CONSTRUCTION IMPLEMENTATION PLAN

SOIL REMEDIATION PROJECT
MAESTRI SITE
GEDDES, NEW YORK

Stauffer Management Company

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O'BRIEN & GERE
ENGINEERS, INC.

Contents

1. Introduction

1.1. General

This Construction Implementation Plan provides a description of how O'Brien & Gere anticipates the Contractor will accomplish the various construction phases necessary to complete the soil remedial activities at the Maestri Site in Geddes, New York. The Plan addresses issues such as the staging and handling of soils, materials and equipment, and the decontamination of tools and equipment. The Plan is intended to be used for planning purposes, to inform the community of proposed activities, and for evaluating Contractor proposed methods.

1.2. Scope of work

The Soil Remediation Project will include, but is not limited to, the excavation of soils exhibiting elevated levels of volatile organic compounds (VOCs) and/or semi-volatile organic compounds (SVOCs); on-site treatment and discharge of ground water encountered and collected during excavation; and on-site treatment of VOC and/or SVOC contaminated soils utilizing mechanical screening and, if necessary, *ex situ* biological and vapor vacuum extraction treatment. The project also includes backfilling the excavation using suitable treated soils exhibiting VOC and SVOC concentrations below clean-up criteria and/or clean fill material from off-site.

In general, it is anticipated that the project will be completed following the sequence of events presented below.

Phase 1. The Contractor will provide the submittals identified by the Special Provisions that are required, and obtain any additional permits and approvals necessary before initiating construction. The Contractor

will also submit the shop drawings, equipment cut sheets, and other information required by the Technical Specifications.

Phase 2. The Contractor will mobilize, provide decontamination facilities and office trailers, and install site security and perimeter storm water and erosion control measures. The Contractor will also set-up the soil screening equipment and environmental enclosures, and construct the water treatment system for water removed from the excavation and biopiles which may be necessary.

Phase 3. Removal and reinstallation of sections of the existing perimeter fence to accommodate soil excavation, staging, and treatment needs. The Contractor will also verify the locations of buried utilities on site.

Phase 4. The Contractor will commence soil excavation, mechanical screening, and staging activities. During this period, the Contractor will continue to operate and maintain the construction water collection and treatment devices, and storm water and erosion control measures.

Phase 5. Initiate construction of the required number of *ex situ* bioremediation/vapor vacuum extraction piles and the associated air and water collection/feed/treatments systems. Also, after completing the excavation and screening of soils, the Contractor will remove the environmental enclosures.

Phase 6. Backfilling, rough grading, proof rolling, and demobilization of temporary equipment.

Phase 7. Topsoil, seeding, and restoration of surfaces.

Phase 8. Maintenance of seeded areas and germinated grass seed.

Phase 9. Removal of perimeter silt fences and other erosion control measures.

The activities listed above are described further in the following sections.

2. Construction implementation

2.1. General

This section describes the methods by which the activities are anticipated to be completed by the Contractor. For convenience, the section addresses each of the project phases presented in the preceding section.

2.2. Phase 1 - submittals and permits

Prior to initiating work on-site, the Contractor will be required to submit a site specific Health and Safety Plan. The Contractor will also prepare and submit a Staging/Sequencing Plan describing methods and sequencing of all intended operations connected to the requirements of the project. The Staging/Sequencing Plan will include the schedule provided by the Contractor with the Bid providing the order and date on which the major construction features will be started and completed. The Contractor will also provide the shop drawings, material data sheets, catalog cut sheets, and other submittals required by the Technical Specifications for review by the Engineer prior to completing the work specified.

2.3. Phase 2 - mobilization

Within approximately 2 weeks of being awarded the Soil Remediation Project - Contract No. 1, the Contractor will mobilize and initiate activities on Site. Among the first tasks accomplished, the Contractor will erect separate field offices for use by the Contractor and Engineer on-site outside the work zone. The Contractor will also set-up field sanitation facilities, equipment and personnel decontamination equipment, and the treatment

system for water removed from the excavation during construction. Also, the Contractor will be required to conduct and submit a property boundary survey. After the property line survey has been performed and the property line has been marked, the work zone will be cleared and graded, as necessary; the Exclusion, Decontamination, and Support areas will be marked; and storm water and erosion control measures will be set-up as required.

During this phase of the project, the Contractor will also set-up the soil screening equipment proximal to the location shown on Contract Drawing G-2, and erect the temporary self-supporting structures being used to enclose the screening equipment and the first area to be excavated. It is anticipated that the first area that will be excavated will be that portion of the Site shown on Contract Drawing G-2 located closest to the existing ground water treatment building.

Finally, the Contractor will line the ground surface with polyethylene sheeting in the locations where soil will be stockpiled before mechanical screening, and where soil will be stockpiled after mechanical screening while awaiting the results of laboratory analyses.

2.4. Phase 3 - Perimeter fencing

Soon after the Contractor mobilizes, the security fence shown on Contract Drawing Sheet G-2 will be installed and sections of the existing perimeter fence will be removed as necessary to accommodate soil excavation, staging, and treatment needs. While this work is being accomplished, the Contractor will also verify and mark the locations of existing buried utilities on Site in the Work Zone.

2.5. Phase 4 - Excavation, screening, and staging of soil

As previously indicated, it is anticipated that the first area that will be excavated will be that portion of the Site shown on Contract Drawing G-2 located closest to the existing ground water treatment building. By starting in this area, the Contractor will be able to move soils without obstruction

between the area being excavated and the pre-treatment soil stockpile area located in the south-east corner of the Site.

The excavated soil will be stockpiled in approximately sized 200 CY piles in the south-east corner of the Site on top of polyethylene liner material placed on the ground surface. In the pre-treatment soil stockpile area, the Contractor will amend the excavated soil with lime, as necessary, to dry the soil in preparation for mechanical screening. After allowing several hours for the lime to react with moisture in the soil, each 200 CY pile will be transferred in-turn into the structure enclosing the mechanical screening equipment.

Once a 200 CY batch of soil has been screened, it will be sampled pursuant to the Construction Quality Assurance Plan and transferred to the post-treatment soil stockpile area shown on Contract Drawing G-2. The soil stockpiled in this location will also be placed on top of polyethylene liner material until it is verified that the soil does not contain VOCs or SVOCs above the remedial action objectives. After the entire 200 CY batch of screened soil has been removed from the enclosure, screening of the next 200 CY batch of excavated soil will commence.

After the area within the enclosure has been excavated to the extent necessary to achieve the remedial action objectives (RAOs), clean-up verification samples will be collected from the excavation as required by the Construction Quality Assurance Plan. If the results of the verification analyses demonstrate that the RAOs have been achieved in the particular location excavated, the excavation will be backfilled to the extent practicable without causing contact to the south-east wall of the excavation, which would be expected to contain VOC and/or SVOC residues above the RAO until the excavation was extended to the south-east limit shown on Contract Drawing sheet G-2. To backfill the excavation, the Contractor will use suitable soil screened on site and verified "clean" and/or clean material from off-site.

As the excavation is completed and backfilled proceeding toward the south-east corner of the Site, the Contractor may also elect to initiate construction of the permanent ground water recovery trench shown on Contract Drawing sheet G-6 starting at the ground water collection sump. This would minimize the requirement for additional excavating in the future.

Once excavation and backfilling is completed in an area, the temporary structure erected over the area will be moved toward the south-east to allow excavation activities to commence in the adjoining area.

2.6. Phase 5 - bioremediation/vapor extraction piles

Anticipating the possible need to treat a portion of the soils excavated for SVOCs and/or VOCs, the Contractor may be instructed by the Owner to construct the bottom section (consisting of the bottom liner, leachate collection pipe, pea gravel, air extraction pipe, and geotextile) for one biopile, as shown on Contract Drawing sheet G-5, after a minimum of 500 CY of soil exhibiting SVOC concentrations above the RAOs have been excavated and stockpiled on-site. Concurrent to the execution of Phase 4, a determination will be made regarding the need to complete that biopile and/or initiate construction of additional bioremediation/vapor extraction piles based on the results of post-screening sampling performed pursuant to the Construction Quality Assurance Plan.

Construction of the Biopile/Vapor Extraction pile water and nutrient addition, leachate collection and treatment, and air extraction and treatment systems and controls will not be initiated until at least one biopile is constructed. Authorization to complete construction of these systems will be provided only after the final volume of soil placed into biopiles has been identified and the equipment and control requirements verified.

It is intended that the installing Contractor also make arrangements for operating the biopile/vapor extraction pile(s), as may be required, for the period necessary to achieve the RAOs. The Contractor will be required to operate the biopile/vapor vacuum extraction pile(s) pursuant to the instructions provided in the Operations & Maintenance (O&M) Manual prepared by the Engineer. The Contractor will also be required to monitor performance of the treatment system pursuant to the Sampling, Analysis, and Monitoring Plan prepared by the Engineer for the project.

2.7. Phase 6 - backfilling, rough grading, proof rolling, and demobilization

As previously indicated, suitable screened soil verified "clean" and/or clean material from off-site may be used to backfill parts of the excavation as work proceeds during Phase 5. However, it is also possible that a portion

of the excavated soils may require treatment using biopile/vapor extraction piles prior to being used as backfill. In this case, it will be necessary for the Contractor to return to the Site once treatment is completed to remove the soil from the piles and backfill/spread the material on-site. Afterwards, the equipment installed in connection with the biopile(s) will be cleaned, prepared for storage, and shipped from the Site to a location specified by the Owner and the liners, pipe and other material not recyclable will be decontaminated, as necessary, and disposed of off-site.

Earlier, upon completing the excavation to the extent required to achieve the NYSDEC established clean-up objectives, screening all the soil excavated, and backfilling/grading the excavation to the extent necessary to prevent ponding of surface water, the Contractor will decontaminate and remove the mechanical screening equipment and temporary self-supporting structures erected on-site. The Contractor will also decontaminate and remove the heavy equipment, sanitary facilities, and field office trailers and restore the perimeter fence where necessary.

2.8. Phase 7 - topsoil, seeding, and restoration of surfaces

Once all material excavated from the Site has been verified as "clean" and has been either used as backfill or spread on-site, the Contractor will place topsoil and grass seed over the area excavated or disturbed as a result of the soil stockpiles, soil processing area, equipment movement, the biopile(s), etc.

2.9. Phase 8 - maintenance of seeded areas and germinated grass seed

The Contractor will be required to maintain the newly seeded areas in accordance with the technical specification entitled Topsoil and Seeding.

2.10. Phase 9 - removal of perimeter silt fences/erosion control measures

Once a grass cover has been reestablished in the areas disturbed during the Soil Remediation Project, the Contractor shall remove and dispose the perimeter silt fences and/or other erosion control measures utilized on-site.

SOIL & GROUNDWATER REMEDIATION PROJECT
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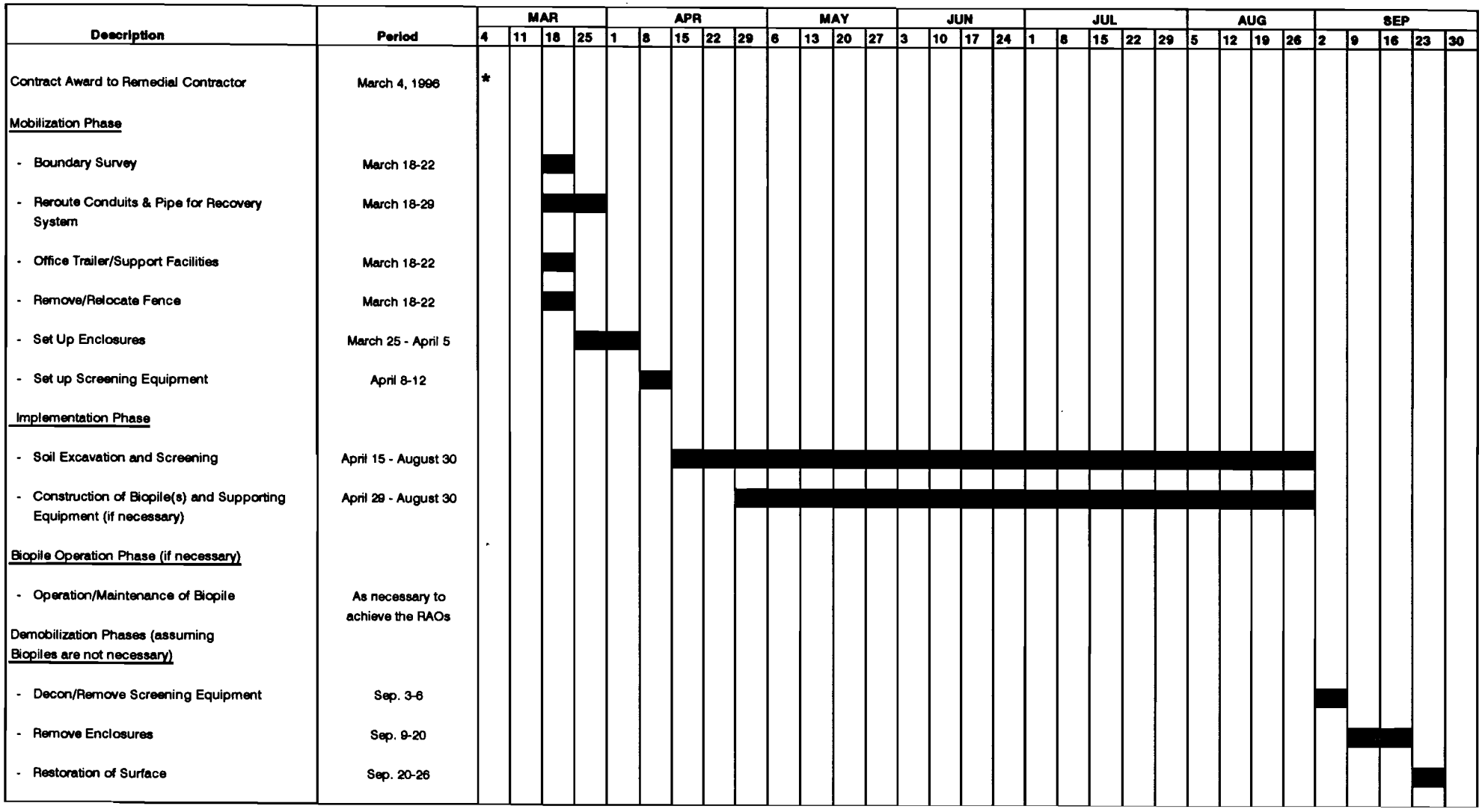
ANTICIPATED CONSTRUCTION SCHEDULE



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(1) Actual period for completion of remedial action tasks are subject to change based on schedule provided by remedial contractor.