

RAC2

EPA Region 2



Final Site Management Plan

**Old Roosevelt Field Contaminated
Groundwater Area Superfund Site
Garden City, New York**

**EPA Contract No. EP-W-09-002
WA 023-RARA-02PE**

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Acronyms

| | |
|----------|---|
| CDM | CDM Federal Programs Corporation |
| CHMM | Certified Hazardous Materials Manager |
| CIH | Certified Industrial Hygienist |
| C.S.P | Certified Safety Professional |
| CQA | construction quality assurance |
| DCE | dichloroethene |
| EPA | U.S. Environmental Protection Agency |
| gpm | gallons per minute |
| GWTF | groundwater treatment facility |
| HASP | Health and Safety Plan |
| IDW | investigation derived waste |
| µg/L | micrograms per liter |
| MCL | maximum contaminant level |
| mgd | million gallons per day |
| NAF | U.S. Naval Air Facility |
| NCSWCD | Nassau County Soil and Water Conservation District |
| NPL | National Priority List |
| NTP | Notice to Proceed |
| NYCRR | New York Code Rules and Regulations |
| NYSDEC | New York State Department of Environmental Conservation |
| O&M | operation and maintenance |
| PCE | tetrachloroethene |
| PE | Professional Engineer |
| QA | quality assurance |
| QC | quality control |
| RA | remedial action |
| RAC | Response Action Contract |
| RD | remedial design |
| RI/FS | Remedial Investigation/Feasibility Study |
| ROD | Record of Decision |
| RPM | remedial project manager |
| SMP | Site Management Plan |
| SOW | scope of work |
| SPDES | State Pollution Discharge Elimination System |
| TCE | trichloroethene |
| UFP-QAPP | Uniform Federal Policy Quality Assurance Project Plan |
| VOC | volatile organic compound |

Section 1

Section 1

Introduction

1.1 Overview

This Site Management Plan (SMP) was prepared by CDM Federal Programs Corporation (CDM) for the U.S. Environmental Protection Agency (EPA) under the Remedial Action Contract (RAC 2) program, Work Assignment 023-RARA-02PE for the Remedial Action (RA) at the Old Roosevelt Field Contaminated Groundwater Area Site (the site) in Garden City, New York. The plan is intended to partially fulfill the requirements specified under Task 5.3.1 of the *Final Work Plan* for this work assignment.

The EPA September 2007 Record of Decision (ROD) remedy for the site addresses the site groundwater contamination in the mall area by selecting groundwater extraction and ex-situ treatment technologies. This SMP addresses RA activities pertaining to the Final Remedial Design (RD) (CDM 2009), which relates to the groundwater extraction, treatment, and discharge components of the ROD.

1.2 Site Background and Setting

1.2.1 General Site Location and Description

The Old Roosevelt Field Contaminated Groundwater Area site is an area of groundwater contamination within the Village of Garden City in central Nassau County, New York. The site is located on the eastern side of Clinton Road, south of the intersection with Old Country Road (Figure 1-1), and includes the area of the former Roosevelt Field airfield. The former Roosevelt Field airfield area is currently developed as a large retail shopping mall, with a number of restaurants and a movie theater. Several office buildings (including Garden City Plaza) are on the western perimeter of the mall and share parking space with the mall. A thin strip of open space along the eastern side of Clinton Road (known as Hazelhurst Park) serves as designated parkland and a buffer between the residential community on the west side of Clinton Road and the mall complex.

Two recharge basins are directly south of the mall/office area. One basin is known as Pembroke Basin and is on property owned by the mall. The second basin is Nassau County Recharge Basin number 124. Two municipal supply well fields are located south (downgradient) of the former airfield: The Village of Garden City Public Supply Wells 10 and 11, on the eastern side of Clinton Road, and the Village of Hempstead Wellfield, approximately one mile south of the Garden City supply wells.

1.2.2 Site History

The site was used for aviation activities from 1911 to 1951. The original airfield was known as the Hempstead Plains Aerodrome, and encompassed 900 to 1,000 acres east of Clinton Road and south of Old Country Road. During its first three years, activities at the airfield included civilian flight training, equipment testing, and aerial stunt shows.

The U.S. military began using the Hempstead Plains field prior to World War I. In 1918, the Army named the airfield Roosevelt Field. After the war, the U.S. Air Service authorized aviation-related companies to operate from Roosevelt Field, but maintained control until July 1, 1920, when the airfield reverted to use as a private airfield.

Roosevelt Field was used by the Army and Navy during World War II. In July 1939, the Army Air Corps provided airplane and engine mechanics' training at the Roosevelt Aviation School. By March 1942, there were 6 steel/concrete hangars, 14 wooden hangars, and several other buildings at Roosevelt Field. In addition to the training activities, the Roosevelt Field facilities were used to receive, refuel, crate, and ship Army aircraft.

In November 1942, the Navy Bureau of Aeronautics established a modification center at Roosevelt Field to install British equipment into U.S. aircraft for the British Royal Navy. The Navy leased five steel/concrete hangars along Old Country Road, and designated this installation as the U.S. Naval Air Facility (NAF) Roosevelt Field. By September 1943, the Navy had built wooden buildings between four of the hangars, and in October 1943 leased six additional hangars. NAF Roosevelt Field was responsible for aircraft repair and maintenance, equipment installation, preparation and flight delivery of lend-lease aircraft, and metal work required for the installation of British modifications. The metal work constituted a substantial portion of the facility's workload. The facility also performed salvage work of crashed Royal Navy planes. The Navy vacated all but six hangars shortly after the end of World War II, and removed their temporary buildings by the time their lease expired on June 30, 1946. The restoration of buildings and grounds was completed by August 1946, and Roosevelt Field operated as a commercial airport until it closed in May 1951.

Soon after the airfield closed, the large Roosevelt Field shopping center was constructed at the site and opened in 1957. The old field is currently the site of the shopping mall and office building complexes, the Meadowbrook Parkway and is surrounded by commercial areas and light industry.

It is likely that chlorinated solvents were used at Roosevelt Field during and after World War II. Chlorinated solvents such as tetrachloroethene (PCE) and trichloroethene (TCE) have been widely used for aircraft manufacturing, maintenance, and repair operations since about the 1930s. Beginning in the late 1930s, the U.S. military issued protocols for use of solvents such as TCE for cleaning airplane parts and for de-icing. The types of airplanes designated for solvent use were present at Roosevelt Field during World War II. The finish specifications for at least one type of plane that the Navy modified at Roosevelt Field (eight of which were on site in April 1943) called for the aluminum alloy to be cleaned with TCE. An aircraft engine overhaul manual issued in January 1945 specified TCE as a degreasing agent.

Wells 10 and 11 were installed by the Village of Garden City in 1952, and were put into service in 1953. Both wells have shown the presence of PCE and TCE since they were first sampled in the late 1970s and early 1980s, and the concentrations of these contaminants increased significantly until 1987, when an air-stripping treatment

system was installed to treat the water from these wells. The highest levels of volatile organic compound (VOC) contamination were noted during the mid-to-late 1990s, and have steadily declined since that time, although the levels still currently remain above EPA and New York State drinking water standards.

In addition to the Village of Garden City supply wells, seven cooling water wells in the mall area pumped contaminated groundwater from the Magothy aquifer for use in the air conditioning systems of the mall building and the office buildings west of the mall. These wells operated from approximately 1960 to 1985. After the contaminated groundwater was used in the air conditioning systems, the untreated water was returned to the aquifer system via surface recharge to the Pembroke recharge basin and to a drain field west of 100 Garden City Plaza and 200 Garden City Plaza.

The discharge of contaminated water into the recharge basin and drain field continued up to 1985, when the cooling water wells were taken out of service due to the presence of VOCs in the groundwater. Surface discharge of contaminated groundwater spread contamination through the Upper Glacial and Magothy aquifers. The recharge basin and drain field also created localized groundwater mounding, which may have spread contamination at the water table. The Pembroke recharge basin currently only receives surficial stormwater runoff from parking lots surrounding the mall and the office buildings. The drain field/diffusion wells near 100 Garden City Plaza are under the paved parking lot west of 100 Garden City Plaza and 200 Garden City Plaza, and are not currently identifiable.

EPA completed a Remedial Investigation/Feasibility Study (RI/FS) in 2007 (CDM 2007). The ROD for the site was signed on September 28, 2007. The selected remedy is groundwater extraction with ex-situ treatment, with discharge to Nassau County Recharge Basin No. 124. The selected remedy addresses contaminated groundwater in the mall area north (upgradient) of Garden City Municipal Supply Wells 10 and 11. The primary groundwater contaminants are PCE, TCE, and cis-1,2 dichloroethene (cis-1,2 DCE).

The Final RD was completed by CDM in September 2009 for remedial activities relating to VOC groundwater contamination in the mall area. The RD included performance requirements for the installation and operation of a groundwater extraction and treatment system.

1.2.3 Summary of Groundwater Contamination

Eight multi-port monitoring wells were drilled during the RI (CDM 2007). Four wells, each with 10 ports, were installed in the Roosevelt Field mall area. One upgradient (background) well with 10 ports is located on the north side of Old Country Road, and three wells, each with six ports, are located in the downgradient area south of the two Village of Garden City supply wells. Ten existing monitoring wells were also sampled.

The site-related VOCs were selected based on historical data, since sampling of the Garden City supply wells has been performed on a regular basis for over 20 years.

The site-related VOCs are TCE, PCE, 1,1-dichloroethene (1,1-DCE), cis-1,2-DCE, and carbon tetrachloride.

Two rounds of VOC samples were collected from the eight multi-port monitoring wells and the 10 existing wells. The highest levels of PCE and TCE (350 and 280 microgram per liter [$\mu\text{g/L}$], respectively) are concentrated at SVP/GWM-4, at approximately 250 to 310 feet deep. It should be noted that the SVP-4 location was selected for monitoring because a distilling well/drain field was operated in the area during the 1980s, to dispose of cooling water contaminated with the site-related VOCs. The next highest levels occur downgradient (to the south) of SVP/GWM-4 in the existing well GWX-10019, at a slightly shallower depth at approximately 223 to 228 feet below ground surface (bgs), and at the two supply wells GWP-10 and GWP-11, at approximately 370 to 417 feet deep. The multi-port well SVP/GWM-7, located southwest of the supply wells, showed 20 $\mu\text{g/L}$ of TCE and 7.7 $\mu\text{g/L}$ of PCE at approximately 310 to 315 feet bgs. Further downgradient, the monitoring well SVP/GWM-8, installed during the RI, showed 34 $\mu\text{g/L}$ of PCE at approximately 100 to 105 feet bgs and 57 $\mu\text{g/L}$ of PCE at the same depth from Round 1 and Round 2 sampling, respectively. TCE was detected at levels below the maximum contaminant level (MCL) in both rounds. The monitoring well SVP/GWM-6 showed a detection of 8.2 $\mu\text{g/L}$ of TCE at 245 to 250 feet bgs in Round 1 and 2.3 $\mu\text{g/L}$ in Round 2 at the same depth. PCE was detected in several depths during both sampling rounds, but at levels below the MCL.

The supply wells GWP-10 and GWP-11 each have a capacity to pump approximately one million gallons per day (mgd) of groundwater from the Magothy aquifer. Groundwater flow and contaminant movement are downward and south from the mall area to the Garden City supply wells. Contamination was observed south (downgradient) of the Garden City supply wells, as observed in the wells sampled.

During the initial pre-design investigation, three additional multi-port monitoring wells were installed, each with 10 ports. The pre-design wells were drilled to a total depth of 500 feet, approximately 50 feet deeper than the multi-port wells installed during the RI. The pre-design wells were installed at the following locations: 1) north (upgradient) of the contamination identified at SVP-4, to determine the northern extent of the plume; 2) at the location of the RA extraction wells, to confirm the levels of contamination that will be extracted for treatment; and 3) south (downgradient) of the two supply wells, to determine whether the supply wells pumping contain the plume and prevent contaminant migration further to the south. The monitoring well sampling results indicate that: 1) the plume extends as far north as the new multi-port well north of SVP-4 (this contamination should be intercepted by the three extraction wells); 2) significant levels of contamination are present at the extraction well location; and 3) contamination was identified south of the two supply wells. As a follow up to the contamination south of the supply wells, two additional multi-port monitoring wells (each with 6 ports) have been installed south (downgradient) of the newly-identified contamination. EPA is currently assessing the next steps that should be taken to address the contamination south of the supply wells.

Approximately one mile downgradient of the supply wells, PCE and TCE contaminant levels in the most downgradient multi-port well (SVP/GWM-8) (just upgradient of the Hempstead wellfield) are present at shallower depths than at the plume core in the mall area and at the multiport well just south of the two Garden City supply wells. Other sources of VOC contamination in the area south of the site may have contributed to the contamination in this area.

The Village of Hempstead water supply wellfield, approximately one block south (downgradient) of multi-port monitoring wells SVP-6 and SVP-8, has been contaminated with VOCs since the 1980s. During routine monitoring in early 2007 two of the wells in the Village of Hempstead wellfield showed TCE detections of 10.1 µg/L and 9.2 µg/L. The source of this contamination is currently unknown, since several potential sources are located in the upgradient area of the Hempstead wellfield.

1.3 Scope of Work for the Remedial Action

The scope of work (SOW) as specified in CDM's 100% RD documents includes the following items.

- Construction of three groundwater extraction wells
- Installation of six monitoring wells
- Performance of a pumping test
- Pilot testing for iron removal system
- Construction of an ex-situ groundwater treatment facility, influent piping from the extraction wells to the treatment facility, and effluent piping for discharge to Nassau County Recharge Basin No. 124 via a local storm drain
- Final evaluation and upgrade of air strippers at Village of Garden City Supply Wells 10 and 11
- Preparation of associated work plans and reports
- Site restoration
- Long-term groundwater monitoring
- Preparation of the RA Completion Report
- Development of institutional controls and a SMP
- Performance of Operation and Maintenance (O&M) for the first year after construction of the treatment system
- Monitoring of the RA remedial system efficiency

1.4 Purpose and Organization of this Document

The purpose of the SMP is to describe CDM's plans for managing site access and use; security, health and safety; traffic, environmental quality, and waste disposal and other site-related activities during the RA.

This SMP includes the sections described below.

- **Section 1: Introduction** - Summarizes the background information for the project, and establishes the purpose and organization of this document

- **Section 2: Project Organization and Responsibility** - Summarizes the roles and responsibilities for all parties involved with on-site RA activities, as they relate to site management
- **Section 3: Site Management Activities** - Summarizes CDM's plans for addressing the various site management activities required for this project
- **Section 4: Remedial Action Schedule** - Summarizes the tentative schedule for RA completion
- **Section 5: References** - Document the references cited in the SMP

To minimize redundancy, this SMP references the other project plans (i.e., Uniform Federal Policy Quality Assurance Project Plan [UFP-QAPP], Construction Quality Assurance Plan, Health and Safety Plan), where appropriate. The SMP also references the RA subcontractors' project plan submittals (i.e., to be completed after the award of the subcontract), where appropriate. Such references are for clarification purposes only, since much of the RA work will be performed by the Treatment System Subcontractor and covered in their project plan submittals. These submittals will be completed at a later date, following the award of the subcontract by CDM.

Section 2

Section 2

Project Organization and Responsibility

The purpose of this section is to define the primary roles and responsibilities of key personnel from each party involved with RA implementation.

The primary roles and responsibilities of key personnel from each party involved with the construction are summarized below. A project organization chart, which illustrates the lines of authority and communication between parties, is included as Figure 2-1. Contact information for the project personnel is included in Table 2-1.

2.1 Environmental Protection Agency

EPA is the lead agency of this project with ultimate responsibility and authority for all aspects of RA implementation.

| Role | Contact | Responsibilities |
|--------------------------------|---------------|---|
| Remedial Project Manager (RPM) | Caroline Kwan | Responsible for day-to-day technical and financial management of this project. Primary EPA contact for all aspects of work. |
| Contracting Officer | Debbie Butler | Responsible for overall contractual management of this project, including the associated RA subcontracts, under the RAC 2 contract. Monitors the project for conformance with the signed contract clauses, budget contained in the approved Work Plan for this work assignment and the terms and conditions. Has consent authority for all changes in scope and cost. |
| Project Officer | Helen Eng | Responsible for overall technical management of this project under the RAC 2 contract. Monitors the project for conformance with the scope of work contained in the EPA SOW and approved Work Plan for this work assignment. |

2.2 CDM

CDM is EPA's contractor under the Region 2 RAC 2 contract for this work assignment. CDM is responsible for the implementation of the RA on this project, including the provision of all procurement/subcontract management, project management, resident engineering, and technical support required to successfully complete the work specified in the subcontract documents and the EPA-approved Work Plan.

| Role | Contact | Responsibilities |
|---|-----------------------------------|--|
| Site Manager | Thomas Mathew, PE | Responsible for day-to-day project management. Primary CDM contact for all aspects of work. |
| Procurement/ Subcontracts Manager | Vernon Wimberley | Responsible for procurement and overall management of the RA subcontracts. |
| Project Engineer | Muzaffar Rahmani | Responsible for coordinating and/or performing all engineering tasks and tracking work status, schedule, cost on a daily basis under the direction/supervision of the Site Manager. |
| Project Geologist | Frank Robinson | Responsible for coordinating and/or performing all field team leader/geologist tasks, including quality assurance/quality control (QA/QC) tasks, on a daily basis for drilling and aquifer testing activities. Will perform all tasks under the direction/supervision of the Project Engineer/Site Manager. |
| Construction Supervisor | Peter Connolly, PE | Responsible for coordinating and/or performing all resident engineering tasks, construction QA/QC tasks, on a daily basis under the direction/supervision of the Project Engineer/Site Manager. Will perform the Shop and Pre-final/Final Inspections of the groundwater treatment facility (GWTF) and provide field direction/supervision during the Initial Testing Program for the treatment system. |
| Site Safety and Health Officer | Frank Robinson/ Peter Connolly | <p>Frank Robinson will act as the SSHO during Phase I work (refer to Section 3.2.1) and will be responsible for site health and safety requirements.</p> <p>Peter Connolly will act as the SSHO during Phase II (refer to Section 3.2.1) work and will be responsible for coordinating with the Treatment System Subcontractor SSHO and verifying that all work is performed in accordance with the Treatment System Subcontractor's Health and Safety Plan.</p> |

| Role | Contact | Responsibilities |
|-------------------------------|----------------------------|---|
| Quality Assurance Coordinator | Jeniffer Oxford, CHMM | Responsible for overseeing QA/QC on this project. Coordinates with the Construction Supervisor regarding the status of construction QA/QC activities. Coordinates and/or performs QA field audits. Verifies that all EPA and CDM QA requirements are met. |
| Health and Safety Officer | Shawn Oliveira, CIH, C.S.P | Responsible for managing and monitoring CDM's health and safety program at the corporate level. Coordinates with the Health and Safety Coordinator to ensure project conformance with CDM health and safety requirements. |
| Health and Safety Coordinator | Jeniffer Oxford, CHMM | Responsible for overseeing health and safety on this project. Coordinates with the Construction Supervisor regarding the status of construction health and safety activities. Verifies that all EPA and CDM health and safety requirements are met. |

2.3 CDM's Remedial Action Subcontractors

The CDM RA subcontractors (Drilling, Investigation Derived Waste (IDW), and Treatment System) are responsible for completing RA construction and O&M in accordance with the subcontract documents under CDM's direction and supervision. CDM has procured the Drilling and IDW subcontractors and their name, contact and responsibility are listed below. CDM is currently in the process of procuring the services of a Treatment System Subcontractor; therefore, the roles and responsibilities of Treatment System Subcontractor project personnel have not yet been established. This information will be submitted by the Treatment System Subcontractor prior to initiating construction, and it will be forwarded by CDM to EPA for informational purposes.

Drilling Subcontractor

Uni-Tech Drilling Co., Inc
Frankville, NJ 08322
Contact: Gerald Freck, President

As per the drilling subcontract documents, Uni-Tech will install a test borehole for the extraction wells, three extraction wells and six monitoring wells, and complete well development. In addition, INTEX, a lower tier subcontractor to Uni-Tech will be responsible for treatment and discharge of well development and pump test water using a temporary treatment system.

IDW Subcontractor

SeaCoast Environmental Services, Inc.
716 Newman Springs Road, PMB 292
Lincroft, New Jersey 07738
Contact: Eugene Streiter, President

As per the IDW subcontract documents, SeaCoast will perform sampling, and offsite transportation and disposal of IDW generated during well drilling activities.

2.4 New York State Department of Environmental Conservation

As per the Superfund Contract for this project, the New York State Department of Environmental Conservation (NYSDEC) is essentially EPA's "partner" in implementing this RA. NYSDEC is in charge of monitoring and enforcing local environmental regulations.

NYSDEC will participate in various aspects of the project, including meetings, field oversight, and Pre-Final/Final Inspections and have opportunities to review the field project files, upon making advance requests to EPA. NYSDEC will be able to communicate directly with CDM and make recommendations, but will not have the authority to issue directions on EPA's behalf.

Section 3

Section 3

Site Management Activities

3.1 Pre-Construction Period

3.1.1 Site Access Agreements

The required site access agreements have been obtained by EPA to implement the RA. Copies of the access agreements will be maintained at the site in the project files during construction. Contact information for property owners is included in Table 3-1.

3.1.2 Local Permit Equivalencies and Approvals

The permit equivalencies and/or approvals for the RA are summarized below.

New York State Pollution Discharge Elimination System

A New York State Pollution Discharge Elimination System (SPDES) permit equivalent for remediation discharges is required for discharge of the treated groundwater into the subsurface via a recharge basin. As part of the permit equivalent requirements, the effluent water is required to meet the New York State groundwater quality standards and surface water standards. The SPDES permit equivalency was obtained by CDM on behalf of EPA. The permit equivalency is provided in Appendix E of the Final Design Analysis Report (CDM 2009).

Air Pollution Control Permit

In accordance with NYSDEC regulation 6 of the New York Codes Rules and Regulations (NYCRR) Subpart 201-3.3, air strippers at a superfund site are considered trivial activities, and therefore, are exempt from obtaining an NYSDEC air pollution control State Facility Permit. However, a Registration Certificate for Source Construction and Operation Form is required to be completed and submitted to NYSDEC. The Treatment System Subcontractor will be responsible for submitting the form to NYSDEC.

Long Island Well Permit

Under Part 602 of NYCRR, a Long Island well permit equivalent will be required for installation of the extraction wells. The permit equivalent will be required for EW-1S, EW-1I and EW-1D because the wells are expected to extract water at a rate greater than 45 gallons per minute (gpm). The permit application will be completed and submitted to the NYSDEC by the Drilling Subcontractor.

Planning and Zoning Board Approval – Local

EPA counsel has reviewed the applicability of the application process. The GWTF will be constructed on a National Priorities List (NPL) site on the New York Registry of Class 2 Inactive Hazardous Waste Disposal Sites. As such, a formal building permit is not required. However, the structure must meet the substantive New York State and Local building code requirements. Typically, Planning Board and Zoning Board approvals will be required from the Village of Garden City for all siting, construction, and operation of the treatment system. The Treatment System Subcontractor will be

responsible for submitting the plans to the Planning Board and Zoning Board for completion and approval prior to the start of GWTF construction.

Building Permits – Local

After the Planning Board's and Zoning Board's approval of the GWTF construction plans, building permits will be obtained from the Building Department of the Village of Garden City for the construction of the treatment facility and associated access ways, and the piping networks. The building permits will also include the electrical, plumbing, and fire subcode permits. The Treatment System Subcontractor will be responsible for submitting the plans to the Building Department of the Village of Garden City to obtain the permits prior to the start of GWTF construction.

Erosion and Sediment Control Plan Approval – Nassau County

An Erosion and Sediment Control Plan is required by the Nassau County Soil and Water Conservation District (NCSWCD). An Erosion and Sediment Control Plan must be submitted to the agency to demonstrate that the construction plans comply with State requirements. The plans submitted should demonstrate that construction activities will not affect runoff from construction activities and stabilization methods during/after construction activities. The Treatment System Subcontractor will be responsible for submitting the application and plans to NCSWCD. The plan will be reviewed and approved by CDM prior to submittal to NCSWCD.

Discharge of Treated Water Approval – Nassau County

The treated water will be discharge to the local Nassau County Recharge Basin No. 124 via a stormwater manhole located in front of Garden City Well Field #10 and 11. Approval for discharge of treated water to Recharge Basin No. 124 and connection of effluent piping to the stormwater manhole has been obtained by EPA from Nassau County.

Sewage Disposal System

A septic tank will be required for the bathroom facilities in the GWTF building. The sewage disposal system will be installed in accordance with all State and local requirements. The Treatment System Subcontractor will be responsible for designing an appropriate sewage disposal system and submitting an application for the sewage disposal system permit to the Nassau County Department of Health Services, Division of Environmental Quality. Septage from the tank will be removed on a periodic basis by an approved septage removal company for proper disposal.

3.1.3 Local Business and Professional Licensing Requirements

The RA subcontractors are required to meet all local licensing requirements applicable to implementing the RA. Such requirements include the items below.

- General contractor's licenses - For all firms (i.e., Subcontractor and/or lower-tier subcontractors) performing construction work in the Village of Garden City.
- Drilling license - For installation of wells.
- Plumbing license - Plumbing construction must be certified by a NY-licensed plumber as per local regulatory requirements.
- Electrical license - Electrical construction work must be certified by a NY-licensed electrician as per local regulatory requirements.

- Engineering license - Detailed design and construction work must be certified by a NY-licensed Professional Engineer as per the subcontract specifications and local regulatory requirements.

Prospective RA subcontractors are required to demonstrate their ability to meet local licensing requirements in their proposals. Proposals will be reviewed by CDM, accordingly, as part of the RA subcontractor evaluation and selection process.

3.1.4 Pre-Construction and Pre-Work Conferences

Pre-construction and pre-work conferences will be held between CDM and the RA subcontractors after issuance of the Notice to Proceed (NTP) and prior to mobilization, respectively. Multiple pre-work conferences may take place for each definable feature of work in order to accelerate the work to meet the EPA schedule. The scope for each of these meetings will be as per the requirements specified in Section 01201 of the Subcontract Specifications. EPA will be invited to participate in these meetings.

3.2 Construction Period

3.2.1 On-Site Resident Engineering and Inspection

CDM will perform resident engineering and inspection on a full-time basis during construction to ensure that the RA is implemented by the RA subcontractors in accordance with the Subcontract requirements. Resident engineering and inspection will be performed by CDM personnel in accordance with CDM's Construction Quality Assurance (CQA) Plan, to be submitted in the future, and contract specifications and drawings (CDM 2009).

The RA construction will be completed in two phases, Phase I and Phase II. Phase I will include installation of extraction and monitoring wells, aquifer testing, and IDW disposal of waste generated during well drilling. Phase II will include construction of the GWTF, trenching and piping, and well head completion. The following personnel will be mobilized to the site to perform on-site resident engineering and inspection during each phase.

- Phase I: Well installation and testing – Frank Robinson, Field Team Leader/Geologist
- Phase II: GWTF construction – Peter Connolly, GWTF Construction Supervisor

CDM on-site personnel will be equipped with a cell phone and a lap top computer to facilitate communication. On-site office facilities and furnishings (e.g., trailer with desk) will be supplied by CDM and the Treatment System Subcontractor for Phase I and Phase II activities, respectively.

3.2.2 Progress Meetings

Weekly progress meetings will be held between CDM and the RA subcontractors during active periods of construction. The scope for these meetings will be as specified in Section 01202 of the Subcontract Specifications. The scope and schedule for each meeting will be coordinated in advance by the CDM Construction Supervisor/Geologist and RA subcontractors. The meetings will generally be held at

the site, with remote participation by pertinent team members via teleconference. EPA and NYSDEC will be invited to participate in these meetings. The weekly meeting minutes for Phase I and Phase II work will be completed by CDM and the Treatment System Subcontractor, respectively and will be forwarded to EPA.

3.3 Groundwater Sampling

CDM will perform baseline, quarterly and annual groundwater sampling and water level measurements in accordance with the EPA-approved UFP-QAPP. The schedule for each sampling event will be coordinated in advance by the Site Manager with the property owners.

3.4 Operations, Maintenance, and Monitoring Period

The Treatment System Subcontractor will perform routine operation, maintenance, and monitoring of the treatment systems. In addition, the Treatment System Subcontractor will perform initial testing of the treatment system for 14 days and system performance testing for 2 days.

CDM will not maintain a full-time representative at the site during the O&M period. Routine O&M activities will be completed by the Treatment System Subcontractor with CDM supervision. CDM will provide field direction/supervision during the initial testing program.

3.5 Demobilization

The Drilling Subcontractor will complete demobilization and site cleanup/restoration in accordance with the Subcontract Specification, Section 02525 after completion of drilling and aquifer testing activities.

The Treatment System Subcontractor will complete demobilization and site cleanup/restoration in accordance with the Subcontract Specifications, Sections 01780 and 02900 after: 1) completion of construction for the GWTF (including startup) and 2) completion of the Treatment System Subcontractor's scope of work.

Completion of demobilization and site cleanup/restoration will be verified via visual site inspection and photo-documented by CDM.

3.6 Other General Activities

3.6.1 Coordination of Work with Property Owners

All construction work will be coordinated in advance with property owners. EPA has primary responsibility for coordinating work with property owners. The primary EPA point of contact will be Caroline Kwan. CDM has established existing relationships with property owners, and, as EPA's contractor, will also assume a primary role in maintaining established relations on a daily basis during construction in coordination with EPA. The primary CDM point of contact will be Thomas Mathew.

Contact information for property owners is included in Table 3-1.

3.6.2 Coordination of Work with Local Regulatory and Utility Authorities

All work will be coordinated in advance with NYSDEC. CDM has existing relationships with representatives from the regulatory agencies, and will assume the lead role in maintaining established relations. The initial, primary point of contact will be Thomas Mathew. As the work proceeds and relationships expand, this responsibility will likely be delegated to CDM's Construction Supervisor/Geologist. The RA subcontractors will work directly with regulatory agencies, as necessary, to fulfill permit equivalency requirements and obtain the required approvals. CDM will assist the RA subcontractors in facilitating this process, when necessary.

The RA subcontractors will work directly with local utility owners to obtain utility mark outs in advance of performing intrusive construction work and to arrange for utility service installation. CDM will assist the RA subcontractors in facilitating this process, when necessary.

Contact information for local regulatory agencies and utility owners is included on Table 3-2.

3.6.3 Community Relations

Prior to the start of work, the CDM Construction Supervisor/Geologist will instruct all CDM and RA subcontractors personnel regarding how to address any inquiries received from the public or media. In particular, all personnel will be: 1) informed that they are not authorized by EPA to speak to the public regarding the project and 2) instructed to direct all public inquiries to the CDM Construction Supervisor/Geologist. Copies of the most current EPA Fact Sheet will be maintained at the site by CDM. The CDM Construction Supervisor/Geologist will provide public inquirers with a Fact Sheet, and indicate that all project-related questions be directed to Elizabeth Totman at EPA's Region 2 Public Affairs Division, as per the contact information on the Fact Sheet. The CDM Construction Supervisor/Geologist will be responsible for ensuring that any new RA subcontractors' personnel receive the above instructions.

3.6.4 Health and Safety

CDM Construction Supervisor/Geologist will be responsible for monitoring health and safety in accordance with CDM's Health and Safety Plan (HASP) and the RA subcontractors' HASP. CDM's Health and Safety Coordinator will perform remote monitoring on a periodic basis and coordinate with CDM's corporate Health and Safety Officer, to verify compliance with the HASP. At a minimum, the measures shown below will be implemented.

- Participate in the RA subcontractors' daily tailgate meetings before the start of work to discuss the health and safety issues pertaining to such work
- Verify that all work areas (i.e., exclusion zone, contaminant reduction zone, support zone) are properly delineated
- Verify that all necessary health and safety personnel, equipment, and supplies are on site
- Verify that all HASP requirements are being met on a continuing basis

3.6.5 Traffic Control and Security

CDM's Construction Supervisor/Geologist will be responsible for ensuring that the RA subcontractors provide traffic control and security for the site. Hours of construction operations will need to be coordinated with the property owner and the Village of Garden City.

All construction work will be performed on the site and traffic control on public roads is therefore not required. However, the RA subcontractors will be required to perform traffic control for traffic within the Treeline Companies and Simon Property Group facility property boundaries. For this project, the traffic controls shown below are anticipated during construction.

- Delineation of work and staging areas using chain link fencing to prevent unauthorized entry
- Re-routing of facility vehicle traffic during installation of extraction and monitoring wells, and the GWTF yard piping
- Coordination of transportation routes and treatment plant equipment delivery to the site
- Off hour transportation of treatment plant equipment to the site
- Coordination of transportation routes from the site to the disposal facilities

In addition, the security measures shown below are anticipated.

Construction

- Use of secure trailers for temporary storage of equipment and materials to be left at the site during off hours

O&M Period

- Storage of all valuable equipment and supplies inside the secure treatment facility or at an off-site location during facility operation, maintenance and monitoring
- Obtaining the services of a security company to manage fire and intrusion alarms.

3.6.6 Environmental Protection and Spill Control

CDM's Construction Supervisor/Geologist will be responsible for ensuring the RA subcontractors provides environmental protection and spill control in accordance with the Subcontract Specifications, Sections 01351 and 01355. At a minimum, the measures shown below will be implemented.

- Delineation of work and staging areas to prevent unauthorized access
- Installation and maintenance of soil erosion and sediment controls during the performance of earth work
- Collection, handling, and temporary storage of waste materials using standard methods and containers
- Characterization and disposal of waste materials at permitted disposal facilities
- Inspection of equipment for leaks prior to use at the site
- Maintenance of spill control supplies (e.g., shovels, sorbent) at the site

3.6.7 Waste Management

CDM's Construction Supervisor/Geologist will be responsible for ensuring that the RA subcontractors manages and dispose of all wastes generated during the RA in accordance with the Subcontract Specifications, Section 02120. The types of wastes shown below are anticipated.

Drilling

- Wastewater from drilling, steam cleaning, well development, and step testing
- Drill cuttings/mud
- Used personnel protective equipment

Site Construction

- Construction and demolition debris
- Excess soil from trench and building foundation excavation

Operations, Maintenance, and Monitoring

- Spent particulate filters
- Spent lubricants and equipment parts
- Used personnel protective equipment
- Used sampling equipment, materials, and supplies
- Spent acid from air-stripper cleaning
- Sludge from iron removal system, if iron removal system is installed
- Spent green sand media, if iron removal system is installed
- Purge water from groundwater sampling

3.6.8 Green Remediation

The RA subcontractors will be implementing green remediation practices in accordance with EPA Region 2's "Clean & Green" policy. The RA subcontractors will be required to supply documentation and records supporting the green remediation practices implemented (i.e., certifications from concrete and steel suppliers, utility receipts, etc.). CDM will be responsible for tracking and reviewing the documentation supplied by the subcontractors. In addition, CDM will perform inspections as part of the resident engineering services to document the implemented practices (i.e., quantities of recycled materials installed, confirmation that vehicles have been retrofitted with diesel particulate filters, etc.). CDM will report records of green-related activities performed by CDM and the RA subcontractors to EPA in its monthly progress reports or as requested by the EPA RPM.

Section 4

Section 4

RA Implementation Schedule

The RA Treatment System Subcontractor is required to submit a construction schedule for approval by CDM. A preliminary project schedule for the RA including installation of extraction and monitoring wells is shown on Figure 4-1.

Section 5

Section 5

References

CDM. 2007. Final Remedial Investigation Report, Old Roosevelt Field Contaminated Groundwater Area Site. July 24.

_____. 2009. Final Remedial Design, Old Roosevelt Field Contaminated Groundwater Area Site. September 18.

EPA. 2007. Record of Decision, Old Roosevelt Field Contaminated Groundwater Area Site. September 28.

Tables

Table 2-1
Project Contact Information
Site Management Plan
Old Roosevelt Field Contaminated Groundwater Area Site
Garden City, New York

| Project Title | Company/ Organization | Name | Phone Number |
|---|-----------------------|----------------------------|----------------|
| Remedial Project Manager | EPA | Caroline Kwan | (212) 637-4275 |
| Contracting Officer | EPA | Helen Eng | (212) 637-4348 |
| Project Officer | EPA | Debbie Butler | (212) 637-3367 |
| Site Manager | CDM | Thomas Mathew, P.E. | (732) 590-4638 |
| Procurement/Subcontracts Manager | CDM | Vernon Wimberely | (703) 814-7315 |
| Project Engineer | CDM | Muzaffar Rahmani | (732) 590-4727 |
| Geologist | CDM | Frank Robinson | (516) 496-8400 |
| Resident Engineer | CDM | Peter Connolly, P.E. | (978) 606-2704 |
| Health & Safety Officer | CDM | Shawn Oliveira, CIH, C.S.P | (406) 293-8595 |
| Quality Assurance Coordinator and Health & Safety Coordinator | CDM | Jennifer Oxford, CHMM | (212) 377-4536 |
| Project Manager | NYSDEC | Heather Bishop | (518) 402-9692 |
| Drilling Subcontractor | Uni-Tech Drilling | Gerald Freck | (856) 694-4200 |
| IDW Subcontractor | SeaCoast | Eugene Streiter | (732) 257-1616 |
| Treatment System Subcontractor | TBD | | |

Acronyms:

TBD - to be determined

EPA - U.S. Environmental Protection Agency

NYSDEC - New York State Department of Environmental Conservation

CHMM - Certified Hazardous Materials Manager

C.S.P. - Certified Safety Professional

CIH - Certified Industrial Hygienist

P.E. - Professional Engineer

IDW - Investigation Derived Waste

Table 3-1
Contact Information For Property Owners
Site Management Plan
Old Roosevelt Field Contaminated Groundwater Area Site
Garden City, New York

| Property | Contact | Phone | Address |
|--|---|----------------|---|
| Office Plaza (Treeline) | Michael Schor - Executive Vice President | (516) 837-8010 | 200 Garden City Plaza Garden City, NY 11530 |
| Roosevelt Field Mall (Simon Property Group) | George Montine - Operations Director | (516) 742-8001 | 630 Old Country Road Garden City, NY 11530 |
| Nassau County | Gerard Ennis - Hazardous Waste Specialist, Department of Public Works | (516) 571-6850 | 170 Cantiague Rock Road Hicksville, NY 11801 |
| Village of Garden City | Frank Koch - Water Supreintendent | (631) 952-6028 | 351 Stewart Avenue Garden City, NY 11530 |

Table 3-2
Contact Information For Local Regulatory and Utility Authorities
Site Management Plan
Old Roosevelt Field Contaminated Groundwater Area Site
Garden City, New York

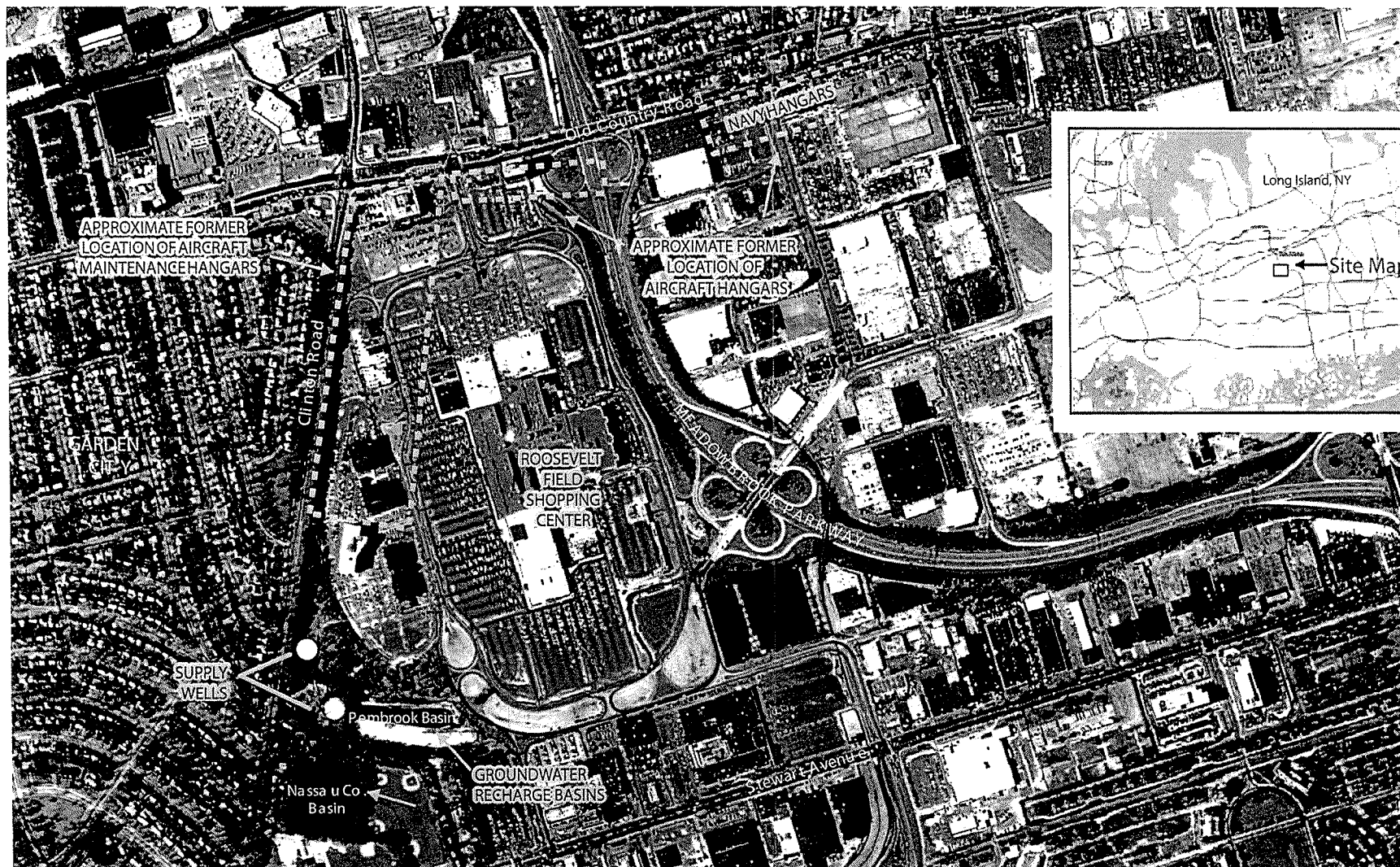
| Permit/Utility | Authority/Utility Owner | Contact Number |
|---|--|------------------------------------|
| Soil Erosion and Sediment Control Plan | Nassau County Soil & Water Conservation District | (516) 364-5860 |
| Local NYSDEC Representative | NYSDEC Division of Environmental Enforcement, Region 1 | John Conover (631) 444-0400 |
| Long Island Well Permit | NYSDEC Regional Permit Administrator, Region 1 | Roger Evans (631) 444-0365 |
| Sewage Disposal System Permit | Nassau County Department of Health Services Division of Environmental Health | (516) 227-9564 |
| Planning & Zone Board Approval, Building Permits | Building Department Village of Garden City | Michael Filippon (516) 465-4040 |
| Water & Sewer | Garden City Department of Public Works | (516) 465-4003 |
| Electricity | Long Island Power Authority (LIPA) | (800) 490-0025 |
| Telephone | Verizon | (800) 427-9977 |
| Gas | National Grid | (800) 930-5003 |
| Underground Utility Markouts | New York City One Call Center and Long Island | (800) 272-4480 |
| Fire Department | Garden City Fire Department | (516) 746-1301 |
| Police Department | Garden City Police Department | (516) 465-4100 |
| Health Services | Nassau County Department of Health Services | (516) 227-9697 |

Acronyms:

NYSDEC - New York State Department of Environmental Conservation

LIPA - Long Island Power Authority

Figures



adapted from NY SDEC Interactive Mapping Gateway: <http://www.nygis.state.ny.us/gateway/index.html>

CDM

0.25 0.125 0 0.25 Miles

Figure 1-1
Site Map
 Old Roosevelt Field Contaminated Groundwater Area Site
 Garden City, New York

Figure 2-1
Project Organization
Site Management Plan
Old Roosevelt Field Contaminated Groundwater Area Site
Garden City, New York

