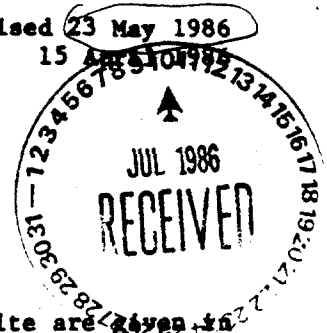


Revised 23 May 1986

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SUPERFUND REMEDIAL ACTION DESIGN
HELEN KRAMER LANDFILL
MANTUA TOWNSHIP, NEW JERSEY



SCOPE OF WORK

1. DESCRIPTION OF WORK: The final remedial measures of the site are given in Record of Decision (ROD), Remedial Alternative Selection, Helen Kramer Landfill, Mantua Township, New Jersey. Based upon the ROD, the following items are included in this Scope of Work.

a. Perform necessary site investigation at the Helen Kramer Landfill Superfund Site in Mantua Township, New Jersey, to determine nature and extent of the contamination.

b. Design a construction remedial action for the following activities:

(1) Construct, operate, and maintain a groundwater/leachate collection trench.

(2) Construct, operate, and maintain a clay cap over the site.

(3) Construct, an upgradient slurry wall.

(4) Construct, operate, and maintain an active gas collection and treatment system.

(5) Dewater, excavate, and fill leachate ponds and lagoons.

(6) Construct and maintain a security fence surrounding the site and work areas.

(7) Construct, operate, and maintain surface drainage controls throughout site. Controls should include surface runoff and relocation of Edwards run which are necessary to control the migration of contaminants off-site.

(8) Develop a monitoring program that will be utilized during the construction phase. Also, the monitoring program will assess the effectiveness and reliability of the remedial action.

(9) Construct, operate, and maintain a pretreatment facility for the surface runoff and groundwater/leachate from the trench. The pretreated water will be discharged to the Gloucester County Publicly-owned Treatment Works (POTW).

(10) Develop a plan for phasing each construction activity in relation with associate costs for each phase.

c. Provide technical assistance to EPA in community relations activities.

d. Provide technical assistance to EPA in obtaining access to private property for all remedial activities such as surveying techniques needed for property line verification, and development of a legal description of the properties requiring access.

2. AUTHORIZATION: The design of this project is authorized by the Corps/EPA Interagency Agreement No. DW96931855-01-0, dated 29 April 1986.

3. PROGRAMMED CONSTRUCTION COST:

a. The A-E, throughout his participation in the project, shall bear in mind that the interest of the Government is to perform a project which is economical in design, construction, operation and maintenance.

b. The programmed construction cost excluding contingencies and Supervision and Administration is \$25,157,000. If the design indicates this amount will be exceeded, the A-E will so advise the Contracting Officer and provide supporting data and recommendations for reduction of cost. Any proposed deviations from criteria or scope to achieve the limitation must be cleared prior to implementation.

4. A-E RESPONSIBILITY:

a. The Architect-Engineer (A-E) shall perform and shall assume all responsibility for the accuracy and completeness of the design work and services for the described project in accordance with criteria and instructions. Quality of design work accomplished under the contract will be a determining factor in consideration of the A-E for future work. This contract will remain in force until construction of the project has been completed. During this period, the A-E will be responsible for the correction of any design errors or deficiencies and reimbursement of any reconstruction costs resulting therefrom pursuant to the provisions of Clause 27, of the Contract Clauses of the contract. Should design changes as a result of revised criteria be required during this period, the A-E may be required to perform the necessary redesign work. In this instance, where design changes are required by revised criteria the contract will be modified accordingly, including an adjustment in the contract amount.

b. In the event that discrepancies, omissions, or other errors in the drawings and specifications are discovered after the final submission, the A-E shall review the specifications and/or contract drawings or prepare sketches and provide the necessary data, including a detailed cost estimate and information to permit issuance of amendments or modifications by the Government.

c. Should the A-E receive any direction or criteria that is not included in this contract that requires additional effort beyond the contract criteria, the A-E shall notify the Contracting Officer in writing, describing the change(s) and impact on the effort.

d. This clause is cumulative of the responsibilities of the Architect-Engineer described in Clause 27 of the contract clauses and does not limit, alter or modify that clause.

5. INDEMNIFICATION: Pursuant to the Memorandum for the Record Between US Environmental Protection Agency (EPA) and the US Army Corps of Engineers (COE) Regarding EPA Indemnification of COE Contractors (A/E Firms) on Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Projects, dated 11 April 1983.

a. The Government will hold harmless and indemnify the Contractor against claims (including expenses of litigation or settlement) by third persons (including employees of the Contractor) for death, bodily injury, or loss of or damage to property arising out of performance of this contract, to the extent that such a claim is not compensated by insurance or otherwise and does not arise from actions that constitute gross willful negligence by the contractor. Any such claim within deductible amounts of the Contractor's insurance will not be covered under this article. Reimbursement for such liabilities to third persons will not cover liabilities for which the Contractor has failed to insure as required or to maintain insurance as approved by the Contracting Officer.

b. Reimbursement for any liabilities under this article will not exceed "CERCLA" appropriations available (i.e. unobligated) at the time such liabilities are represented by final judgments or by settlements approved in writing by the Government. This agreement to reimburse the Contractor for certain liabilities will not be interpreted as implying that Congress will, at later date, appropriate funds sufficient to meet deficiencies.

c. A-E will be required to procure and maintain comprehensive general liability insurance for bodily injury, death, or loss or damage to property of third persons in the minimum amount of \$1,000,000 per occurrence.

6. RELEASE OF INFORMATION: The A-E shall not publicize nor release in any manner information or data in regards to projects on which they may be working or negotiating with this office, nor discuss prior to public release by this office, a project, any future program, or any planning with anyone not directly concerned with the design of the project. Any inquiries in regard to these matters shall be referred to the Contracting Officer or District Project Manager. Classified information obtained from this office shall be treated in accordance with instructions in regard to such matters.

7. RIGHT-OF-ENTRY: All rights-of-entry will be obtained by the Government. However, coordination with property owners will be required by the A-E.

8. COMMUNITY RELATIONS ACTIVITIES: The community relations activities shall include a quarterly informational paper and meeting/presentation with EPA, local officials and property owners during the quarterly progress conferences with EPA.

9. CRITERIA: The design criteria provided or referenced are intended to serve as a guide for the A-E in the preparation of a proposal for professional services which will satisfactorily meet design and construction standards for the proposed project. All aspects of this project are to meet all applicable federal (EPA, DOT, etc.), state and local regulations. Additional specific criteria is furnished for the A-E as described in the "Criteria and Instruction Documents Listing."

10. **DRAWINGS:** All drawings shall be prepared in accordance with the "A-E Guidelines for Corps of Engineers, Kansas City District Drawings". Design criteria and referenced drawings furnished by the Government are intended to serve as a guide for the Architect-Engineer in the preparation of acceptable working drawings and specifications. Applicable details of these drawings shall be incorporated into the working drawings and specifications without reference to the source. Incorporation by reference only is not acceptable. Blank sheets will be provided by the Government in sufficient quantity for all drawings.

11. **SPECIFICATIONS:** Specifications shall be prepared using Corps of Engineers Standard Guide Specifications and in accordance with the "Instructions for Preparation of Bidding Documents for Construction Contracts" (POBD). If a particular item is not included within the guide specifications, a non-proprietary specification may be developed utilizing the same format as guide specifications. Departure from the guide specifications is not authorized without specific approval. No specification developed shall contravene or modify the Contract Clauses.

a. The Government will develop the following parts:

Front Cover
Solicitations Provisions
Contract Clauses
Solicitation, Offer, and Award, SF 1442 (Bid Form), except Bidding Schedule
Pages TC-1 through TC-3 of the Table of Contents
Standard Special Clauses paragraphs
Technical Provisions, Division 1 sections shown on page 104 of POBD except Base Schedule and Additives, and Contract Quality Control.

b. The A-E will complete the parts listed below. A reference to the descriptive portion of the POBD follows each item.

Bidding Schedule (Chapter 6)
Table of Contents, pages TC-4 and on, and indices for Divisions 2 through 16 (Chapter 8)
Project-Specific Special Clauses [previously Special Provisions] (Chapter 9) including: Schedule and phasing requirements (SC-1) Sheet number, drawing number, title and date for each drawing (SC-3), Technical Provisions (Chapter 10). Develop Division 1 sections entitled: BASE SCHEDULE AND ADDITIVES, and Contractor Quality Control Special additional Division 1 sections not included on page 104 of POBD Develop Divisions 2 through 16.

c. Format will be in accordance with POBD, Chapter 10, paragraph 10, except the paper will be 8-1/2 inches by 11 inches.

d. Typing will be in accordance with POBD, Chapter 10, paragraph 11.

e. Proprietary (sole source) Specifications will not be used unless approved by the Division Engineer. Where such approval has been obtained, the general paragraph of the specification for this item shall state, "This (description) is a sole source item available from (list name and address of manufacturer). The second sentence of subparagraph "a" of the Contract

Clauses paragraph titled: MATERIAL AND WORKMANSHIP does not apply. If criteria presented or special situations require other than stated above, the Contracting Officer will be notified and approval obtained prior to incorporation into the specifications.

f. Non-Proprietary Specifications: When approved, a performance specification may be developed from manufacturer's literature. The format will be in accordance with Appendices A and B of the POBD. For each item specified in this manner a listing of three manufacturers with model numbers meeting this specification will be inserted into the design analysis. A specified item may be written in the manner of a performance specification but is considered proprietary if only one manufacturer can meet its requirements.

12. COORDINATION OF PLANS AND SPECIFICATIONS: The importance of careful checking and coordination of plans, specifications and other project documents cannot be overemphasized. It shall be the responsibility of the A-E to check and coordinate all project data prior to all submittals. Deficiencies, ambiguities, conflicts and inconsistencies shall be rectified prior to submittal of documents. The letter of transmittal shall certify that all documents have been checked and coordinated prior to submittal and it shall be signed by a principal of the A-E firm.

13. DESIGN ANALYSIS: The design analysis shall be prepared in accordance with the "Design Analysis Guidelines" and other instructions provided by the COE Project Manager.

14. COST ESTIMATES. Cost estimates shall be prepared in accordance with the draft "Preparation of Final Design Construction Cost Estimates for Hazardous Waste Cleanup Projects" prepared by Kansas City District, Corps of Engineers, dated January 1985.

15. COMPATIBILITY CAP STUDIES: Evaluate the potential differential settlement and the compatibility assessment of a cap, also evaluate the feasibility of phasing the installation of the cap to compensate for differential settling.

16. SERVICES TO BE PERFORMED BY THE ARCHITECT-ENGINEER: The Architect-Engineer (A-E) shall perform and shall assume all responsibility for the accuracy and completeness of the following design work and services in accordance with criteria and instructions specified hereinafter. Quality of design work accomplished under the contract will be a determining factor in consideration of the A-E for future work.

a. Title I Services:

(1) Predesign:

(a) A-E Site Specific Safety Plan (SSSP).

(b) A-E Site Specific Quality Management Plan (SSQMP).

(c) Meet with EPA Zone Contractor to obtain information.

(d) Work Plan - A detail narrative on how the design services

and field investigation (which should include, but not be limited to:

1) State purpose of investigation, indicate type of equipment, method,

depths, location, and describe any field test procedures. 2) Plan should

include requiring a geotechnical engineer and/or an engineering geologist to be on site while explorations are being conducted. 3) Include drilling, geotechnical sampling plan, and geotechnical testing program) will be accomplished, including the schedules.

(e) Progress Chart.

(f) Sampling Plan.

(g) Data management plan shall consist of a plan to document and track investigation data and results. This plan should identify and set up laboratory and data documentation materials and procedures, project file requirements, project-related progress, etc.

(h) Attend predesign conference at New York, New York, EPA Region II office.

(2) Preliminary Design, 35 Percent Complete: Site Drawings with construction limits and required easements.

(a) Preliminary compatibility assessment of cap and slurry wall.

(b) Preliminary site drainage plan.

(c) Evaluation of effluent disposal alternatives and site drainage control.

(d) Risk assessment for air emissions from water treatment operations.

(e) Technical assistance to EPA Community Relation Activities.

(f) Technical assistance to EPA and USCOE in obtaining access to private property for all remedial activities such as surveying techniques needed for property line verification, and development of a legal description of the properties requiring access.

(g) Evaluation of the design package to ensure compliance with Executive Order 11988 - Floodplain Management.

(h) Evaluate phasing construction activities of the Remedial Action in relation with associated cost for each phase.

(i) Evaluate the potential differential settling and the compatibility assessment of a cap, also evaluate the feasibility of phasing the installation of the cap to compensate for differential settling.

(j) Evaluate the use of rented "package" treatment units vs the on-site treatment.

(k) Provide additional field data necessary to design selected remedy.

(l) Specifications Table of Contents.

(m) Draft SSQMP for Construction. This is a working document which shall be incorporated as a section in the specifications.

(n) Preliminary cost estimate.

(o) Attend preliminary (35%) design review conference at EPA Region II in New York, New York.

(p) Draft Design Analysis and Plans.

(q) Complete field sampling and lab analyses.

(3) Optional Preliminary Design, 65 Percent Complete (at the option of the Government):

(a) Incorporate all review comments.

(b) General Site Drawings - Topographic, Property Utilities, etc.

(c) Complete compatibility studies for the cap and slurry wall.

- (d) Site Specific Safety Plan for construction.
- (e) Site Specific Quality Management Plan for construction.
- (f) List of required permits with requirements and/or restrictions.
- (g) Revised design analysis, plans, and specs.
- (h) Code B estimate.
- (i) Attend preliminary design review conference at Kansas City, Missouri.
- (j) Complete a treatability, bench scale, or pilot study if treatment facility is upgraded to full treatment onsite (applicable if full treatment is needed, at the option of the Government).

(4) Optional Final Design (at the option of the Government):

(a) Advance Final Design - 95 Percent:

- 1. Incorporate all review comments.
- 2. Construction plans and specifications.
- 3. Complete design analysis.
- 4. Code C estimate.
- 5. Attend advance final review conference at Kansas City, Missouri.
- 6. Plans-in-hand check of drawings and specifications against existing conditions.

(b) Final Design:

- 1. Incorporate comments from advance final review conference.
- 2. Final construction plans and specifications.
- 3. Final estimate.
- 4. Support to Government for questions during advertisement.

(5) Monthly progress reports will be sent to EPA Region II in New York, New York. These reports will begin at the preliminary and continue to the completion of the project.

(6) Conference, other than those specified above, when so requested in writing by the Contracting Officer. Maintain minutes of these meetings with copies distributed to all attendees and Contracting Officer within five (5) calendar days of the meeting.

(a) Title II Services: At the option of the Government, the following Title II services may be added by modification.

- 1. Visit(s) to the project site during the construction period when so requested in writing by the Contracting Officer.
- 2. Check and recommend approval (or disapproval) of the shop drawings submittals furnished by the construction contractor during the construction period.
- 3. Engineering and Design During Construction. Perform necessary design services during construction including: visits to the site; preparation of modifications to the plans and specifications for requested

changes and changed field conditions; necessary estimates for budgeting possible changes; and for funding and negotiating the contract changes. Provide design services for questions that arise during construction that are not covered by Title I design services. Serve on safety investigation or value engineering teams as may be required.

17. SUBMISSIONS REQUIRED OF THE ARCHITECT-ENGINEER. The A-E will be required to make the following submissions at various stages of the project design:

- Predesign
- Preliminary 35 Percent Design
- Preliminary 65 Percent Design
- Advance Final (95 Percent Design)
- Final (100 Percent Design)

a. All drawings, analyses, and/or specifications shall be physically assembled in sets in one office several working days prior to scheduled submittal to permit an overall coordination review and interference check by the A-E.

b. With each submission, the A-E shall send a letter of the transmittal listing the material being submitted. The letter shall reference to the project by title, number, and location. A complete submission must be received by the Government before it will undertake to review such submission; particle submissions will not be accepted without prior approval.

c. Submissions will be made, in the quantities indicated to each office as designated in the attached Design Document Distribution Listing. Design documents for all contract levels of design shall be distributed via a carrier service that will provide for second day delivery.

18. COMPLETION SCHEDULE: The A-E shall complete the design work and services as follows:

a. Predesign submittal within 30 calendar days after receipt of notice to proceed.

b. Preliminary 35 percent submittal within 75 calendar days after receipt of notice to proceed with preliminary 35 percent design.

c. Preliminary 65 percent submittal within 60 calendar days after receipt of notice to proceed with preliminary 65 percent design.

d. Advance final - project submittal within 60 calendar days after receipt of notice to proceed with final design.

e. Final submittals within 15 calendar days after the advance final review conference.

f. Design services are contemplated to begin as outlined in the project schedule. Should the start of each phase or portions thereof be delayed more than 6 months by causes other than the A-E's negligence, the remaining may be renegotiated with the A-E's request.

19. SUBMITTALS:

a. Title I: The Architect-Engineer shall complete all Title I work and services as listed in paragraph 16 and make submittals as specified in paragraphs 17 and 18. The following additional instructions apply to the respective submittals:

(1) **Pre-design:**

(a) The work plan, progress chart and sampling plan shall be assembled in one document. The A-E Site Specific Safety Plan and A-E Site Specific Quality Management shall be submitted in separate documents. All documents shall be provided in one submittal.

(b) Distribution of the pre-design submittal will be made by the A-E directly to the reviewing offices with the required number of copies as indicated on the Design Document Distribution Listing.

(c) The pre-design review conference will be held at the EPA office New York, New York. Key persons involved with the design must be available to attend as well as the Project Manager. See Conferences paragraph.

(2) **Preliminary Design Submittals (65 percent at the option of the Government):**

(a) The tabulation of criteria, narrative description, design analysis, and draft and/or outline specifications shall be assembled. Information contained in provided documents need not be reiterated, but should be referenced as appropriate. All project components shall be described in narrative form, including decision rationale. Results of investigations and analyses shall be given. The Specifications table of Contents and indices and specifications sections (decided upon by A-E and Project Manager) shall be included in final typed form, and other specification sections included in outline form, except for Corps of Engineers guide specifications which may be listed by title. A separate section shall be added listing unresolved items or criteria required to complete the final design.

(b) Distribution of the preliminary design submittals will be made by the A-E directly to the reviewing offices with the required number of copies as indicated on the Design Document Distribution Listing. In addition, one (1) "marked up" set of guide specifications used shall be submitted at the 35 percent preliminary design submittal to the Project Manager.

(c) The preliminary review conference (35 percent) will be held at the EPA office New York, New York. Key persons involved with the design must be available to attend as well as the Project Manager. See Conferences paragraph.

(3) **Final Design, Submittals and Review:** (At the option of the Government). The final design and design documents shall be furnished in two separate submittals.

(a) Advance Final Submittal: The advance final submittals of drawings, typed technical specifications, design analysis (including SSSP and SSQMP), and a construction cost estimate (Code "C") shall be a completed set of documents (each bound separately) that could be used for advertising without review.

(b) Distribution of the preliminary design submittals will be made by the A-E directly to the reviewing agencies with the required number of copies as indicated on the Design Documents Distribution Listing.

(c) Advance final review conferences will be held at the Kansas City District Office. The A-E shall furnish key personnel representing all disciplines and involved in the design and the Project Manager to attend. See Conferences paragraph.

(d) Final Submittal: The final submission provides project documents that are ready for advertisement. The A-E will furnish signed original tracings, final reproducible specifications, updated design analysis and updated construction cost estimate (Code "C"), all corrected to reflect final review conference comments. The final corrected tracings shall be transmitted by registered or guaranteed mail. Unless specifically requested by the Government, delivery by person will not be necessary. Required numbers of copies of the final submittal are indicated on the Design Documents Distribution Listing.

(4) Title II: The Architect-Engineer shall complete all work and services under Title II of the contract as follows:

(a) Shop Drawing Services: Check and recommend approval (or disapproval) of each complete submittal of shop and working drawings, catalogs, samples, etc., as required by the contract drawings and specifications, within ten (10) working days after receipt thereof, unless the Contracting Officer is notified that a longer time will be required and of the reasons therefor.

(b) Visits to the Project Site During Construction. Need for visits to the project site during construction will be determined and requested as required by the Contracting Officer.

20. Health and Safety:

a. The Architect-Engineer responsible for the preparation of the design documents and remedial action specifications for this project shall review all project information provided and develop health and safety criteria and practices sufficient to protect onsite personnel, the public, and the environment from physical, chemical, and/or biological hazards particular to this site. If the information made available is insufficient to allow the Architect-Engineer to develop such health and safety documents, a description of all additional information required will be prepared and submitted to the Contracting Officer.

b. Health and safety documents required shall be in accordance with the following:

(1) **A-E Health and Safety Plan:** If, in the course of developing the necessary design documents and specifications, the A-E and his subcontractors are required to perform onsite work, an A-E Health and Safety Plan shall be prepared and submitted for approval to the Contracting Officer prior to commencement of any onsite activity. This plan shall describe the health and safety equipment and procedures to be utilized and implemented in order to protect personnel from the potential hazards associated with the site specific work. (Refer to paragraph b(3) for plan content guidance.)

(2) **Site Specific Safety Plan (SSSP):** An SSSP as defined in ER 385-1-92, 30 August 1984, shall be prepared by the A-E utilizing information in Appendix A of that document. This SSSP will serve as a design analysis concerning health and safety related aspects of the remedial action and shall be in a form which will be usable by COE construction management personnel during the remedial construction (cleanup) phase of this project. The SSSP shall be submitted for review by appropriate Corps personnel concurrent with other design documents. Discrepancies or omissions identified in this document during the review periods shall be corrected before final approval is granted.

(3) **Health and Safety Specifications:** The A-E shall prepare a section of the construction specifications which describes the minimum safety, health, and emergency response requirements for which the Construction Contractor will be made responsible. This section, referred to as "Technical Provisions - Additional Safety Requirements" in ER 385-1-92, shall be developed from the SSSP and entitled Safety, Health, and Emergency Response. This section will require the construction contractor to develop and implement a Safety, Health, and Emergency Response Plan (SHERP). The requirements of the COE Safety and Health Requirements Manual, EM 385-1-1, F.A.R. Clause 52.236-13, Accident Prevention; OSHA Standards for General Industry, 29 CFR 1910, and Construction Industry, 29 CFR 1926; and the E.P.A. Standard Operating Safety Guides, November 1984; whichever provides the greater degree of protection, will serve as the basis of the SHERP. The Safety, Health, and Emergency Response section will address the following areas as a minimum:

- (a) Regulatory Requirements
 - (b) Staff Organization, Qualifications, and Responsibilities
 - (c) Accident Prevention
 - (d) Site Description and Hazard Assessment
 - (e) Work Zones and Work Practice Controls
 - (f) Personal Protective Equipment
 - (g) Personnel and Equipment Decontamination
 - (h) Medical Surveillance
 - (i) Training and Education
 - (j) Personnel and Environmental Monitoring
 - (k) Emergency Response/Contingency/Planning Equipment and Procedures
- (1) Logs, Reports, and Recordkeeping

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21. CHEMICAL QUALITY MANAGEMENT PLAN:

An extremely important aspect of this project is the management of the chemical data. An A-E site-specific Quality Management Plan (SSQMP) shall be developed to assure that the A-E collect, analyze, and evaluate chemical data which are legally and scientifically defensible. This SSQMP shall be in accordance with provisions covered in ER-1110-1-263, especially Appendix A; Sample Handling Protocol for Low, Medium and High Concentration Samples of Hazardous Waste (a COE document); and applicable EPA, NIOSH and DOT standards and regulations. Air samples and analytical methods, analyses and QA/QC samples shall be cross referenced in the SSQMP as well as in the site-specific Health and Safety Plan under Personnel and Environmental Monitoring. All other types of sampling procedures and analyses shall be fully described in the SSQMP including, but not limited to, sampling of soil, sediment, sludge, water (surface and ground), air, wipe tests (if applicable), etc. The SSQMP shall be a separately bound section to the work plan.

a. The A-E SSQMP shall include a site history (relating to likely toxic and hazardous chemicals), sampling procedures, sample handling and preservation, chain of custody, analytical methods, interpretation of analytical results, and internal quality control and external quality assurance checks. The format shall follow the format in ER 1110-1-263, Appendix A. The SSQMP shall address the following as a minimum:

(1) The quality control organization (including separate chain of authority reporting to senior personnel).

(2) Authority and responsibilities of all quality control personnel.

(3) Qualifications of chemical quality management personnel: The minimum requirements for the quality control officer and bench chemists shall be a B.S. in chemistry and 1 year of appropriate experience in preparations, testing, and analyses. In addition, the GC/MS Special Interpretation Expert which shall have 3 years minimum appropriate experience and the Gas Chromatograph Residue Analyses Expert shall have 2 years minimum appropriate experience. Technicians shall normally have a minimum of 2 years of college science. (Technicians shall work under the close and continuous supervision of a chemist and shall be used primarily for sample preparation.) Chronological resumes listing relevant education with exact disciplines and years of experience (including continuing education) shall be included for all chemical quality management personnel.

(4) Laboratory Qualifications: The laboratory qualifications shall include information relating to physical laboratory facilities, instrumentation, participation in interlaboratory and performance audits, familiarity with EPA procedures including CPL protocols, etc. Details of the specific instrumentation shall include manufacturer, model types, accessories, calibrations, and year of purchase. Laboratories used for air analysis shall be either AIHA certified for appropriate tests (if applicable) or satisfactorily participating in current NIOSH proficiency tests. Any history of chronic laboratory contamination shall be included.

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(5) **Proposed Analytical Methods:** The proposed analytical methods shall include exact reference and description of the method (publication name, method number and/or page number), the name(s) of the chemical quality management personnel performing each method, and instrumentation and equipment to be used. Normally standard EPA methods shall be used (such as SW-846 for chemical analysis of solid waste), but NIOSH standard procedures shall be used for air monitoring. Modifications of these methods require prior approval. Analyses which will have to be conducted shall include:

- (a) A search for RCRA and CERCLA metals;
- (b) A search for all Hazardous Substances List (HSL) chemicals;
- (c) Identification (if possible) and quantification of 20 additional non-HSL major semi-volatile peaks; and
- (d) Identification (if possible) and quantification of 10 additional non-HSL major volatile peaks.
- (e) Leachate parameters listed in Table 3-1 (attached) for the composite listed in (6)(a).

(6) **Proposed Sampling, Sample Handling, and Recording Protocols:** Proposed sampling for the purpose of determining the nature, extent, and severity of contamination shall include the following as a minimum:

- (a) RI/FS designated Wells X-3, S-3, X-4S, S-8, and WE-7 composited in a volume ratio of 25:15:25:15:20, respectively. A subsample of this composite shall be sent to Gloucester Co. POTW and another subsample to URS lab;
- (b) RI/FS designated Wells X-1I, X-1D, X-2I, X-4D and a duplicate to be sent to the Gloucester Co. POTW, and S-4S;
- (c) The residential wells of Frazier, Duke, and Bolton (EPA Region II will arrange for access to these wells). Sample shall be taken from tap;
- (d) Two grab samples of seepage from a residential area near the site; and
- (e) RI/FS designated Wells X-4, X-3, S-3, and S-8. The blank(s) required for the above specific sampling locations shall be a trip blank(s) to be analyzed for volatiles only. Additional sampling, sample handling and recording protocols shall be developed to ensure representative sampling, handling, storage, transfer, recording and chain-of-custody procedures.

(7) **Methods of Performing, Documenting and Enforcing Quality Control Operations:** Methods of performing, documenting and enforcing quality control operations including inspection and testing shall be submitted. Lists of percentages and types of internal quality control checks, external quality assurance samples and performance audits shall be included (normally 1 sample each out of every 10 should consist of a duplicate or a split, and a blank for internal quality control or one spiece per batch, whichever is greater.

Similar requirements shall be developed for external quality assurance). Methods for identifying and correcting laboratory contamination shall be included.

(8) Required Quality Control Reports: The SSQMP shall address the frequency and content of the quality control reports that shall be submitted during the design. Quality control reports giving analytical results and general quality control procedures shall be prepared daily and submitted weekly to the COE Project Manager and the MRDED-L quality assurance laboratory. A second report detailing any significant problems with analytical procedures, instrument calibration or quality control shall be submitted along with the corrective actions that have been taken to solve the problems, who was assigned to correct these problems, and final problem solution. These reports shall contain information as specified in ER-1110-1-263, Appendix A. A Quality Control Summary Report shall be submitted upon completion of the chemical quality management portion of the project summarizing the results of the previously submitted quality control reports and shall include appropriate tables and references.

b. The laboratory proposed to perform the chemical quality management for this site will be inspected and approval shall be obtained prior to the initiation of any on-site activities.

TABLE 3-1

WASTE CHARACTERISTICS - CONVENTIONAL PARAMETERS

Helen Kramer Landfill

PARAMETERS (mg/l) ^a	RAW LEACHATE			
	1 MAY	2 MAY	6 MAY	MEAN
BOD ₅	660	640	350	550
COD	1070	950	880	967
TOC	350	340	370	353
NH ₃ -N	24	29	23	25.3
NO ₃ -N	4.1	4	34	11.3
Organic N	26	29	22	25.7
TKN	50	58	45	51.0
Ortho-P	<0.05	<0.05	0.11	0.07
Total P	1.4	0.33	0.26	0.66
Oil and grease	2	4	2	2.67
TS	1900	2100	2340	2113
TVS	600	600	870	690
TSS	58	260	600	306
TDS	1860	1820	2000	1893
Total settleable solids	37	200	540	259
pH (pH unit)	5.45	5.45	5.6	5.5
Acidity, as CaCO ₃	180	230	210	207
Alkalinity, as CaCO ₃	100	62	92	85
Chloride	40	600	620	353
Sulfide as S	0.37	0.33	1.2	0.63
Sulfite as SO ₃	<2	<2	<2	<2
Sulfate as SO ₄	43	25	36	34.7
Silica	12.3	6.9	6.2	8.5
Phenolics	3.9	4.2	3.9	4.0
Total Cyanide	0.087	<0.025	0.056	0.056

^aValues are in mg/l unless otherwise noted.

22. GENERAL REQUIREMENTS AND STANDARDS:

a. Project Manager:

(1) The A-E shall assign a principal or key employee to serve as the Project Manager. The Project Manager shall oversee the coordination of the entire project design and shall be capable of administering all instructions from this office and obtaining answers to all questions from this office during and after the design work.

(2) During the prosecution of the work under the contract, the A-E shall keep in close liaison with the Corps of Engineers Design Project Manager (PM), who will coordinate the work with the EPA and other agencies. All requests made by the EPA and other agencies shall be referred to the COE PM.

b. Review of Progress and Technical Adequacy: At appropriate times, representatives of the Contracting Officer may review the progress and technical adequacy of the work. Such review will not relieve the A-E from performing all contract requirements, except as may be waived by written instruction.

c. Progress Chart: Upon receipt of Notice to Proceed, the A-E shall prepare a progress chart to show the proposed schedule for completion of design. The progress chart shall be prepared in reproducible form and submitted for approval. The actual progress shall be updated and submitted by the 15th of each month and may be included with the request for payment. Progress charts must be revised to reflect modifications and other approved changes in scheduling.

d. Data, Information and Services to be Furnished by the Government: The Government will furnish the following:

- (1) Record of Decision.
- (2) Previous site investigation records.
- (3) Instructions for preparation of Bidding Documents for Construction Contracts, latest edition.
- (4) Applicable Engineer Manuals (EM's), Technical Manuals (TM's), Engineering Regulations (ER's), and Engineering Technical Letters (ETL's).
- (5) Applicable guide specifications.
- (6) Applicable standard drawings.
- (7) Liaison with EPA and State Regulatory Agency.
- (8) ER 385-1-92.
- (9) ER 1110-1-263.
- (10) Instruction on Preparation of Government Estimates.

(11) Reproduction of the contract drawings and specifications for advertising purposes.

(12) Other documents so indicated on the Documents Listing.

e. Environmental Permits: The A-E shall insure that the project is in full compliance with the requirements of all Federal, state and local clean air, clean water and solid waste disposal standards and the Federal Endangered Species Act. All applicable standards and criteria shall be obtained and reviewed by the A-E. The A-E shall identify, in the Design Analysis, all required permits and compliance requirements.

f. Verification of Existing Conditions: The A-E is responsible for making the necessary field visits to assess existing conditions and to obtain such detail information as is required to complete the design. The Government will furnish available "as-built" or construction drawings pertinent to the facilities involved. Such drawings, however, may not show the existing conditions correctly. Therefore, all data shown on such drawings shall be verified by the Architect-Engineer and the A-E shall obtain all other data as required to insure the complete and proper design of the project. The A-E shall verify by field reconnaissance the current location of all utility lines and of any additional utility lines. Existing information shall be used whenever possible.

g. Conferences:

(1) The A-E shall be represented by personnel familiar with all aspects of the work submitted.

(2) The A-E shall be responsible for taking notes and preparing the minutes for all conferences. Conference notes will be prepared in typed form, signed by the Project Manager, and distributed to all attendees and this office within five (5) days after date of conference.

(a) These minutes shall include the date, place and a list of attendees, including organization and telephone number. Comments made during the conference, or decision affecting criteria changes, must be recorded in the basic conference notes. Any augmentation of written comments should be documented by the conference notes.

(b) Written comments presented by attendees shall be attached to each report with the conference action noted. Conference action shall be "A" for an approved comment, "D" for a disapproved comment, "W" for a comment that has been withdrawn, and "E" for a comment that has an exception noted. Functional/criteria comments annotated "F" are mandatory and must be included in the project documents. Technical comments annotated "T" are provided for consideration. Indicate comments not incorporated and provide a brief explanation for rejection.

h. Confirmation Notices: The Architect-Engineer will be required to provide a record of all discussions, verbal directions, telephone conversations, etc., participated in by the Architect-Engineer and/or his representatives on matters relative to this contract and the work, irrespective of whom the other participants may have been. These records,

entitled "Confirmations Notices, will be numbered sequentially and shall fully identify participating personnel, subject discussed, and any conclusions reached. The A-E shall forward to the Contracting Officer or his representative as soon as possible (5 work days), a reproducible copy of said confirmation notices.

i. Project Records: At the completion of the project, the A-E shall provide a complete set of project records including all correspondence, memorandums, trip reports, confirmation notices, sampling plans, test results, submittals, photographs, and any other records or documents generated as a result of the project.

j. Value Engineering: Value Engineering studies are required on the work covered under this contract. Within 21 calendar days after Notice to Proceed, the A-E shall identify features of the project offering potential for value engineering. These features may include layout, principle features of construction, criteria, or any item having "high cost-low value" where improvement can be accomplished. The items identified for potential value engineering effort shall be submitted to the project engineer. If an alternative is apparent to the proposed item without further study, then the proposed alternate(s) shall be listed with the list of features submitted. Upon receipt of the list of items and features submitted by the A-E firm, the Government reserves the right to do one of the following:

(1) Implement some of the changes proposed and/or modify the contract for the design A-E firm to further perform formal value engineering studies on any or all of the items submitted. Within 7 days after receipt of these items, the project engineer will indicate to the A-E which items are to be implemented and which items are to be subjected to formal value engineering study. At that time, the contract will be modified for the additional work resulting from the formal value engineering studies.

(2) Appoint a value engineering team of Government personnel and perform the value engineering studies working closely with the design A-E firm, furnishing the results upon completion.

(3) Use a separate A-E firm under an indefinite delivery contract to perform the value engineering studies working closely with the design A-E firm, furnishing the results upon completion.

k. Design Codes:

(1) The A-E shall be responsible for incorporation of all applicable information.

(2) The facilities, systems and equipment design standards of the Occupational Safety and Health Act, Code of Federal Regulations, Title 29, Chapter XVII. Parts 1910 and 1926, as applicable, will be incorporated by the A-E into all engineering design and analyses furnished pursuant to this contract. Any problem in incorporating these standards due to conflict with other technical criteria will be promptly submitted to the Contracting Officer for decision.

(3) The intent of the Government is to design within environmental requirements currently in effect. If in the opinion of the A-E compliance with current regulation cannot be accomplished due to engineering problems, he will immediately notify the Contracting Officer in writing with recommendations. The A-E shall fill out any form required for environmental permits.

(4) The A-E shall coordinate with local officials to assure that drawings and specifications are in compliance with requirements of applicable local codes and regulations. Any plan inspection filing fees necessary in determining the compliance of plans and specifications with local codes and regulations shall be the responsibility of the A-E and costs for such shall not be included in the construction contract. Where no municipal, county, or state code is applicable to the area in which the project is located, the A-E shall comply with one of the following building codes: "Basic Building Code," "National Building Code," "Uniform Building Code," or "Southern Building Code." The A-E shall identify the building code and regulations which he is using at the time of his first submission. The specifications for the project shall designate the code which has been used and which shall be adhered to in construction of the project.

1. As-Advertised Review: After submittal of the Final Design Documents, the A-E shall completely review the advertised project plans and specifications. Any comments or corrections found in this review shall be furnished to the Contracting Officer in such form that an amendment can be issued therefrom not later than the midpoint of the advertising period.

m. Bidding Procedures: The reproduction of plans and specifications for bidding purposes will be accomplished by the Government. The Government, likewise, will issue all documents to prospective bidders and will receive all bids. During the bidding period when plans and specifications are out for bids, the A-E shall not give out any interpretations regarding any inquiries from prospective bidders relating thereto. All inquiries from prospective bidders, whether oral or written, shall be forwarded to the Contracting Officer. The Government will evaluate all bids; however, the A-E shall render such assistance in the bid evaluation process as may be required by the Contracting Officer.

n. Notification of Site Visits: The A-E shall notify the COE Project Manager at least 10 days prior to site visits if possible or immediately upon decision to visit the site. If the A-E is unable to reach the COE Project Manager, the EPA Project Manager shall be notified. Confirmation of site visits shall be made immediately prior to the site visits. Notification by phone is sufficient.

23. METHOD OF PAYMENT:

a. Title I: The Architect-Engineer shall prepare and submit to the US Army Engineer District, Kansas City, partial payment estimates in accordance with the attachment entitled "Instructions for Completion of ENG Form 93" dated 5 January 1983. All partial payments shall be based on work completed as of the 15th day of the report month and shall be submitted to the office of the Contracting Officer by the 18th day of the month. The US Army Engineer District, Kansas City, will prepare supporting payment documents after obtaining necessary approvals and forward all documents to the US Army

Engineer District, Omaha, for issuance of the payment check. All questions regarding payments shall be directed to the US Army Engineer District, Kansas City Payment under this contract, for which property or services are provided in a series of partial executions or deliveries, will be made within 15 days after receipt of an invoice which has been properly executed by the Architect-Engineer, approved by the Contracting Officer, and received at the paying office.

b. Additional Conferences: Payment for furnishing the services of technically qualified representatives to attend additional conferences, when so requested in writing by the Contracting Officer, will be made at a rate per hour for the discipline involved plus travel expenses computed in accordance with Government Joint Travel Regulations in effect at the time travel is performed and actual cost of transportation. Payment for attending additional conferences shall be made after submittal of a separate ENG Form 93, which shall not be assigned a partial payment estimate number.

HEALTH AND SAFETY GUIDELINES LIST

1. OSHA Standards for General Industry, 29 CFR 1910, and OSHA Standards for the Construction Industry, 29 CFR 1926.
2. NIOSH (National Institute of Occupational Safety and Health), Manual of Analytical Methods, 2nd Edition, Volumes I-VII, or the 3rd Edition, Volumes I and II.
3. ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous Waste Site Remedial Actions, 30 August 1984.
4. Standard Operating Safety Guides, Office of Emergency and Remedial Response, Environmental Protection Agency, November 1984.
5. TLV's - Threshold Limit Values and Biological Exposure Indices for 1985-86, ACGIH (American Conference of Governmental Industrial Hygienists).
6. ANSI Z88.2-1980, (American National Standards Institute), American National Standards Practices for Respiratory Protection, March 11, 1981.
7. Interim Standard Air Monitoring Guide for Hazardous Waste Sites, Toxic Waste and Environmental Section, Missouri River Division, US Army Corps of Engineers, June 1984.
8. EM 385-1-1, US Army Corps of Engineers Safety and Health Requirements Manual, Revised October 1984.
9. NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, October 1985.

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DOCUMENTS LISTING

HELEN KRAMER LANDFILL SITE, SUPERFUND REMEDIAL ACTION DESIGN

1. Record of Decision
2. Scope of Work with Design Task List
3. Previous Site Reports: Obtain from EPA Region II or NUS.
4. Previous contract drawings, specifications, and miscellaneous records - Initial Remedial Measure.
5. Instruction for preparation of Bidding Documents for Construction Contracts, dated March 1985.
6. Guidelines for Preparation of Corps of Engineers, Kansas City District Drawings, dated 11 October 1983 (revised 19 March 1985).
7. Preparation of Final Design Construction Cost Estimates for Hazardous Waste Cleanup Projects, draft dated January, 1985 (revised guide which includes preliminary estimates will be furnished).
8. EM 1110-2-1302, Cost Estimates, 15 January 1982.
9. EP 1110-1-8, Volume 1, Construction Equipment Ownership and Operating Expense Schedule, Region I.
10. Design Analysis Guidelines, April 1983.
11. DOD Construction Manual 4270.M, 15 December 1983.
12. Department of the Army Technical Manuals (TM's) to be selected from the attached list, dated 17 July 1985.
13. Current ETL List, dated 7 February 1985.
14. Index of Guide Specifications:
Military dated 4 May 1984 (superseded) EP 310-1-5 dated 15 March 1985 (Civil and Military)
15. Applicable specifications selected from above list.
16. EPA Superfund Project Disposal Site Requirements Memorandums:
Requirements for Selecting an Off-Site Option in a Superfund Response Action, 28 January 1983.
Draft Procedures for Selecting Off-Site RCRA Facilities for Superfund Substances, 10 July 1984.
17. EPA Design Manuals:

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a. EPA 600/2-79-165; "Design and Construction of Covers for Solid Waste Landfills," August 1979.

b. EPA 600/2-85-035, "Settlement and Cover Subsidence," September 1985.

c. EPA 540/2-84-001, "Slurry Trench Construction for Pollution Migration Control," February 1984.

18. ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous Waste Site Remedial Actions.

19. Health and Safety Guidelines List

20. Interim Standard Air Monitoring Guide for Hazardous Waste Sites, June 1984

21. ER 1110-1-263, Chemical Quality Management - Toxic and Hazardous Wastes.

22. Design Document Distribution and Mailing List

23. Standard Drawings:

Legend Soils Legend

Topography maps (site)

24. Forms:

ENG Form 93, MRD Form 1644, ENG Forms 4025 and 4026 Comment Forms Estimating Forms

25. Instructions for Completion of ENG Form 93 - Payment Estimate.

26. Sample handling protocol for low, medium and high concentration samples of hazardous wastes.

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**LIST OF ADDRESSES FOR SUBMITTALS HELEN KRAMER LANDFILL SITE,
SUPERFUND REMEDIAL ACTION DESIGN**

**Commander
US Army Engineer District, Kansas City
ATTN: MRKED-S (Mr. Arthur Collins)
700 Federal Building
601 East 12th Street
Kansas City, Missouri 64106**

**Commander
US Army Corps of Engineers
ATTN: DAEN-ECE-B
20 Massachusetts Avenue, Northwest
Washington, DC 20314-1000**

**Commander
US Army Engineer Division, Missouri River
ATTN: MRDED-L
420 South 18th Street
Omaha, Nebraska 68102-2586**

**Commander
US Army Engineer Division, Missouri River
ATTN: MRDED-TG
Post Office Box 103 Downtown Station
12565 West Center Road
Omaha, Nebraska 68101**

**Commander
US Army Engineer District, Philadelphia
ATTN: NAPED
Custom's House, 2d and Chestnut
Philadelphia, Pennsylvania 19106**

**Commander
US Army Engineer Division, North Atlantic
ATTN: NADCO-EP (Mr. Lusardi)
90 Church Street
New York, New York 10007**

**US Environmental Protection Agency
ATTN: Mr. Edward Putnam
26 Federal Plaza
New York, New York 10278**

NOTE: See Design Document Distribution Chart for submittal requirements.

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DESIGN DOCUMENT DISTRIBUTION HELEN KRAMER LANDFILL SITE,
SUPERFUND DESIGN PROJECT

	Pre-design	Preliminary P, S, & DA Est	Adv. Final P, S, & Est	Final P, S, & DA Est
MRKED-S	3	10 ^c 6	10 ^c 6	a 6 ^c 6 b
DAEN-ECE-B		6	6	
MRDED-TG	2	5	5	
MRDED-L	1	1	1	1
CONSTRUCTION DIVISION NADCO		2	2	2
CONSTRUCTION DISTRICT NAPED		2	2	2
EPA REGION II	10	10	10	10
TOTAL	16	36 6	36 6	21 6

- Note:
- a. Submit 5 copies of corrections to final design analysis
 - b. A-E should retain one record copy, also submit original tracings and specifications.
 - c. All estimates will be sent to MRKED-S for review and distribution.

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