc. (De Minimis Settlers)

Date: 7-3-96

Francis S. Rossi
SIGNATURE

Francis S. Rossi
(Name -- please type)

Associate Counsel
(Title)

345 Park Avenue
New York, New York 10154
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Francis S. Rossi

Title: Associate Counsel

Address: 345 Park Avenue
New York, New York 10154

Tel. Number: 212) 546-3902

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR

Bundy Corporation (with respect to itself and the National Rolling Mills Plant)

Date: 7.31.96

SIGNATURE

Richard T. Kingston
(Name -- please type)

Facilities Manager
(Title)

12345 E. Nine Mile Rd.
Warren, MI 48090
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Richard T. Kingston
(Please type)

Title: Facilities Manager

Address: 12345 E. Nine Mile Rd.
Warren, MI 48090

Tel. Number: (810) 755-8401

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Callery Chemical, a Division of Mine Safety Appliances Company, and Mine Safety Appliances Company
(Name of settling party -- please type)

Date: 7/29/96

SIGNATURE

Jay D. Branderbit
(Name -- please type)

Counsel for Settling Party
(Title)

KENT & McBRIDE, P.C.

(Address) Two Logan Square
Suite 600
18th & ARch Streets
Philadelphia, PA 19103

Agent authorized to accept service on behalf of above-signed settling party:

Name: Jay D. Branderbit
(Please type)

Title: Attorney

Address: KENT & McBRIDE, P.C. (see above address)

Tel. Number: (215) 568-1800
(215) 568-1830 (fax)

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CBS Inc.
(Name of settling party -- please type)

Date: June 28, 1996

Joseph Horowitz
SIGNATURE

6-28-96

Joseph Horowitz
(Name -- please type)

Director, Environmental Engineering
(Title)

CBS Inc.

(Address)
51 West 52 Street
New York, NY 10019

Agent authorized to accept service on behalf of above-signed settling party:

Name: Marlene W. Jackson, Esq.
(Please type)

Title: Assistant General Counsel

Address: Westinghouse Electric Corporation
11 Stanwix Street
Pittsburgh, PA 15222

Tel. Number: 412-642-5243

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Central Boiler Repair Company
(Name of settling party
-- please type)

Date: July 25, 1996

SIGNATURE

JOSEPH MEEHAN
(Name -- please type)

Attorney at Law, State of New Jersey
(Title)

495 Broadway, P.O. Box 4025
Long Branch, NJ 07740
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: JOSEPH MEEHAN
(Please type)

Title: Attorney at Law, State of New Jersey

Address: 495 Broadway, P.O. Box 4025
Long Branch, New Jersey 07740

Tel. Number: (908) 229-3245

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CertainTeed Corporation
(Name of settling party -- please type)

Date: 7-2-96

SIGNATURE

Lauren P. Alterman
(Name -- please type)

Counsel
(Title)

Saint-Gobain Corporation
750 E. Swedesford Rd., P.O. Box 860, Valley Forge, PA 19482-0101
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Lauren P. Alterman
(Please type)

Title: Counsel

Address: Saint-Gobain Corporation
750 E. Swedesford Rd., P.O. Box 860, Valley Forge, PA 19482-0101

Tel. Number: 610-341-7838

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Chemical Leaman Tank Lines, Inc.
(Name of settling party
-- please type)

Date: July 9, 1996

SIGNATURE

Philip J. Ringo
(Name -- please type)

President & CEO
(Title)

102 Pickering Way
Exton, PA 19341-0200
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Bonni Fine Kaufman
(Please type)

Title: Counsel
WILLKIE FARR & GALLAGHER

Address: 1155 21st Street, N.W., Suite 600
Washington, D.C. 20036

Tel. Number: (202) 429-4759

July 18th 1996
APB

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CHESTER HIDE & SKIN CORP.
(Name of settling party -- please type)

Date: July 18-1996
APB

Alfred P. Seligman
SIGNATURE

ALFRED P. SELIGMAN
(Name -- please type)

President
(Title)

c/o Jeffrey Mintz, Esq.
270 Madison Avenue
(Address) Suite 1301
New York, NY 10016

Agent authorized to accept service on behalf of above-signed settling party:

Name: Jeffrey Mintz, Esq.
(Please type)

Title: Attorney

Address: 270 Madison Avenue, Suite 1301
New York, NY 10016

Tel. Number: (212) 725-5252

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Chevron U.S.A. Inc.
(Name of settling party -- please type)

Date: July 12, 1996

SIGNATURE

Ken L. Frank
(Name -- please type)

Senior Superfund Specialist
(Title)

1003 West Cutting Boulevard
Richmond, CA 94804
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: The Prentice-Hall Corporation System, Inc.
(Please type)

Title:

Address: 100 Pine Street
Harrisburg, PA 17108

Tel. Number: (717) 236-1535

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Kewanee Industries, Inc.
(Name of settling party -- please type)

Date: July 12, 1996

SIGNATURE

Ken L. Frank
(Name -- please type)

Senior Superfund Specialist
(Title)

1003 West Cutting Boulevard
Richmond, CA 94804
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: The Prentice-Hall Corporation System, Inc.
(Please type)

Title:

Address: 100 Pine Street
Harrisburg, PA 17108

Tel. Number: (717) 236-1535

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Chicago Bridge & Iron Company
(Name of settling party -- please type)

Date: July 31, 1996

T. L. Aldinger
SIGNATURE

T. L. Aldinger
(Name -- please type)

President
(Title)

1501 North Division Street
Plainfield, IL 60544-8929
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Chicago Bridge & Iron Company
(Please type)

Title: General Counsel

Address: 1501 North Division Street
Plainfield, IL 60544-8929

Tel. Number: (815) 439-6000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CHRYSLER CORPORATION
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Leroy C. Richie
(Name -- please type)

Vice President & General Counsel
Automotive Legal Affairs
(Title)

1000 Chrysler Drive, CIMS 485-13-65
Auburn Hills, MI 48326-2766
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: The Corporation Trust Co.
(Please type)

Title: 820 Bear Tavern Road

Address: W. Trenton, NJ 08628

Tel. Number:

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CLIFTON ADHESIVES, INC.
(Name of settling party -- please type)

Date: July 31, 1996

SIGNATURE

DOMENIC D. TOTO
(Name -- please type)

ATTORNEY
(Title)
c/o STARR, GERN, DAVISON & RUBIN
103 Eisenhower Parkway
Roseland, New Jersey 07068
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: DOMENIC D. TOTO, ESQ.
(Please type)

Title: ATTORNEY

Address: c/o STARR, GERN, DAVISON & RUBIN
103 Eisenhower Parkway
Roseland, New Jersey 07068

Tel. Number: (201) 403-9200

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR COLONIAL HEIGHTS PACKAGING INC.
(successor by merger to Polymer Industries, Inc.
(Name of settling party
-- please type)

Date: 7/12/96

SIGNATURE

DENNIS J. FLOOM
(Name -- please type)

Secretary
(Title)

120 Park Avenue
NY, NY 10017
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: William H. Harbeck
(Please type)

Title: Attorney

Address: QUARLES & BRADY
411 East Wisconsin Avenue
Milwaukee WI 53202

Tel. Number: (414) 277-5000

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CRODA INKS CORPORATION, corporate successor to Richardson Ink Company
(Name of settling party -- please type)

Date: July 9, 1996

Lawrence L. Rokosz
SIGNATURE

Lawrence L. Rokosz
(Name -- please type)

Secretary and Treasurer
(Title)

7777 North Merrimac Avenue
Niles, Illinois 60714
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Howard C. Crystal
(Please type)

Title: Attorney for Croda Inks Corp.

Address: Lynch Rowin Novack Burnbaum & Crystal, P.C.
300 E. 42nd St., New York, NY 10017

Tel. Number: (212) 682-4001

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Cumberland County Medical Center (n/k/a Cumberland Manor) and Cumberland County (to, and only to the extent its liability is based upon the Cumberland County Medical Center)

(Name of settling party -- please type)

Date: July 1, 1996

SIGNATURE

Richard J. Geiger
(Name -- please type)

Cumberland County Counsel
(Title)

146 W. Broad St., P.O. Box 440
Bridgeton, NJ 08302
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Richard J. Geiger
(Please type)

Title: Cumberland County Counsel

Address: 146 W. Broad St., P.O. Box 440
Bridgeton, NJ 08302

Tel. Number: (609) 451-7100

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR DAIRYPAK, A DIVISION OF CHAMPION INTERNATIONAL CORP.
(Name of settling party -- please type)

Date: 7/3/96

Melinda S. Kemp
SIGNATURE

MELINDA S. KEMP
(Name -- please type)

ENVIRONMENTAL PROJECTS MANAGER
(Title)

ONE CHAMPION PLAZA
STAMFORD, CT 06921
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: THE PRENTICE-HALL CORP. SYSTEM, NEW JERSEY, INC.
(Please type)

Title:

Address: 830 BEAR TAVERN RD.
WEST TRENTON, NJ 08628

Tel. Number:

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR DeSoto, Inc.
(Name of settling party -- please type)

Date: 7/3/96

Anne E. Eisele
SIGNATURE

Anne Eisele
(Name -- please type)

President
(Title)

P. O. Box 609
Joliet, IL 60434
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joel L. Herz, Esq.
(Please type)

Title: Attorney for DeSoto, Inc.

Address: 1050 E. River Rd., #300
Tucson, AZ 85718

Tel. Number: 520/293-1400

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Dock Resins
(Name of settling party please type)

Date: September 5, 1996

Christopher L. Musmanno
SIGNATURE

Christopher L. Musmanno, Esq.
(Name -- please type)

Attorney of Dock Resins
(Title)

127 Main St. Chatham, N.J
(Address)

-0- payment on behalf of Dock Resins

Agent authorized to accept service on behalf of above-signed settling party:

Name: Christopher L. Musmanno, Esq.
(Please type)

Title: attorney for Dock Resins

Address: 127 Main St. Chatham, N.J

Tel. Number: (201) 635-4200

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Elf Atochem North America, Inc. (together with its past and present related companies, including Polyrez, Inc.
(Name of settling party -- please type)

Date: _____, 1996

SIGNATURE

Frank B. Friedman
(Name -- please type)

Senior Vice President - HES
(Title)

2000 Market Street
Philadelphia, PA 19103-3222
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Linda Mack
(Please type)

Title: Attorney

Address: Fox, Rothschild, O'Brien & Frankel
997 Lenox Drive, Bldg. 3, Lawrenceville, NJ 08648-2311

Tel. Number: 609/896-3600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Esschem, Inc. (fka Sartomer Resins, Inc.; Sartomer Industries, Inc.; and Leksi, Inc.)
(Name of settling party -- please type)

Date: 7/10/96

Joseph M. Suarez
SIGNATURE

Joseph M. Suarez
(Name -- please type)

Attorney
(Title)

Suarez & Suarez
2016 Kennedy Blvd., Jersey City, NJ 07305
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Esschem, Inc.
(Please type)

Title:

Address: Governor Prinze Blvd. & Wanamaker Ave.
Essington, PA 19029

Tel. Number: (610)521-3800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Exide Corporation
(Name of settling party -- please type)

Date: September 27, 1996

SIGNATURE

Ari D. Levine
(Name -- please type)

Assistant General Counsel
(Title)

645 Penn Street
Reading, PA 19612-4205
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Ari D. Levine
(Please type)

Title: Assistant General Counsel

Address: 645 Penn Street
Reading, PA 19612-4205

Tel. Number: (610) 378-0852

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Food Haulers, Inc.
(Name of settling party -- please type)

Date: June 24, 1996

SIGNATURE

Dean Janeway
(Name -- please type)

President
(Title)

600 York Street
Elizabeth, N.J. 07207
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James F. Watson, Esq.
(Please type)

Title: General Counsel, Food Haulers, Inc.

Address: 600 York Street
Elizabeth, N.J. 07207

Tel. Number: 908-527-3351

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Fred Heinzelman & Sons, Inc.
(Name of settling party -- please type)

Date: July 30, 1996

SIGNATURE

Donald J. Crecca, Esq.
(Name -- please type)

Attorney for Fred Heinzelman & Sons, Inc.
(Title)

c/o Schwartz, Tobia, Stanziale, Becker, Rosensweig & Sedita, P.A.
22 Crestmont Road
Montclair, NJ 07042
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Donald J. Crecca, Esq.
(Please type)

Title: Attorney for Fred Heinzelman & Sons, Inc.

Address: c/o Schwartz, Tobia, Stanziale, Becker, Rosensweig & Sedita, P.A.
22 Crestmont Road, Montclair, NJ 07042

Tel. Number: 201-746-6000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR General Electric Company (GE)
(Name of settling party
-- please type)

Date: July 11, 1996

SIGNATURE

David W. Thompson
(Name -- please type)

Manager, Mid-Atlantic/Southeast Region
(Title)

640 Freedom Business Center
King Of Prussia, PA 19406
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Nancy Rohn, Esquire
(Please type)

Title: Resident Partner

Address: Reed Smith Shaw & McClay
Princeton Forrestal Village
~~136 Main Street, Suite~~ 250
P.O. Box 7839
Princeton, New Jersey
08543-7839

Tel. Number: (609) 520-6010

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Radio Corporation of America (RCA)
(Name of settling party
-- please type)

Date: July 11, 1996

SIGNATURE

David W. Thompson
(Name -- please type)

Manager, Mid-Atlantic/Southeast Region
(Title)

640 Freedom Business Center
King of Prussia, PA 19406
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Nancy Rohn, Esquire
(Please type)

Title: ~~Resident~~ Partner

Address: Reed Smith Shaw & McClay
Princeton Forrestal Village
~~136 Main Street~~
Suite 250
P.O. Box 7839
Princeton, New Jersey
08543-7839

Tel. Number: (609) 520-6010

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR GENERAL METALCRAFT INC
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

MICHAEL AMSTERDAM
(Name -- please type)

PRESIDENT
(Title)

PO BOX 557
DOVER DE 19903
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James L. McKenna, P.C.
(Please type)

Title: Outside Counsel

Address: Ten Melrose Avenue, Suite 450,
Cherry Hill, New Jersey 08003

Tel. Number: (609) 429-6662

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR The Gilbert Spruance Company
(Name of settling party -- please type)

Date: July 8, 1996

Robert M. Cox, Jr.
SIGNATURE

Robert M. Cox, Jr.
(Name -- please type)

Owner
(Title)

2017 Lodges Lane, Oreland, PA 19075
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Seth v.d.H. Cooley
(Please type)

Title: Attorney

Address: Duane, Morris & Heckscher
One Liberty Place, Philadelphia, PA 19103

Tel. Number: (215) 979-1838

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Gimbels Bros., Inc. (BATUS, Inc.)
(Name of settling party
-- please type)

Date: July 2, 1996

SIGNATURE

F. Anthony Burke
(Name -- please type)

Vice President and General Counsel
(Title)

Brown & Williamson Tobacco Corp.
1500 Brown & Williamson Tower
Louisville, KY 40202
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: The Corporation Trust
(Please type)

Title:

Address: 820 Bear Tavern Road
West Trenton, NJ 08628

Tel. Number:

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Gold Cooperage t/a Prospect Industries
(Name of settling party -- please type)

Date: August 8, 1996

SIGNATURE

Richard P. Flaum, Esq.
(Name -- please type)

ATTORNEY FOR GOLD COOPERAGE T/A PROSPECT INDUSTRIES
(Title)

Bivona, Cohen, Kunzman, Coley
Yospin, Bernstein & DiFrancesco
(Address)
15 Mountain Boulevard
Warren, NJ 07059

Agent authorized to accept service on behalf of above-signed settling party:

Name: Richard P. Flaum, Esq.
(Please type)

Title: Attorney

Address: Bivona, Cohen, Kubzman, Coley, Yospin, Bernstein & DiFrancesco
15 Mountain Boulevard, Warren, NJ 07059

Tel. Number: (908) 757-7800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR HATCO CORPORATION
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

David J. Mason
(Name -- please type)

Vice President of Environmental Affairs
(Title)

King George Post Road
Fords, New Jersey 08863
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Anthony J. Reitano, Esq.
Herold and Haines, P.A.
(Please type)

Title: Attorney for Hatco Corporation

Address: 25 Independence Boulevard
Warren, New Jersey 07059

Tel. Number: (908) 647-1022

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Hercules Incorporated
(Name of settling party -- please type)

Date: July 10, 1996

Michael B. Keehan RLW
SIGNATURE

Michael B. Keehan
(Name -- please type)

Vice President, Law
(Title)

Hercules Plaza
Wilmington, DE 19894-0001
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Richmond L. Williams, Esq.
(Please type)

Title: Counsel

Address: Hercules Incorporated
Hercules Plaza, Wilmington, DE 19894-0001

Tel. Number: (302) 594-7020
Telefax No.: (302) 594-7038 or 594-7052

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR HOFFMANN-LA ROCHE, INC.
(Name of settling party -- please type)

Date: 6/28/96

SIGNATURE

John D. Alexander
(Name -- please type)

Assistant General Counsel
(Title)

340 Kingsland Street
Nutley, NJ 07110
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: FREDERICK C. KENTZ, III
(Please type)

Title: VICE PRESIDENT & GENERAL COUNSEL

Address: HOFFMANN-LA ROCHE INC.
340 Kingsland Street, Nutley, NJ 07110

Tel. Number:

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Philadelphia College of Osteopathic Medicine
(Name of settling party -- please type)

Date: July 11, 1996

Robert J. Ryan
SIGNATURE

Robert J. Ryan
(Name -- please type)

V.P. ERO (Vice President Eastern Regional Offices)
(Title)

4150 City Line Avenue
Philadelphia, PA 19131-1696
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: THOMAS C. DeLORENZO
(Please type)

Title: ATTORNEY

Address: MARSHALL, DENNEHEY, WARNER, COLEMAN & GOGGIN
1845 WALNUT STREET, PHILADELPHIA, PA 19103

Tel. Number: (215) 575-2600

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR International Flavors & Fragrances, Inc.
(Name of settling party -- please type)

Date: July 3, 1996

by: [signature]
SIGNATURE

Peter J. Serritella
(Name -- please type)

Assistant Secretary
(Title)

521 West 57th Street
New York, NY 10019
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Linda Mack
(Please type)

Title: Attorney

Address: Fox, Rothschild, O'Brien & Frankel
997 Lenox Drive Bldg. 3, Lawrenceville, NJ 08648-2311

Tel. Number: 609/896-3600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Service, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Kerr Group, Inc.
(Name of settling party -- please type)

Date: 7/10/96

SIGNATURE

Larry R. Knipple
(Name -- please type)

Vice President/Corporate Secretary
(Title)

500 New Holland Avenue
Lancaster, PA 17602-2104
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Bonni Fine Kaufman
(Please type)

Title: Counsel

Address: Willkie, Farr & Gallagher
1155 21st Street, N.W., Suite 600
Washington, DC. 20036

Tel. Number: (202) 328-8000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR KIRSCHNER BROTHERS OIL CO.
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

Frederick M. Kirschner
(Name -- please type)

Sec.
(Title)

518 W. Lancaster Avenue P. O. Box 535
Haverford, PA 19041
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Gerald E. Haughey
(Please type)

Title: Attorney-at-Law

Address: 240 W. Route 38, P.O.Box 1002
Moorestown, NJ 08057-0949

Tel. Number: 609-235-1111

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR KTK STEEL DRUM CORP.
(Name of settling party -- please type)

Date: 7/17/96

SIGNATURE

GARY TOTH
(Name -- please type)

PRESIDENT
(Title)

MEADOW RD: BOX 1394
EDISON, NJ 08817
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: GARY TOTH
(Please type)

Title: PRESIDENT

Address: MEADOW RD: BOX 1394
EDISON, NJ 08817

Tel. Number: 908-985-0447

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Louderback Transportation Company
(Name of settling party -- please type)

Date: 7-8-96

SIGNATURE

Lewis G. Louderback
(Name -- please type)

President
(Title)

1081 Baron Drive
Bryn Mawr, PA 19010
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Arnold S. Block, Esquire
(Please type)

Title:

Address: Stradley, Ronon, Stevens & Young
2600 One Commerce Square
Philadelphia, PA 19103

Tel. Number: (215) 564-8000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR M.A. Bruder & Sons, Incorporated
(Name of settling party -- please type)

Date: June 27, 1996

by David R Winters
SIGNATURE

David R. Winters
(Name -- please type)

Vice President-Finance
(Title)

600 Reed Road, Broomall, PA 19008
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David R. Winters
(Please type)

Title: Vice President-Finance

Address: 600 Reed Road
~~Broomall, PA 19008~~

Tel. Number:

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Magid Corporation
(Name of settling party -- please type)

Date: July 11, 1996

SIGNATURE

Robert S. Nayberg, Esq.
(Name -- please type)

Attorneys
(Title)

Law Offices of Martin H. Scher
One Old Country Road, Suite 385
Carle Place, NY 11514-1849
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Law Offices of Martin H. Scher (Please type)
Title:	Attorneys
Address:	One Old Country Road, Suite 385 Carle Place, NY 11514-1849
Tel. Number:	(516) 746-5040

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR J.T. Baker Inc. now known as Mallinckrodt Baker Inc.
(Name of settling party -- please type)

Date: July 9, 1996

SIGNATURE

Fred K. Vogt
(Name -- please type)

Vice President & General Manager
(Title)

16305 Swingley Ridge Drive, #200
Chesterfield, MO 63017-1777
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Theodore L. Garrett - Covington & Burling
(Please type)

Title: Partner

Address: 1201 Pennsylvania Ave., N.W.
Post Office Box 7566
Washington, DC 20044-7566

Tel. Number: 202-662-6000

The undersigned party enters into this consent decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Mannington Mills, Inc.
(Name of settling party -- please type)

Date: August 6, 1996

SIGNATURE

Stephen A. Zegler
(Name -- please type)

Senior Vice President - Operations
(Title)

Mannington Mills Road
Salem, NJ 08079
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Corporation Service Company
(Please type)

Title:

Address: 830 Bear Tavern Road
West Trenton, NJ 08628

Tel. Number:

Mannington is represented by:

Morgan, Lewis & Bockius
2000 One Logan Square
Philadelphia, PA 19103-6993

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR MARISOL, INC.
(Name of settling party -- please type)

Date: JULY 3, 1996

Therese A. Nerger
SIGNATURE

THERESE A. NERGER
(Name -- please type)

SEC'Y/TREAS.
(Title)

MARISOL, INC.
125 FACTORY LANE, MIDDLESEX, NJ 08846
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Richard A. Levao, Esq.
(Please type)

Title: Attorney

Address: Shanley & Fisher, P.C.
131 Madison Ave.
Morristown, NJ 07962-1979

Tel. Number: 201-285-1000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Matlack, Inc.
(Name of settling party -- please type)

Date: July 2, 1996

X
SIGNATURE

Gerard J. Trippitelli
(Name -- please type)

President
(Title)

One Rollins Plaza, 2200 Concord Pike
Wilmington, Delaware 19803
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Michael B. Kinnard, Esq.
(Please type)

Title: General Counsel

Address: One Rollins Plaza, 2200 Concord Pike
Wilmington, Delaware 19803

Tel. Number: 302-[illegible]

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR McCORQUODALE COLOR CARD, INC.
(Name of settling party -- please type)

Date: July 8, 1996

D. Marsh Prause
SIGNATURE

D. MARSH PRAUSE
(Name -- please type)

Attorney for McCorquodale
(Title)

SMITH HELMS MULLISS & MOORE, L.L.P.
Post Office Box 21927
Greensboro, NC 27420
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: GERALD T. MORAN, JR.
(Please type)

Title: Corporate Counsel, Rexam, Inc.

Address: Post Office Box 472528
Charlotte, NC 28247

Tel. Number: (704) 551-1500

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Merck & Co., Inc.
(Name of settling party -- please type)

Date: July 2, 1996

SIGNATURE

Beryl M. Kuder
(Name -- please type)

Assistant Counsel
(Title)
P.O. Box 100
One Merck Drive
Whitehouse Station, NJ 08889-0100
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: The Corporation Trust Company
(Please type)

Title:

Address: 820 Bear Tavern Road
West Trenton, New Jersey 08628

Tel. Number:

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Michael's Industrial Disposal Service
(Name of settling party -- please type)

Date: 7-11-96

Eugenia Cane
SIGNATURE

Attorney At Law
(Name -- please type)

Eugenia Cane
(Title)

6 - Welles Ct
Piscataway NJ 08854
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Eugenia Cane
(Please type)

Title: Attorney At Law

Address: 6 Welles Ct
Piscataway NJ 08854

Tel. Number: 908-463-0033

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Mobil Oil Corporation
(Name of settling party -- please type)

Date: 7/10/96

JAMES L. McKENNA, P.C.
By
SIGNATURE

~~Jam~~ James L. McKenna
(Name -- please type)

Outside counsel
(Title)

Ten Mulberry Ave Suite 450
Cherry Hill, NJ 08003
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James L. McKenna, P.C.
(Please type)

Title: Outside counsel

Address: Ten ——

Tel. Number: [illegible]

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Monsanto Company
(Name of settling party -- please type)

Date: 6/28/96

SIGNATURE

Michael R. Foresman
(Name -- please type)

Director, Remedial Projects
(Title)

800 N. Lindbergh Blvd., St. Louis, MO 63167
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Judith Reinsdorf
(Please type)

Title: Environmental Attorney

Address: 800 N. Lindbergh Blvd., St. Louis, MO 63167

Tel. Number: (314) 694-8503

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Moore Products Co.
(Name of settling party -- please type)

Date: 7/15/96

R. E. Wisniewski
SIGNATURE

R. E. Wisniewski
(Name -- please type)

Secretary & Treasurer
(Title)

Sumneytown Pike
Spring House, PA 19477
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James L. McKenna, P.C.
(Please type)

Title: Outside Counsel

Address: Ten Melrose Avenue, Suite 450
Cherry Hill, New Jersey 08003

Tel. Number: (609) 429-6662

RECEIVE
SEP 1 8 1996

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR NVF Company
(Name of settling party -- please type)

Date: July , 1996

SIGNATURE

John J. McNaboe
(Name -- please type)

Chief Executive Officer
(Title)

1166 Yorklyn Road
Yorklyn, DE 19736
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David P. Hackett, Esq.
(Please type)

Title: Baker & McKenzie

Address: 130 East Randolph Drive
Chicago, IL 60601

Tel. Number: 312/861-8000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

NEWS AMERICA PUBLICATIONS, INC (formerly known as Triangle Publications)

FOR _____
(Name of settling party -- please type)

Date: 7/10/96

SIGNATURE

JAN F. CONSTANTINE
(Name -- please type)

VICE PRESIDENT
(Title)

1211 Avenue of the Americas
New York, NY 10036
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Maureen Murray-O'Toole
(Please type)

Title: Attorney

Address: Marks, O'Neill, Reilly, O'Brien & Courtney
1880 John F. Kennedy Boulevard, Suite 1200
Philadelphia, PA 19103

Tel. Number: (215) 564-6688

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR New York Twist Drill/Drico, Inc.*
(Name of settling party -- please type)

Date: 7/3/96

SIGNATURE

THOMAS DAMM
(Name -- please type)

DIRECTOR OF CORPORATE ADMINISTRATION
(Title)

231 BRADLEY PLACE, SUITE 206
PALM BEACH, FL 33480
(Address)

* and any parent, subsidiary or related corporations, affiliated entities, and any agents, servants, officers, directors, shareholders, partners, employees, attorneys, representatives, predecessors, successors and assigns.

Agent authorized to accept service on behalf of above-signed settling party:

Name: Lisa M. Bromberg, Esq.
(Please type)

Title:

Address: 163 Madison Avenue
Morristown, NJ 07962-1997

Tel. Number: (201) 538-4006

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Occidental Chemical Corporation for itself and on behalf of Parker Chemical Company
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Keith C. McDole
(Name -- please type)

Vice President & General Counsel
(Title)

5005 LBJ Freeway
Dallas, TX 75244
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Martin B. Wasser, Esq.
(Please type)

Title: Phillips Nizer Benjamin Krim & Ballon LLP

Address: 666 Fifth Avenue
New York, NY 10103-0084

Tel. Number: (212) 977-9700

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

PECO ENERGY COMPANY
f/k/a/ Philadelphia Electric Company

Date: 7/9/96

By: _____
Corbin A. McNeill, Jr.
President and Chief Executive Officer
2301 Market Street
Philadelphia, PA 19103

Agent authorized to accept service on behalf of above-signed settling party:

Dawn Getty Sutphin
Assistant General Counsel
PECO Energy Company
2301 Market Street
Philadelphia, PA 19103
(215) 841-6855

60470

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR PENN PETROLEUM PRODUCTS CO., INC.
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

Marc Steinberg
(Name -- please type)

President
(Title)

c/o Epstein, Shapiro & Epstein
1515 Market Street, 15th Floor
Philadelphia, PA 19102
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Phyllis Horn Epstein, Esquire
(Please type)

Title: Attorney

Address: 1515 Market Street, 15th Floor
Philadelphia, PA 19102

Tel. Number: (215) 563-1200

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Pfizer Inc
(Name of settling party -- please type)

Date: July 9, 1996

SIGNATURE

William L. Warren, Esquire
(Name -- please type)

Outside Counsel
(Title)

Drinker Biddle & Reath
1009 Lenox Drive, Building Four
(Address)
Lawrenceville, New Jersey 08648

Agent authorized to accept service on behalf of above-signed settling party:

Name: William L. Warren, Esquire
(Please type)

Title: Outside Counsel

Address: Drinker Biddle & Reath
1009 Lenox Dr. Building Four, Lawrenceville, NJ 08648

Tel. Number: 609-895-6203

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Philadelphia Newspapers, Inc.
(Name of settling party
-- please type)

Date: July ___, 1996

SIGNATURE

Robert D. Mies
(Name -- please type)

Vice President of Finance and CFO
(Title)
Philadelphia Newspapers, Inc.
400 North Broad Street, P.O. Box 8263
Philadelphia, PA 19101
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Christopher M. Roe, Esquire (Please type)
Title:	Counsel for Philadelphia Newspapers, Inc.
Address:	Dechert Price & Rhoads 4000 Bell Atlantic Tower, 1717 Arch Street Philadelphia, PA 19103
Tel. Number:	(215) 994-2295

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Public Service Electric and Gas Company ("PSE&G")
(Name of settling party
-- please type)

Date: August 9, 1996

SIGNATURE

John F. Doherty, Esq.
(Name -- please type)

Associate General Litigation Counsel
(Title)

80 Park Plaza, T5D
Newark, New Jersey 07102
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John F. Doherty, Esq.
(Please type)

Title: Associate General Litigation Counsel

Address: 80 Park Plaza, T5D
Newark, New Jersey 07102

Tel. Number: (201) 430-6478

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Reagent Chemical & Research Inc.
(Name of settling party -- please type)

Date: July 1996

Steven T. Finney
SIGNATURE

Steven T. Finney
(Name -- please type)

Secretary
(Title)

124 River Road, Middlesex, New Jersey
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Gabriel H. Halpern
(Please type)

Title: Attorney

Address: Fox & Fox, Esqs.
570 Broad Street, Newark, N.J

Tel. Number: (201) 622-3624

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Reliance Insurance Company
(Name of settling party -- please type)

Date: July 18, 1996

Robert J. Brookes
SIGNATURE

Robert J. Brookes
(Name -- please type)

Assistant General Counsel
(Title)

Four Penn Center Plaza
Philadelphia, PA 19103
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Office of the General Counsel
(Please type)

Title:

Address: Four Penn Center Plaza
Philadelphia, PA 19103

Tel. Number: 215-864-1006

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Rhone-Poulenc Inc. formerly known as Rhodia Inc.
(Name of settling party -- please type)

Date: July 2, 1996

David D. Eckert
SIGNATURE

David D. Eckert
(Name -- please type)

President North American Chemicals, Rhone-Poulenc Inc.
(Title)

CN 7500
Cranbury, New Jersey 08512-7500
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Katherine Snell
(Please type)

Title: Health, Safety & Environmental Paralegal
Rhone-Poulenc Inc.

Address: CN 5266, Princeton, New Jersey 08543-5266

Tel. Number: (908) 821-3470

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Rollins Environmental Services (NJ) Inc.
(Name of settling party -- please type)

Date: July 8, 1996

SIGNATURE

Louis A. Minella
(Name -- please type)

Counsel
(Title)

P. O. Box 2349
Wilmington, Delaware 19899
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Louis A. Minella
(Please type)

Title: Counsel

Address: P. O. Box 2349
Wilmington, Delaware 19899

Tel. Number: (302) 420-3922

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

Sandoz Pharmaceuticals Corporation
and Clariant Corporation, and their
predecessors and successors, and their
parents and affiliates under past
ownership or control

Date: 7/10/96

Michael McGrane
Associate General Counsel
Sandoz Pharmaceuticals Corporation
59 Route 10
East Hanover, NJ

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Joe Schneider, Esq. Attorney, Archer & Greiner
Address:	One Centennial Square Haddonfield, NJ 08033
Tel. Number:	609-354-3055

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Sandoz Pharmaceuticals Corporation and Clariant Corporation, and their predecessors and successors, and their parents and affiliates under past common ownership or control
(Name of settling party -- please type)

Date: 7-10-96

SIGNATURE

C. S. Barnard
(Name -- please type)

Vice President-Legal, Secretary & General Counsel
(Title)

4000 Monroe Road
Charlotte, NC 28205
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joel Schneider, Esq., Archer & Greiner
(Please type)

Title: Attorney

Address: One Centennial Square
Haddonfield, NJ 08033

Tel. Number: 608-354-3055

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Sears, Roebuck & Co.
(Name of settling party -- please type)

Date: July 7, 1996

Bobbie McGee Gregg
SIGNATURE

Bobbie McGee Gregg
(Name -- please type)

Assistant General Counsel
(Title)

3333 Beverly Road
Hoffman Estates, IL 60179
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Frederick J. Kulevich
(Please type)

Title: Attorney

Address: 3333 Beverly Road
Hoffman Estates, IL 60179

Tel. Number: (847) 286-5310

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Sequa Corporation on behalf of General Printing Ink
(Name of settling party -- please type)

Date: July 11, 1996

SIGNATURE

Leonard P. Pasculli
(Name -- please type)

Director, Environmental Law
(Title)

Sequa Corporation
Three University Plaza
Hackensack, NJ 07601
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Eletha L. Duffy
(Please type)

Title: Attorney

Address: 1138-H Easton Ave.
Somerset, NJ 08873

Tel. Number: (908) 214-1111

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR TEXACO INC.
(Name of settling party -- please type)

Date: July 9, 1996

SIGNATURE

Michael P. Gallagher
(Name -- please type)

Manager Centralized Waste Site Management Group
(Title)

P.O. Box 509
Beacon, NY 12508
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: R. Scott McCay
(Please type)

Title: Senior Attorney

Address: P.O. Box 1496
Houston, TX 77210

Tel. Number: (713) 752-6011

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR The Sherwin-Williams Company
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Louis E. Stellato
(Name -- please type)

Vice President, General Counsel & Secretary
(Title)

101 Prospect Avenue, N.W.
Cleveland, OH 44115
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Allen J. Danzig
(Please type)

Title: Associate General Counsel - Environmental

Address: 101 Prospect Avenue, N.W.
Cleveland, OH 44115

Tel. Number: (216) 566-2482

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Tyco Industries, Inc.
(Name of settling party -- please type)

Date: July 15, 1996

SIGNATURE

R. Michael Kennedy, Jr.
(Name -- please type)

Senior Vice President and Secretary
(Title)

6000 Midlantic Drive
Mt. Laurel, NJ 08054
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: CSC Networks/Prentice-Hall Corp.
(Please type)

Title: Registered Agent

Address: 830 Bear Tavern Road
West Trenton, NJ 08628

Tel. Number: (609) 771-1800

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Unisys Corporation
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

Ronald C. Anderson
(Name -- please type)

Assistant Secretary
(Title)

Townshipline and Union Meeting Roads
Blue Bell, PA 19424-0001
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Aria A. Klees
(Please type)

Title: Counsel (Unisys Corporation)

Address: P.O. Box 500 (M/S C1SW19)
Townshipline and Union Meeting Rds., Blue Bell, PA 19424

Tel. Number: (215) 986-5169

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Vineland Chemical Company
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Franklin J. Riesenburger
(Name -- please type)

Attorney for Vineland Chemical Company
(Title)

190 S. Main Road, Vineland, NJ 08360
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Franklin J. Riesenburger
(Please type)

Title: Attorney for Vineland Chemical Company

Address: 190 S. Main Road,
Vineland, NJ 08360

Tel. Number: (609) 691-6200

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR W. R. GRACE & CO.-CONN
(Name of settling party -- please type)

Date: July 8, 1996

X
SIGNATURE

ALDEN C. PIERCE
(Name -- please type)

VICE PRESIDENT OF ENVIRONMENT, HEALTH & SAFETY
(Title)

ONE TOWN CENTER ROAD
BOCA RATON, FLORIDA 33486-1010
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: RODERIC MCLAREN
(Please type)

Title: SENIOR ENTIRONMENTAL COUNSEL

Address: 62 WHITTEMORE AVENUE
CAMBRIDGE, MA. 02140

Tel. Number: (617) 498-4553

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR _____
(Name of settling party -- please type)

Date: July 9, 1996

Samuel R. Pitts
SIGNATURE
Vice President
Westinghouse Electric Corporation
(Name -- please type)

11 Stanwix Street
(Title)

Pittsburgh, PA 15222

(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Marlene W. Jackson, Esq.
(Please type)

Title: Assistant General Counsel
Westinghouse Electric Corporation

Address: 11 Stanwix Street
Pittsburgh, PA 15222

Tel. Number: 412-642-5243

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Weyerhaeuser Company
(Name of settling party -- please type)

Date: June 28, 1996

SIGNATURE

James P. Odendahl
(Name -- please type)

Director, Toxic/Solid Waste
(Title)

Tacoma, WA 98477
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James P. Odendahl
(Please type)

Title: Director, Toxic/Solid Waste

Address: Tacoma, WA 98477

Tel. Number: 206/924-6361

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Witco Corporation
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Dustan E. McCoy
(Name -- please type)

Vice President, General Counsel and Secretary
(Title)

One American Lane
Greenwich, CT 06831
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James A. Nortz
(Please type)

Title: Senior Attorney

Address: One American Lane
Greenwich, CT 06831

Tel. Number: 203.552.2806

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Wyeth Laboratories, Inc.
(Name of settling party -- please type)

Date: July 9, 1996

SIGNATURE

William L. Warren, Esquire
(Name -- please type)

Outside Counsel
(Title)

Drinker Biddle & Reath
1009 Lenox Drive, Building Four
(Address)
Lawrenceville, New Jersey 08648

Agent authorized to accept service on behalf of above-signed settling party:

Name: William L. Warren, Esquire
(Please type)

Title: Outside Counsel

Address: Drinker Biddle & Reath
1009 Lenox Dr. Building Four - Lawrenceville, NJ 08648

Tel. Number: 609 895 6203

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Ekco Products Inc.
(Name of settling party -- please type)

Date: July 9, 1996

SIGNATURE

William L. Warren, Esquire
(Name -- please type)

Outside Counsel
(Title)

Drinker Biddle & Reath
1009 Lenox Drive, Building Four
(Address) Lawrenceville, New Jersey 08648

Agent authorized to accept service on behalf of above-signed settling party:

Name: William L. Warren, Esquire
(Please type)

Title: Outside Counsel

Address: Drinker Biddle & Reath
1009 Lenox Dr. Building Four - Lawrenceville, NJ 08648

Tel. Number: 609 895 6203

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR WOODLYNNE BOARD OF EDUCATION
(Name of settling party -- please type)
ID. #21-6000354

Date: July 10, 1996

SIGNATURE

ERIC L. JOHANSEN
(Name -- please type)

Superintendent
(Title)

131 Elm Avenue, Woodlynne, N.J. 08107
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Eric L. Johansen
(Please type)

Title: Superintendent

Address: 131 Elm Avenue
Woodlynne, New Jersey 08107

Tel. Number: (609) 962-8822

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Woodbury Heights

Date: 6/17/96

Donald W. Steward
Mayor
Municipal Building
500 Elm Avenue
Woodbury Heights, NJ 08097

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

Name: Carol E. Pierce
Title: Clerk
Address: Municipal Building
500 Elm Avenue
Woodbury Heights, NJ 08097

Tel. Number: (609) 848-2832

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Woodbury Heights

Date: 6/17/96

Donald W. Steward
Mayor
Municipal Building
500 Elm Avenue
Woodbury Heights, NJ 08097

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

Name: Carol E. Pierce
Title: Clerk
Address: Municipal Building
500 Elm Avenue
Woodbury Heights, NJ 08097

Tel. Number: (609) 848-2832

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ANCORA PSYCHIATRIC HOSPITAL
(Name of settling party -- please type)

Date: 7/3/96

SIGNATURE

Edward Tetelman
(Name -- please type)

Assistant Commissioner
(Title)

Department of Human Services
CN 700, Trenton, NJ 08625
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Peter Verniero
(Please type)

Title: Attorney General of New Jersey

Address: R.J. Hughes Justice Complex, CN-112
Trenton, NJ 08625

Tel. Number: 984-3900

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ASBURY PARK BOARD OF EDUCATION
(Name of settling party -- please type)

Date: JULY 15,1996

Dora E. Mylchreest
SIGNATURE

DORA E. MYLCHREEST
(Name -- please type)

BOARD SECRETARY/BUSINESS ADMINISTRATOR
(Title)

ASBURY PARK BOARD OF EDUCATION

1506 PARK AVE., ASBURY PARK, NJ 07712
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: KIM A. FELLENZ, ESQ.
(Please type)

Title: ATTORNEY FOR ASBURY PARK BOARD OF EDUCATION

Address: 101 PRESS PLAZA
ASBURY PARK, NJ 07712

Tel. Number: (908) 774-5665

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, inc., et al., and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR: City of Atlantic City

Date: July 11, 1996

Signature

Daniel A. Corey, Esquire
City Solicitor of Atlantic City
City Hall -- Room 706
1301 Bacharach Boulevard
Atlantic City NJ 08401

Agent authorized to accept service in the above matters on behalf of the above-signed settling party:

Name: F. John Caldwell, Jr., Esq.
Assistant City Solicitor

City Hall -- Room 707
1301 Bacharach Boulevard
Atlantic City NJ 08401

(609) 347-5540

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Audubon Board of Education

Date: 7/15/96

~~RONALD T. COCORY~~ Ralph D. Gilmore
~~Board President~~ Vice President
350 Edgewood Avenue
Audubon, NJ 08106
(609) 547-7965

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

Harry ~~Sewartzer~~ Schwartzer, Board Secretary, or Successor
350 Edgewood Avenue
Audubon, NJ 08106
(609) 547-7965

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Audubon
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

Alfred W. Murray
(Name -- please type)

Mayor
(Title)

606 W. Nicholson Rd.
Audubon, NJ 08106
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Lee C. Daniels, Borough Clerk

Name: Lee C. Daniels
(Please type)

Title: Clerk

Address: 606 W. Nicholson Rd.
Audubon, NJ 08106

Tel. Number: 546-4749

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Audubon Mutual Housing Corporation
(Name of settling party
-- please type)

Date: August 12, 1996

SIGNATURE

Lawrence Pennock
(Name -- please type)

Vice President, Board of Trustees
(Title)

Community Building, Road "C"
Audubon Park, NJ 08106
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Martin F. McKernan, Jr., Esquire
(Please type)

Title: Counsel

Address: McKernan, McKernan & Godino
113 North Sixth Street, Camden, NJ 08102

Tel. Number: (609) 964-7759

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Audubon Park Board of Education

Date: 9/6/96

JUDITH VANRELL
Board President
16 Waxwing Ct.
Audubon Park, NJ 08106
(609) 547-6825

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

Debra Stasuli, Board Secretary, or Successor
16 Waxwing Ct.
Audubon Park, NJ 08106
(609) 547-6825

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products and Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR: BOROUGH OF BELLMAWR
(Name of Settling Party - please type)

Date: 7/3/96

SIGNATURE

ANTHONY INFANTI
(Name - please type)

MAYOR
(Title)

21 EAST BROWING ROAD
(Address)

BELLMAWR, NJ 08031

Agent authorized to accept service on behalf of above-signed settling party:

Name: ROBERT L. MESSICK, ESQUIRE

Title: ATTORNEY

Address: 41 GROVE STREET

HADDONFIELD, NJ 08033

Tel. Number: (609) 429-2236

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Berlin

Date: June 17, 1996

Millard Wilkinson
Mayor
59 S.White Horse Pike
Berlin, NJ 08009

ATTESTED:

Date: June 17, 1996

Barbara Gilbert
Clerk
59 S. White Horse Pike
Berlin, NJ 08009

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

Name:	Barbara Gilbert
Title:	Clerk
Address:	59 S. White Horse Pike Berlin, NJ 08009
Tel. Number:	(609) 753-9122

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Beverly Board of Education

Date: 24 July 96

WILLIS W. MOORE, III,
Board President
601 Bentley Avenue
Beverly, NJ 08010

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

Dr. Glenn T. Gray, Superintendent, or Successor
601 Bentley Avenue
Beverly, NJ 08010

THE UNDERSINED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

For Borough of Lawnside

Dated: June 10, 1996

James W. Burns Esq.
Signature JAMES W. BURNS ESQ.

Freeman, Zeller & Bryant

Attorneys for Borough of Lawnside
(Title)
10 Melrose Avenue, Suite 400
Cherry Hill, New Jersey 08003

Agent authorized to accept service on behalf of above-signed settling party:

Name:	Freeman, Zeller, & Bryant
Title:	Attorneys For Borough of Lawnside 10 Melrose Avenue, Suite 400 Cherry Hill, New Jersey 08003
Tel. Number:	(609) 428-6600

THE UNDERSIGNED PARTY a de minimis settling defendant enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Hi-Nella

Date: 6/8/96

Irene Wolick
Mayor
Municipal Building
100 Wykagyl Road
Somerdale, NJ 08083

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

Name:	Arlene Reynolds
Title:	Clerk
Address:	Municipal Building 100 Wykagyl Road Somerdale, NJ 08083
Tel. Number:	(609) 784-6237

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Clementon

Date: June 18, 1996.

Arthur Brewin Jr.
Mayor
Borough Hall
101 Gibbsboro Road
Clementon, NJ 08021

ATTESTED:

Date: June 18, 1996.

Patricia M. Porter
Clerk
Borough Hall
101 Gibbsboro Road
Clementon, NJ 08021

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

Name:	Patricia M. Porter
Title:	Clerk
Address:	Borough Hall 101 Gibbsboro Road Clementon, NJ 08021
Tel. Number:	(609) 783-0284

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Haddonfield

Date: 6/25/96

John J. Tarditi, Jr.
Mayor
242 Kings Highway E.
P.O. Box 3005
Haddonfield, NJ 08033-0969

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

Name:	Richard B. Schwab
Title:	Borough Administrator
Address:	242 Kings Highway E. P.O. Box 3005 Haddonfield, NJ 08033-0969
Tel. Number:	(609) 429-4700

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR THE COUNTY OF DELAWARE

Date: June 25, 1996

Name: Paul G. Mattus

Title: Chairman

Address: Delaware County Council
Government Center Building
Media, PA 19063

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

Name: Francis P. Connors, Esquire

Title: County Solicitor

Address: Government Center Building, Media, PA 19063

Phone Number: (610) 891-4072

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Chesilhurst

Date: June 25, 1996

Arland E. Poindexter
Mayor
Borough Hall
201 Grant Avenue
Chesilhurst, NJ 08089

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

Name:	Gloria Rose
Title:	Clerk
Address:	Borough Hall 201 Grant Avenue Chesilhurst, NJ 08089
Tel. Number:	(609) 767-4153

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Laurel Springs

Date: June 24, 1996

Robert W. Hagen, Jr.
Mayor
Borough Hall
135 Broadway
Laurel Springs, NJ 08021

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

Name:	Barbara W. Hawk
Title:	Clerk
Address:	Borough Hall 135 Broadway Laurel Springs, NJ 08021
Tel. Number:	(609) 784-0500

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Bordentown Regional School District

Date: 6/26/96

William Cashman
Board President
48 Dunns Mill Road
Bordentown, NJ 08505

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

Name: Peggy A. Flower
Title: Business Administrator and Board Secretary
Address: 48 Dunns Mill Road
Bordentown, NJ 08505
Tel. Number: (609) 298-3066

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR North Wildwood Board of Education
(Name of settling party
-- please type)

Date: June 28, 1996

SIGNATURE

Mary E. Ott
(Name -- please type)

Board Secretary/SBA
(Title)

1201 Atlantic Avenue
North Wildwood, NJ 08260
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Mary E. Ott
(Please type)

Title: Board Secretary/SBA

Address: 1201 Atlantic Avenue
North Wildwood, NJ 08260

Tel. Number: 609-729-4649

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOARD OF EDUCATION OF THE CITY OF MILLVILLE
(Name of settling party -- please type)

Date: June 28, 1996.

SIGNATURE

WILLIAM PUZAK
(Name -- please type)

ASSISTANT SUPERINTENDENT FOR BUSINESS AND BOARD SECRETARY
(Title)

Culver Center, 110 N. Third Street
Millville, New Jersey 08332
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: RUSSELL E. PAUL, ESQ.
(Please type)

Title: Board Solicitor

Address: 39 South Broad Street
Woodbury, New Jersey 08096

Tel. Number: (609) 848-2100

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR *Board of Education of the Borough of Glassboro*
(Name of settling party
-- please type)

Date: *June 30, 1996*

SIGNATURE

George A. Leone
(Name -- please type)

Assistant Superintendent for Business/Board Secretary
(Title)

Joseph Bowe Blvd.
Glassboro, NJ 08028
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: *George A. Leone*
(Please type)

Title: *Assistant Superintendent for Business/Board Secretary*

Address: *Joseph Bowe Blvd.,*
Glassboro, NJ 08028

Tel. Number: *(609) 881-0123*

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc. et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

For: **New Jersey Turnpike Authority**

Date: July 1, 1996

SCHWARTZ, TOBIA, STANZIALE,
BECKER, ROSENSWEIG & SEDITA
Special Environmental Counsel

By: William A. Baker

William A. Baker

22 Crestmont Road
Montclair, New Jersey 07042

Agent authorized to accept service on behalf of above-signed settling party:

Name: SCHWARTZ, TOBIA, STANZIALE,
BECKER, ROSENSWEIG & SEDITA
Attention: Damon R. Sedita, Esq.

Address: 22 Crestmont Road
Montclair, New Jersey 07042

Telephone Number: (201) 746-6000

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR THE TOWNSHIP OF MOORESTOWN
(Name of settling party -- please type)

Date: July 2, 1996

X Walter T. Maahs
SIGNATURE

Walter T. Maahs
(Name -- please type)

Mayor
(Title)

111 West Second Street
Moorestown, N.J. 08057
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Jack T. Terry
(Please type)

Title: Township Manager

Address: 111 West Second Street
Moorestown, N.J. 08057

Tel. Number: (609) 235-0912

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Hamilton Township Board of Education
(Name of settling party -- please type)

Date: July 2, 1996

SIGNATURE

Carol Chiacchio
(Name -- please type)

Business Administrator/Secretary
(Title)

90 Park Avenue, Hamilton Square, NJ 08690
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Carol Chiacchio
(Please type)

Title: Business Administrator/Secretary

Address: 90 Park Ave., Ham. Sq., NJ 08690

Tel. Number: 1-609-890-3720

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOARD OF EDUCATION OF THE BOROUGH OF GIBBSBORO
(Name of settling party -- please type)

Date: July 2, 1996

SIGNATURE

William P. Kiernan
(Name -- please type)

Superintendent
(Title)

37 Kirkwood Road
Gibbsboro, N.J. 08026
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: RONALD W. SAHLI, ESQUIRE
(Please type)

Title: SOLICITOR

Address: 503 S. White Horse Pike, P.O. Box 601
Hammonton, NJ 08037

Tel. Number: (609) 567-9400

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Evesham Board of Education

Date: _____

_____
ANN MACREADY
Board President
25 South Maple Ave.
Marlton, NJ 08053

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

John J. Deserable, Board Secretary, or Successor
25 South Maple Ave.
Marlton, NJ 08053
(609) 983-1800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products and Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR: BOROUGH OF MT. BROOKLAWN

(Name of Settling Party - please type)

Date: 7-2-96

Michael Mevoli
SIGNATURE

MICHAEL MEVOLI
(Name - please type)

MAYOR
(Title)

BOROUGH HALL, HAAKON ROAD

(Address)

BROOKLAWN, NJ 08030

Agent authorized to accept service on behalf of above-signed settling party:

Name: ROBERT L. MESSICK, ESQUIRE

Title: ATTORNEY

Address: 41 GROVE STREET

HADDONFIELD, NJ 08033

Tel. Number: (609) 429-2236

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR TOWNSHIP OF MANTUA
(Name of settling party -- please type)

Date: 7/3/96

Robert E. Hudgins
SIGNATURE

Robert E. Hudgins
(Name -- please type)

Mayor
(Title)

401 Main Street
Mantua NJ 08051
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: David W. Morgan
(Please type)

Title: Solicitor

Address: 62 North Broad Street
Woodbury NJ 08096

Tel. Number: 609 848-5858

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR LAWRENCE TOWNSHIP BOARD OF ED.
(Name of settling party -- please type)

Date: 7/3/96

Nicholas Puleio
SIGNATURE

NICHOLAS C.A. PULEIO
(Name -- please type)

BUSINESS ADMINISTRATOR/BOARD SECRETARY
(Title)

2565 PRINCETON PIKE
LAWRENCEVILLE, N.J. 08648-3698
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: NICHOLAS C.A. PULEIO
(Please type)

Title: BUSINESS ADM.,/BOARD SEC'Y.

Address: 2565 PRINCETON PIKE
LAWRENCEVILLE, N.J. 08648

Tel. Number: 609-530-8609 (EXT. 3406)

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Middle Township Board of Education

Date: 7/3/96

Calvin Back
Board President
216 S. Main Street
Cape May Court House, NJ 08210

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

Name:	Elaine Jordan
Title:	Secretary
Address:	216 S. Main Street Cape May Court House, NJ 08210
Tel. Number:	(609) 465-1806

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOROUGH OF GIBBBSBORO

Date: 7-3-96

Edward G. Campbell III
Signature

EDWARD CAMPBELL, III

MAYOR
Borough Hall
49 Kirkwood Road
Gibbsboro, NJ 08026

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

Name: Anne D. Levy
Title: Borough Clerk

Address: Borough Hall
49 Kirkwood Road
Gibbsboro, NJ 08026

Tel. Number: 609-783-6655

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Board of Education of the Borough of Highland Park
(Name of settling party -- please type)

Date: July 5, 1996

Dorothea B. Hoekzema
SIGNATURE

Dorothea Hoekzema
(Name -- please type)

Board President
(Title)

435 Mansfield Street
Highland Park, NJ 08904
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Vincent J. Occhino
(Please type)

Title: School Business Administrator/Board Secretary

Address: 435 Mansfield Street
Highland Park, NJ 08904

Tel. Number: (908) 572 6990 X10

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR THE COLLEGE OF NEW JERSEY (formerly TRENTON STATE COLLEGE)
(Name of settling party -- please type)

Date: 7/5/96

Peter L. Mills
SIGNATURE

Peter L. Mills
(Name -- please type)

Vice President for Administration & Finance
(Title)

Hillwood Lakes, CN 4700
Trenton, NJ 08650-4700
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Peter L. Mills
(Please type)

Title: Vice President for Administration & Finance

Address: Hillwood Lakes, CN 4700
Trenton, NJ 08650-4700

Tel. Number: (609) 771-2186

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products and Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR: BOROUGH OF MT. EPHRAIM
(Name of Settling Party - please type)

Date: 7/5/96

SIGNATURE

JOSEPH WOLK
(Name - please type)

MAYOR
(Title)

121 S. BLACK HORSE PIKE
(Address)

MT. EPHRAIM, NJ 08059

Agent authorized to accept service on behalf of above-signed settling party:

Name: ROBERT L. MESSICK, ESQUIRE

Title: ATTORNEY

Address: 41 GROVE STREET

HADDONFIELD, NJ 08033

Tel. Number: (609) 429-2236

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Lawnside Baord of Education

Date: 7/5/96

Dawn R. Wright

Dawn Wright
President
Lawnside Board of Education
426 Charleston Avenue
Lawnside, NJ 08045

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

Name:	Theresa Tutt
Title:	Board Secretary
Address:	426 Charleston Avenue Lawnside, NJ 08045
Tel. Number:	(609) 547-2585

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Lawnside Baord of Education

Date: 7/5/96

Dawn R. Wright

Dawn Wright
President
Lawnside Board of Education
426 Charleston Avenue
Lawnside, NJ 08045

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

Name:	Theresa Tutt
Title:	Board Secretary
Address:	426 Charleston Avenue Lawnside, NJ 08045
Tel. Number:	(609) 547-2585

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

ATTEST:

Dated: 7/8/96

JOHN MITCHELL, MAYOR
FOR THE BOROUGH OF CLAYTON
THIRD PARTY DEFENDANT
Borough Hall
125 N. Delsea Drive
Clayton, NJ 08312

Agent authorized to accept service on behalf of the above-signed settling party:

Name:	Richard DeVillasanta
Title:	Borough Administrator
Adress:	Borough Hall 125 N. Delsea Drive Clayton, NJ 08312
Telephone Number:	(609) 881-2882

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR **TOWNSHIP OF HAMILTON, COUNTY OF MERCER STATE OF NEW JERSEY**
(Name of settling party -- please type)

Date: 1/8/96

SIGNATURE

John K. Rafferty
(Name -- please type)

Mayor
(Title)

2090 Greenwood Avenue
CN 00150
Hamilton, New Jersey 08650-0150
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: **Richard D. Fornaro, Esq.**
(Please type)

Title: **Director, Hamilton Township Department of Law**

Address: **2090 Greenwood Avenue**
CN 00150
Hamilton, New Jersey 08650-0150

Tel. Number: **609-890-3882**

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BURLINGTON COUNTY BOARD OF CHOSEN FREEHOLDERS
(Name of settling party -- please type)

Date: July 9, 1996

Frederick F. Galdo
SIGNATURE

FREDERICK F. GALDO
(Name -- please type)

COUNTY ADMINISTRATOR
(Title)
49 Rancocas Road, Room 123
P.O. Box 6000
Mount Holly, NJ 08060
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: EVAN H.C. CROOK, ESQUIRE
(Please type)

Title: BURLINGTON COUNTY SOLICITOR

Address: 49 Rancocas Road, Room 225
P.O. Box 6000
Mount Holly, NJ 08060

Tel. Number: (609) 265-5289

State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al.
Consent Decree Signature Page

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Township of Maple Shade
(Name of settling party -- please type)

Date: 7/9/96

SIGNATURE

John E. Harrington, Esquire
(Name -- please type)

Township Solicitor
(Title)

7 North Main Street, P.O. Box 212
Medford, New Jersey 08055
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: John E. Harrington, Esquire
(Please type)

Title: Township Solicitor

Address: 7 North Main Street, P.O. Box 212
Medford, New Jersey 08055

Tel. Number: (609) 654-9629

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Harrison Township Board of Education
(Name of settling party -- please type)

Date: 7-9-96

Kathleen Kazuuas
SIGNATURE

Kathleen Kazuuas
(Name -- please type)

President
(Title)

120 N. Main Street, PO Box 549
Mullica Hill, NJ 08062
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Robert A. Muccilli, Esquire
(Please type)

Title: legal counsel for Harrison Township Board of Ed.

Address: 8000 Midlantic Drive, Ste 300
Mt. Laurel, NJ 08054

Tel. Number: (609) 234-6800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR County of Camden

Date: 7/9/96

Mark J. Lonetto
County Administrator & Treasurer
520 Market Street
16th Floor Courthouse
Camden, NJ 08102-1375

Date: 7-9-96

Robert G. Millenky, Esq.
County Counsel
520 Market Street
16th Floor Courthouse
Camden, NJ 08102-1375

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

Name:	Mark J. Lonetto
Title:	County Administrator & Treasurer
Address:	520 Market Street 16th Floor Courthouse Camden, NJ 08102-1375
Tel. Number:	(609) 225-5353

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR The Borough of Lindenwold
(Name of settling party -- please type)

Date: July 10 , 1996

SIGNATURE

Frank Delucca
(Name -- please type)

Mayor - Borough of Lindenwold
(Title)

2001 Egg Harbor Road
Lindenwold, NJ 08021
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Jane E. Barber
(Please type)

Title: Borough Clerk - Borough of Lindenwold

Address: 2001 Egg Harbor Road
Lindenwold, NJ 08021

Tel. Number: (609) 783-2121

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Haddon Heights
(Name of settling party -- please type)

Date: July 10, 1996

Barbara Cortese
SIGNATURE

Barbara Cortese
(Name -- please type)

Mayor
(Title)

625 Station Avenue
Haddon Heights, NJ 08035
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joan Young
(Please type)

Title: Borough Clerk

Address: 625 Station Avenue
Haddon Heights, NJ 08035

Tel. Number: (609) 547-7164

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Board of Education of Elk Township

Date: 7/10/96

Edwin D. Person
Board President
Box 338A - RD 1
Glassboro, NJ 08028

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

Name:	Marie Filipello
Title:	Secretary and Board Administrator
Address:	Box 338A - RD 1 Glassboro, NJ 08028
Tel. Number:	(609) 881-6889

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR County of Monmouth
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Robert J. Collins
(Name -- please type)

Administrator
(Title)

Hall of Records, Main Street
Freehold, New Jersey 07728
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Robert J. Collins
(Please type)

Title: Administrator

Address: Hall of Records, Main Street
Freehold, New Jersey 07728

Tel. Number: 908-431-7384

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent decree in the matters of *State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc. et al.* and *United States v. Air Products & Chemicals, Inc. et al.*, relating to the Gloucester Environmental Management Services Superfund Site.

TOWNSHIP OF CHERRY HILL

Date: 7-10-96

Susan Jacobucci, Esquire
Director, Department of Law
Township of Cherry Hill
820 Mercer Street
Cherry Hill, New Jersey 08034

Agent authorized to accept service on behalf of the above-signed settling party:

Myrna C. Cloth RMC
Township Clerk
Township of Cherry Hill
820 Mercer Street
P.O. Box 5002
Cherry Hill, New Jersey 08034

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Moorestown Board of Education

Date: 7/12/96

CYNDY WOLFSBERG
Board President
803 North Stanwick Road
Moorestown, NJ 08057
(609) 778-6600

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

Robert J. Oldt, Board Secretary, or Successor
803 North Stanwick Road
Moorestown, NJ 08057
(609) 778-6600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Haddonfield Board of Education

Date: 7-15-96

JANE M. KERSHNER
Board President
1 Lincoln Avenue
Haddonfield, NJ 08033
(609) 429-7510

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

Ben Schoelkopf, Board Secretary, or Successor
1 Lincoln Avenue
Haddonfield, NJ 08033
(609) 429-7510

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Mt. Laurel Board of Education

Date: 7/15/96

Cathy Ladd

CATHY LADD
Board President
330 Mt. Laurel Rd.
Mt. Laurel, NJ 08054
(609) 235-3387

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

FRANK E. HICKS
~~Harry Scwartzor~~, Board Secretary, or Successor
330 Mt. Laurel Rd.
Mt. Laurel, NJ 08054
(609) 235-3387

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Cherry Hill Board of Education

Date: July 15, 1996

Mona Noyes

MONA NOYES
Board President
Heritage School
Browning Lane
P.O. Box 5015
Cherry Hill, NJ 08034

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

Thomas Redmond, Board Secretary, or Successor
Heritage School
Browning Lane
P.O. Box 5015
Cherry Hill, NJ 08034
(609) 429-5600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Maple Shade Board of Education

Date: 7-17-96

CHARLES ANSERT
Board President
Frederick & Clinton Avenues
Maple Shade, NJ
(609) 779-1750

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

Steven Marinoff, Board Secretary, or Successor
Frederick & Clinton Avenues
Maple Shade, NJ 08052
(609) 779-1750

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Medford Lakes Board of Education

Date: 7/18/96

MARGE TURSI
Board President
135 Mudcreekeewis Trail
Medford Lakes, NJ 08055

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

Lynn Shugars, Board Secretary, or Successor
135 Mudjeekeewis Trail
Medford Lakes, NJ 08055

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Donald D LeVan
(Name of settling party -- please type)
DEPTFORD TOWNSHIP BOARD OF EDUCATION

Date: 7-22-96

Donald D LeVan
SIGNATURE

DONALD D. LeVAN
(Name -- please type)

Asst. Supt.
(Title)

2022 Good Intent Rd.
Deptford N.J. 08096
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: DONNA SIGEL PLATT, ESQUIRE
(Please type)

Title:

Address: 131 Delaware Street
Woodbury, NJ 08096

Tel. Number: (609) 845-2393

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Cinnaminson Board of Education

Date: 7/22/96

Harry Shea

HARRY SHEA
Board President
P.O. Box 224
905 Route 30 South
Cinnaminson, NJ 08077
(609) 827-7600

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

Edward J. Walkiewicz, Board Secretary, or Successor
P.O. Box 224
905 Route 30 South
Cinnaminson, NJ 08077
(609) 827-7600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Mannington Board of Education

Date: 7/22/96

EDWARD ABDILL
Board Vice-President
495 Route 45
Salem, NJ 08079
(609) 935-1078

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

Suzanne R. Fox, Board Secretary, or Successor
495 Route 45
Salem, NJ 08079
(609) 935-1078

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Bridgeton Board of Education

Date: 7/26/96

Helen M Burger

HELEN M. BURGER
Board President
Bank Street
P.O. Box 657
Bridgeton, NJ 08302
(609) 455-8030

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

Ken Kling, Business Administrator, or Successor
Bank Street
P.O. Box 657
Bridgeton, NJ 08302

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Collingswood

Date: 7/29/96

Jean DiGennaro
Borough Administrator
678 Haddon Avenue
Collingswood, NJ 08108

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

Name:	Jean DiGennaro
Title:	Borough Administrator
Address:	678 Haddon Avenue Collingswood, NJ 08108
Tel. Number:	(609) 854-2901

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Town of Hammonton

Date: 8-1-96

Ralph Morano

Ralph Morano

Mayor

100 Central Avenue

Hammonton, NJ 08037

Agent authorized to accept service on behalf of above-signed settling party:

Name: Ralph Morano

Title: Mayor

Address: 100 Central Avenue
Hammonton, NJ 08037

Tel. Number: (609) 567-4300

MATTHEWS WHITE & FISCHER
163 Madison Avenue - CN-1986
Morristown, New Jersey 07962-1986

Fax Number (201) 644 - 0990

Date: 09/26/96

Please hand deliver the following message to:

Name: Patricia C. Hick
William Tucker

Company: DEP

Fax Number: 212 637-3096

From: Edwin R. Matthews

File No. 185-001

Pages including this cover page: 2

Please call immediately if the telecopy you receive is incomplete or illegible. The telephone number is (201) 644-2200

This facsimile contains **Privileged and Confidential** information. If you are not the intended recipient, dissemination of this communication is strictly prohibited. If you have received this facsimile in error, please notify us immediately by telephone and return the original facsimile to the above address. We will reimburse you for all expenses incurred. Thank you.

MATTHEWS WHITE & FISCHER

A PROFESSIONAL CORPORATION
COUNSELLORS AT LAW
163 MADISON AVENUE
P. O. BOX 1986
MORRISTOWN, NJ 07962-1986
TELEPHONE 201-644-2200
TELECOPIER 201-644-0990

EDWIN R. MATTHEWS **
DAVID G. WHITE **
WILLIAM M. FISCHER

ROBERT J. PANSULLA ▲
DANIEL J. BONNER
LISA A. GRATTAN •
DREW D. KRAUSE ▲

* Certified Civil Trial Attorney
* Also Admitted in NY
▲ Also Admitted in PA
• Also Admitted in DC

September 26, 1996

VIA FACSIMILE TO (212) 637-3096
Patricia C. Hick, Esq.
William Tucker, Esq.
Department of Environmental Protection
New York, NY

Re: NJDEP v. GEMS, et al
Civil Action No. 84-0152 (JBS)

Dear Counsel:

I have been requested by Maria J. Dittmar and John Fitzpatrick to provide certain information to you with respect to the above-referenced settlement. This office represents the Board of Education of the East Windsor Regional School District. This entity was an Almo Nexus defendant who was part of the Municipalities' Group who has requested de minimis status as part of the settlement.

This office has previously forwarded a signature page which was found to be non-conforming because it did not designate an agent for service of process. I have tried to contact each of you to advise you of the designated agent for service of process. Since I have been unable to reach either of you by phone, I have written this letter to provide the information to you in writing. The designated agent for service of process is: **David Schafter, Secretary, Board of Education East Windsor Regional School District, 384 Stockton Street, Hightstown, NJ 08520**. I trust that this provides you with whatever additional information you need.

Should you need anything else with respect to this matter, please do not hesitate to contact me.

Very truly yours,

Edwin R. Matthews

cc: Maria J. Dittmar - via facsimile
John Fitzpatrick - via facsimile
David Coates
Stephanie McLaughlin

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

ATTEST:

DAVID SHAFTER, Board Secretary

Date: MAY 29, 1996

384 Stockton Street

Hightstown, NJ 08520
(Address)

(609) 443-7706
(Phone)

EAST WINDSOR REGIONAL SCHOOL BOARD

BY:
SHARON FOLTZ, Board President

384 Stockton Street

Hightstown, NJ 08520
(Address)

(609) 443-7706
(Phone)

Agent authorized to accept service on behalf of above-signed settling party:

NAME: David Schafter
TITLE: Secretary
ADDRESS: Board of Education
East Windsor Regional School District
384 Stockton Street
Hightstown, NJ 08520

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR City of Camden

Date: 9-6-96

Arnold W. Webster

Arnold W. Webster, Ph.D.
Mayor
City Hall
6th & Market Streets
Camden, NJ 08101

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

Name:	Patrick J. Keating
Title:	City Administrator
Address:	City Hall 6th & Market Streets Camden, NJ 08101
Tel. Number:	(609) 757-7100

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Oaklyn Board of Education

Date: 7/15/96

William T. Stauts

WILLIAM STAUTS
Board President
Kendall Blvd.
Oaklyn, NJ 08107
(609) 858-0678

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

Genevieve Cipollene, Board Secretary, or Successor
Kendall Blvd.
Oaklyn, NJ 08107
(609) 858-0678

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Oaklyn

Date: 6/28/96

Vincent S. Scriboni
Mayor
Municipal Building
500 White Horse Pike
Oaklyn, NJ 08107

ATTESTED:

Date: 6/28/96

Marie Hawkins
Clerk
Municipal Building
500 White Horse Pike
Oaklyn, NJ 08107

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

Name:	Marie Hawkins
Title:	Clerk
Address:	Municipal Building 500 White Horse Pike Oaklyn, NJ 08107
Tel. Number:	(609) 858-2457

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR COUNTY OF OCEAN
(Name of settling party -- please type)

Date: 7/10/96

SIGNATURE

STEVEN L. POLLOCK
(Name -- please type)

County Administrator
(Title)

PO Box 2191
Toms River, NJ 08754
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: DANIEL J. HENNESSY
(Please type)

Title: CLERK OF THE BOARD

Address: PO Box 2191
Toms River, NJ 08754

Tel. Number: 908-929-2005

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOROUGH OF PALMYRA

Date: 7-5-16

Signature

Bob Leather

Mayor

20 West Broad
Palmyra, NJ 08065

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

Name: Grace Carr
Title: Municipal Clerk
Address: 20 West Broad
Palmyra, NJ 08065

Tel. Number: 609-829-6100

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Paulsboro Board of Education

Date: June 20, 1996

Walter Quint
Superintendent of Schools
700 North Delaware Street
Paulsboro, NJ 08066

or

Eugene P. Chell, Esq.
Board Attorney
Chell & Chell
28 Cooper Road
Woodbury, NJ 08096

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

Name:	Joseph P. Connors
Title:	Business Administrator
Address:	700 North Delaware Street Paulsboro, NJ 08066
Tel. Number:	(609) 423-5440

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Paulsboro
(Name of settling party -- please type)

Date: 7/2/96

SIGNATURE

John J. Burzichelli
(Name -- please type)

Mayor
(Title)

1211 Delaware Street
Paulsboro, NJ 08066
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Robert F. Cuva, Esquire
(Please type)

Title: Attorney

Address: Plaza 1000, Suite 204, Main St.
Voorhees, NJ 08043

Tel. Number: (609) 751-6655

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

SIGNATURE PAGE

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States of America v. Air Products & Chemicals, Inc., et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR: The **PENNSAUKEN TOWNSHIP BOARD OF EDUCATION**

Date: Aug 13, 1996

Name:
Title:
Address: Pennsauken Township
Board of Education
Administration Offices
1695 Hylton Road
Pennsauken, NJ 08110

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

Name: Mr. Edward Ragone
Title: Business Administrator and Board Secretary
Address: 1695 Hlton Road, Pennsauken, NJ 08110
Tel. Number: 609-662-8505

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Perth Amboy Board of Education

Date: July 15, 1996

KURT E. EPPS
Board President
178 Barracks Street
Perth Amboy, NJ 08861
(908) 826-3360

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

John M. Rodecker, Board Secretary, or Successor
178 Barracks Street
Perth Amboy, NJ 08861
(908) 826-3360

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc. et al. and United States v. Air Products & Chemicals, Inc. et al. relating to the Gloucester Environmental Management Services Superfund Site.

FOR _____
CITY OF PERTH AMBOY

Date: 7/8/96

_____
SIGNATURE

_____
JOSEPH VAS

Mayor of Perth Amboy
(Title)
260 High Street
Perth Amboy, New Jersey 08801
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Dennis Gonzalez, Esq.

Title: Corporation Counsel -- City of Perth Amboy

Address: 260 High Street, Perth Amboy, New Jersey 08801

Telephone Number: (908) 826-0290

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOARD OF EDUCATION OF THE BOROUGH OF PINE HILL
(Name of settling party -- please type)

Date: July 2, 1996

Carol A Mascioli
SIGNATURE

Carol A. Mascioli
(Name -- please type)

School Business Administrator
(Title)

1003 Turnerville Road
Pine Hill, NJ 08021
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: RONALD W. SAHLI, ESQUIRE
(Please type)

Title: SOLICITOR

Address: 503 S. White Horse Pike, P.O. Box 601
Hammonton, NJ 08037

Tel. Number: (609) 567-9400

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOROUGH OF PINE HILL

Date: 2/10/96

Signature

Curt Noe

Mayor

48 West Fifth Avenue
Pine Hill, N.J. 08021

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

Name:	Joan A. Schneebele
Title:	Municipal Clerk
Address:	Borough of Pine Hill 48 West Sixth Avenue Pine Hill, N.J. 08021
Tel. Number:	609-783-7400

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Pitman Board of Education

Date: 7-18-96

W.R. McCLINTOCK
Board President
~~350 Edgewood Avenue~~ 420 Hudson Ave.
~~Audubon, NJ 08106~~ Pitman, NJ 08071
~~(609) 547-7965~~ 609-589-2145

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

Michele Roemer, Board Secretary, or Successor
c/o Memorial School
P.O. Box 88
Hudson Avenue
Pitman, NJ 08071
(609) 589-2145

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Pitman
(Name of settling party -- please type)

Date: 7/1/96

SIGNATURE

Eugene P. Chell, Esquire
(Name -- please type)

Solicitor
(Title)

28 Cooper Street
Woodbury, NJ 08096
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Jay Todd
(Please type)

Title: Municipal Clerk

Address: 110 South Broadway
Pitman, NJ 08071

Tel. Number: (609) 589-3522

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

RECEIVED
JUL 10 1996
PRINCETON REGIONAL SCHOOLS
BOARD OF EDUCATION

FOR Princeton Regional Schools
(Name of settling party -- please type)

Date: July 10, 1996

SIGNATURE

Dr. Daniel M. Swirsky
(Name -- please type)

Board Administrator/Board Secretary
(Title)

25 Valley Road, P.O. Box 711, Princeton, NJ 08540
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: James M. Robertson, Esq.
(Please type)

Title: Special Counsel-PRS

Address: 22 South Park Street, Suite 210
Montclair, NJ 07042

Tel. Number: 201-509-0749

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc. et als., and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

For Riverside Board of Education
Federal Tax I.D. # 216000297

Dated: July 9, 1996

Richard Avery, President
Riverside High School
100 Washington Street
Riverside , New Jersey 08075

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

Dr. J. Alan Ferner
Superintendent of Schools
Riverside High School
100 Washington Street
Riverside , New Jersey 08075
609 461-7105

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR ROWAN COLLEGE OF NEW JERSEY (formerly GLASSBORO STATE COLLEGE)
(Name of settling party -- please type)

Date: 7/8/96

SIGNATURE

Lawrence J. Reader
(Name -- please type)

Vice President for Administration & Finance
(Title)

Rowan College
201 Mullica Hill Road
Glassboro, NJ 08028
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Peter Verniero
(Please type)

Title: Attorney General of New Jersey

Address: R.J. Hughes Justice Complex
CN 112
Trenton, NJ 08625

Tel. Number: 609-984-3900

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Runnemede

Date: 6/17/96

John J. Yarabinee, Jr.
Mayor
413 N. Black Horse Pike
P.O. Box 267
Runnemede, NJ 08078

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

Name:	Joyce Pinto
Title:	Clerk
Address:	413 N. Black Horse Pike P.O. Box 267 Runnemede, NJ 08078
Tel. Number:	(609) 939-5161

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc. et als., and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

For Salem City Board of Education
Federal Tax I.D. # 216 000 305

Dated: July 9, 1996

James Scull, President
Salem Middle School
New Market Street
Salem , New Jersey 08079

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

Richard Rhau, Superintendent of Schools
Salem Middle School
New Market Street
Salem , New Jersey 08079
609 935-3800

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Shrewsbury Board of Education

Date: 7/12/96

RICHARD CELLARY
Board President
20 Obre Place
Shrewsbury, NJ 07702
(609) 747-0887

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

David Winter, Board Secretary, or Successor
20 Obre Place
Shrewsbury, NJ 07702
(609) 747-0887

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc. et al. and United States v. Air Products & Chemicals, Inc. et al, relating to the Gloucester Environmental Management Services Superfund Site.

Dated: MAY 8, 1996

BOROUGH OF SOMERDALE

ATTEST:

By: Gary J. Passanante
MAYOR GARY J. PASSANANTE
105 Kennedy Blvd.
Somerdale, NJ 08083

Eleanor O'Donnell
Eleanor O'Donnell, Borough Clerk

Agent authorized to accept service on behalf of above-signed party:

Name:	Eleanor O'Donnell
Title:	Borough Clerk
Address:	105 Kennedy Blvd., Somerdale, NJ 08083
Tel. Number:	(609) 783-6320

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Springfield Board of Education

Date: 18 July 96

Gregory Chilson
GREGORY CHILSON
Board President
2146 Jacksonville Road
Jobstown, NJ 08041

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

Barbara Harris, Board Secretary, or Successor
2146 Jacksonville Road
Jobstown, NJ 08041
(609) 723-2479

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Stafford Township Board of Education

Date: 6-20-96

~~Steve Fessler~~ Wendell Whitehead
Board President
1000 McKinley Avenue
Manahawkin, NJ 08050

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

Name:	Enrico Siano
Title:	Business Administrator
Address:	1000 McKinley Avenue Manahawkin, NJ 08050
Tel. Number:	(609) 978-5720

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR BOROUGH OF STRATFORD

Date: 7-22-96

Signature

THOMAS ANGELUCCI

Mayor

307 Union Avenue
Stratford, N.J. 08084

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

Name:	Dorothy Carlson
Title:	Municipal Clerk
Address:	Borough of Stratford 307 Union Avenue Stratford, N.J. 08084
Tel. Number:	609-783-0600

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Borough of Swedesboro
(Name of settling party -- please type)

Date: 7-3-96

Dolores M. Connors
SIGNATURE

Dolores M. Connors
(Name -- please type)

Borough Clerk
(Title)

P.O. Box 56
Swedesboro, NJ 08085
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Joanne M. Walker, Esquire
(Please type)

Title: Attorney

Address: Manta and Welge
1040 North Kings Highway, Suite 600
Cherry Hill, NJ 08034

Tel. Number: 609-795-7611

FOR THE STATE OF NEW JERSEY

Date:_____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al* and *United States v. Air Products & Chemicals, Inc., et al.* relating to the Gloucester Environmental Management Services superfund site.

FOR Teaneck Board of Education

Date: 8/26/96

MARGARET ANGELI
Board President
1 Merrison Street
Teaneck, NJ 07666
(201) 833-5527

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

Dr. Vincent Doyle, Board Secretary, or successor
1 Merrison Street
Teaneck, NJ 07666
(201) 833-5527

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR TRENTON PSYCHIATRIC HOSPITAL
(Name of settling party -- please type)

Date: 7/3/96

SIGNATURE

Edward Tetelman
(Name -- please type)

Assistant Commissioner
(Title)

Department of Human Services
CN 700, Trenton, NJ 08625
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Peter Verniero
(Please type)

Title: Attorney General of New Jersey

Address: R.J. Hughes Justice Complex, CN-112
Trenton, NJ 08625

Tel. Number: 984-3900

The Undersigned Party enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al, and United States v. Air Products & Chemicals, Inc., et al, relating to the Gloucester Environmental Management Services Superfund Site.

For Upper Darby Township

Date: 4-28-96

Margaret M. Murdoch

Name MARGARET M. MURDOCH
Title MAYOR, UPPER DARBY TOWNSHIP
Address MUNICIPAL BUILDING
100 GARRETT ROAD
UPPER DARBY, PA 19082-3135

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

Name F. RAYMOND SHAY
Title CHIEF ADMINISTRATIVE OFFICER
Address MUNICIPAL BUILDING
100 GARRETT ROAD
UPPER DARBY, PA 19082-3135
Telephone Number (610) 734-7622

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Upper Deerfield Board of Education

Date: 7-17-96

Barbara Shellenberger

BARBARA SHELLENBERGER
Superintendent
1373 Highway 77
Seabrook, NJ 08302

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

Darlene Barber, Board Secretary, or Successor
1373 Highway 77
Seabrook, NJ 08302
(609) 455-2267

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR CITY OF VINELAND

Date: 6/27/96

Signature

JOSEPH ROMANO
MAYOR
640 E. Wood Street
Vineland, NJ 08360-1508

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

Name:	Linda M. Dechen
Title:	Business Administrator
Address:	640 E. Wood Street Vineland, NJ 08360-1508
Tel. Number:	(609) 794-4144

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Township of Voorhees
(Name of settling party -- please type)

Date: July 8, 1996

SIGNATURE

Charles F. Mann, Jr.
(Name -- please type)

Administrator
(Title)

620 Berlin Road
Voorhees, NJ 08043
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Charles F. Mann, Jr.
(Please type)

Title: Administrator

Address: 620 Berlin Road
Voorhees, NJ 08043

Tel. Number: 609-429-7174

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Township of Washington

Date: 9/4/96

Joseph A. Alacqua, Esq.
Solicitor - Township of Washington
112 Johnson Road
Turnersville, NJ 08012

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

Name:	Joseph A. Alacqua, Esq.
Title:	Solicitor - Township of Washington
Address:	112 Johnson Road Turnersville, NJ 08012
Tel. Number:	(609) 227-1420

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR TOWNSHIP OF WATERFORD

Date: 7/3/96

Signature

DAVID C. PATERSON, ESQ.

Township Attorney

Maressa, Goldstein, Birsner,
Patterson, Drinkwater & Oddo
191 West White Horse Pike
Berlin, NJ 08009

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

Name: Virginia Chandler

Title: Municipal Clerk
Address: Township of Waterford
Municipal Building
Auburn Avernue
Patco, N.J. 08004
Tel. Number: 609 768-2300

FOR THE STATE OF NEW JERSEY

Date: _____

_____
EDWARD DEVINE
Deputy Attorney General
Division of Law
Department of Law and Public Safety
Richard J. Hughes Justice Complex
CN-093
Trenton, New Jersey 08625

Date: _____

_____
RONALD T. CORCORY
Assistant Director
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection & Energy
401 East State Street
Trenton, New Jersey 08625

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR West Windsor-Plainsboro Regional Board of Education
(Name of settling party -- please type)

Date: 7/12/96

SIGNATURE

Richard Guellnitz
(Name -- please type)

Secretary
(Title)

505 Village Road West
P.O. Box 248
Princeton Jct., NJ, 08550
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Secretary West Windsor Regional School Dist.
(Please type)

Title: Secretary West Windsor Regional School Dist.

Address: 505 Village Road W., P.O. Box 248
Princeton Jct., NJ, 08550

Tel. Number: 609-799-0200

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR Wharton Board of Education
(Name of settling party -- please type)

Date: July 29, 1996

SIGNATURE

Gene W. Beverly, Ed.D.
(Name -- please type)

Superintendent
(Title)

137 E. Central Avenue
Wharton, NJ 07885
(Address)

Agent authorized to accept service on behalf of above-signed settling party:

Name: Philip E. Stern, Friedman & Siegelbaum
(Please type)

Title: Board Attorney

Address: 7 Becker Farm Rd.
Roseland, NJ 07068-1757

Tel. Number: 201-992-1990

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al. and United States v. Air Products & Chemicals, Inc. et al., relating to the Gloucester Environmental Management Services Superfund Site.

FOR City of Wildwood COMPANY, INC. */

Date: MAY 15, 1996

Fred G. Wager
[Name -- Please Type] Mayor
[Title -- Please Type]
[Address -- Please Type]

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

Name: [Please Type] FRED G. WAGER
Title: MAYOR
Address: 4400 NEW JERSEY AVE. WILDWOOD, NJ 08260
Tel. Number: 609-522-2444 EXT. 245

Attest: Patricia A. Rhodes
PATRICIA A. RHODES, CMC
City Clerk

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al* relating to the Gloucester Environmental Management Services Superfund site.

FOR: Willingboro Township Board of Education

Dated: 7-15-96

Robert Rodriguez, President

Agent Authorized to accept service on behalf of above-signed party:

Ernestine Hyland-Board Secretary, or successor
Levitt Building
50 Salem Road
Willingboro, NJ 08046
(609) 871-9005

Dated: July 12, 1996

Dr. Geraldyn O. Foster, Superintendent

Witnessed: July 12, 1996

Ernestine B. Hyland, Board Secretary

4222-1484

THE UNDERSIGNED PARTY enters into this Consent Decree in the matters of *State of New Jersey, Department of Environmental Protection, v. Gloucester Environmental Management Services, Inc., et al and United States v. Air Products & Chemicals, Inc., et al,* relating to the Gloucester Environmental Management Services Superfund site.

FOR Woodbury Board of Education

Date: 7/10/96

THOMAS G. CAMPO
Board President
25 North Broad Street
Woodbury, NJ 08096
(609) 853-0123

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

Bryan C. McGair, Board Secretary, or Successor
25 North Broad Street
Woodbury, NJ 08096
(609) 853-0123