Remedial Design - SOW

STATEMENT OF WORK
STOUGHTON CITY LANDFILL
STOUGHTON, WISCONSIN
REMEDIAL DESIGN PHASE
February 24, 1993
REVISION #2

I. Purpose

The purpose of this revised Statement of Work (SOW) is to provide the United States Environmental Protection Agency (U.S. EPA) with a completed design package for the implementation of the specified remedy for the Stoughton City Landfill site, Stoughton, Wisconsin. The reason for this revision is to address additional predesign work necessary for the completion of the design. The additional work is described under Task K. All portions of the remedy will be in accordance with the Record of Decision (ROD) for the site, which was signed on September 30, 1991.

II. Background

The Stoughton City Landfill site is located in the northeast portion of the city of Stoughton, approximately 13 miles southeast of Madison, in Dane County, Wisconsin. The original 40-acre parcel of land was purchased by the City of Stoughton (the City) in 1952. Fifteen acres of the original site were used for landfilling purposes. Due to land exchanges that occurred after 1982, only 27 of the original 40 acres are still owned by the City. None of the thirteen acres of land which were transferred during the land exchanges were used for landfilling.

The landfill operated from 1952 until it was officially closed in 1982. Between 1952 and 1969, the site was operated as an uncontrolled dump site. During this time, refuse was usually burned or covered by dirt. The site began operation as a state-licensed landfill in 1969. In 1977, the Wisconsin Department of Natural Resources (WDNR) required that the site be closed according to state regulations. Closure activities included construction of a trash transfer station, placement of cover material borrowed from the northwest portion of the site and from agricultural areas, application of topsoil, and seeding. From 1978 to 1982, only brick, rubble, and similar construction materials were accepted at the site while closure work was performed.

Common municipal waste and solid and liquid industrial wastes were disposed of at the Stoughton City Landfill site during its years of operation. Industrial sludge containing acetone, tetrahydrofuran, toluene, xylene, and other organic substances was disposed of at the site from 1954 until 1962. During this period, the liquid wastes were commonly poured over garbage and burned. It was also reported that some liquid wastes were poured down boreholes in the

west-central portion of the landfill that had been drilled as part of field testing of drilling equipment.

The site was placed on the National Priorities List (NPL) in June 1986. In March 1988, the Potentially Responsible Parties (PRPs), Uniroyal Plastics, Inc. and the City of Stoughton, entered into an Administrative Order on Consent (AOC) with U.S. EPA and WDNR for conducting a Remedial Investigation and Feasibility Study (RI/FS). RI field activities began at the site in March 1989. The majority of the RI was completed by September 1991. Based on work done to date, it has been determined that as a result of hazardous waste disposal at the landfill, various chemical contaminants have been leaching into the groundwater beneath the site and flowing towards the Yahara River located west of the site. The ROD, which was signed in September 1991, called for the following remedial action to protect human health and the environment:

* excavation and consolidation of saturated wastes from wetlands;

* design, construction, and operation and maintenance of a landfill cap meeting State requirements under applicable or relevant and appropriate law (NR 504.07, WAC);

* installation of fencing;

* establishment of institutional controls of future land use;

* long-term groundwater monitoring; and

* groundwater extraction and treatment, if deemed necessary by U.S. EPA.

The U.S. EPA will be conducting the remedial design (RD) at the site.

III. Objectives

The objectives of this SOW are to provide U.S. EPA with the following:

- A completed design package for the excavation and consolidation of saturated wastes;

- A completed design package for the construction, operation, and maintenance of a landfill cap meeting federal and State applicable or relevant and appropriate requirements (ARARs);

- A completed construction plan for installation of fencing around the site and a design for an access road onto the site;

- A completed design package for the construction, operation, and maintenance of the groundwater extraction, treatment, and discharge system; and

- A completed design package for the implementation of a groundwater monitoring program.

IV. Travel Requirements

It is estimated that 4 one-day trips to U.S. EPA's regional office in Chicago and 3 one-day trips to the WDNR's central office may be necessary for planning and consultation purposes. Another one-day trip to Chicago may be necessary to discuss work plan revisions. Two one-day trips to Stoughton, Wisconsin, may be necessary to discuss the remediation plan with city officials.

Additionally, 2 one-day trips to the site for conducting groundwater treatability studies are anticipated, and a one-day trip to the site for an initial visit, if determined to be necessary, may take place. Two two-day trips to the site may be necessary to collect information or samples needed to complete the RD tasks outlined below.

Ten to twelve additional multiple-day trips to the site may be necessary to perform the predesign work addressed in this SOW revision.

V. Tasks to be Performed

A. Work Plan

The contractor shall prepare a detailed work plan which provides U.S. EPA with a project description and an outline of the overall technical approach for the design of the remedial action at the site, as defined by this SOW revision. The work plan shall include a description of all tasks and an estimated budget and schedule for accomplishing the work. When completing the work plan, budget, and schedule, it should be assumed that groundwater treatment will be necessary and that Task G, Groundwater Remediation System Design, will have to be completed.

Budget estimates should specify LOE and costs by both task and professional level. The work plan shall document the responsibility and authority of all organizations and key personnel involved in the implementation of the work plan. The plan shall also include a description of the qualifications of key personnel directing the RD, including contractor personnel.

The contractor shall participate in a "kick-off" meeting, either in person or via telephone conference, to discuss this SOW. The

contractor shall travel to the site to perform an initial site visit, if necessary, to produce the work plan. Once the work plan has been submitted to U.S. EPA, the contractor may be required to attend a meeting with Agency representatives to discuss the work plan and any revisions that may be necessary.

No other tasks besides Tasks A, B, and C may be initiated prior to Contracting Official (CO) approval of the contractor's work plan, or as authorized in writing by the CO.

B. Initial Review of Documents

The contractor shall conduct an initial review of all documents determined to be necessary to perform the remedial design. These documents include, but are not limited to, the Stoughton City Landfill Remedial Investigation (RI) Report and Feasibility Study (FS) Report and the ROD for the Stoughton City Landfill site.

C. Health and Safety Plan

The contractor shall modify the health and safety plan developed for the RI/FS to address the activities to be performed at the site to implement the remedial design.

D. Project Management

The contractor shall perform project management of this work assignment. This includes, but is not limited to, day-to-day management, staffing and coordination of personnel, completion of monthly status reports, compliance with contract administration requirements, and coordinating with U.S. EPA.

The contractor shall prepare monthly status reports during the ongoing remedial design. The report contents shall include information regarding schedule status, as well as technical progress and financial management sections. Information that should be included in the technical and financial sections are listed below.

i. <u>Technical Progress</u>

a. Identification of site and activity;
b. Status of work at the site and comparison of actual dates versus dates proposed in the original schedule;
c. Percentage of project work completed;
d. Difficulties encountered during the reporting period;
e. Action(s) being taken to rectify the problem(s);
f. Activities planned for the following month;
g. Changes in personnel; and
h. Deliverables submitted

ii. Financial Management

a. Actual expenditures of dollars and LOE by task;
b. Comparison of actual dollars expended with amount originally proposed (with fee included);
c. Comparison of actual LOE with LOE originally targeted; and
d. Projection of expenditures of dollars and LOE needed to complete the project, including an explanation for any anticipated deviations from the original projections

E. Design of Fencing

The contractor shall prepare a design for permanent fencing around the site in order to restrict access. If it appears that waste consolidation and capping activities will interfere with installation of permanent fencing, the contractor will evaluate the need for, and, if necessary, make plans for, temporary fencing during these activities. The fencing design shall also include locked gates at the existing entrance to the site and at the access road entrance.

F. Waste Consolidation Plan/Landfill Cap Design/Access Road Design

The contractor shall prepare an excavation and consolidation plan for the saturated wastes located in wetland areas in the northeast and southeast portions of the site. The contractor shall also design a landfill cap, in accordance with federal and State ARARs and the ROD.

Prior to waste excavation, facilities and equipment for dewatering the saturated refuse shall be designed. The contractor shall design plans for relocating the dewatered waste to the top of the landfill. In addition, a Field Sampling Plan (FSP) shall be prepared to describe peripheral and at depth samples necessary to confirm that all waste and contaminated soils and sediments from the saturated areas have been relocated.

Designs for the landfill cap shall provide for cover of the original fill area and the newly-relocated waste. (Note: Areas from which relocated waste was removed will not be capped). The cap design shall meet all requirements contained in State of Wisconsin law NR 504.07, WAC, and shall include a passive gas collection system.

As part of the design of the waste consolidation and landfill cap, the contractor shall also design a temporary site access road for entering the site during construction. The access road shall be located so as to minimize disruption of the residential area located south of the site.

One possible location for the temporary access road that has been identified would be to enter from County Road N, located east of

the site. The majority of the area between County Road N and the site is occupied by wetlands. In evaluating the options for the location of the access road, the contractor shall identify those locations that would lead to the least adverse impacts on the wetlands. This evaluation should take into account not only the total acreage of wetlands that would be affected but also "natural value" factors and overall impact to the hydrology of the wetland complex. Examples of natural value factors are uniqueness of plant communities and variety of species present. Engineering and construction criteria should also be taken into account in assessing the relative value of possible road locations. The contractor shall recommend a location for the access road for approval by the EPA.

Design plans for closure of the access road after remedial activities are complete shall include plans for restoration of any wetland areas adversely impacted by the construction of the road.

The contractor shall submit the design documents for the waste consolidation, landfill cap, and access road in four parts: 30% completion (preliminary); 60% completion (intermediate); 95% completion (prefinal); and 100% completion (final).

The Preliminary Design submittal shall include or discuss, at a minimum, the following:

- Preliminary plans, drawings, and sketches, including design calculations;
- Results of treatability studies and additional field sampling;
- Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for the treatment train, and expected removal or treatment efficiencies for both the process and waste (concentration and volume);
- Proposed cleanup verification methods, including compliance with ARARs;
- Outline of required specifications;
- Proposed siting/locations of processes/construction activity;
- Expected long-term monitoring and operation requirements;
- Real estate, easement, and permit requirements;
- Preliminary construction schedule, including contracting strategy.

The Intermediate Design shall fully address all comments made to the preceding design submittal. The Intermediate Design submittal shall include those elements listed for the Preliminary Design, as well as, the following:

- Draft Performance Standard Verification Plan;
- Draft Construction Quality Assurance Plan;
- Draft QAPP/Draft Health and Safety Plan (HASP)/Draft Field Sampling Plan (FSP)

The Prefinal Design shall fully address all comments made to the preceding design submittal. The Final Design shall fully address all comments made to the Prefinal Design and shall include reproducible drawings and specifications suitable for bid advertisement. The Prefinal Design shall serve as the Final Design if U.S. EPA has no further comments and issues the notice to proceed.

The Prefinal and Final Design submittals shall include those elements listed for the Preliminary Design, as well as the following:

- Final Performance Standard Verification Plan;
- Final Construction Quality Assurance Plan;
- Final QAPP/Final HASP/Final FSP;
- Draft Operation and Maintenance Plan;
- Capital and Operation and Maintenance Cost Estimate. This cost estimate shall refine the FS cost estimate to reflect the detail presented in the Final Design;
- Final Project Schedule for the construction and implementation of the Remedial Action which identifies timing for initiation and completion of all critical path tasks. The final project schedule submitted as part of the Final Design shall include specific dates for completion of the project and major milestones.

G. Groundwater Remediation System Design

If groundwater monitoring results from additional RI/FS work being conducted by U.S. EPA indicate that treatment of groundwater is necessary, the CO shall require the contractor to perform groundwater treatability studies and subsequently design a groundwater remediation system. Water table drawdown in nearby wetlands that is produced by the groundwater pumping system shall

be calculated in order to assess the potential hydrogeologic effect on the wetland complex.

Within 5 days of CO notification to begin this task, the contractor shall submit an outline of and a schedule for the treatability studies to be performed. The outline and schedule for the treatability studies are subject to U.S. EPA review and approval.

Once the treatability studies are completed and all necessary data are obtained, the contractor shall summarize the findings from the studies in a report to be submitted to U.S. EPA. The submittal shall also include a recommendation for selection of the most cost-effective treatment method that will result in compliance with federal and State ARARs and will meet clean-up criteria, as set forth in the Stoughton City Landfill ROD.

After completion of the treatability studies and approval by U.S. EPA of the method of treatment, the contractor shall design a groundwater remediation system capable of extracting, treating, and discharging the contaminated water in accordance with federal and State ARARs. The design shall include a draft Operation and Maintenance (O&M) Manual, which can be modified once the groundwater remediation system has been constructed. In addition, a groundwater monitoring program shall be designed for the period following the cessation of treatment. The point at which the groundwater treatment ceases will be determined by U.S. EPA and will be based on compliance with federal and State ARARs. If results from the additional work being performed indicate that groundwater treatment is <u>not</u> necessary, the CO shall direct the contractor to design a groundwater monitoring program for the site.

The contractor shall submit the design documents for the groundwater remediation system in four parts--at 30%, 60%, 95%, and 100% completion. The submittals are to be prepared as described under Task F. One additional submittal, a Contingency Plan, shall be required. This Contingency Plan will briefly document steps to be taken in the event that a municipal or residential well in the area of the site is determined to be contaminated due to a release from the site.

Work under this task shall not be initiated until directed by the CO. Final selection of the method of groundwater remediation shall be made by U.S. EPA. The contractor should note that the RD work plan and associated cost estimates should be based on the assumption that groundwater treatment <u>will</u> be necessary.

H. Review of Non-Specific Deliverables

The U.S. EPA may receive additional deliverables from the State or PRPs that the contractor shall be requested to review and comment on which are not covered by a specific task. The contractor shall budget 60 hours of level of effort for such activities.

I. Meeting Participation

The contractor shall participate in site meetings, as directed by the U.S. EPA Work Assignment Manager (WAM). The contractor shall allocate 50 hours of LOE for meeting participation. Travel is covered under Section IV of this SOW.

J. Restoration of On-site Wetlands

The contractor shall backfill areas from which saturated waste was excavated with appropriate hydric soil so that the fill is approximately level with adjacent or nearby wetland area(s). These backfilled areas will be reseeded with hydrophytic, preferably indigenous plants.

K. Predesign Work

K1. Delineation of Wetlands

The contractor shall verify findings of the Preliminary Ecological Assessment completed by the U.S. EPA and gather other information regarding the wetland areas necessary for restoring the areas after construction activities are complete. The contractor shall prepare a short report summarizing the findings of the assessment. If possible, the U.S. EPA ecologist who co-authored the Preliminary Ecological Assessment of the site will accompany the contractors on field trips necessary for this task and will provide assistance as needed.

K2. Identification of Borrow Source Material

The contractor shall identify a source (or sources) of borrow materials for the landfill cap, and for backfilling areas from which wastes are removed. The contractor shall perform tests that are necessary to confirm the suitability of the materials for purposes of capping or filling.

K3. Hydrogeological Investigation

The contractor shall conduct additional hydrogeological investigative work necessary for completion of the Remedial Design. The investigative work shall include the following: 1) installation of extraction wells; 2) performance of up to two aquifer pumping tests; 3) installation of up to 6 monitoring wells (unless U.S. EPA approves the installation of more than six wells); 4) installation of 4 piezometers; 5) collection of one soil sample at each proposed well location for grain size and total organic carbon analyses; and 6) collection of groundwater samples for analysis of additional parameters. The contractor shall not initiate the work in this subtask until approval to do so is obtained from the CO.

K4. Preload Settlement Testing

The contractor shall perform preload settlement tests to collect information necessary for completion of the design of the landfill cap and the plan for waste relocation.

K5. Surveying

The contractor shall conduct surveying work to verify existing conditions at the site, locate property boundaries, and gather other information necessary for the preparation of base maps for the site. If information on deed restrictions for the property is not available from the Office of Regional Counsel at the U.S. EPA, the contractor shall conduct necessary research to obtain the information.

K6. Delineation of Extent of Landfill Cap

The contractor shall collect soil borings to verify the extent of the existing landfill.

VI. Deliverables

Deliverables required under this Work Assignment (WA) with the corresponding due dates are listed on the next page.

VI. Deliverables

Submission	Due Date
Draft RD Work Plan and HASP	December 4, 1992
Final RD Work Plan	14 days after CO approval of SOW Revision #2
Final HASP	30 days after CO approval of SOW Revision #2
30% of waste consolidation/ landfill cap (WC/LC) design	6 months after approval of WC/LC design work plan
60% of WC/LC design	2 months after receipt of Agency comments on 30% design documents
95% of WC/LC design	45 days after receipt of Agency comments on 60% design documents
100% of WC/LC	1 month after receipt of Agency comments on 95% design documents
Outline and schedule for groundwater treatability studies	Within 5 days of CO notification to begin task
Summary report of groundwater treatability studies	As agreed to in U.S. EPA-approved treatability study schedule
30% design of the groundwater extraction and treatment system (GWETS) and groundwater monitoring program (GWMP)	30 days after notice of selection of treatment method
60% design of GWETS and GWMP	3 months after receipt of Agency comments on 30% design documents
95% design of GWETS and GWMP	45 days after receipt of Agency comments on 60% design documents
Final design of GWETS and GWMP	1 month after the receipt of Agency comments on prefinal design
Progress reports	By the 20th of each month

VII. Schedule

Work is scheduled to begin by November 1992. It is projected that the design of the waste consolidation plan and the landfill cap (Task F), and the fencing installation plan (Task E), shall be completed by Spring 1994. The design of the groundwater treatment system (Task G) is projected to begin as soon as results from the additional RI/FS work are available and U.S. EPA has determined whether groundwater treatment is necessary. It is anticipated that the groundwater treatment system design shall be completed by Fall 1994.

VIII. Primary Contact

The WAM at U.S. EPA is Mary Tierney, who can be reached at (312) 886-4785.