LONG-TERM RESPONSE ACTION WORK PLAN

PENTA WOOD PRODUCTS SITE
Town of Daniels, Wisconsin

WA No. 101-RALR-05WE/Contract No. 68-W6-0025

July 21, 2000

Contents

SECTION 1

Introduction

This Work Plan defines the scope of activities, schedule, and budget for conducting 3 years of operation and maintenance (O&M) of the bioventing/groundwater treatment system installed at the Penta Wood Products Site (PWP) in Siren, Wisconsin. It is being submitted pursuant to the draft Statement of Work (SOW) for Long-Term Response Action (LTRA) dated June14, 2000, Work Assignment (WA) No. 101-RALR-05WE, and the Technical Direction Memorandum (TDM) #01 for WA #049-RARA-05WE, dated June 8, 2000. The work is being conducted in accordance with Contract No. 68-W6-0025. The LTRA activities identified in the SOW are:

- Project Planning and Support
- Update Site Specific Plans
- Procurement of Subcontract
- Sampling and Cleanup Validation
- Remedial Action Implementation (Subpool Activities)
- Project Performance (O&M)
- WA Closeout

Project Background

Refer to the approved Remedial Action (RA) Work Plan dated January 2000, under WA No. 049-RARA-05WE, Contract No. 68-W8-0040, for information on the project background and selected remedy.

LTRA Components

The primary components of the LTRA are:

- Operate and maintain the groundwater treatment facility and bioventing system.
- Sample and analyze the influent to and effluent from the groundwater treatment facility to monitor process performance and ensure compliance with discharge requirements.
- Measure groundwater levels in the groundwater monitoring wells to verify capture of the grossly-contaminated plume and exposure of the light non-aqueous phase layer (LNAPL) smear zone.
- Sample and analyze groundwater monitoring well samples to track the extent of contamination and monitor cleanup.
- Sample and analyze soil gas and soil samples to monitor oxygen uptake and contaminant reductions in soils resulting from bioventing system operation.
- Sample and analyze residential well samples to confirm contaminants do not extend to drinking water wells.

SECTION 2

Scope of Work and Task Descriptions

The following is the work breakdown structure for project execution. This work breakdown structure matches the structure defined in the SOW.

Task 1—Project Planning and Support (PP)

The project planning task includes activities related to managing the overall project. Efforts for work planning are not included because they were previously performed under the RA WA.

Subtask 1.2—Project Management

This subtask provides for the management of the LTRA activities and reporting activities. The anticipated period of performance for this WA is from September 30, 2000, through September 29, 2003, a total of 36 months.

Subtask 1.2.1—Monthly Project Management and Reporting

This subtask provides for the management of the RA oversight activities. Management consists of managing project activities; coordinating, scheduling, and monitoring project staff; tracking and updating budgets and schedules; and preparing the monthly technical status reports. Project management has been budgeted for 36 months of performance. A total of 9 LOE hours per month have been budgeted for project management activities and preparing the monthly status reports. The total LOE for project management activities is 324 hours.

Subtask 1.2.2—Team or Pool Subcontract Management

It is anticipated that five subcontracts will be managed during the first 3 years of the LTRA. The anticipated subcontracts will be for the following services:

- LNAPL disposal (i.e., Safety Kleen)
- Carbon and activated clay exchange and disposal
- Offsite laboratory analytical services
- Erosion control
- Drilling (collect subsurface soil samples)

The laboratory and the LNAPL disposal firm will be procured under the RA WA (WA NO. 49). The other three subcontractors will be procured under Task 4 of this WA.

This subtask includes the effort associated with management of the subcontracts after they are awarded. This effort includes directing the subcontractors, reviewing and approving invoices and any subcontract modifications, and monitoring the quality of work. An estimate of 12 hours per subcontract is assumed. The estimated LOE for this subtask is 60 hours.

Subtask 1.2.3—Meetings

As directed in the Statement of Work, CH2M HILL will participate in four progress meetings over the course of the WA, with each meeting assumed to take 4 hours. It is assumed two people will attend each meeting (alternating between the SM, lead engineer, and RTL).

Although it is assumed the meetings will be held at the site, time and expenses for travel are not included in this subtask as it is assumed the progress meetings will be scheduled concurrent with other site activities. The total estimated LOE for this subtask is 32 hours.

Subtask 1.2.4—Coordinate with Local Emergency Response Teams

Local emergency response authorities will be invited to the site for a tour and briefing. The estimated LOE for this subtask is 3 hours.

Task 3—Update Site Specific Plans (DU)

The purpose of this task is to update existing site specific plans that were prepared during the Remedial Design for use during the RA. The plans will be updated to reflect LTRA activities.

Subtask 3.1—Update Site Management Plan

This plan outlines site access, security, health and safety, contingency procedures, and management responsibilities. The estimated LOE to update and reproduce the Site Management Plan (SMP) is 4 hours. The updated SMP is due 10 calendar days after the effective date of the LTRA WA (i. e., if the effective date of the WA #101 is September 30, 2000, the SMP is due on October 9, 2000).

Subtask 3.2—Update Health and Safety Plan

Regular updates are required to address specific health and safety considerations for onsite tasks, and to add new personnel. The estimated LOE to update the activity list and personnel information, and reproduce the HASP is 6 hours. The updated HASP is due 14 days after the effective date of the LTRA WA.

Subtask 3.3—Update Sampling and Analysis Plan

The required elements of a Sampling and Analysis Plan (SAP) are included in the Quality Assurance Project Plan (QAPP), Field Sampling Plan (FSP), and Data Management Plan (DMP). For the ongoing PWP work these three plans have historically been combined into one report entitled the Sampling and Analysis Plan. Thus no LOE are estimated for this subtask as the components of the plan are tracked separately.

The three plans that make up the SAP are due 21 days after the effective date of the LTRA WA.

Subtask 3.4—Update Quality Assurance Project Plan

The existing QAPP will be updated in accordance with EPA QA/R-5 (latest draft or revision) and will reflect the LTRA tasks. The QAPP will describe the project objectives and organization, functional activities, and quality assurance/quality control (QA/QC) protocols that will be used to achieve the desired data quality objectives (DQOs). The DQOs will, at a minimum, reflect use of analytical methods for identifying contamination and addressing contamination consistent with the levels for RA objectives identified in the National Contingency Plan. The estimated LOE for this subtask is 20 hours.

Section 4.3 QAPP

Subtask 3.5—Update FSP - Field Sampling Plan

The FSP will be updated to reflect the LTRA sampling tasks. The FSP will include sampling objectives, sample locations and frequency, sampling equipment and procedures, sample handling

and analysis, and a breakdown of samples to be analyzed as well as the justification for those decisions. The FSP will be written so that a field team not familiar with the site would be able to gather the required samples and field information. The estimated LOE for this subtask is 20 hours.

Subtask 3.6—Update DMP

This plan will be updated and reproduced as needed to reflect LTRA tasks. The estimated total LOE for this subtask is 4 hours.

Subtask 3.7—Update Pollution Control and Mitigation Plan

The Pollution Control and Mitigation Plan will outline the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released offsite during the implementation of the LTRA. The existing Pollution Control and Mitigation Plan will be updated. Any erosion control measures that are needed after the RA has been implemented will be identified and implemented through the erosion control subcontractor. It is assumed air monitoring will not be required. The estimated LOE for this subtask is 5 hours.

The updated Pollution Control and Mitigation Plan is due 21 days after the effective date of the LTRA WA.

Subtask 3.8—Update Transportation and Disposal Plan

The existing Transportation and Disposal Plan will be updated to reflect the LTRA activities. The plan will outline how wastes that are generated at the site during the LTRA will be managed and disposed. The plan will include the procedures to be followed when wastes are transported offsite for disposal. The estimated LOE for this subtask is 10 hours.

The updated Transportation and Disposal Plan is due 21 days after the effective date of the LTRA WA.

Task 4—Procurement of Subcontract (PB)

The purpose of this task is to procure bids for three of the five needed subcontracts: the carbon disposal, the erosion control, and the drilling. TDM #01 to the RA WA (WA #49) authorized procurement of the LNAPL disposal contract and the laboratory contract under WA #49.

CH2M HILL intends to hire a local resident and train her as the system operator; thus plant operations will not be subcontracted.

Subtask 4.1—Pre-Bid Activities

It is assumed the value of each of the three subcontracts will be below the dollar value where advertising is warranted. It is assumed a scope of work, or technical specifications if warranted, will be developed for each subcontract and distributed to three to five firms in good standing with a request for a bid. It is assumed that an onsite bid meeting will not be needed for any of the subcontracts. Development, printing, and distribution of the subcontract documents for the three subcontracts is estimated at 20 hours each. The total estimated LOE for this subtask is 60 hours.

Subtask 4.2—Pre-Award Activities

The subtask includes bid evaluation and request for consent to award from USEPA, if required based on the contract value. It is assumed each of the three subcontracts to be procured under this WA will require 8 hours to evaluate bids, follow-up with bidders, and coordinate with USEPA. The total estimated LOE for this subtask is 24 hours.

Subtask 4.3—Post-Award Activities

This subtask includes the review of each of the successful bidders' insurance coverage, bond, schedule and submittals if appropriate, and issuance of a Notice to Proceed. The estimated LOE for this subtask is 6 hours.

Task 7—Sampling and Cleanup Validation (CV)

The purpose of this task is to perform sampling and analysis of water, soil gas, and soil at periodic times during the LTRA to verify the effectiveness of the treatment system. Sample analysis and data evaluation are included in this task. Sample frequency and type as provided in the SOW is summarized in Table 2-1. Additional detail on justification, sample locations, parameters, etc, has been presented in the Basis of Design Report (August 1999) and the SAP (November 1999) prepared under previous WAs. The SAP will be updated to reflect minor revisions that have been made.

TABLE 2-1
Scheduled LTRA Sampling Events

Sampling Event Type	Samples	Effort	Travel time	Air Travel
December 2000 Quarterly Sampling	5 mon. wells plus QC	2 people × 2 days × 12 hr/day	1 person × 12 hrs/trip	1 person
March 2001 Semi-Annual Sampling	19 mon. wells, 4 res wells plus QC	5 people × 5 days 12 hr/day	4 people × 12 hrs/trip	No
June 2001 Quarterly Sampling	5 mon. wells plus QC	2 people × 2 days × 12 hr/day	1 person × 12 hrs/trip	1 person
September 2001 Annual Sampling	19 mon. wells, 4 res wells plus QC, soil gas	5 people × 5.8 days × 12 hr/day	4 people × 12 hrs/trip	No
December 2001 Quarterly Sampling	5 mon. wells plus QC	2 people × 2 days × 12 hr/day	1 person × 12 hrs/trip	1 person
March 2002 Semi-Annual Sampling	5 mon. wells, 4 res wells plus QC	2 people × 2.3 days × 12 hr/day	1 person × 12 hrs/trip	1 person
June 2002 Quarterly Sampling	5 mon. wells plus QC	2 people × 2 days × 12 hr/day	1 person × 12 hrs/trip	1 person
September 2002 Annual Sampling	19 mon. wells, 4 res wells plus QC, soil gas	5 people × 5.8 days × 12 hr/day	4 people × 12 hrs/trip	No
December 2002 Quarterly Sampling	5 mon. wells plus QC	2 people × 2 days × 12 hr/day	1 person × 12 hrs/trip	1 person
March 2003 Semi-Annual Sampling	5 mon. wells, 4 res wells plus QC	2 people × 2.3 days × 12 hr/day	1 person × 12 hrs/trip	1 person
June 2003 Quarterly Sampling	5 mon. wells plus QC	2 people × 2 days × 12 hr/day	1 person × 12 hrs/trip	1 person

TABLE 2-1
Scheduled LTRA Sampling Events

Sampling Event Type	Samples	Effort	Travel time	Air Travel
September 2003 Annual Sampling	19 mon. wells, 4 res wells plus QC, soil gas, 18 soil samples	5 people × 6.6 days × 12 hr/day	4 people × 12 hrs/trip	No

Subtask 7.1—Mobilization/Demobilization

This subtask includes providing and mobilizing the necessary personnel, equipment, and sampling supplies for performance sampling and analyses, and demobilizing the equipment following completion of sampling activities. This subtask includes the lodging, meals, and travel costs for all personnel's travel associated with Task 7 sampling activities. Incorporated into Table 2-1 is assumed travel times and whether airfare is assumed.

A budget of $1,400 is assumed for health and safety equipment, supplies, soil and groundwater sampling, soil gas sampling equipment, and related sampling supplies over the 3-year operation period.

The estimated LOE for this subtask is 320 hours, which consists of 8 trips (12 hours/trip) for 1 person, and 4 trips (12 hours/trip) for 4 people. One extra trip of 12 hours is assumed for an erosion control event, and 20 hours are assumed for packing and unpacking of supplies. No travel costs are assumed for the local operator, who will participate in each sampling event.

Subtask 7.2—Operational Sampling and Monitoring

The following sampling activities will be performed:

- Groundwater sampling will be conducted quarterly, semi-annually, or annually according to the schedule presented in Table 2-1. The sampling will include groundwater elevation measurement. Estimated LOE is 1,360 hours.
- Soil gas sampling will be conducted annually from soil gas wells installed in the bioventing area. Estimated LOE is 288 hours, and assumes soil gas readings will be collected from 14 wells before system shutdown and then continually after shutdown for 48 hours.
- Soil sampling of vadose zone soils will be collected during the third year of the LTRA. Estimated LOE is 60 hours.

The estimated effort for these sampling activities is presented in Table 2-1. The activities have been scheduled concurrently for maximum efficiency. The total estimated LOE for these activities is 1,708 hours.

Additionally, system operational sampling will be required and will include:

- Influent/effluent sampling of the groundwater treatment system. It is assumed the surface water discharge permit to be granted by the Wisconsin Department of Natural Resources will require a minimum of weekly samples. Estimated LOE is 4 hours/week, 52 weeks a year for 3 years, for a total of 624 LOE.
- LNAPL Waste/Liquid Waste sampling required prior to disposal. Estimated LOE is 10 hours.
- Carbon and activated clay sampling required prior to changeout/disposal. Estimated LOE is 24 hours.

The total estimated LOE for Subtask 7.2 is 2,366 hours.

Subtask 7.3 Sample Analysis

Subtask 7.3.2—CLP Type Laboratory Sample Analysis

It is assumed a CLP-type offsite laboratory will analyze monitoring well and residential well water samples, influent and effluent plant samples, waste disposal samples, and soil samples. A detailed breakdown of estimated sample parameters and costs was provided in the RA work plan (August 1999), and the O&M cost spreadsheet dated May 19, 2000. The total estimated analytical cost is $208,875.

Subtask 7.4—Analytical Support and Data Validation

Collected samples will be preserved and shipped to the laboratory in accordance with the approved QAPP. CH2M HILL will coordinate with laboratory personnel to arrange for personnel to be available to accept samples. Project support will be provided from a chemist in the Milwaukee office. Upon receipt and a check for completeness, the analytical data will be forwarded to the USEPA for data validation. CH2M HILL will provide ongoing sample management (maintain data storage). The estimated LOE for this subtask is 96 hours, which equates to 8 hours for each of the 12 scheduled sampling events.

Subtask 7.5—Data Evaluation

This subtask includes the organization, evaluation, interpretation, and presentation of sampling data and other analytical data collected during the LTRA. A database will be designed and a presentation format established, which will be incorporated into the reports covered under Subtask 9.3.

It is assumed on average 10 hours of effort will be expended for each of the 12 sampling events. The estimated LOE for this subtask is 120 hours.

Task 8—RA Implementation (AI)

This subtask records the activities performed and costs incurred by subcontractors.

Subtask 8.1—LTRA Subcontract Cost

Estimated costs for the LTRA subcontracts are based on estimated quantities and unit costs presented during the Remedial Design Basis of Design Report and subsequent submitted spreadsheets (latest revision May 19, 2000) and are as follows:

- LNAPL disposal—$135,570
- Carbon and activated clay Change-out and Disposal—$145,080
- Erosion control—$27,000
- Drilling—$8,400

A budget of $15,000 was included for system equipment and parts that may require replacing, including but not limited to free product pumps, groundwater extraction pumps, bag filters, airline gauges, and filter regulators. It is assumed industrial ladders and a socket set will be required for the project.

The total estimated subcontract cost is $331,050. This does not include the laboratory subcontract cost, which is under Subtask 7.3.2.

Subtask 8.2—RA Reserve

CH2M HILL will monitor and track the reserve in relation to any approved change orders and notify the RPM of any changes. The reserve fund, which equals 15 percent over the subcontract price in the WA, is provided for the purpose of funding changes or subcontractor claims. According to the project SOW, no LOE hours and no cost for this subtask have been assumed.

Task 9—Project Performance (O&M) of the Bioventing/Groundwater Extraction System (PJ)

The purpose of this task is to perform the activities necessary to protect the integrity of the remedy and to evaluate system performance. This task begins immediately upon the WA effective date and ends at the end of the period of performance.

Subtask 9.1—O&M

Activities that will be performed to operate the bioventing/groundwater extraction system include:

- Review and update the O&M Manual, as necessary
- Provide all necessary training of the LTRA operations staff
- Update corrective action plans, if necessary
- Review records and reporting requirements
- Maintain records of scheduled and unscheduled O&M activities
- Review laboratory procedures
- Review process systems
- Review safety and emergency systems
- Review warranty information and files
- Maintain and operate the system in accordance with the approved O&M manual, performance and warranty criteria, standards, and permit requirements

It is assumed a local operator, hired and trained by CH2M HILL as a flex employee, will serve as the primary operator for the system, and on average work 2 days per week, 8 hours a day to operate and maintain the system. Sixteen hours per week for 52 weeks equals 832 LOE per year, or 2,496 LOE for the 3-year period of performance.

System operating costs were also included in this subtask, and consist of the following:

- Electricity—$107,000
- Utilities (phone, heat)—$10,000
- Snow Removal—$2,000

Subtask 9.2—System Performance

CH2M HILL will evaluate the system performance of the equipment and conduct necessary performance tests to document procedures and results. For this subtask it is assumed Bill Andrae, and on occasion the program analyst, will travel to the site and conduct regularly scheduled tests, or perform troubleshooting, as required. It is assumed Bill will make six performance test trips to the site over 3 years, with each trip averaging 20 hours, including travel, for a total of 120 LOE. An additional 80 LOE is budgeted for a systems analyst. The estimated total LOE for this subtask is 200 hours.

Subtask 9.3—Report Project Performance

The SOW requests monthly (during the first year of operation) and quarterly reports that summarize the operational activities conducted, identify any problems and the associated resolutions, and summarize sampling results. It is assumed the monthly reporting requirement will be incorporated into the monthly technical status report prepared under Task 1.2.1, and no LOE have been assumed under this subtask. For the quarterly reports that summarize project performance, 72 LOE have been estimated assuming 6 hours per report (6 hours for 4 quarters a year for 3 years, for a total of 72 hours). The quarterly reports are due to the USEPA 30 calendar days after the quarterly sampling events.

A technical memorandum will be prepared and submitted 60 days prior to the end of the period of performance (on July 30, 2003) that will summarize the system's overall performance and required O&M procedures. It is assumed minor revisions will be required based on USEPA comments, and a Final Technical Memorandum will be issued within 10 days of receipt of USEPA comments. The estimated LOE to prepare the draft and final technical memorandum is 50 hours.

The total estimated LOE for this subtask is 122 hours.

Task 11—WA Closeout (CO)

This task includes activities to closeout the WA in accordance with contract requirements. CH2M HILL will package and return documents to the USEPA. A WA Closeout Report (WACR) will be prepared that breaks down all LOE P-level hours and costs in accordance with the Work Breakdown Structure. The estimated LOE to conduct these activities is 20 hours.

SECTION 3

Project Management

Project Organization

The WA for the PWP site will be managed out of CH2M HILL's Milwaukee office. Technical personnel used on this WA will also be from the Milwaukee office; however, specialized technical expertise will be accessed as needed. Gina Bayer will serve as the SM and Bill Andrae will serve as the ASM. They will work directly with the USEPA Region V WAM, and will have primary responsibility for execution of this WA.

The project organization and key personnel are similar to the project team for the RA. Please refer to the RA Work Plan for resumes and an organizational chart. Phil Smith will serve as the Review Team Leader. Design engineers and hydrogeologists who performed the remedial design and supported the RA will remain on the project team. Bill Andrae is the treatment facility engineer. Jeff Meerdink is the earthworks engineer. Dan Plomb is the project hydrogeologist. Matt Kluge is the Contract Administrator.

Chris Liethen, who served as the Construction Manager during the RA, will remain on the project team. It is CH2M HILL's intent to hire and train local resident Mary Wicklund to serve as the part-time operator at the site. The intent is to bring Mary in during the last month of the RA to observe the plumbing and plant start-up process.

SECTION 4

Schedule

It is anticipated this WA will commence September 30, 2000, and end on September 29, 2003. The system should be in continuous operation, with occasional shutdowns for maintenance and during soil gas sampling. The scheduled quarterly, semi-annual, and annual sampling events are shown on Table 2-1. Due dates for plan updates and scheduled reports are specified within the applicable subtasks.

SECTION 5

Budget

The estimated costs to complete the LTRA tasks described above are shown in the project financial information package.