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USACE CONTRACT NO. DACW33-94-D-0002
TASK ORDER NO. 024
TOTAL ENVIRONMENTAL RESTORATION CONTRACT

REVISED WORK PLAN
FOR
EARLY ACTION ACTIVITIES
OPERABLE UNIT #1
NEW BEDFORD HARBOR SUPERFUND SITE
New Bedford, Massachusetts

January 2001

Prepared for

U.S. Army Corps of Engineers
New England District
Concord, Massachusetts

2000-024-0019
1/4/01

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Prepared by

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Revision	Date	Prepared By	Approved By	Pages Affected
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LIST OF ACRONYMS AND ABBREVIATIONS

AHA	Activity Hazard Analysis
BGS	Below Ground Surface
CDF	Confined Disposal Facility
CQCP	Construction Quality Control Plan
DDA	Debris Disposal Area
HTRW	Hazardous, Toxic, Radioactive Waste
LF	Linear Feet
MHHW	Mean Higher High Water
MHW	Mean High Water
MTL	Mean Tide Level
MLW	Mean Low Water
NBRO	New Bedford Resident Office
OSHA	Occupational Safety and Health Administration
PCB	Poly-Chlorinated Biphenyls
RFP	Request For Proposal
SSHP	Site Specific Safety and Health Plan
NE TERC	New England Total Environmental Restoration Contract
TTSP	Transportation and Temporary Storage Plan
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
RA WBS	Remedial Action Work Breakdown Structure

1.0 GENERAL INFORMATION

Foster Wheeler Environmental Corporation (Foster Wheeler) has prepared this Work Plan for the Early Action Activities under the U.S. Army Corps of Engineers (USACE) Total Environmental Restoration Contract (TERC) No. DACW33-94-D-0002. This Work Plan and associated Project Schedule and Cost Estimate are based on the scope of work as outlined in RFP No. 48 under Task Order No.17, dated 05/24/00; additional guidance contained in a letter from the U.S. Environmental Protection Agency (USEPA) dated March 24, 2000 with attached drawings; discussion during the site meetings held on March 27, 2000, and November 01, 2000; and additional clarification during project meetings and conference calls. The scope of work is the remedial excavation and disposal of approximately 2,300 cubic yards of polychlorinated biphenyl (PCB) contaminated soils from the shoreline of the upper New Bedford Harbor, and the installation of approximately 1,680 linear feet of chain-link fence.

This Work Plan and Cost Estimate represents a revision to the Work Plan and Cost Estimate previously submitted in May 2000. This revised Work Plan and Cost Estimate includes a dramatically increased scope of work as a result of findings from additional field sediment sampling. The attached Cost Estimate represents the total cost of all Early Action Activities.

This Work Plan is divided into three sections. Section 1.0 provides an introduction and overview of the project including a brief description of the project's major work elements, and assumptions that affect development of this Work Plan. Section 2.0 is a description of the approach to work using the Hazardous, Toxic, Radioactive Waste (HTRW) Series 33 Code of Accounts for Remedial Action. The overall management plan for staffing, project execution, project scheduling, and cost control is discussed in Section 3.0. The Project Schedule and Cost Estimate are discussed in Sections 4.0. This Work Plan is intended to be a general discussion of the work to be conducted as a basis for developing the project schedule and cost proposal. Foster Wheeler intends to perform the majority of the work described herein. This document and the accompanying Project Schedule and Cost Estimate represent Foster Wheeler's approach for performing the scope of work.

1.1 Site Description

The New Bedford Harbor Superfund Site located in Bristol County, extends from the shallow northern reaches of the Acushnet River estuary south through the commercial port of New Bedford Harbor and adjacent areas of Buzzards Bay. The sediments in the harbor are contaminated with high concentrations of many pollutants, notably PCBs and heavy metals, from the industrial and urban development surrounding the harbor. The site is divided into three areas – Upper, Lower, and Outer Harbor. The areas addressed in this Work Plan are located within the Upper Harbor, which extends from areas slightly north of the Wood Street Bridge south to the Coggeshall Street Bridge. Specifically, the work will be performed north of Wood Street along the west and east shoreline of the Acushnet River, and along Belleville Avenue from the Sawyer Street site to the playground located on Coffin Avenue.

1.2 Background Information

In September 1998, after years of study, public debate, and consensus building, USEPA selected a cleanup remedy for the entire Upper and Lower Harbor areas, also known as Operable Unit #1, as a solution to the PCB contamination in and around New Bedford Harbor. This remedy involves the dredging of about 450,000 cubic yards of PCB contaminated sediment into Confined Disposal Facilities (CDF) along the harbor shoreline. The CDF's will be used to permanently isolate the sediments from the public and marine environment.

Foster Wheeler carried out a sediment sampling program during the summer of 1999. This sampling program concentrated on the intertidal areas along the Acushnet River. Results of this program showed elevated levels of PCB's in the sediments and soils near a few residential areas. The USEPA in their April 24, 2000 letter identified areas which needed additional sampling and some areas that will require fencing or excavation to restrict access to the contaminated sediment. Additional sampling events performed by Foster Wheeler in May, June and September 2000 were used to further delineate areas requiring excavation.

1.3 Summary of Scope of Work

The following provides an overview of the work included for the Early Action Activities.

1.3.1 Preparation of Plans

In addition to this Work Plan, Cost Estimate and Project Schedule, Foster Wheeler will prepare addendums to the existing Sampling and Analysis Plan (SAP), Site Safety and Health Plan (SSHP), Transportation and Temporary Storage Plan (TTSP), and Construction Quality Control Plan (CQCP).

1.3.2 Fence Installation

Foster Wheeler will install chain-link fence at two locations. The fence locations covered under this Scope of Work will be north of Wood Street along the west shoreline of the Acushnet River and along Belleville Avenue from the Sawyer Street site to the playground located on Coffin Avenue. The installation of fence will temporarily isolate the public from shoreline areas that have been identified to show risk to human health, and will be maintained until the final remediation of the upper harbor is completed.

1.3.3 Wetland Excavation/Restoration

Foster Wheeler will excavate soils along the upper harbor shoreline north of Wood Street on the east shoreline of the Acushnet River in the vicinity of the existing small hinged dock. This area shall be referred to hereinafter as the 'Dock Area'. Foster Wheeler will prepare plans and specifications for the excavation and restoration of the Dock Area as part of this Work Plan.

1.3.4 Sawyer Street Debris Disposal Area (DDA)

Foster Wheeler will maintain an interim storage facility for PCB contaminated soils excavated from the Dock Area, to be located at the Sawyer Street DDA. A quarterly groundwater monitoring program shall be implemented to monitor leachate migration, if any, from the DDA site.

1.4 Assumptions

This Work Plan, cost estimate, and project schedule were developed as a guide to complete Early Action Activities. The following key assumptions were used in developing the Work Plan, Project Cost Estimate and Project Schedule.

- Work will be performed in accordance with the Plans and Drawings prepared by Foster Wheeler included as part of this Work Plan.

- Site preparation work will start in January of 2001. Construction operations will be conducted five days per week (Monday through Friday) between the hours of 7 am and 4:30 p.m. A delay of one day per week is included due to weather delays during winter operations.
- It is assumed that only excavation activity at the Dock Area will require equipment decontamination. Equipment will perform the excavation work with only the buckets of required equipment contacting contaminated material whenever possible. Buckets will be wrapped in polyethylene sheeting and taken to the existing Sawyer Street facility for decontamination.
- Chemical analysis will not be required for off-site borrow material. A letter will be required from the owner of the borrow pit. The letter will certify that the borrow material is soil which will be dug from its natural location. The letter will also include the name of the borrow pit owner and operator and the address of the borrow pit. Foster Wheeler and USACE site personnel will also visit and inspect the borrow pit prior to accepting any material.

2.0 WORK APPROACH AND TASK SPECIFIC PLAN

2.1 HTRW Code of Accounts (Series 33)

This section presents a detailed list of specific tasks to be included in the Early Action Activities. Foster Wheeler has developed a Remedial Action Work Breakdown Structure (RA WBS) for the activities covered under this Work Plan based on the HTRW Series 33 Code of Accounts. This section provides a detailed presentation of the work to be performed, organized according to the WBS and will be used to segregate cost associated with individual Tasks.

2.1.1 Task 01 – Mobilization And Preparatory Work

2.1.1.1 Subtask 01.01 – Mobilization of Construction Equipment and Facilities

Foster Wheeler will mobilize all labor and equipment to complete all work associated with the excavation/restoration portion of the work along the shoreline at the Dock Area, and disposal of the excavated material at the Sawyer Street DDA

2.1.1.2 Subtask 01.03 – Submittals/Implementation Plans

Submittals will be transmitted to USACE in accordance with the Project Quality Control Plan. Additional detail has been provided below for the planning documents that will be amended prior to work.

2.1.1.2.1 Activity 01.03.08 – Site Safety and Health Plan (SSHP)

Foster Wheeler will submit an addendum to the existing project SSHP. A complete Activity Hazard Analysis (AHA) will be developed as required in the Project SSHP prior to the start of work.

2.1.1.2.2 Activity 01.03.14 – Construction Quality Control Plan (CQCP)

Foster Wheeler will submit an addendum to the existing project CQCP for all work covered under this Work Plan.

2.1.1.2.3 Activity 01.03.15 – Transportation and Temporary Storage Plan (TTSP)

Foster Wheeler will submit an addendum to the existing project TTSP for the work to be performed at the Dock Area. This addendum will cover the transportation and storage of the excavated material that will be moved from the Dock Area to the Sawyer Street DDA.

2.1.1.3 Subtask 01.04 – Setup/Construct Temporary Facilities

2.1.1.3.1 Activity 01.04.04 – Decontamination Facilities for Personnel

Foster Wheeler will set up and operate temporary decontamination facilities for personnel who may come into contact with contaminated material during the course of the work. Typically, these facilities will consist of polyethylene sheeting, washtubs, drums, etc.

2.1.1.3.2 Activity 01.04.05 – Decontamination Facilities for Equipment/Vehicles

Foster Wheeler will utilize the existing Sawyer Street decontamination facility for equipment and vehicles that may come into contact with contaminated material during the course of the work. Prior to demobilizing equipment from the work area to the Sawyer Street facility, equipment will be gross decontaminated on-site, and all effected areas of the equipment will be wrapped in polyethylene sheeting. Decontamination will occur on temporary decontamination pads constructed on pressure treated timber over polyethylene sheeting. Pad construction requires pressure treated mats approximately 4' x 20' to be laid down in an 8" deep rectangular trench. Mats shall be spaced wide enough to accommodate the intended equipment. Approximately 30 mil of polyethylene sheeting is stretched across the bottom of the trench and the timber mats are placed on top of the sheeting for the trucks to drive on. Decontamination water will be transferred from the decontamination pad to 55-gallon drums and transported to the Sawyer Street Site.

2.1.1.3.3 Activity 01.04.10 – Toilets

Foster Wheeler will set up temporary sanitary facilities at the Dock Area for use by personnel. It is assumed that portable toilets will be used and that sewer connections will not be required. The quantity of facilities will be determined in accordance with the USACE Health and Safety Manual (EM385-1-1) and OSHA Regulations.

2.1.1.3.4 Activity 01.04.24 – Security Fencing

Foster Wheeler will install temporary security fencing along the north perimeter of the Dock Area work site. Approximately 400 Linear Feet of fencing will be installed to secure the site. Access gates will be located at the two temporary haul road locations to allow entry by project personnel and equipment. Fencing will not be installed along the south (river) side of the work area as shown on Sheet C-1 in Appendix A. Fencing will consist of 6 foot high chain-link fence in accordance with the Temporary Fence Specification in Appendix C. Signs shall be placed on the security fence in several visible locations that shall read "DO NOT ENTER AUTHORIZED PERSONNEL ONLY", "HARD HAT AREA", "CAUTION OPEN EXCAVATIONS".

2.1.1.3.5 Activity 01.04.25 – Roads and Parking

Foster Wheeler will install temporary haul roads and staging areas prior to all site work activities at the Dock Area. Access to the Dock Area will be provided through improvements to an existing trail and construction of new road. Approximately 500 LF of gravel haul road and 200 ft^2 of staging area shall be provided. Haul road shall be constructed of gravel material 6 inches thick and 12 ft wide in accordance with the detail on Sheet C-2 in Appendix A. Gravel material shall be placed for staging areas 6 inches thick as needed. Timber mats will be used to construct equipment access within wetland and excavation boundaries. Geotextile fabric (10 oz. non-woven) shall be placed beneath roads in wet areas to stabilize the road bed in accordance with the detail on Sheet C-1 in Appendix A. Heavy equipment and vehicles shall remain on temporary roads during all site activities.

- Gravel

  Material for the construction of Gravel shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings and deleterious materials. The material shall conform to the requirements of Section M1.03.1 for Processed Gravel of the State

Specifications (1988; Standard Specifications for Highways and Bridges), and shall be graded within the following limits:

Sieve Designation	Percent Passing
3 in.	100
1-½ in.	70-100
¼ in.	50-85
No.4	30-60
No.200	0-10

2.1.1.3.6 Activity 01.04.30 – Erosion Control

The following portion of the Work Plan presents the proposed Best Management Practices (BMPs) to control erosion and sedimentation and manage stormwater during the remediation of the Dock Area. This Erosion and Sediment Control and Stormwater Management Plan has been prepared using field observations of the site conducted by Foster Wheeler in the Fall 2000.

Structural Soil Erosion And Sediment Control Measures

The following is a summary of temporary soil erosion and sediment control measures that are supplemental to the proposed measures presented on Sheet C-1 in Appendix A. All proposed soil erosion and sedimentation control measures shall be maintained in accordance with the Massachusetts Stormwater Management and Erosion and Sedimentation Control Handbook.

- Temporary Tracking Control Pads

  A stabilized pad of crushed stone will be installed at points where construction vehicle traffic will be entering or leaving the site (unpaved) onto or from a public roadway to reduce the tracking or flowing of sediment onto public rights-of-way. The tracking control pad will be located at the entrance to the site from the driveway on Lot 5. The tracking control pad will be constructed in accordance with the detail on Sheet C-1 in Appendix A. Locations of temporary access roads may be altered from those shown on the drawings, and will be determined and documented by Foster Wheeler in the field.

- Silt Fence & Hay Bales with Silt Fence

  Silt fence with hay bale filter will be installed as shown, and in accordance with the detail on Sheet C-1 in Appendix A. Silt fence with hay bale filter will be required at all wetland areas, unless standing water is encountered, where silt fence without hay bale filter will be used. Silt fence should not be used where the entire fence may be submerged.

- Turbidity Barrier

  Turbidity barrier will be installed as shown, and in accordance with the detail on Sheet C-1 in Appendix A. Turbidity barrier will be required at all wetland areas where standing water is encountered.

Non-Structural Soil Erosion And Sediment Control Measures

The following is a summary of non-structural temporary, and permanent soil erosion and sediment control measures that are supplemental to the proposed measures presented herein.

Construction activities shall be scheduled and performed in a manner that minimizes the area and duration of exposed soils. All exposed areas where construction activities are complete or have been temporarily suspended shall be stabilized within five days of the last activity in the area. This will be done by restoring the area to rough interim grades and applying the appropriate erosion control matting and/or structures. Restoration to final grade and application of herbaceous vegetative cover will occur after spring thaw as field conditions dictate.

Permanent herbaceous vegetative cover (to include top soiling, mulching, seeding, and fertilizing) shall be established and maintained on exposed soils at the locations indicated in the Site Restoration Plan in Appendix B.

Protection of Wetlands

Conditions that relate to erosion, sediment control, and stormwater management within wetland areas, include but are not limited to the following project specific conditions:

- Siltation/erosion/turbidity controls shall be in place prior to construction, shall be maintained during construction, and shall remain until the area is stabilized.
- All exposed areas, where construction activities are complete or have been temporarily suspended, shall be stabilized. The stabilization technique utilized will partially depend on the time of year that the construction activity was complete. Stabilization options include seeding and mulching, mulching with tack, netting, and/or pinning on slopes steeper than 3:1, or by utilization of vegetative mats. Regardless of chosen technique, stabilization will be initiated within three days of the last activity in an area.
- There shall be no soil materials stockpiled in proximity to designated wetland areas that could cause erosion into the wetland.
- The Project Superintendent and Site Quality Control Manager shall oversee installation of erosion controls and periodically verify that the controls are properly maintained during construction.

Proposed Soil Erosion And Sediment Control Monitoring

Periodic and regular observation of the proposed soil erosion and sediment control measures described herein will be performed to monitor compliance with the approved plan and assess the effectiveness and adequacy of their operation. As necessary, deficiencies, corrective actions, and recommended modifications to the plan (to address changing operations or inadequate erosion and sediment control and stormwater management measures) will also be identified. The following monitoring checklist (Table 2-1) will be utilized to perform these services.

Table 2-1
Erosion/Sediment and Stormwater Management Plan
Control Monitoring Schedule

Items	Description	Frequency
Silt Fence/Hay Bales	Verify that items are placed in accordance with standard details and at locations indicated. Report condition and stability of materials. When sediment reaches approximately one-half of the height of the barrier, recommend removal of sediment.	Monitored by Foster Wheeler weekly, or after storm event of more than 0.5 inches, or as directed
Tracking Control Pads	Verify measure is preventing tracking or flowing of sediment onto public right-of-way and/or verify material that is tracked on to public way is removed and cleaned appropriately.	Same as above
Temporary Erosion control matting	Verify areas not vegetated for more than five days be temporarily stabilized. Verify that temporary stabilization is performed in accordance with specifications. Report any damage from traffic and/or erosion.	Same as above
Permanent Seed/Mulch	Verify that restoration of growth is done in accordance with specifications. Report any damage from traffic and/or erosion.	Same as above
Turbidity Barrier	Verify that items are placed in accordance with standard details and at locations indicated. Report condition and stability of materials.	Same as above

Note: Monitoring services to be performed by Foster Wheeler personnel in accordance with Erosion And Sediment Control Checklist. Foster Wheeler shall review soil erosion and sediment control measures on a daily basis while the site is active. Soil erosion and sediment control monitoring will be conducted on a weekly basis during the temporary winter shut-down of the site. If any deficiencies are observed, the problem will be corrected as needed. Daily monitoring will resume upon remobilization for planting in the spring of 2001.

2.1.2 Task 02 – Monitoring, Sampling, Testing and Analysis

2.1.2.1 Subtask 02.03 – Air Monitoring and Sampling

2.1.2.1.1 Activity 02.03.02 Non-real time

Air sampling for these Early Action Activities shall be conducted in accordance with the existing Project Sampling and Analysis Plan (SAP), and as specified herein. Note that five weeks of baseline sampling from station 28 was conducted during September/October 2000 under TO#24. Sampling will be conducted beginning with the start of construction and continue during construction activities (an approximate 10-week period, scheduled to begin on January 22, 2000). Sampling will be conducted at ~~3~~ 2 locations (28/D, 29 and 30) for the Early Action Remedial Activities. Location 28 will include a

2-1-01

duplicate station (28D) for field duplicate and government QA sample collection. Three field samples will collected during each sampling event. In addition, field duplicates and QA samples will be collected at a frequency of approximately every 10 samples (or approximately every third sampling event). A blank will accompany each laboratory shipment. All samples including the blanks will be analyzed for Total Homologues.

Early Action ambient air sampling will be conducted at the following frequency:

- Starting with the excavation activities (beginning approximately January 22, 2001), sampling will be performed every other work day for the first 2 weeks. These samples will be analyzed on a 3-day turn around time.

- After the first two weeks of excavation activity, sampling will be conducted once a week until construction is complete (approximately 8 weeks). These samples will be analyzed on a 2-week turn around time.

- The samples from sampler 28D collected during the first sampling event and every third event thereafter will be sent to the designated government QA laboratory for independent analysis. Duplicate samples will also be collected during the second event and every third event thereafter This will result in three or four samples, plus a blank to be analyzed by the contract laboratory for each event.

Based on this sampling schedule, 13 sampling events (40 samples, 4 duplicates and 13 blanks) will be performed during the Early Action Remedial Activities. An estimated 4 QA samples and associated blanks will be shipped to the QA laboratory. The total number of samples to be sent to the primary laboratory is 57.

2.1.2.2 Subtask 02.05 – Groundwater Monitoring and Sampling

Groundwater samples will be collected from the six existing monitoring wells located around the perimeter of Cell #1 (MW1, and MW3-7). Samples will be collected in accordance with the Project SAP, using EPA's low flow pump sampling SOP, modified to use peristaltic pumps. Four quarters of groundwater sampling are scheduled, the first once excavated material is place in the DDA (January 2001) and the other three, quarterly thereafter. A total of six samples, one trip blank (VOCs only), one field blank, one duplicate, and one MS/MSD pair will be collected during each quarter for a total of 10 samples (11 VOCs) for each of the four quarters. Samples will be collected and analyzed for PCB homologue groups, VOCs, SVOCs, and TAL metals. Laboratory data will be reviewed for acceptability relative to QC objectives and will be reported in tabular format on a quarterly basis.

The costs associated to collect the sample will be covered under Task Order 24 General Management. Costs to raise the wells located inside the DDA are included under this task.

2.1.3 Task 03 – Site Work

Prior to the start of any site work, a survey of site features will be completed. In addition to the survey, pre-construction photos and video documentation will be completed.

2.1.3.1 Subtask 03.02 – Clearing and Grubbing

- Dock Area

  Clearing of trees and brush will be conducted in the areas of proposed haul roads, staging area and fence line. All cleared material that has not made contact with contaminated soils will be disposed of off-site at an approved facility. Stumps and material contacting contaminated soils that are removed from this area will be transported to the Sawyer Street site for disposal into the Debris Disposal Area (DDA).

- Wood Street

  Clearing of trees and brush will be conducted in the areas of the proposed fence alignment. Generally, clearing will start at the Wood Street access and proceed to the north along the shoreline. The trees at the start of the clearing will be removed from the slope to allow the fence to be installed. Tree and brush cover becomes thicker in the flatter areas to the north. Dense brush and large trees cover the area from the CSO outfall to the lumberyard. All cleared material that has not made contact with contaminated soils will be disposed of off-site at an approved facility. Stumps and material in contact with contaminated soils removed from this area will be transported to the Sawyer Street site for disposal into the Debris Disposal Area (DDA).

- Belleville Avenue

  Clearing of small brush will be conducted in the areas of the proposed fence alignment. This area will be graded to remove large debris both above and below ground surface. All wood and brush removed from the area along the shoreline will be transported back to the Sawyer Street site, chipped and placed into the DDA.

2.1.3.2 Subtask 03.03 – Earthwork

2.1.3.2.1 Activity 03.03.07 – Grading

This activity will include the labor and equipment to clear a path along the fence alignment at Belleville Avenue. A D-5 size track dozer will be used to complete this portion of the work. Any material that is removed from this operation will be graded and left on the Belleville Avenue site.

2.1.3.2.2 Activity 03.03.90 – Dock Relocation

Under this activity will be the cost of equipment and labor to dismantle and move the existing hinged dock located at the Dock Area. The main platform of the dock shall be stored on-site for re-use. The floating hinged ramp assembly from the shore to the main platform of the dock shall be demolished and disposed of at the Sawyer Street site. A new ramp assembly shall be constructed to replicate the existing ramp.

2.1.3.3 Subtask 03.05 – Fencing

This subtask includes labor and materials associated with the installation of chain link fence at the two locations described in this Work Plan. Foster Wheeler's fencing subcontractor will perform these activities. All fencing will be 6-foot high chain link fence with top and bottom tension wires. Access

gates will be 4-foot personnel gates located to allow entry by project personnel and equipment. Line poles will be set in concrete. All fencing for this Subtask shall be in accordance with the chain-link fence specification in Appendix C.

- Wood Street

  Approximately 701 feet of fence will be installed in this area. The fence will be installed along the shoreline at the bottom of the natural slope. The fence alignment will be determined in the field by Foster Wheeler personnel and approved by the USACE NBRO personnel. Holes for posts will be excavated by hand with the excavated material remaining inside of the fenced area. Concrete for the posts will also be mixed and placed by hand. Access to private property will be required for the purpose of installing the fence fabric.

- Belleville Avenue

  Approximately 970 feet of fence will be installed at this location beginning at the northwest corner of the Sawyer Street site, and continued until reaching the existing fence south of the park area. The fence alignment will be determined in the field by Foster Wheeler personnel and approved by the USACE NBRO personnel. Access is available in this area for trucks and equipment.

2.1.4 Task 08 – Solids Collection and Containment

2.1.4.1 Subtask 08.01 – Contaminated Soil Collection

2.1.4.1.1 Activity 08.01.02 – Excavation

This Activity includes costs of equipment and labor for the excavation of contaminated soils at the Dock Area. Removal action will take place at two locations. These excavation areas are referred to herein as EA-1 (Upper Wetland) and EA-2 (Lower Wetland). Foster Wheeler will excavate a total of approximately 2300 cubic yards of material. This work shall be performed in accordance with the Site Excavation Plan, Sheet C-1, in Appendix A. Trucks will be decontaminated on-site before leaving the Dock Area as needed.

- EA-1 (Upper Wetland)

  The Upper Wetland excavation area occupies approximately 19,500 square feet. This area shall be excavated to a relative depth of two (2) feet Below Ground Surface (BGS). Access to EA-1 will be provided by the construction of temporary haul roads described in Section 2.2.1.3.5. A Hyundai 290 LC-3 long reach excavator, or equivalent, will be used wherever feasible to remove the contaminated soils to within one foot of the existing rubble revetment/retaining wall that traces the shoreline. A CAT 312-size excavator, or equivalent, will be used at all other locations. Laborers will hand dig the remaining soil so that no damage occurs to the existing revetment/retaining wall. During excavation, trucks will await loading from temporary haul roads. The excavated material will be directly loaded into the trucks for transportation to the DDA. Plastic will be draped over the side of the truck to minimize the decontamination required.

hand digging

- EA-2 (Lower Wetland)

  The Lower Wetland excavation area occupies approximately 4,300 square feet. This area shall be excavated to a relative depth of three (3) feet Below Ground Surface (BGS). Access to EA-2 will be provided by the construction of temporary haul roads described in Section 2.2.1.3.5. A CAT 312-size excavator, or equivalent, will be used to remove the contaminated soils to within one foot of the existing rubble revetment/retaining wall that traces the shoreline. Laborers will hand dig the remaining soil so that no damage occurs to the existing revetment/retaining wall. During excavation, trucks will await loading from temporary haul roads. The excavated material will be directly loaded into the trucks for transportation to the DDA. Plastic will be draped over the side of the truck to minimize the decontamination required. This work shall be in accordance with the Site Excavation Plan, Sheet C-1, in Appendix A.

2.1.4.1.2 Activity 08.01.03 – Hauling

This operation will involve the use of 10-wheel trucks with liners, sealed gates and covers. All trucks will have current licenses and permits to transport hazardous waste. All loads will be manifested from the excavation site to the Sawyer Street site. Material will be placed into the DDA. If needed, decontamination of trucks will be performed before leaving the Sawyer Street facility.

2.1.4.2 Subtask 08.05 – Capping of Contaminated Area/Waste Pile

This subtask includes all labor, equipment and materials to prepare the DDA for disposal of contaminated soils from the Dock Area. This work shall be in accordance with the requirements outlined in 40 CFR 761.65(c)(9)(iv), and additional guidance in the E-mail titled, "Use of the DDA as a Storage Area for TOSCA Remediation Waste" from Maurice Beaudoin, USACE, dated December 18, 2000.

Generally, the work shall involve the temporary placement of contaminated soils excavated from the Dock Area into the DDA. Once construction of CDF C is completed, the material placed in the DDA for temporary storage will be excavated and placed in CDF C. A geotextile will be placed on the existing surface of the DDA as a marker layer. The base of the DDA shall be graded to a sump. A geotextile will be placed on the existing surface of the DDA as a marker layer. The sump shall be constructed such that leachate may be collected, or pumped to Cell 1 as needed. No other base preparation shall be required at the DDA. Soils placed into the DDA shall be graded such that all runoff is contained within the DDA. The need for a cover at the DDA after soil material has been placed shall be evaluated following completion of disposal activities. A CAT D-5 type dozer, or equivalent, shall be used to handle material as it is brought to the DDA for disposal.

Assume either water cover or mud

2.1.5 Task 20 – Site Restoration

2.1.5.1 Subtask 20.01 – Earthwork

2.1.5.1.1 Activity 20.01.03 – Backfill

This Activity includes costs of equipment and labor for backfill at the Dock Area. Backfilling will take place following excavation with the appropriate materials, to mimic pre-excavation characteristics where indicated.

- EA-1 (Upper Wetland)

  No backfilling is planned following excavation of the Upper Wetland.

- EA-2 (Lower Wetland)

  Under this activity, the Lower Wetland shall be restored to existing conditions. Following excavation and removal activity, the pre-disturbance elevation of the disturbed area will be restored with a combination of common fill, and a gravely, sandy "Wetland Topsoil". Fill material shall be placed as directed by Foster Wheeler.

  Backfill shall be constructed from Common Fill up to the final one foot of grade. The material shall be spread uniformly in successive horizontal layers of loose material not more than 12 inches in depth. Compaction shall be accomplished by tamping with the excavator bucket, or other approved equipment.

  The upper most one foot of backfill will be constructed of Wetland Topsoil as specified below. The surface shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross-sections or elevations shown on Sheet C-2 in Appendix B. Topsoil shall not be spread when frozen or excessively wet or dry.

- Uplands

  No backfilling is planned for Upland Areas.

- Common Fill

  Material for the construction of Common Fill shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings and deleterious materials. The material shall conform to the requirements of Section M1.03.1 for Processed Gravel of the State Specifications (1988; Standard Specifications for Highways and Bridges), and shall be graded within the following limits:

Sieve Designation	Percent Passing
3 in.	100
1-½ in.	70-100
¼ in.	50-85
No.4	30-60
No.200	0-10

- Wetland Topsoil

  Material for the construction of Wetland Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from visible plants and plant parts. The material shall be graded within the following limits:

Sieve Designation	Percent Passing
No. 4	100
No. 40	60-85

No. 100	38-60
No. 200	22-35
0.002 mm	0-5

2.1.5.1.2 Activity 20.01.07 – Grading

- EA-1 (Upper Wetland)

  Grading within the Upper Wetland will be limited to the edges of the excavated area as necessary to establish stable slopes in the transition area from wetland to upland. The extents of the excavation area will be graded to an approximate 2:1 slope. The Upper Wetland area shall be restored to the lines and grades as shown on sheet C-2 in Appendix B.

- EA-2 (Lower Wetland)

  The Lower Wetland area shall be restored to the lines, grades, and cross-sections or elevations shown on Sheet C-2 in Appendix B.

2.1.5.1.3 Activity 20.01.14 – Topsoil

This Activity includes costs of equipment, labor, and materials for the installation of topsoil at the Dock Area. Topsoil placement will take place following completion of excavation and backfilling with the appropriate materials, to mimic pre-disturbance characteristics where indicated. Generally, topsoil placement shall be in those upland areas disturbed by removal activities (Roads, Staging Area, etc.).

- Common Topsoil

  Material for the construction of Common Topsoil shall be fertile, friable, natural topsoil, reasonably free of stumps, roots, stiff clay, stones larger than one inch in diameter, noxious weeds, sticks, brush, trash or other litter. The material shall conform to Section M1.07.0 for Plantable Soil Borrow of the State Specifications (1988; Standard Specifications for Highways and Bridges).

2.1.5.2 Subtask 20.03 – Permanent Features

2.1.5.2.1 Activity 20.03.01 – Roads

This activity includes work performed to patch/replace paved areas disturbed by heavy equipment traffic at the Dock Area. Damage, if any, to the driveway at 20 Main Street shall be evaluated at the conclusion of remedial activities at the Dock Area.

2.1.5.2.2 Activity 20.03.90 – Dock

This activity includes work performed to reconstruct and install the hinged dock to its original location at the Dock Area.

2.1.5.3 Subtask 20.04 – Revegetation and Planting

2.1.5.3.1 Activity 20.04.01 – Seeding/Mulch/Fertilizer

2.1.6.3 Subtask 22.07 – Health & Safety

This subtask includes the efforts of Peter Vernon, and Michael McSherry for health and safety oversight and management support related to field activities for the Early Actions. Tom Hawthorne's time was added to the GM budget with the CSO C estimate. The CSO C installation will be taking place at the same time as the early action activities. Time has been added to this estimate for Miguel Guzman to assist Tom with Health & Safety oversight for the early action activities. This Subtask includes all PPE costs for execution of this work, medical monitoring for craft personnel, and personnel sampling (2 samples/person/week).

Costs for the awareness, Recognition and Participation Program described in Appendix F are included under this task.

2.1.6.4 Subtask 22.10 – Project Utilities

This activity includes monthly utility costs for electricity and water associated with work activities at the Dock Area, including electricity for air monitoring stations. Utilities will be accessed from the property at 20 Main Street, and the OWNER reimbursed for costs associated with these utilities for the payment periods in which utility access is required.

2.1.6.5 Subtask 22.11 – Miscellaneous Project Expenses

This activity covers the use by Foster Wheeler, of one leased/rented pick-up truck for support of field activities, and small tools.

2.1.6.6 Subtask 22.12 – Insurance, Interest and Fees

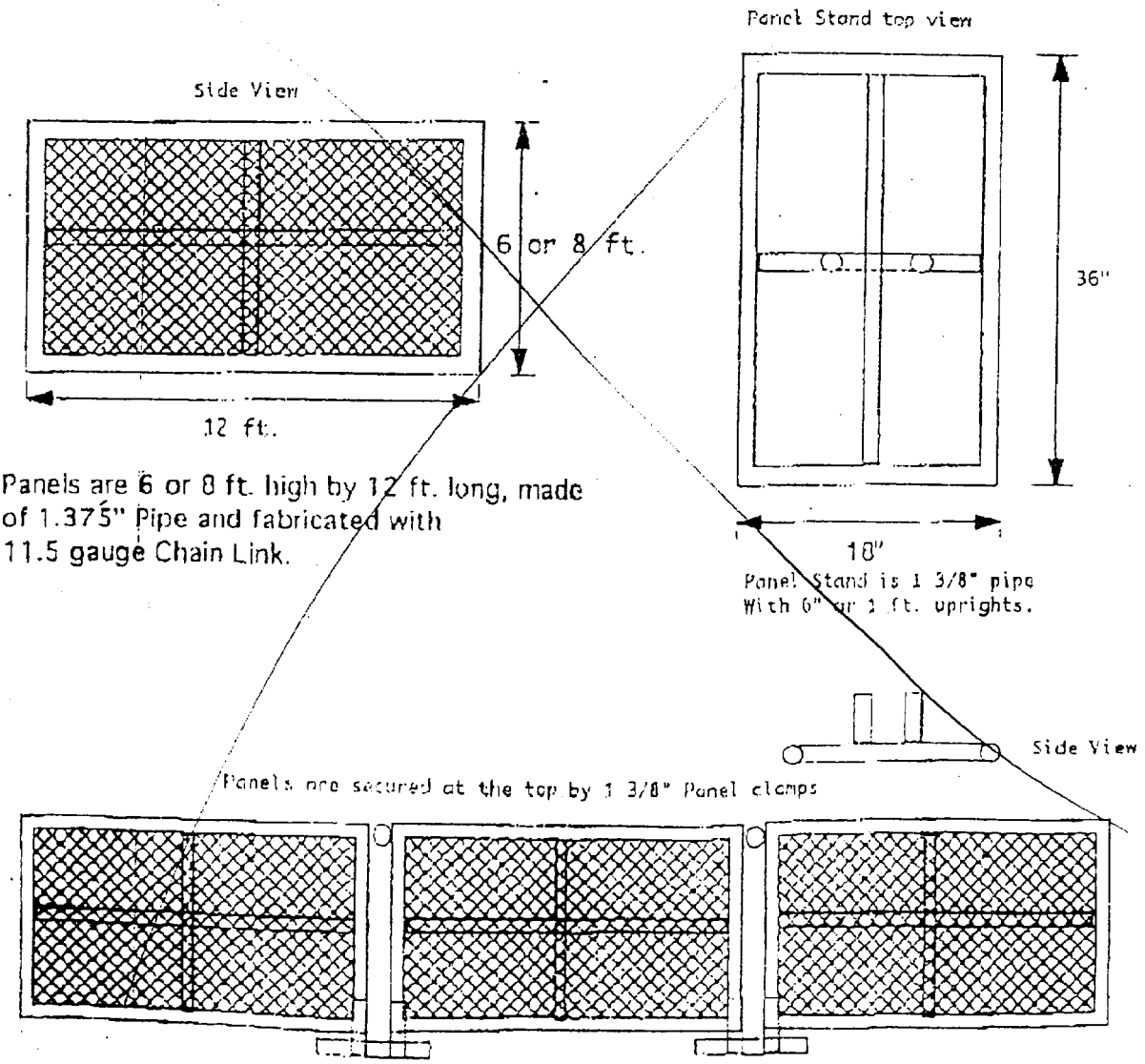
This activity includes Foster Wheeler's fee for the work described above. The fee calculation is attached to the Cost Estimate.

Appendix B
Site Restoration Plan

Appendix C
Specifications

TEMPORARY FENCE

Panels



Panels are 6 or 8 ft. high by 12 ft. long, made of 1.375" Pipe and fabricated with 11.5 gauge Chain Link.

FENCE SPECIFICATION:

11 ½ GA 2" Mesh 6' High Galvanized Steel Chain Link Fabric

2" FN 20 Galvanized Steel Pipe Line Posts

2 ½ FN 20 Galvanized Steel Pipe End and Corner Posts

3" SCH 40 Galvanized Steel Pipe Gate Posts

7 GA Galvanized Steel Top and Bottom Tension Wire

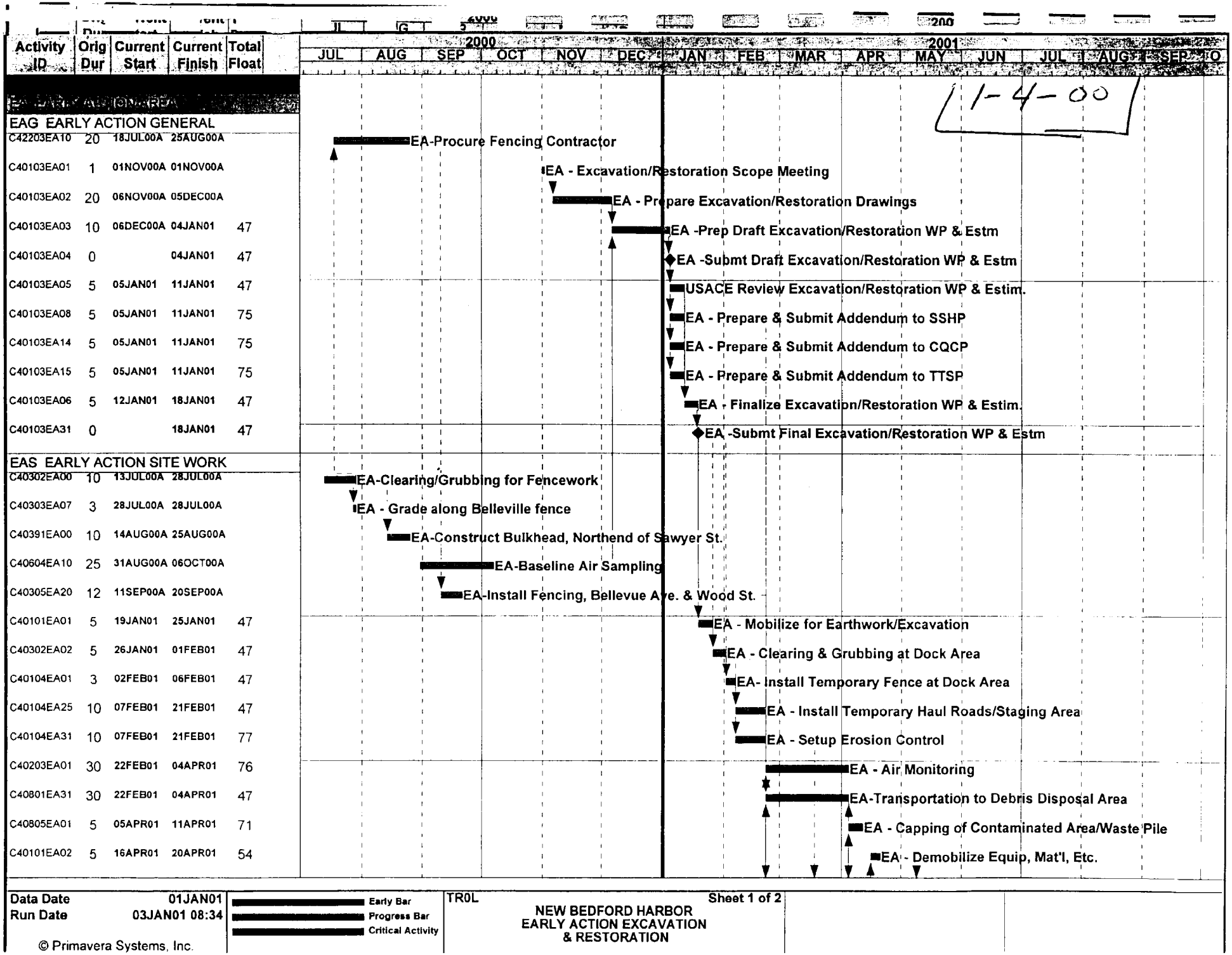
Galvanized Steel Hardware

Aluminum Tie Wire and Hog Rings

Line, End, Corner and Gate Posts Installed in Approx. 2' Deep Cement Footings

1 5/8 FN 20 Galvanized Steel pipe Gate Frame with Truss Rod

Appendix D
Project Schedule



Data Date 01JAN01
Run Date 03JAN01 08:34

Early Bar
Progress Bar
Critical Activity

TR0L

NEW BEDFORD HARBOR
EARLY ACTION EXCAVATION
& RESTORATION

Appendix E
Cost Estimate

Appendix F
Safety Incentive Program

FOSTER WHEELER ENVIRONMENTAL CORPORATION

NE TERC
New Bedford Harbor Remediation Project

Awareness, Recognition and Participation Programs

1.0 INTRODUCTION

Foster Wheeler Environmental Corporation is firmly committed to providing a safe and environmentally compliant working environment for all site employees. As part of our management commitment to safety and our "Do It Right" (DIR) approach to all projects, we are implementing Awareness, Recognition and Participation Programs for remediation activities at New Bedford Harbor Project. These programs apply to FWENC employees and employees of subcontractors performing field work at the site.

The purposes of these programs are:

- Awareness - to maintain environmental health and safety as a priority for each site participant, to assist them in accessing Environmental Health and Safety (EHS) information, and to create a working environment that helps site personnel to integrate EHS considerations into every aspect of the job.

- Recognition - to provide positive reinforcement for both individual and group performance consistent with corporate and project goals.

- Participation - to ensure that all project personnel have input into the site EHS program, and are empowered to make meaningful contributions through frequent and routine participation in the program.

Note: **These programs may be modified or discontinued at any time at the discretion of project management. Changes, which may incur financial costs to the project, must be approved by the USACE Contracting Officer's Representative (COR). It is important that these programs do not have a negative impact on incident reporting, which FW believes is a critical loss control tool. If failure to report incidents to maintain award eligibility becomes evident, the Recognition Programs will be discontinued.**

2.0 AWARENESS PROGRAM

In addition to the required meetings, incident investigations, and inspections, the NBH awareness program consists of the following:

2.1 Bulletin Boards and Site Posting Areas which include the following as a minimum:

- Corporate EHS Policy Statement
- Compliance Hot Line Poster
- Zero Incident Performance (ZIP) Pledge Poster
- *ZIP* and Other Safety Message Banners

- Legally required postings, e.g., OSHA Notice
- EHS Work Rules
- DIR Principles
- Emergency Phone Numbers and Procedures
- Evacuation Route Maps
- OSHA 200 Summary (During February for previous calendar year)
- Committee Meeting Minutes (most recent), if applicable
- EHS Bulletins and memos regarding new regulations, EHS lessons learned, Environmental Management System (EMS) postings, or other pertinent EHS topics
- Personal air sampling results

Bulletins and memos can be from any source. The bulletins should involve issues of local concern. Each bulletin should include a statement of the problem or issue; impacts on the site or the employee; a brief summary of related company rules or government regulations; and actions individuals can take to avoid the problems discussed or to improve the Company's standing relative to the issue. For readability, the bulletins should be limited to one page in length.

2.2 All project participants will be asked to sign the ZIP Pledge.

2.3 A Lost-Time Incident Sign will be posted at the entrance to the administrative area, displaying the number of hours/days worked without a lost-time incident.

2.4 A Foster Wheeler ZIP Banner will be displayed in the administrative area.

2.5 A comparative visual depiction of safety performance (OSHA Recordable cases) will be displayed in the administrative area. This will consist of a series of "thermometers" such as those used in "United Way' campaigns.

2.6 Critical Topic Campaign (CTC)

1. A Critical Topic will be selected for each month, based on site hazards, seasonal hazards, incidents or project specific objectives.
2. Each month the project will host a General Safety Meeting during the lunch break. The Meeting will be used to kick off the CTC for the month with a special briefing on the topic.
3. Posters addressing the Critical Topic for the month will be displayed in common areas of the site during the month.
4. The Site Manager will issue a follow-up memo to all site personnel addressing the Critical Topic
5. A safety awareness item will be presented to all site workers attending the lunch. The item may be something useful, which will be consistent with the Critical Topic, or bear a message reminding employees of the topic. For example, if the Critical Topic is Heat Stress Prevention, the gift may be an insulated sports bottle with a project logo as a reminder to drink plenty of cool liquids. Costs for these CTC awareness gifts will be in the $3 - $10 range.

3.0 RECOGNITION PROGRAM

The Recognition Program will consist of four types of awards: Personal Achievement Awards, Group Milestone Awards, Spot Recognition Awards, and Project Completion Award. Of these, only the

- He/she demonstrates disregard or unwillingness to report incidents, including no-loss (near miss) incidents.

3.2 Group Milestone

Group Milestone Awards will be presented when significant milestones are reached on the project without a lost-time occupational injury/illness. These awards will not be announced until they are earned, and will be of nominal value, e.g. $10-$20 per worker, and may be in the form of a site pizza luncheon or barbecue. This is a celebratory award, and all site personnel present at the time the milestone is achieved are eligible for this award. Initially, Milestones will include:

- 50,000 hours, or when a defined scope of work which includes significant field labor, is completed by the Foster Wheeler team and subcontractors
- 100,000 hours
- 200,000 hours

3.3 Spot Recognition

The Spot Recognition is designed to provide positive reinforcement to those actively supporting the EHS program. Spot recognition awards will be presented, if approved by the Remediation Manager. All site personnel are eligible for this award.

Examples of activities for which spot recognition awards may be given include:

- Reporting a no-loss (near miss) incident and participating in the investigation.
- All no-loss incidents must be substantiated and confirmed by the Remediation Manager.
- Taking action to prevent an impending incident, or removing a significant hazard.
- Giving safety training.
- Submitting a significant safety suggestion or Hazard Report.
- Other individual or small team contribution to the site EHS program.

The Spot Recognition will typically consist of a gift valued at $25.

3.4 Project Completion Award

As the NBH project nears completion, those craft employees who remain working at the site through project completion will be eligible to participate in a lottery drawing for $1,000. Participation will be based on points earned for each week worked by an individual from announced inception of the Project Completion Award to the date of project completion. Criteria will be instituted and applied in a similar fashion as described for the Personal Achievement Awards.

The following conditions must be met for an employee to be eligible for the drawing:

- The employee must complete the project without any OSHA Recordable injuries.
- The employee must accrue a minimum of 160 hours on the project.
- Individuals who are laid off due to lack of work will still be eligible for the final drawing, as long as they have met the requirements.

4.0 EMPLOYEE PARTICIPATION PROGRAM

Foster Wheeler encourages and expects all site personnel to participate actively in the project EHS program. Many opportunities are afforded for participation, including:

- Development and review of Activity Hazard Analyses
- Participation in Project Environmental, Health and Safety (EHS) Committee
- Providing input and questions during Daily Safety Briefings
- Reporting and participating in incident investigations
- Making EHS suggestions to Supervisors
- Using the Hazard Report Form to raise EHS issues to project management for their documented resolution.

During the construction phases of the project, a formalized program will be implemented to ensure craft labor participation in the Program. The program will consist of Project EHS Committee and a Safety Observation program in which each member of the field crew will have a turn observing work task(s) and reporting on their observations at the Daily Briefing. The Safety Observation will enable the workers to identify work practices and behaviors that will enhance the overall EHS performance, as well as increase the opportunities to achieve to Recognition awards, discussed in Section 3.0. The program will also enable the field crew members to identify hazardous conditions, inadequate procedures, or other items that may be functioning as barriers to safe behavior, and recommend corrective action.

The Safety Observation program will generally follow the guidance provided in the Attachment to the Foster Wheeler Environmental Corporation Employee Participation Program. However, specific details of the program will be worked out with the input of the craft participants at the beginning of that phase of the project.