workplan.hw.130043.2008-10-30.D004437-31_CDM.pdf

New York State Department of Environmental Conservation
Division of Management & Budget Services
Bureau of Procurement Services, 10th Floor
Minority and Women's Business Programs
625 Broadway, Albany, New York 12233-5028
Phone: (518) 402-9311 • **FAX:** (518) 402-9230
Website: www.dec.ny.gov

Alexander B.Grannis
Commissioner

October 30, 2008

Chris Korzenko
CDM
100 Crossways Park
Woodbury, New York 11797

Re: Contract # D004437-31
Contract Name: New Cassel Industrial Area
County: Nassau
Minority and Women's Business Program

Dear Mr. Korzenko:

The Bureau of Affirmative Action and Minority and Women's Business Programs (BAA/W/WBP) is responsible for the administration of the Department of Environmental Conservation's (DEC) Minority and Women's Business Enterprise-Equal Employment Opportunity (M/WBE-EEO) Program. The M/WBE-EEO Program serves to assure that NY State certified minority and women-owned business enterprises (M/WBEs) are provided access to contracting opportunities and minorities and women are provided equal access to employment opportunities (EEO) created by the expenditure of public funds. The BAA/M/WBP is in receipt of your firm's utilization plan. Based on our review, the following comments are provided for your information.

Total dollar Value	$ 99,870.00
MBE Project Goal 15%	$ 14,981.00
WBE Project Goal 5%	$ 4,993.00
Total M/WBE Goal 20%	$ 19,975.00

According to New York State Executive Law, Article 15-A, Criteria for Contractors M/WBE Good Faith Efforts, all prime contractors are required to make a documented good faith effort to obtain M/WBE participation on New York State Department of Environmental Conservation funded contracts. After reviewing your recent correspondence, it appears that CDM has met those requirements; therefore the Contractors M/WBE Utilization Plan is approved.

C. The firms listed below are NYS certified M/WBE's and can be used for goal crediting purposes:

MBE FIRM	SCOPE OF WORK	DOLLAR AMOUNT
Ken Schider	M/WBE QT Reports	$ 900.00
Total Proposed MBE Participation		$ 900.00

WBE FIRM	SCOPE OF WORK	DOLLAR AMOUNT
Data Validation Services	Data Validation/DURS Prep	$ 1,852.00
Air Toxics	Analytical Laboratory Services	$ 19,119.00
Total Proposed WBE Participation $		$ 20,971.00

D. To complete the M/WBE-EEO program, please ensure that the following procedures are followed:

1. That legally signed and executed M/WBE subcontracts representative of the M/WBE goal amounts are obtained from the prime contractor and maintained in the CDM files for review by the NYSDEC.

2. That copies of purchase orders (if used) along with copies of both sides of legally signed and canceled checks, are obtained from the prime contractor to verify actual payment to M/WBE's. These documents are to be kept in the CDM files for review by the NYSDEC.

3. That CDM provide this office, within fifteen (15) business days of the close of each federal fiscal quarter, a quarterly report listing of all M/WBE subcontracts on record for each prime contract and/or legally signed purchase orders. Please include date of award for each M/WBE subcontract, total dollar value and scope of work.

4. That any changes in the contractor M/WBE utilization plan herein determined to be acceptable should be brought to the attention of this office.

5. Please note that items D-1 and D-2 above must be maintained at the offices of the CDM for purposes of inspection and/or submittal to the NYSDEC.

Sincerely,

Thomas Christian
Minority Business Specialist 1

C: J. Abadia
A. Indelicato

New York State Department of Environmental Conservation
Division of Environmental Remediation, 12th Floor
625 Broadway, Albany, New York 12233-7012
Phone: (518) 402-9764 • **FAX:** (518) 402-9722
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

October 31, 2008

Mr. Michael Memoli, P.E.
Program Manager
Camp Dresser & McKee
100 Crossways Park West, Suite 415
Woodbury, New York 11797

RE: Schedule 2.11 Approvals
Contract/WA No.: **D004437-31**
Site/Spill Name: **New Cassel Industrial Area**
Site/Spill No./PIN: **130043**

Dear Mr. Memoli:

The New York State Department of Environmental Conservation's Division of Environmental Remediation (DER) hereby approves the enclosed Schedule 2.11s for the above referenced WA for a total amount not to exceed $99,879. Your firm may now submit a request for reimbursement for work completed under this WA.

If you have any questions regarding the WA, please contact the Project Manager, Joe Jones, at (518) 402-9621.

Sincerely,

Michael J. Cruden, P.E.
Chief
Contracts and Payments Section
Bureau of Program Management
Division of Environmental Remediation

Attachment

ec: J. Jones, PM
A. Indelicato, CM
D. Desnoyers
S. Ervolina
D. Weigel
M. Cruden
C. Vasudevan
G. Bobersky
W. Parish, Region 1
D. Finlayson
T. Wolosen
M/WBE Unit

FINAL
WORK PLAN
OPERABLE UNIT 4 PHASE 3 OFF-SITE VAPOR INTRUSION EVALUATION
New Cassel Industrial Area
(Site No. 1-30-043-A, B, C, F, K, N and V)
North Hempstead and Westbury, Nassau County, New York

Prepared for

New York State Department of Environmental Conservation
Investigation and Design Engineering Services
Standby Contract No. D004437
Work Assignment No. D004437-31

Prepared by

Camp Dresser & McKee Inc.
Raritan Plaza I, Raritan Center
Edison, New Jersey

October 30, 2008

Contents

Appendices

Figures

Tables

Acronyms

AS	air sparging
ASP	Analytical Services Protocol
bgs	below ground surface
CDM	Camp Dresser & McKee Inc.
Co	Company
CPP	Citizen Participation Plan
DER	Division of Environmental Remediation
EDD	Electronic Data Deliverable
ELAP	Environmental Laboratory Approval Program
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
FS	Feasibility Study
GAC	granulated active carbon
HASP	Health and Safety Plan
IDW	investigative derived waste
IMC	IMC Magnetics Inc.
Inc.	Incorporated
IRM	Interim Remedial Measure
LOE	Level of Effort
LM&S	Lawler, Matusky and Skelly Engineers, LLP
MBE	Minority Business Enterprise
NCDOH	Nassau County Department of Health
NTP	Notice to Proceed
NY	New York
NYPIRG	New York Public Interest Research Group
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OU	Operable Unit
PCE	Tetrachloroethene
PID	photoionization detector
PM	Project Manager
PSA	preliminary site assessment
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
RI	Remedial Investigation
ROD	Record of Decision
SVE	soil vapor extraction
TCA	trichloroethane
TCE	trichloroethene
$\mu g/m^3$	micrograms per cubic meters
UGA	upper glacial aquifer
VOC	volatile organic compound
WA	work assignment
WBE	Woman Business Enterprise

Section 1
Introduction

This Work Plan for the New Cassel Industrial Area (NCIA) Operable Unit (OU) 4, Phase 3 Off-site Vapor Intrusion Evaluation was prepared by Camp Dresser & McKee Inc. (CDM) for the New York State Department of Environmental Conservation (NYSDEC) under the Engineering Services for Investigation and Design, Standby Contract No. D004437. The Work Plan was developed in accordance with the *"Standby Contract Work Assignment No. D004437-31, Soil Vapor Intrusion Investigation at the New Cassel Industrial Area Sites (Site No.:1-30-043A, B, C, F, K, N and V)"*. This Work Plan is consistent with the *"Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006"* and the applicable elements of the *"Draft Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, dated December 2002"*.

This Work Plan is comprised of the following sections:

- **Section 1 - Introduction**
  This section presents the site description and history, including the location, operational and remedial history as well as the project objectives.

- **Section 2 - Scope of Work**
  This section presents the scope of work for the following four tasks of this work assignment:
  1. Task 1: Work Plan Development
  2. Task 2: Citizen Participation Plan Mailing List and Fact Sheet
  3. Task 3: Phase 3 Off-site Soil Vapor Intrusion Investigation
  4. Task 4: Site Characterization Report

- **Section 3 - Project Schedule**
  The project schedule for the performance of the above four tasks is presented in this section.

- **Section 4 - Budget Estimate**
  A detailed work assignment budget is presented in this section, itemized by tasks and sub-tasks utilizing schedule 2.11 in accordance with the contract's budget reporting requirements, cost rates and factors contained in the base contract.

- **Section 5 - Staffing Plan**
  The staffing plan identifies the roles and responsibilities of the CDM project team. CDM has assembled a team of environmental engineers and scientists experienced with vapor intrusion and NYSDEC regulations.

- **Section 6 - Subcontracting**

This section identifies the services provided by subcontractors on this work assignment. The name and location of each proposed subcontractor is also presented in this section.

- **Section 7 - MBE/WBE Utilization Plan**
  The Minority Business Enterprise (MBE) and Woman Business Enterprise (WBE) Utilization Plan is presented in this section. CDM's subcontractors have been carefully selected to provide the most reasonable cost-effective services while achieving the contract-specific MBE/WBE utilization goals.

- **Section 8 - References**
  This section presents a complete list of the references cited in the Work Plan.

The following appendices are also included in this Work Plan:

- **Appendix A - O'Brien and Gere's OU 4 Phase 1 and 2 Off-site Vapor Intrusion Investigation**
  Information presented on critical figures and analytical tables from this document provided by NYSDEC were used to develop the proposed sampling locations. The critical figures, tables, and the text of the report are presented in Appendix A.

- **Appendix B - Quality Assurance/Quality Control Tables**
  The Generic Quality Assurance Project Plan (QAPP) has been provided to NYSDEC separately. The Generic QAPP details procedures and methods used during the field investigation activities to ensure quality during the execution of this work assignment. Site specific QA/QC tables are presented in Appendix B.

- **Appendix C - Health and Safety Plan**
  The site-specific Health and Safety Plan (HASP) presented in Appendix C specifies the health and safety procedures to ensure safe work practices are employed.

- **Appendix D - Citizen Participation Plan**
  The Citizen Participation Plan (CPP) presented in Appendix D provides the primary contacts for the site as well as various public entities and provides ways for citizen to be involved in the project.

- **Appendix E - Schedule 2.11**
  The schedule 2.11 presented in Appendix E contains a detailed cost estimate by task and subtask of all work elements contained in this work assignment.

- **Appendix F - Subcontractor Backup**
  Appendix F contains the conflict of interest forms signed by the subcontracted laboratory and data validator.

1.1 Purpose and Objectives

The focus of this work assignment (WA) is to determine if volatile organic compounds (VOCs) are present in the sub-slab vapor and indoor air at 17 residences and the W.T. Clarke High School. The owner names and addresses at the residential locations are being kept confidential in this work plan and have been provided to NYSDEC separately. The targeted properties are located within the area affected by the groundwater plumes originating in NCIA and were identified in a previous study (WA #D00490-40) as potential candidates for additional indoor air sampling. Sub-slab vapor, indoor air, and outdoor (ambient) air samples will be collected to determine if soil vapor contamination exists at the selected locations. If so, the potential threat to human health and the environment will be examined. Field tasks for this investigation are:

- Perform a soil vapor intrusion investigation;
- Determine if vapor contamination present poses a threat to human health and the environment.

1.2 Site Description and Background

1.2.1 Location

The NCIA is located in the town of North Hempstead, Nassau County, New York (NY) (Figure 1-1). NCIA is heavily developed and covers approximately 170 acres which are bounded by the Long Island Railroad to the north, Frost Street to the east, Old Country Road to the south, and Grand Boulevard to the southwest. NCIA and surrounding areas, in general, are comprised of several light industrial and commercial properties intermixed with private residences located to the north and south. Hempstead Bay is located approximately 6 miles southwest of the site and the nearest water supply well is approximately 1,800 feet southeast of the NCIA.

The 17 residential properties and the W.T. Clarke High School designated for soil vapor sampling are located in the neighboring town of Westbury, NY. The surrounding area of these 18 locations is a mix of commercial and residential properties.

1.2.2 Operational and Remedial History

Documents describing existing conditions, history and past land use practices were provided to CDM by the NYSDEC. The information in these documents was used to provide a general description of the sites and historical/remedial activities conducted. The following NYSDEC provided background documents were utilized:

- OU 4 Phase 1 and 2 Vapor Intrusion Investigation, 2007. Work Assignment #D00490-40, New Cassel, Site No. 1-30-043A-V. O'Brien and Gere.
- Work Plan, 2006. New Cassel Operable Unit 4, Site No.1-30-043A-V, Vapor Intrusion Investigation, Work Assignment #D00490-40.

- Record of Decision, 2003. New Cassel Industrial Area Site, Town of North Hempstead, Nassau County, New York, Offsite Groundwater South of the New Cassel Industrial Area Operable Unit No. 3.
- Record of Decision, 2002. Tishcon Corporation at 29 New York Avenue Site, Town of North Hempstead, Nassau County, New York, Site Number 1-30-043V.
- Record of Decision, 2000. Atlas Graphics Site, Town of North Hempstead, Nassau County, Site Number 1-30-043B Operable Unit-01 On-Site Soil and Groundwater.
- Record of Decision, 2000. IMC Magnetics Site, Town of North Hempstead, Nassau County, Site Number 1-30-043A Operable Unit-02 On-Site Groundwater.
- Remedial Investigation/Feasibility Study Report, Volume 1, 2000. New Cassel Industrial Area Offsite Groundwater, Town of North Hempstead, Nassau County.
- Record of Decision, 1998. Tishcon Corporation Site at 125 State Street, Westbury (V), North Hempstead (T) New Cassel Industrial Area, Nassau County, New York, Site Number 1-30-043C.
- Record of Decision, 1997. Former Tishcon Corporation Site, Westbury, North Hempstead, New Cassel Industrial Area, Nassau County, New York, Site Number 1-30-043F.
- Multisite PSA Report, 1996. New Cassel Industrial Area Site, North Hempstead, Nassau County.
- Environmental Investigation, 750 Summa Avenue Westbury, New York. 1996.
- Summary Report on New Cassel Industrial Area, Site ID#130043, 1995.

The following subsections describe the NCIA as well as the surrounding residential and commercial area, and provide a brief overview of operational and remedial activities conducted.

1.2.2.1 New Cassel Industrial Area

The NCIA was first developed during the early 1950s and is home to approximately 200 industrial and commercial businesses. Business practices associated with past light industrial activities within the area have resulted in extensive VOC contamination of groundwater in the vicinity of the site. Previous investigations conducted within the area indicated that multiple parties were responsible for the contamination resulting in individual "sites". To address this, the NYSDEC classified

the entire industrial area as a hazardous waste site in 1998 and is collectively referred to as the NCIA (LM&S 1996; NYSDEC 2003).

Site A - 570 Main Street

Site A is located at 570 Main Street and is approximately over two acres in size. From the early 1950s until 1992, the site was occupied by IMC Magnetics Inc (IMC), a manufacturer of induction motors, fans, blowers, stepper motors and other rotating machinery. In 1995 the site was given a Class 2 Registry status by the NYSDEC due to the presence of onsite contaminated soils and groundwater. Primary contaminants consisted of chlorinated hydrocarbons, petroleum hydrocarbons and metals; however, further investigations revealed the presence of chlorinated VOCs. Subsequently, to remediate site soil contamination identified during a 1996 Remedial Investigation (RI), IMC installed and operated a soil vapor extraction (SVE) system. In addition, an RI/Feasibility Study (FS) conducted at the site confirmed the presence of a chlorinated VOC groundwater plume. To address the groundwater contamination, in-situ oxidation using hydrogen peroxide injection was selected as the remedy. Treatment began in December 2001 and was still ongoing upon completion of the October 2003, Record of Decision (ROD) for Operable Unit (OU) 3 (NYSDEC 2003).

Site B - 567 Main Street

Site B is located at 567 Main Street and is approximately one acre in size. In 1950 a warehouse was constructed onsite for use as a construction vehicle storage facility. Warehouse operations ceased in 1977, and the property was sold to Atlas Graphics Inc., a photo engraving manufacturing operation. The operation used a reported 312 gallons per year of tetrachloroethene (TCE). At the time of purchase, the building was connected to a cesspool for its sanitary waste disposal. In 1977, a discharge of approximately 50 gallons of TCE to the cesspool was documented. Investigations conducted on site showed elevated levels of TCE in both soil and groundwater, and in 1995 the site was assigned a Class 2 status by NYSDEC. In February 2000, a ROD was issued for the site selecting air sparging/soil vapor extraction (AS/SVE) as the remedy to address the contaminated soils and groundwater. The system was constructed in October 2000 followed by initial treatment activities in November 2000 (NYSDEC 2003).

Site C - 125 State Street

Site C is located at 125 State Street and is approximately one acre in size. From 1984 to 1996 the site was occupied by the Tishcon Corporation (Tishcon). Manufacturing operations at Tishcon consisted primarily of the production of dietary supplements and vitamin products via a dry blending process. From 1985 to 1993, methylene chloride, 1,1,1-trichloroethane (1,1,1-TCA) and methanol were used in tablet coating processes conducted at the facility. As part of operating procedures, equipment was rinsed in a driveway fitted with several storm drains. An investigation conducted by the Nassau County Department of Health (NCDOH) indicated the presence of chlorinated VOCs and metals in four storm drains at the site, and requested that contaminated material be removed from storm drains and a distribution box on the

property in August 1993. The site was placed on the Registry in 1995 and issued a Class 2 status. The excavation and restoration of contaminated areas was completed as part of an Interim Remedial Measure (IRM) in October 1997. A ROD for the site was issued in January 1998, and required the excavation and restoration of remaining contaminated source areas. Excavation and disposal of the material was conducted in early 1999, and the site was reclassified by NYSDEC to a Class 4 ranking in March of 2000 (NYSDEC 2003).

Site F - 68 Kinkel Street

Site F is located at 68 Kinkel Street and is approximately one-quarter of an acre in size. From 1982 to 1983, Tishcon conducted operations at the site which involved the encapsulation of materials. It was reported that during these processes, 1,650 gallons of TCE as well as 8,000 gallons of methylene chloride and 3,000 gallons of shellac were used. The site was added to the NYSDEC Registry under Class 2 status in 1995. A State Superfund investigation was completed in July 1996, and in January 1997, a ROD requiring no action was issued. The site was delisted from the Registry in December of 1997 (NYSDEC 2003).

Site K - 62 Kinkel Street

Site K is located at 62 Kinkel Street, west of the intersection of Old Country Road and the Wantagh State Parkway. The LAKA Tool and Stamping Company (Co), Incorporated (Inc.), occupied and conducted metals stamping at the site from 1971 to 1978. LAKA Industries, Inc., the parent company, operated the site from 1979 to 1984 as a machine shop specializing in tools, dies and precision stamping; both companies used TCE and lubricating oils as part of their operating procedures. In 1996, the site was issued a Class 2 status. Subsequently, a RI/FS was conducted to define the nature and extent of contamination at the site. Results of the RI/FS confirmed the presence of soil contamination in the vicinity of an onsite cesspool and an area located in a catch basin found downgradient of the site. To address the soil contamination, the NYSDEC issued a ROD in February 2000, followed by the excavation of contaminated soils in May 2001; however, remedial activities did not address groundwater contamination (NYSDEC 2003).

Site N - 750 Summa Avenue

Site N is located at 750 Summa Avenue and is currently occupied by EZ-EM, a company that specializes in imaging and diagnostic for treating gastrointestinal diseases. EZ-EM along with other parties owned the property since 1982. Prior to EZ-EM ownership, Micro Industries, a machine shop occupied the site from 1971 to 1982. From 1968 to 1971 Advance Food Service Equipment Manufacturing occupied the site as a stainless steel kitchen equipment supplier. Advance Food Service stored and used 1,1,1-TCA and other solvents during their occupancy. In 1978, the NCDOH required a floor drain near a vat used for degreasing operations be sealed as sludges sampled from a dry-well contained levels 1,1,1-TCA. In 1985, the vat was removed from the site. Degreaser sludges containing a mixture of 1,1,1-TCA and waste oil were stored in drums in the rear of the facility according to records from 1978. The

site was classified on the Registry as a Class 4 ranking (LM&S 1996; NYPIRG website).

Site V - 29 New York Avenue
Site V is located at 29 New York Avenue and is approximately one acre in size. The site was developed in 1952, and was used to manufacture electronic equipment until the late 1970s. From 1979 to 1991 Tishcon occupied the site until it was sold to Equity 1 Associates in 1991. In 1995 the site was issued a Class 2 status on the Registry as part of the Tishcon Brooklyn Ave site. A 1996 study investigating soils/sediments collected from onsite catch basins showed levels of 1,1,1-TCA-related compounds above cleanup criteria. Based on these results, the NYSDEC listed the Tishcon 29 New York Ave site as a separate Class 2 site on the Registry in March 1998. In December 1999, a RI was completed and results were presented to the NYSDEC followed by the removal of contaminated materials from an onsite cesspool in August 2000. Based on the results of that investigation a no further action ROD was signed in March 2002, and the site was delisted from the Registry later that year (NYSDEC 2003).

1.2.2.2 Lawler, Matusky, and Skelly Engineers LLP 2000 RI/FS

Several state funded remedial investigations at the NCIA were conducted from 1995 to through January 2000. In September of 2000, Lawler, Matusky, and Skelly Engineers LLP completed a RI/FS report which summarized all the groundwater data collected during the various remedial investigations. The activities conducted during the RI include the following: Installation of four shallow monitoring wells and sampling at fifteen hydropunch locations downgradient of NCIA in the summer of 1996, followed by five rounds of monitoring well sampling. The first round, completed in the summer of 1996, consisted of sampling 37 existing wells and the 4 newly installed shallow. The second round, completed in the summer of 1997, consisted of sampling at eleven hydropunch locations south of Old County Road as well as Round 1's 41 monitoring wells. The third and fourth rounds, completed in the spring and summer 1999, consisted of sampling four Bowling Green early warning wells (previously installed and sampled in July of 1998) and the 41 existing monitoring wells. The final round, completed during January of 2000, consisted of sampling the four Bowling Green early warning wells and 22 existing monitoring wells.

Analytical results obtained from groundwater sampling showed concentrations of VOCs exceeding Class GA groundwater standards for tetrachloroethene (PCE), 1,1,1-TCA, and their breakdown products. The results of the RI in combination with operational history analysis concluded that past activities at the various sites within the NCIA has resulted in significant off-site groundwater contamination. A total of three groundwater plumes were identified as contributing to the off-site VOCs contamination. One plume was identified in the central section of NCIA, one plume in the eastern portion of NCIA, and one plume in the western section. The three groundwater plumes are concluded to be affecting both the Upper Glacial Aquifer (UGA) and the upper zones of the Magothy Aquifer.

Lawler, Matusky, and Skelly Engineers LLP presented 11 alternatives in the September 2000 RI/FS Report. Each alternative did not include remedies for subsurface soil and potential sources since these matrices are part of NYSDEC's On-Site Remedial Program.

Following the RI/FS, NYSDEC continued to monitor the four Bowling Green early warning wells on a quarterly basis. In addition, eight monitoring wells were installed to the southwest of the Bowling Green production wells in October 2001, and a 300 foot deep monitoring well was installed in July of 2002. These nine monitoring wells were also continually monitored on a quarterly basis.

1.2.2.3 NYSDEC October 2003 Record of Decision

In October of 2003, NYSDEC in consultation with New York State Department of Health (NYSDOH) presented a ROD for the selected remedy for OU 3 which consists of off-site groundwater primarily located to the south of the NCIA. NYSDEC selected full plume remediation of upper and deep portions of the aquifer (to 225 feet below ground surface (bgs)) with in-well vapor stripping/localized vapor treatment as the remedy.

Under this remedy, the groundwater contaminant plume is treated in-situ using a series of groundwater circulation wells (also known as in-well stripping systems). The circulation well system creates in-situ vertical groundwater circulation cells by drawing groundwater from an aquifer formation through one screen section of a double-screen well and discharging it through the second screen section. A blower is used to achieve upward groundwater flow and bubbling air within the cell which drives aerated water out of the upper well screen. The groundwater circulation allows the air to capture the VOC contamination which is then removed by a vacuum blower and directed through a granulated active carbon (GAC) filtration system.

A 225 foot vapor stripping well with ancillary systems was installed foremost for the purpose of a pilot study. Following the pilot study three additional 225 foot vapor stripping wells, four 200 foot vapor stripping wells, and three 140 foot vapor stripping wells, including the ancillary systems, will be installed.

A long term groundwater monitoring program is also part of the ROD. Nine newly installed monitoring wells downgradient of Old Country Road and thirteen existing wells will be conducted quarterly for the first two years and periodically thereafter. Continued monitoring will also be conducted at the two existing Bowling Green Water District supply wells. Operation and maintenance of the treatment system and monitoring activities will take place until the remediation goals are achieved.

1.2.2.4 O'Brien and Gere's OU 4 Phase 1 and 2 Off-site Vapor Intrusion Investigation

In 2006, NYSDEC tasked O'Brien and Gere to assess whether vapor phase contaminants migrating in groundwater or the vadose zone from the NCIA were

volatilizing and entering structures in an area surrounding the NCIA. The investigation was divided into two phases which are summarized below.

Phase 1 Investigation
The Phase 1 Investigation was conducted from August 11 through September 22, 2006. During this time period, two soil vapor probes were installed at 38 locations for a total of 76 soil vapor sampling ports. The sampling ports were located at building foundation depth (approximately 8 feet bgs) and 6 to 10 feet above the water table (approximately 29 to 45 feet bgs). The water table was determined periodically by measuring the depth to water from nearby monitoring wells or drilling to 50 feet bgs and conducting a water level measurement. The soil vapor samples were collected with 1-Liter Summa canisters with a 2-hour regulator. Tracer gas tests were also performed at several soil vapor ports to ensure the quality of the bentonite seal.

Results from the Phase 1 Investigation showed chlorinated and non-chlorinated hydrocarbons at elevated levels. PCE concentrations ranged from 2.85 to 1,086 micrograms per cubic meters ($\mu g/m^3$). Three soil vapor samples exceed the New York State air guideline for PCE (100 $\mu g/m^3$). TCE concentrations ranged from non-detect to 363 $\mu g/m^3$. Seven soil vapor samples exceed the New York State guideline for TCE (5 $\mu g/m^3$). Benzene concentrations ranged from 2.3 to 182 $\mu g/m^3$. Based on the results of the Phase 1 Investigation the NYSDEC and NYSDOH proposed additional soil vapor sampling of residences and public buildings within the area. A table presenting the analytical results of the Phase 1Investigation is provided in Appendix A.

Phase 2 Investigation
The Phase 2 Investigation was conducted on September 14, 2007. Six indoor air samples were collected within the W.T. Clarke High School to determine the hazard of VOC exposure to students. Three canisters were set up in the basement and three were set up on the first floor to accurately delineate the soil vapor intrusion pathway. The first floor samples were collected at approximately four feet above the floor surface to gain an accurate reading of the breathing zone. In addition, an ambient air Summa canister was placed between the Middle School and the athletic fields approximately five feet above the ground surface. O'Brien and Gere noted that the placements of the canisters were not among any objects or materials that would impact the analytical results.

Results from the Phase 2 Investigation showed detections of chlorinated and non-chlorinated hydrocarbons. PCE concentrations ranged from non-detect to 2.28 $\mu g/m^3$. TCE concentrations ranged from non-detect to 3.71 $\mu g/m^3$. Methylene chloride concentrations ranged from 0.671 to 1.91 $\mu g/m^3$. Carbon tetrachloride concentrations ranged from non-detect to 0.831 $\mu g/m^3$. Benzene concentrations ranged from 0.390 to 1.95 $\mu g/m^3$. Toluene concentrations ranged from 2.95 to 8.24 $\mu g/m^3$. Lastly, m&p-xylene concentrations ranged from 1.68 to 4.55 $\mu g/m^3$. The results of the Phase 2 Investigation are presented in Appendix A.

Soil vapor sampling at seventeen additional residences were included in the Phase 2 scope of work; however, the sampling was not completed due to the conclusion of the heating season. The investigation of these seventeen residences was integrated into this Work Plan.

1.2.2.5 CDM 2008 Soil Vapor Intrusion Investigation

In March of 2008, CDM conducted a Soil Vapor Intrusion Investigation which included soil vapor and groundwater sampling at five direct push locations at each of the seven sites (Site A, B, C, F, K, N, & V) of the NCIA. Soil vapor samples were collected from each of the five direct push locations at three depth intervals, 8, 25, and 45 feet bgs, for VOC analysis. Outdoor (ambient) air samples were collected each day of soil vapor sampling to represent the outdoor air quality surrounding the structure. Groundwater samples were also collected from co-located boreholes adjacent to the soil vapor sample locations at the surface of the groundwater table, estimated at 48 feet bgs, for VOC analysis.

The results of the investigation identified several potential source areas contributing to the PCE and 1,1,1-TCA groundwater plume migrating from NCIA. The site characterization report completed by CDM proposes mitigation of those source areas as well as additional sampling after mitigation is complete to ensure all source areas were identified and properly addressed.

1.3 Site Geology and Hydrogeology

The off-site area is located above the UGA which consists of Upper Pleistocene deposits of poorly sorted sand and gravel to approximately 80 feet bgs. Beneath the UGA lies the Magothy aquifer which is comprised of finer sands, silt and small amounts of clay. Previous investigations have indicated that the Magothy formation may sometimes be found at considerable shallower depths (60-80 feet bgs) within the area when compared to other portions of Long Island. Within NCIA, the UGA and Magothy formations are in direct hydraulic connection as no other hydro-geologic units are found between them; however, clay lenses are often found within the upper portions of the Magothy. Previous investigations conducted onsite indicated that the water table is approximately 48 feet bgs and that groundwater flow is in a southwesterly direction.

Section 2
Scope of Work

2.1 Task 1 - Work Plan Development

This Work Assignment was developed based on the recommendations of a previous study conducted by O'Brien and Gere (WA #D00490-40). A copy of the letter report for Work Assignment #D00490-40 prepared by O'Brien and Gere (OBG) dated November 14, 2007 was provided to CDM on August 1, 2008 and is included in Appendix A. The report details OBG's OU 4 Phase 1 and 2 off-site soil vapor and indoor air investigation in the area of the off-site NCIA groundwater plume to determine if soil vapor intrusion was occurring in nearby residences and public buildings. The details of the investigations conducted were provided in Section 1.2.2.4. As indicated in Section 1.2.2.4, OBG's scope of work included conducting soil vapor sampling at seventeen additional residences; however the sampling was not completed due to the conclusion of the heating season. The investigation of these seventeen residences was integrated into this Work Plan. The locations were selected based on their proximity to soil vapor points that had elevated levels of organics and because they had basements. In addition to the 17 residences, sampling within the W.T. Clarke High School is also included in this Work Plan. Of note, the OBG report indicates that the residents were never contacted, but that a letter addressing access had been prepared and approved by NYSDEC and NYSDOH.

This Work Plan references procedures detailed in the CDM Generic Quality Assurance Project Plan (QAPP) dated February 2008, which has been provided to NYSDEC. The Generic QAPP presents methods that will be used to collect field data including project samples, and focuses on the analytical methods and quality assurance/quality control (QA/QC) procedures that will be used to analyze project samples, ensure the data are of known and acceptable quality, and manage the resultant data. Work specific QA/QC tables are provided in Appendix B of this work plan.

This Work Plan also includes a work specific HASP presented in Appendix C and a Citizen Participation Plan, provided in Appendix D. The HASP describes the health and safety for the off-site field activities that will be performed. The CPP provides the primary contacts for the site as well as various public entities and provides ways for citizen to be involved in the project.

2.2 Task 2 - Citizens Participation Plan Mailing List and Fact Sheet

This task includes determining the addresses of adjacent property owners, local officials, and advocacy groups. CDM will also assist NYSDEC with the preparation of a fact sheet to be distributed to the addresses compiled.

2.3 Task 3 - Soil Vapor Investigation

This task includes sub-slab and indoor air sampling at 17 residences and 3 locations within the W.T. Clarke High School located within the area affected by the groundwater plumes originating in the NCIA.
This task will include:

- Perform an inspection of the general property's site conditions including the completion of the NYSDOH *Indoor Air Quality Questionnaire and Building Inventory;*
- Perform sub-slab soil vapor sampling at 17 residences and at 3 locations within the W.T. Clarke High School, for a total of 20 locations;
- Collect indoor air samples in the basement (or first floor if no basement is present) at each location where a sub-slab soil vapor point is located, for a total of 20 locations;
- Collect outdoor (ambient) air samples at each structure sampled for indoor air and sub-slab soil vapor, for a total of 18 locations.

These samples will be collected in accordance with the NYSDEC Division of Environmental Remediation *Technical Guidance for Site Investigation and Remediation,* dated December 2002 and *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (SVI Guidance), dated October 2006. Final sample results will be provided within the standard turnaround time (30 days).

2.3.1 Sub-Slab Air Sample Collection

Sub-slab soil vapor sampling will be conducted at 17 residences and at 3 locations within the W.T. Clarke High School. A total of 20 permanent sub-slab soil vapor sampling implants will be hand drilled to approximately a foot, piercing the concrete slab. The implant installation and soil vapor sampling procedures are detailed in Section 3.9 of the Generic QAPP. A duplicate sub-slab soil vapor sample will also be collected at one of the residences.

The selected sub-slab soil vapor sample location shall be placed away from floor penetrations and co-located with the indoor air sample. Three borehole and tubing volumes will be purged from the subsurface at a rate less than 200 milliliter per minute using the low-flow pump. PID readings will be observed during purging and the highest reading shall be recorded on the appropriate field form.

The sample shall be collected with a 6-Liter, laboratory-certified summa canister with a 24-hour regulator and an initial vacuum of 38 inches Hg ±2 inches. A vacuum of 5 inches Hg ±1 inch must be present when the sample collection is completed. The sub-slab sample will be collected concurrently with the indoor and outdoor air samples.

The sub-slab vapor samples will be sent to an off-site laboratory for VOC analysis via United States Environmental Protection Agency (EPA) Method TO-15. The holding time is fourteen days from the verified time of sample collection. The analysis for sub-slab vapor samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound. All samples will be analyzed by an Environmental Laboratory Approval Program (ELAP) certified laboratory. A NYSDEC Analytical Services Protocol (ASP) Category B data deliverable will be provided for these analyses. Table 2-1 presents a summary of the analytical program for the off-site investigation.

2.3.2 Indoor Air Collection

Indoor air sampling will be conducted at each of the 17 residences and 3 locations within the W.T. Clarke High School. A duplicate indoor air sample will be collected at one of the residences. Indoor air samples will be collected from the basement area (if applicable) or from the first floor if there is no basement at each location. Prior to sampling, an inspection of the general property's site conditions will be performed to include the completion of the NYSDOH *Indoor Air Quality Questionnaire and Building Inventory*, documentation of weather conditions outside and the temperature inside the building, ambient air screening with a PID and selection of air sampling locations. A copy of the questionnaire is provided in Appendix A of the Generic QAPP.

The indoor air samples will be collected with a 6-Liter, laboratory-certified summa canister regulated for a 24-hour sample collection and will have a sample rate less than 200 milliliters per minute. The samples will be collected concurrently with the sub-slab vapor sample and the outdoor air sample for each location. The summa canister will be placed in such a location as to collect a representative sample from the breathing zone at four to six feet above the floor.

The indoor air samples will be sent to an off-site laboratory for VOC analysis via EPA Method TO-15. The holding time is fourteen days from the verified time of sample collection. The analysis for indoor air samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound except for TCE which will have a detection limit of 0.25 $\mu g/m^3$. All samples will be analyzed by an ELAP certified laboratory. A NYSDEC ASP Category B data deliverable will be provided for these analyses. Table 2-1 presents a summary of the analytical program for the off-site investigation.

2.3.3 Outdoor (Ambient) Air Collection

Outdoor (ambient) air sampling will be conducted at each structure where sub-slab and indoor air samples are being collected. As such, an outdoor air sample will be collected upwind of each of the 17 residences and at one location upwind of the W.T. Clarke High School, for a total of 18 locations. The sample location will be determined based on wind direction on the day of sampling. One duplicate ambient air sample will be collected during the investigation.

The outdoor ambient air samples will be collected with a laboratory-certified summa canister regulated for a 24-hour sample collection, with a sample rate less than 200

milliliters per minute and an initial vacuum of 28 inches Hg ±2 inches. The summa canister will be placed in such a location as to collect a representative sample from the breathing zone at four to six feet above site grade. Sample collection will coincide with the indoor air and sub-slab sampling activities.

The outdoor (ambient) air samples will be sent to an off-site laboratory for VOC analysis via EPA Method TO-15. The analysis for outdoor air samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound except for TCE which will have a detection limit of 0.25 $\mu g/m^3$. All samples will be analyzed by an ELAP certified laboratory. A NYSDEC ASP Category B data deliverable will be provided for these analyses. Table 2-1 presents a summary of the analytical program for the off-site investigation.

2.3.4 Investigative Derived Waste

Soil vapor port dedicated tubing will be disposed of properly into garbage dumpsters.

2.3.5 Decontamination Procedures

All non-dedicated equipment and tools used to collect samples for chemical analysis will be decontaminated prior to and between each sample interval using an Alconox rinse and potable water rinse prior to reuse. Decontamination fluids will be discharged to the ground surface unless a visible sheen or odor is detected either on the equipment or the fluids, at which point the decontamination water will be staged in an appropriate container and disposed of appropriately.

2.3.6 Sample Location

CDM will utilize dead-reckoning to identify the soil vapor sampling locations. Field measurements will be collected from fixed locations (e.g. corner of the building, fence, etc.). Subsequently, these data will be used to update the sample locations on the site map.

2.3.7 Sample Identification

Each sample collected will be designated by an alphanumeric code that will identify the site, sampling location, matrix sampled, and date. Sample identification will contain a sequential code consisting of three segments. The first segment will designate the site identification which is NCIA4 for OU 4 off-site vapor investigation. The next segment will designate the structure location and specific matrix. Structure location will be identified by a two-letter code, for example: R2 for the second residence and WC2 for the second location at W.T. Clarke High School. The specific matrix type will be identified using a two-letter code, for example: SB for sub-slab sample. If multiple sub-slab or basement indoor air samples are collected in one structure, then they will be numbered with a two-digit number. The third segment will identify the sample date and if a duplicate sample was collected. The date will be designated by a six digit code, for example: November 17, 2008 would be designated as 111708. The following is a general guideline for sample designation:

First Segment	Second Segment		Third Segment	
Site ID	Structure Location	Matrix Type/number (if more than 1)	Date	Duplicate
NCIA4	R2	SB	xxxxxx	D

Structure Location:
WC=W.T. Clarke High School
R1=Residence 1
R2=Residence 2
etc.
Matrix Type:
SB = Sub-slab
BA =Basement Indoor Air
FA = First Floor Indoor Air
AA = Ambient Air

Field duplicates will be designated by adding a "D" to the end of the sample identification.

The names and address of the owners at the residential locations are being kept confidential in this work plan. A key will be provided to NYSDEC identifying the structure locations and corresponding addresses.

2.3.8 Laboratory Analysis and Validation

All samples will be analyzed by a NYSDOH approved ELAP certified laboratory. Air samples will be analyzed for VOC using EPA Method TO-15. The analysis for sub-slab soil vapor samples will achieve detection limits of 1 $\mu g/m^3$ for each compound. The analysis for indoor and outdoor air samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound except for TCE which will have a detection limit of 0.25 $\mu g/m^3$. A NYSDEC ASP Category B data deliverable will be provided for these analyses (Table 2-1).

All samples collected will be validated in accordance with NYSDEC Data Usability Summary Report (DUSR) guidance by a party that is independent of the laboratory which performed the analyses and CDM. A usability analysis will be conducted by a qualified data validator and a DUSR will be submitted to the NYSDEC.

2.4 Task 4 - Field Documentation and Reporting

2.4.1 Field Documentation Procedures

Field notebooks will be used during all off-site work. A dedicated field notebook will be maintained by the field technician overseeing the field activities. In addition to the notebook, any and all original sampling forms, and soil vapor purge forms used during the field activities, will be submitted to the NYSDEC as part of the final report.

- Field and sampling procedures, including installation of the sub-slab soil vapor ports, etc., will be photo-documented.

2.4.2 Reporting

A total of four copies of a draft letter report will be submitted that documents the work conducted and presents the results of the sample analysis for review and comment by NYSDEC and NYSDOH. Upon receipt of the comments, CDM will revise the draft letter report and print the four final copies and submit to NYSDEC. One copy of the final letter report; text, tables, maps, photos, etc., will be submitted as a single pdf file.

Section 3
Project Schedule

The following table provides the proposed project schedule and key milestones for this work assignment.

The scheduled submittal dates for deliverables are based on standard laboratory turnaround times of four weeks, and turnaround for data validation of four weeks.

Project Milestone	Date
Issue Work Assignment (WA)	June 26, 2008
Acknowledge Receipt of WA	5 Days after Issuance
Work plan development session	August 1, 2008 - August 28, 2008
Submit Task 1 (Draft Work Plan) Deliverable	September 10, 2008
DEC/DOH Comment on Draft Work Plan	October 10, 2008
Submit Task 1 (Final Work Plan) Deliverable	October 30, 2008
Notice to Proceed (NTP)	November 7, 2008
Task 2 Community Relations/ Complete Access Arrangements	30 days after NTP
Task 3 Field Work Completed	60 days after NTP
Task 4 Submit Draft Report	90 days after field work completion
Approve Draft Report	30 Days after Draft Report Submitted
Task 3 Submit Final Report	30 Days after Approval of Draft Report

Section 4
Budget Estimates

Estimated Budget and Level of Effort (LOE) Summary
New Cassel Industrial Area OU 4 Vapor Intrusion Evaluation
Westbury, New York

Task Items	Description/Cost	Dollars
1	Work Plan Development	$8,004
2	CPP Mailing List and Fact Sheet	$5,226
3	Soil Vapor Investigation	$60,872
4	Field Documentation and Reporting	$25,777
	Total Estimate Budget (Tasks 1 - 4)	**$99, 879**

Appendix E presents the detailed costs by task and subtask on the NYSDEC schedule 2.11.

General Assumptions:

- Work will be performed between June 2008 and March 2009.
- All costs are based upon the scope and schedule provided in this Work Plan. Costs associated with project delays or expedited schedules beyond CDM's control are not assumed.
- CDM will provide four hard copies by mail and one electronic file (pdf) by e-mail for each report submitted to the NYSDEC.

Task 1 - Work Plan Development:

- A site walk is not assumed to be required for this task.
- Only one round of comments received concurrently is anticipated on draft deliverables. The review comments will be consolidated by NYSDEC. It is assumed that comments are minimal in nature and no re-evaluation is required. It is assumed that all comments can be addressed in 4 hours.
- Continuous Community Air Monitoring will not be required.

Task 2 - CPP Mailing List and Fact Sheet:

- Citizen Participation Plan support does not include planning or participation in a public meeting. It is assumed that development of a Fact Sheet is the only task that will be necessary.

Task 3 - Soil Vapor Investigation:

- Surveying will not be necessary for this work assignment.

- No schedule delays are assumed due to inclement weather or equipment failure.
- Laboratory analysis and data validation will be subcontracted.
- CDM assumes that all material and equipment staged in access areas will be removed to allow easy access to all sampling locations by hand drill equipment.
- Decontamination wastes and other investigative derived waste will not be required to be containerized and simple on-site disposal is assumed. No analytical, transportation or disposal of investigation derived waste (IDW) is assumed.
- Delays due to the property owner or public are not assumed.
- No continuous air monitoring has been included in this cost estimate. One PID unit will be utilized for air monitoring.
- NYSDEC will provide all communication, coordination, negotiation and access agreements with property owners to ensure CDM access to all sampling locations.
- It is assumed that access to the residential locations will be able to be coordinated to occur within the same period such that only one mobilization will be necessary.
- Laboratory grade helium will not be required for tracer testing.

<u>Task 4 - Field Documentation and Reporting:</u>

- Only conference calls are anticipated to be necessary for this phase. Meetings are not assumed to be required for this task.
- Only one round of comments received concurrently is anticipated on draft deliverables. The review comments will be consolidated by NYSDEC. It is assumed that comments are minimal in nature and no re-evaluation is required. It is assumed that all comments can be addressed in 4 hours.
- During off-site work, digital photographs and field notes will be kept.
- A letter report will be developed including a description of work conducted with field notes, photos, validated analytical data, figures, field measurements, and summary tables/purge forms.
- It is assumed that one data table and one figure having results for the samples collected will be necessary for the letter report.
- It is assumed that previous data from previous investigations will not be required to be hand entered or uploaded into a unified database and that historical tables and figures will be presented without any modifications.

Section 5
Staffing Plan

5.1 Program Manager - Michael A. Memoli, P.E., DEE

The primary responsibilities for program management activities rest with the Program Manager (PM). The Program Manager, Mr. Memoli, will have ultimate contract responsibility for the project, including responsibility for the technical content of all engineering work. Mr. Memoli will direct, review and approve all project deliverables, schedule staff and resources, resolve scheduling conflicts and identify and solve potential program problems. He will be directly accountable to NYSDEC's Division of Hazardous Waste Remediation for program execution. He has authority to assign staff, negotiate and execute contracts and amendments, as well as execute subcontracts. The PRM will communicate directly with CDM's Project Manager.

5.2 Project Manager - Maria D. Watt, P.E.

The Project Manager, Ms. Maria Watt, will have the overall responsibility for the technical and financial aspects of this project. She will assign technical staff, maintain control of the project budget and schedule, prepare monthly progress reports, review and approve project invoices, evaluate the technical quality of the project deliverables as well as the adherence to QA/QC procedures and manage subcontractors. She will serve as CDM's point of contact for this project.

5.3 Program Quality Assurance Manager - Jeniffer M. Oxford

The Program Quality Assurance Officer, Ms. Jeniffer Oxford, will monitor QC activities of program management and technical staff, as well as identify and report needs of corrective action to the Program Manager. He will also conduct an internal review of all project deliverables prepared by CDM staff and sign off on the final investigation reports.

5.4 Health and Safety Officer - Christopher S. Marlowe, C.I.H., Q.E.P

The Program Health and Safety Officer, Mr. Chris Marlow, will review and make recommendations to the Subcontractors on health and safety plans for compliance with OSHA requirements. He will develop a Health and Safety plan for CDM and NYSDEC employees, handle over-sight activities, evaluate the performance of health and safety officers and maintain required health and safety records. He will report to the Program Manager

5.5 Project Geologist - Jessica R. Beattie

The Project Geologist, Ms. Jessica Beattie will assist the Project Manager with the work plan draft and final, as well as general technical tasks related to field work,

subcontractor coordination, reporting, etc. She is directly accountable to the Project Manager.

5.6 Field Manager - Melissa Koberle

The Field Manager, Ms. Melissa Koberle, will be responsible for overseeing and coordinating field activities. This will include, but is not limited to overseeing the installation of vapor ports, coordinating drilling work, coordinating work with other subcontractors and monitoring health and safety conditions in accordance with the approved Health and Safety Plan. She is directly accountable to the Project Manager.

Section 6
Subcontracting

Appendix E presents a comparison of quotes from various subcontractors. CDM proposes to engage subcontractors to provide the following services for this work assignment:

6.1 Analytical Laboratory - Air Toxics

At this time, CDM is proposing to use Air Toxics (WBE) as the analytical laboratory subcontractor. They are located at 180-B Blue Ravine Road, Folsom, CA 95630.

6.2 Data Validation - Data Validation Services

At this time, CDM is proposing to use Data Validation Services (WBE) as the data validation subcontractor. They are located at 120 Cobble Creek Road, P.O. Box 208, North Creek, NY 12853.

6.3 M/WBE Reporting - Kenneth Shider

At this time, CDM is proposing to utilize Ken Shider (M/WBE consultant) to prepare the quarterly M/WBE reports that are required by NYSDEC.

Section 7
MBE/WBE Utilization Plan

To meet the requirements of the MBE/WBE program, CDM has prepared the following utilization plan:

Total Dollar Value of the work assignment	$99,879
MBE Percentage Goal	15%
MBE Dollar Value Goal	$14,982
WBE Percentage Goal	5%
WBE Dollar Value Goal	$4,994
Combined MBE/WBE Percentage Goal	20%
Combined MBE/WBE Dollar Value Goal	$19,976

Minority and woman-owned firms are expected to participate as follows:

Services to be Provided	Description of Services	Subcontractor Name and Contact Information	Proposed Subcontract Price
Laboratory Analysis	Vapor Sample Analysis	Air Toxics (WBE) Kate Branning 1-800-985-5955 ext. 1038	$19,119
Kenneth Shider	M/WBE Quarterly Reports	Kenneth Shider (MBE) (518) 269-2207	$900
Data Validation	DUSR	Data Validation Services (WBE) Judy Harry (518) 251-4429	$1,852

Section 8
References

Lawler, Matusky and Skelly Engineers, LLP (LM&S). 1996. New York State Superfund Contract Multisite PSA Report, New Cassel Industrial Area Site, North Hempstead, Nassau County. Appendices A-C. Prepared for New York State Department of Environmental Conservation.

New York Public Interest Research Group (NYPIRG) Website: www.cmap.nypirg.org/Superfund

New York State Department of Environmental Conservation (NYSDEC). 2003. Record of Decision, New Cassel Industrial Area Sites, Town of North Hempstead, Nassau County, New York, Off-site Groundwater South of the New Cassel Industrial Area, Operable Unit No. 3. March.

Tables

Table 2-1
Analytical Program Summary
New Cassel Industrial Area Sites
Off-site Vapor Intrusion Evaluation
North Hempstead and Westbury, New York

Analytical Parameter	Sample Matrix	Number of Samples	Analytical Method	Field Duplicates (a)	MS/MSDs (b)	Field Blank (c)	Trip Blanks (d)	Container (e)	Sample Preservation	Holding Time
SUB-SLAB SOIL VAPOR SAMPLES										
VOCs	Air	20	EPA TO-15	1	(b)	0	0	6-liter SUMMA canister with 24-hour regulator	None	15 days
INDOOR AIR SAMPLES										
VOCs	Air	20	EPA TO-15	1	(b)	0	0	6-liter SUMMA canister with 24-hour regulator	None	15 days
OUTDOOR AIR (AMBIENT AIR) SAMPLES										
VOCs	Air	18	EPA TO-15	1	(b)	0	0	6-liter SUMMA canister with 24-hour regulator	None	15 days

Notes:
(a) A minimum of 5% of all samples should be collected in duplicate.
(b) SUMMA canisters containing samples are not spiked in the field.
(c) Field blanks are not required for air sampling.
(d) Trip blanks are required for aqeuos samples.
(e) Cannister should be used within 15 days of being shipped to the field for sample collection.

Schedule 2.11(a)

Summary of Work Assignment Price

Work Assignment Number D004437-31

1) Direct Salary Costs (Schedules 2.10(a) and 2.11(b))	$22,808
2) Indirect Costs (Schedule 2.10(g))	$38,295
3) Direct Non-Salary Costs (Schedules 2.10(b)(c)(d) and 2.11(c)(d))	$11,579

4) Subcontract Costs

Cost-Plus-Fixed-Fee Subcontracts (Schedule 2.10(e) and 2.11(e))

	Name of Subcontractor	Services To Be Performed	Subcontract Price
i)	Ken Schider Consulting	W/MBE Reporting	$900
iii)			
vi)			
iv)			

A) Total Cost-Plus-Fixed-Fee Subcontracts $900

Unit Price Subcontracts (Schedule 2.10 (f) and 2.11 (f))

	Name of Subcontractor	Services To Be Performed	Subcontract Price
i)	Air Toxics	WBE Laboratory	$19,119
ii)	Data Validation Services	WBE Data Validator	$1,852
iii)			

B) Total Unit Price Subcontracts $20,971

5) Subcontract Management Fee	$1,049
6) Total Subcontract Costs (lines 4A + 4B + 5)	$22,919
7) Fixed Fee (Schedule 2.10(h))	$4,277
8) Total Work Assignment Price (Lines 1 + 2 + 3 + 6 + 7)	$99,879

Engineer/Contract # D004437
Project Name NCIA
Work Assignment No. D004437-31

Date Prepared: _____

Schedule 2.11(b)
Direct Labor Hours Budgeted

Labor Classification	*IX*		*VIII*		*VII*		*VI*		*V*		*IV*		*III*		*II*		*I*		*Tech. Support*		*Admin Support*		*Total No. of Direct Labor Hours and Costs Budgeted*	
*Av. Salary Rate ($) _____ Year **2008**	$65.24		$59.42		$52.09		$45.95		$38.75		$32.86		$28.62		$25.52		$21.12		$0.00		$21.12		0	
Description	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Task 1 Work Plan	3	$196	12	$713	2	$104	16	$735		$0		$0	30	$859		$0		$0		$0	3	$63	66	$2,670
Task 2 CPP Mailing List and Fact Sheet	2	$130	6	$357	2	$104	2	$92		$0		$0	32	$916		$0		$0		$0	4	$84	48	$1,683
Task 3 Vapor Intrusion Investigation	2	$130	20	$1,188	2	$104	2	$92		$0		$0	160	$4,579	150	$3,828		$0		$0	3	$63	339	$9,986
Total Hours	7		38		6		20		0		0		222		150		0		0		10		453	
Total Direct Labor Cost ($) **Year 2008**		$457		$2,258		$313		$919		$0		$0		$6,354		$3,828		$0		$0		$211		$14,339
Labor Classification	*IX*		*VIII*		*VII*		*VI*		*V*		*IV*		*III*		*II*		*I*		*Tech. Support*		*Admin Support*		*Total No. of Direct Labor Hours and Costs Budgeted*	
*Av. Salary Rate ($) _____ Year **2009**	$67.20		$61.20		$53.65		$47.33		$39.91		$33.85		$29.48		$26.29		$21.75		$0.00		$21.75		0	
Description	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Task 4 Field Documentation & Reporting	3	$202	32	$1,958	6	$322	4	$189	12	$479	32	$1,083	140	$4,127		$0		$0		$0	5	$109	234	$8,469
Total Hours	3		32		6		4		12		32		140		0		0		0		5		234	
Total Direct Labor Cost ($) **Year 2009**		$202		$1,958		$322		$189		$479		$1,083		$4,127		$0		$0		$0		$109		$8,469
Total Hours	10		70		12		24		12		32		362		150		0		0		15		687	
Total Direct Labor Cost 2008-2009($)		$658		$4,216		$634		$1,108		$479		$1,083		$10,481		$3,828		$0		$0		$320		**$22,808**

* For multiple years use one average salary rate row for each year and each years subtotal Labor Cost.

Engineer/Contract # D004437
Project Name NCIA
Work Assignment No. D004437-31

Date Prepared: _____

Schedule 2.11(b-1)
Direct Administrative Labor Hours Budgeted

Labor Classification		*IX*	*VIII*	*VII*	*VI*	*IV*	*III*	*II*	*I*	*Admin. Support*	*Total No. of Direct Labor Hrs.*
Task 1	Work Plan	3	0	0	0	0	0	0	0	3	6
Task 2	CPP Mailing List and Fact Sheet	2	0	0	0	0	0	0	0	4	6
Task 3	Vapor Intrusion Investigation	2	0	0	0	0	0	0	0	3	5
Task 4	Field Documentation & Reporting	3	0	0	0	0	0	0	0	5	8
TOTAL HOURS		10	0	0	0	0	0	0	0	15	25

Contract/Project administrative hours would include (subject to contract allowability) but not necessarily be limited to the following activities:

1) Work Plan Budget Development
   > Conflict of Interest Check
   > Budget schedules & supporting documentation
2) Review work assignment (WA) progress
   > Conduct progress reviews
   > Prepare monthly project report
   > Update WA progress schedule
   > Prepare M/WBE Utilization Report
3) Contractor Application for Payment (CAP)
   > Oversee and prepare monthly CAP
4) Program Management
   > Prepare monthly cost control report
   > Cost control reviews
   <> Staffing Plans
   >Manage subcontracts
   > NSPE list update
   > Equipment inventory
5) Miscellaneous
   > Conduct Health and Safety Reviews
   > Word processing and graphic artists
   > Report editing

Contract/Project Administration hours would **not** include:

1) QA/QC reviews
2) Techincal oversight by management
3) Develop subcontracts
4) Work plan development
5) Review of deliverables

Schedule 2.11 (c)

Direct Non-Salary Costs
Work Assignment Number **D004437-31**

	Item	Max. Reimbursement * Rate (Specify Unit)	Est. No. of Units	Total Estimated Cost
A)	Other			
	Task 1			
	1) Shipping	LS	1	$100
	2) Outside Printing	LS	1	$250
			Total	**$350**
	Task 2			
	1) Shipping	LS	1	$200
	2) Outside Printing	LS	1	$200
			Total	**$400**
	Task 3			
	1) Shipping	LS	1	$1,500
	2) Outside Printing	LS	1	$50
			Total	**$1,550**
	Task 4			
	1) Shipping	LS	1	$100
	2) Outside Printing	LS	1	$500
			Total	**$600**
B)	Miscellaneous			
	Task 3			
	1) Meals (per day)	$64	30	$1,920
	2) Lodging (per day)	$159	12	$1,908
	3) Mileage (per mile)	$0.585	1200	$702
	4) PPE (level D) (per day)	$15.00	30	$450.00
	5) Tolls	$15.00	20	$300.00
	6) LVE	$1.00	310	$310.00
			Total	**$5,590**

Work Assignment No. D004437-31

Schedule 2.11(d) 3

Maximum Reimbursement Rate for Vendor Rented Equipment

Item	Max Reimbursement Rate ($)*	Est. Usage (unit of time)	Est. Rental Cost ($) (Col. 2 x 3)
Task 3 - Site Investigation			
Helium Meter (per week)	$206.25	2	$412.50
MiniRae (2 units, per week)	$110.00	4	$440.00
Low Flow Pump (2 units, per weel	$27.50	4	$110.00
2.5 Gallon Wet/Dry Vac (per weel	$30.00	2	$60.00
Truck Rental (per week)	$350.00	2	$700.00
Helium Gas	$60.00	6	$360.00
		TOTAL:	**$2,083**

Work Assignment No. D004437-31

Schedule 2.11(d) 5

Maximum Reimbursement Rate for Consumables

Item	Estimated Quanitity	Unit Cost ($)	Total Budgeted Cost (Col 2 x 3) ($)
Task 3 - Site Investigation			
Femal Connector - Sub Slab port	$10.30	23	$236.90
Male Connector - ends up tubing	$6.30	46	$289.80
T-connectors - duplicate	$22.50	2	$45.00
Metal Tubing for Sub Slab ports	$7.17	23	$164.91
Teflon Tubing for Sampling (100ft roll)	$210.60	1	$210.60
Flush mount Hi-pressure thread Hex-socket plug (subslab port)	$1.17	23	$26.91
Poly vinyl tubing	$0.25	3	$0.75
Modeling clay - NonToxic	$6.00	2	$12.00
Patcher Cement	$6.00	2	$12.00
Teflon Tape	$4.00	2	$8.00
		TOTAL:	**$1,006.87**

Schedule 2.11 (e)

Cost-Plus-Fixed-Fee Subcontracts
Work Assignment Number D004437-31

Name of Subcontractor	Services to be Performed	Subcontract Price
Ken Shider Consulting	M/WBE Reporting	$900

A) Direct Salary Costs

Professional Responsibility Level	Labor Classification	Ave. Reimbursement Rate ($/Hr.)	Max. Reimbursement Rate ($/Hr.)	Est. No. of Hours	Total Est Direct Salary Cost (Ave. Reimb. Rate x Est. # of Hrs.)
IV	Eng/Scientist 4	$32.60	$36.78	12	$391

Total Direct Salary Costs: $391

Footnotes:

1) The labor rate averages and maximums shall be adjusted by a rate equal to the increase in the CPI index CUURA101SAO-"All Urban Consumers-New York-Northern N.J.-Long Island" for the previous year. This index is published by the U.S. Department of Labor's Bureau of Labor Statistics. The adjustment will be calculated every January and will be effective for subsequent work assignment billing and budgeting purposes.
2) Schedule 2.11(e) may be re-negotiated after four (4) years at the request of either party. Any revision as a result of re-negotiation will be subject to the approval of the Office of the State Comptroller.
3) The maximum annual escalation is limited to 5%.
4) Reimbursement will be limited to the lesser of either the individual's actual hourly rate or the maximum rate for each labor
5) Reimbursement will be limited to the maximum reimbursement rate for the professional responsibility level of the actual work
6) Only those labor classifications indicated with an asterisk will be entitled to overtime.
7) Reimbursement for technical time of principals, owners, and officers will be limited to the maximum reimbursement rate of that category, the actual hourly labor rate paid, or the State M-6 rate, whichever is lower.
8) Maximum reimbursement rates may be exceeded for work assignment activities that are under the jurisdiction of the Schedule of Prevailing Wage Rates set by the New York State Department of Labor.

B) Indirect Costs

Indirect costs shall be paid based on a percentage of direct salary costs incurred which shall not exceed a maximum of 115 % or the actual rate calculated in accordance with 48 CFR Federal Acquisition Regulation, whichever is lower.

Indirect Costs: $450

C) Maximum Reimbursement Rates for Direct Non-Salary Costs

Item		Max Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
1)	Travel	See Schedule 2.10 (d) for rates		
2)	Supplies			

Total Direct Non-Salary Costs: $0

D) Fixed Fee

The fixed fee is: 7%

Fixed Fee: $59

See Schedule 2.10 (h) for how the fixed fee should be claimed.

Schedule 2.11 (f)

Unit Price Subcontracts

Work Assignment Number **D004437-31**

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Data Validation Services	**WBE Data Validator**	**$1,852**	**$93**

Item	**Max. Reimbursement Rate (Specify Unit)**	**Est. No. of Units**	**Total Est. Cost**
Task 2 - DATA VALIDATION			
TO-15	$25.36 /Sample	61	$1,547
TO-15 Dilution	$5.00 /Sample	61	$305
Subtotal-Subcontract Price			**$1,852**
Subcontract Management Fee*			**$93**
TOTAL			**$1,944.40**

* A subcontract management fee of 5% has been included for M/WBE subcontracts.

Schedule 2.11 (f)

Unit Price Subcontracts
Work Assignment Number **D004437-31**

Name of Subcontractor	Services to be Performed	Subcontract Price	Management Fee
Air Toxics	WBE Laboratory	$19,119	$956

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Task 2 - LABORATORY ANALYSIS			
Sampling Equipment			
Summas Canisters/Regulators	$77 sample	67	$5,176
Canister Recertification	$52 sample	6	$309
Analysis			
TO-15	$224 sample	61	$13,634
Subtotal-Subcontract Price			**$19,119**
Subcontract Management Fee*			**$956**
TOTAL			**$20,075**

* A subcontract management fee of 5% has been included for W/MBE subcontracts.

Schedule 2.11 (g) - Summary

Monthly Cost Control Report
Summary of Fiscal Information

Engineer Camp Dresser & McKee
Contract No. D004437
Project Name NCIA Offsite Vapor Intrusion Investigation
Work Assignment No. D004437-31
Task #/Name Summary of Task
Complete 0%

Date Prepared _____
Billing Period _____
Payment No. _____ **Invoice No.** _____

Expenditure Category	*A* *Costs Claimed This Period*	*B* *Paid to Date*	*C* *Total Disallowed to Date*	*D* *Total Costs Incurred to Date (A+B+C)*	*E* *Estimated Costs to Completion*	*F* *Estimated Total Work Assignment Price (A+B+E)*	*G* *Approved Budget*	*H* *Estimated Under/Over (G-F)*
1. Direct Salary Costs	$0	$0	$0	$0	$22,808	$22,808	$22,808	$0
2. Indirect Costs 167.9%	$0	$0	$0	$0	$38,295	$38,295	$38,295	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0	$0	$0	$0	$61,103	$61,103	$61,103	$0
4. Travel	$0	$0	$0	$0	$4,830	$4,830	$4,830	$0
5. Other Non-Salary Costs	$0	$0	$0	$0	$6,749	$6,749	$6,749	$0
6. Subtotal Direct Non-Salary Costs	$0	$0	$0	$0	$11,579	$11,579	$11,579	$0
7. Subcontractors	$0	$0	$0	$0	$21,871	$21,871	$21,871	$0
7a. Subcontract Mgt. Fee	$0	$0	$0	$0	$1,049	$1,049	$1,049	$0
8. Total Work Assignment Cost	$0	$0	$0	$0	$95,601	$95,601	$95,601	$0
9. Fixed Fee	$0	$0	$0	$0	$4,277	$4,277	$4,277	$0
10. Total Work Assignment Price	$0	$0	$0	$0	$99,879	$99,879	$99,879	$0

Project Manager (Engineer) Maria Watt

Date _____

Schedule 2.11 (g)

Monthly Cost Control Report
Summary of Fiscal Information

Engineer Camp Dresser & McKee
Contract No. D004437
Project Name NCIA Offsite Vapor Intrusion Investigation
Work Assignment No. D004437-31
Task #/Name Task 1 - Work Plan
Complete 0%

Date Prepared _____
Billing Period _____
Invoice No. _____

Expenditure Category	*A* *Costs Claimed This Period*	*B* *Paid to Date*	*C* *Total Disallowed to Date*	*D* *Total Costs Incurred to Date (A+B+C)*	*E* *Estimated Costs to Completion*	*F* *Estimated Total Work Assignment Price (A+B+E)*	*G* *Approved Budget*	*H* *Estimated Under/Over (G-F)*
1. Direct Salary Costs	$0	$0	$0	$0	$2,670	$2,670	$2,670	$0
2. Indirect Costs - 167.9%	$0	$0	$0	$0	$4,483	$4,483	$4,483	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0	$0	$0	$0	$7,153	$7,153	$7,153	$0
4. Travel	$0	$0	$0	$0	$0	$0	$0	$0
5. Other Non-Salary Costs	$0	$0	$0	$0	$350	$350	$350	$0
6. Subtotal Direct Non-Salary Costs	$0	$0	$0	$0	$350	$350	$350	$0
7. Subcontractors	$0	$0	$0	$0	$0	$0	$0	$0
7a. Subcontract Mgt. Fee	$0	$0	$0	$0	$0	$0	$0	$0
8. Total Work Assignment Cost	$0	$0	$0	$0	$7,503	$7,503	$7,503	$0
9. Fixed Fee	$0	$0	$0	$0	$501	$501	$501	$0
10.Total Work Assignment Price	$0	$0	$0	$0	$8,004	$8,004	$8,004	$0

Project Manager (Engineer) Maria Watt

Date _____

Schedule 2.11 (g)

Monthly Cost Control Report
Summary of Fiscal Information

Engineer Camp Dresser & McKee
Contract No. D004437
Project Name NCIA Offsite Vapor Intrusion Investigation
Work Assignment No. D004437-31
Task #/Name Task 2 - CPP Mailing List and Fact Sheet
Complete 0%

Date Prepared _____
Billing Period _____
Invoice No. _____

Expenditure Category	*A* *Costs Claimed This Period*	*B* *Paid to Date*	*C* *Total Disallowed to Date*	*D* *Total Costs Incurred to Date (A+B+C)*	*E* *Estimated Costs to Completion*	*F* *Estimated Total Work Assignment Price (A+B+E)*	*G* *Approved Budget*	*H* *Estimated Under/Over (G-F)*
1. Direct Salary Costs	$0	$0	$0	$0	$1,683	$1,683	$1,683	$0
2. Indirect Costs 167.9%	$0	$0	$0	$0	$2,826	$2,826	$2,826	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0	$0	$0	$0	$4,510	$4,510	$4,510	$0
4. Travel	$0	$0	$0	$0	$0	$0	$0	$0
5. Other Non-Salary Costs	$0	$0	$0	$0	$400	$400	$400	$0
6. Subtotal Direct Non-Salary Costs	$0	$0	$0	$0	$400	$400	$400	$0
7. Subcontractors	$0	$0	$0	$0	$0	$0	$0	$0
7a. Subcontract Mgt. Fee	$0	$0	$0	$0	$0	$0	$0	$0
8. Total Work Assignment Cost	$0	$0	$0	$0	$4,910	$4,910	$4,910	$0
9. Fixed Fee	$0	$0	$0	$0	$316	$316	$316	$0
10. Total Work Assignment Price	$0	$0	$0	$0	$5,226	$5,226	$5,226	$0

Project Manager (Engineer) Maria Watt

Date _____

Schedule 2.11 (g)

Monthly Cost Control Report
Summary of Fiscal Information

Engineer Camp Dresser & McKee
Contract No. D004437
Project Name NCIA Offsite Vapor Intrusion Investigation
Work Assignment No. D004437-31
Task #/Name Task 3 - Field Investigation
Complete 0%

Date Prepared _____
Billing Period _____
Invoice No. _____

Expenditure Category	*A* *Costs Claimed This Period*	*B* *Paid to Date*	*C* *Total Disallowed to Date*	*D* *Total Costs Incurred to Date (A+B+C)*	*E* *Estimated Costs to Completion*	*F* *Estimated Total Work Assignment Price (A+B+E)*	*G* *Approved Budget*	*H* *Estimated Under/Over (G-F)*
1. Direct Salary Costs	$0	$0	$0	$0	$9,986	$9,986	$9,986	$0
2. Indirect Costs 167.9%	$0	$0	$0	$0	$16,766	$16,766	$16,766	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0	$0	$0	$0	$26,751	$26,751	$26,751	$0
4. Travel	$0	$0	$0	$0	$4,830	$4,830	$4,830	$0
5. Other Non-Salary Costs	$0	$0	$0	$0	$5,399	$5,399	$5,399	$0
6. Subtotal Direct Non-Salary Costs	$0	$0	$0	$0	$10,229	$10,229	$10,229	$0
7. Subcontractors	$0	$0	$0	$0	$20,971	$20,971	$20,971	$0
7a. Subcontract Mgt. Fee	$0	$0	$0	$0	$1,049	$1,049	$1,049	$0
8. Total Work Assignment Cost	$0	$0	$0	$0	$59,000	$59,000	$59,000	$0
9. Fixed Fee	$0	$0	$0	$0	$1,873	$1,873	$1,873	$0
10. Total Work Assignment Price	$0	$0	$0	$0	$60,872	$60,872	$60,872	$0

Project Manager (Engineer) Maria Watt

Date _____

Schedule 2.11 (g)

Monthly Cost Control Report
Summary of Fiscal Information

Engineer Camp Dresser & McKee
Contract No. D004437
Project Name NCIA Offsite Vapor Intrusion Investigation
Work Assignment No. D004437-31
Task #/Name Task 4 - Documentation and Reporting
Complete 0%

Date Prepared _____
Billing Period _____
Invoice No. _____

Expenditure Category	*A* *Costs Claimed This Period*	*B* *Paid to Date*	*C* *Total Disallowed to Date*	*D* *Total Costs Incurred to Date (A+B+C)*	*E* *Estimated Costs to Completion*	*F* *Estimated Total Work Assignment Price (A+B+E)*	*G* *Approved Budget*	*H* *Estimated Under/Over (G-F)*
1. Direct Salary Costs	$0	$0	$0	$0	$8,469	$8,469	$8,469	$0
2. Indirect Costs 167.9%	$0	$0	$0	$0	$14,220	$14,220	$14,220	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0	$0	$0	$0	$22,689	$22,689	$22,689	$0
4. Travel	$0	$0	$0	$0	$0	$0	$0	$0
5. Other Non-Salary Costs	$0	$0	$0	$0	$600	$600	$600	$0
6. Subtotal Direct Non-Salary Costs	$0	$0	$0	$0	$600	$600	$600	$0
7. Subcontractors	$0	$0	$0	$0	$900	$900	$900	$0
7a. Subcontract Mgt. Fee	$0	$0	$0	$0	$0	$0	$0	$0
8. Total Work Assignment Cost	$0	$0	$0	$0	$24,189	$24,189	$24,189	$0
9. Fixed Fee	$0	$0	$0	$0	$1,588	$1,588	$1,588	$0
10. Total Work Assignment Price	$0	$0	$0	$0	$25,777	$25,777	$25,777	$0

Project Manager (Engineer) Maria Watt

Date _____

Schedule 2.11 (g) - Supplemental

Cost Control Report for Subcontracts

Engineer Camp Dresser & McKee
Contract No. D004437
Project Name NCIA Offsite Vapor Intrusion Investigation
Work Assignment No. D004437-31

Date Prepared _____
Billing Period _____
Invoice No. _____

Subcontract Name	*A* *Subcontract Costs Claimed this Application Inc. Resubmittals*	*B* *Subcontract Costs Approved for Payment on Previous Applications*	*C* *Total Subcontract Costs to Date (A plus B)*	*D* *Subcontract Approved Budget*	*E* *Management Fee Budget*	*F* *Management Fee Paid*	*G* *Total Costs to Date (C plus F)*
1. Data Validation Services	$0	$0	$0	$1,852	$93	$0	$0
2. Air Toxics	$0	$0	$0	$19,119	$956	$0	$0
3 Ken Shider	$0	$0	$0	$900	$0	$0	$0
4	$0	$0	$0	$0	$0	$0	$0
5	$0	$0	$0	$0	$0	$0	$0
6	$0	$0	$0	$0	$0	$0	$0
7.	$0	$0	$0	$0	$0	$0	$0
TOTALS	$0	$0	$0	$21,871	$1,049	$0	$0

Project Manager (Engineer) Maria Watt **Date** _____

NOTES:

1) Costs listed in Columns A, B, C & D do not include any management fee costs.
2) Management fee is applicable to only properly procured, satisfactorily completed, MBE/WBE or unit price subcontracts over $10,000.
3) Line 11, Cloumn G should equal Line 7 (Subcontractors), Column D of Summary Cost Control Report.

Schedule 2.11(h)
Monthly Cost Control Report
Summary of Labor Hours

Number of Direct Labor Hours Expended to Date/Estimated Number of Direct Labor Hours to Completion

Engineer/Contract # D004437
Project Name NCIA Offsite VI
Work Assignment No. D004437-31

Date Prepared _____
Billing Period _____
Invoice No. _____

NSPE Labor Classification	*IX Exp/Est*	*VIII Exp/Est*	*VII Exp/Est*	*VI Exp/Est*	*V Exp/Est*	*IV Exp/Est*	*III Exp/Est*	*II Exp/Est*	*I Exp/Est*	*Admin.*	*Total No. of Direct Labor Hrs. Exp/Est*
Task 1	0 / 3	0 / 12	0 / 2	0 / 16	0 / 0	0 / 0	0 / 30	0 / 0	0 / 0	0 / 3	0 / 66
Task 2	0 / 2	0 / 6	0 / 2	0 / 2	0 / 0	0 / 0	0 / 32	0 / 0	0 / 0	0 / 4	0 / 48
Task 3	0 / 2	0 / 20	0 / 2	0 / 2	0 / 0	0 / 0	0 / 160	0 / 150	0 / 0	0 / 3	0 / 339
Task 4	0 / 3	0 / 32	0 / 6	0 / 4	0 / 12	0 / 32	0 / 140	0 / 0	0 / 0	0 / 5	0 / 234
Total Hours	0 / 10	0 / 70	0 / 12	0 / 24	0 / 12	0 / 32	0 / 362	0 / 150	0 / 0	0 / 15	0 / 687

* Expended/Estimated

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Program Management, Room 1224
625 Broadway, Albany, New York 12233-7012
Phone: (518) 402-9764 • **FAX:** (518) 402-9722
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

June 26, 2008

Mr. Michael Memoli, P.E.
Program Manager
Camp Dresser & McKee
100 Crossways Park West, Suite 415
Woodbury, New York 11797

Re: WA Issuance/Conflict of Interest Letter
New Cassel Industrial Area
(Site No. 130043 A, B, C, F, K, N, V)

Dear Mr. Memoli:

The New York State Department of Environmental Conservation's Division of Environmental Remediation (DER) is issuing to your firm the work assignment (WA) identified below. This WA has been identified by your firm's I/D contract number and the next sequential WA number.

Contract/WA No.:	D004437-31
Site/Spill No./PIN:	130043 A, B, C, F, K, N, V
Site/Spill Name:	New Cassel Industrial Area
Program Element:	Soil Vapor Intrusion Investigation
WP Dev. (WPD) Budget:	$8,000
Est. Total WA Budget (includes WPD):	$97,000
Project Manager (PM):	Joseph Jones
PM Phone No.:	(518) 402-9621
PM E-mail:	jgjones@gw.dec.state.ny.us
Contract Manager (CM):	Andrea Indelicato
CM Phone No.:	(518) 402-9710
CM E-mail:	alindeli@gw.dec.state.ny.us
M/WBE Administrator:	Thomas Christian
M/WBE Phone No:	(518) 402-9311
M/WBE E-mail:	techrist@gw.dec.state.ny.us

Please review your firm's relationship with the Potential Responsible Parties (PRPs) indicated on the enclosed Conflict of Interest Certification form. Then sign and complete the form and accept the WA by returning the document to the contract manager within five (5) calendar days of the date of this letter.

Please initiate the development of a project management work plan for this WA. It is expected that one (1) electronic copy of the work plan will be submitted to DER's contract manager

within 21 calendar days of receipt of this work assignment. Final project management work plans and budgets are to be developed so that a Notice to Proceed can be issued within 90 calendar days of the date of this letter. Failure to do so may result in termination of this WA and may affect your firm's receipt of future WAs.

The project management work plan submitted to DER must include the items listed below. If multiple sites are included in the WA, information should be provided for each site and the total WA.

1. Site description (i.e. location, environmental history).

2. Scope of work (i.e. tasks, subtasks).

3. Detailed schedule with milestones and deliverables.

4. Identification of areas of work requiring subcontracting and the certified M/WBE firms to be utilized, if known.

5. A detailed budget broken down by tasks and subtasks using the most current schedules provided by DER. The budget (i.e. titles, rates) should be in accordance with your executed standby contract.

6. A staffing plan identifying the management and technical staff assigned to the WA. Include resumes of staff not previously approved by DER.

7. An M/WBE Utilization Plan. If the plan does not meet the goals in the standby contract, an explanation must be provided. Contact DEC's M/WBE Office if you have questions.

If you have any questions regarding contract issues, please contact the contract manager indicated. If you have any questions regarding the WA's scope of work, please contact the project manager indicated. The project manager has prepared the enclosed document for your use in preparing the WA. Please contact the project manager to schedule a WA scoping meeting and site visit, if appropriate.

Requests for reimbursement cannot be processed until the draft project management work plan is submitted to DER for approval.

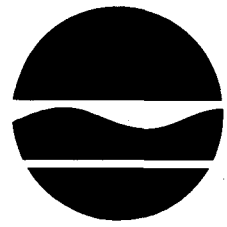
Sincerely,

Michael J. Cruden, P.E.
Chief
Contracts and Payments Section
Bureau of Program Management
Division of Environmental Remediation

Enclosures

ec: J. Jones, PM
A. Indelicato, CM
W. Parish, Region 1
M. Cruden
T. Wolosen
G. Bobersky
C. Vasudevan
T. Christian, M/WBE
M. Memoli, memolima@cdm.com
D. Durfee, durfeedd@cdm.com

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 11th Floor
Albany, New York 12233-7015
Phone: (518) 402-9625 • **Fax:** (518) 402-9022
Website: www.dec.state.ny.us



Alexander B. Grannis
Commissioner

MEMORANDUM

TO: Salvatore Ervolina, Assistant Division Director, DER

FROM: Guy T. Bobersky, Section Chief, REM-A
THROUGH: Chittibabu Vasudevan, Director, BURA/signed/***Chittibabu Vasudevan***

SUBJECT: Conceptual Approval Memo

DATE: June 18, 2008

Site No., Site Name and Location: New Cassel Industrial Area Sites, Sites No. 130043A-V, Soil Vapor Intrusion Investigation south of Old Country Road, Nassau County

Site Information: The New Cassel Industrial Area (NCIA) is located in the Town of North Hempstead, Nassau County. It is bounded by the Long Island Railroad to the north, Frost Street to the east, Old Country Road to the south, and Grand Boulevard to the southwest. The investigations to be performed in this work assignment are located south of the NCIA in Salisbury, New York. A previous study (carried out under work assignment #D00490-40), completed in November 2007, identified 17 residences and the W.T. Clark H.S. as candidates for additional sampling.

Conflict of Interest: See attached PRP list

Program Element: Site Characterization - Soil Vapor Intrusion Investigation

Duration: The project is expected to be complete in 12 months

Estimated Budget: The estimated work plan development cost amount is $8,000 and the estimated total work plan amount is $97,000

Funding Source: State Superfund

Brief Description of Scope of Work: See attached Standby Contract Work Assignment

Attachments

ec: Joseph Jones, REM-A
Guy T. Bobersky, Section Chief, REM-A
Chittibabu Vasudevan, Director, BURA
Dave Finlayson, Chief, FMS
Michael Cruden, Chief, CPS
Donna Weigel, Director, BPM
Dale A. Desnoyers, Division Director

STATE SUPERFUND STANDBY CONTRACT WORK ASSIGNMENT
Site Characterization
New Cassel Industrial Area Sites
Soil Vapor Intrusion Investigation
Nassau County , New York
NYSDEC Project Manager: Joseph Jones

I Work Assignment Objectives

The purpose of this Engineering Standby Contract Work Assignment is to conduct a Soil Vapor Intrusion Investigation for 17 residences and the W.T. Clark High School. These are located within the area affected by the off-site groundwater plumes originating in the New Cassel Industrial Area, and were identified in a previous study (WA #D00490-40) as potential candidates for additional indoor air sampling.

II Site History and Background

The New Cassel Industrial Area (NCIA) is located in the Town of North Hempstead, Nassau County. It encompasses approximately 170 acres of land. It is bounded by the Long Island Railroad to the north, Frost Street to the east, Old Country Road to the south, and Grand Boulevard to the southwest. The NCIA is a heavily developed industrial and commercial area. Development in this area dates back to the 1950's and many of the properties have housed various businesses over the years. The topography is generally flat. A total of seventeen (17) sites within the NCIA were listed as Class 2 sites in the New York State Registry of Inactive Hazardous Waste Disposal Sites (the Registry). The listing of the 17 Class 2 sites, occurred between May 1995 and September 1999.

The investigations to be performed in this work assignment are located south of the NCIA in Salisbury, New York. A previous study (carried out under work assignment #D00490-40), completed in November 2007, identified 17 residences and the W.T. Clark H.S. as candidates for additional sampling.

III Geology and Hydrology

The site's surface is primarily covered by buildings, asphalt pavement and grass (residential lawns). Beneath the site are two water bearing geologic units, the Upper Glacial Aquifer and the Magothy aquifer.

The Upper Glacial Aquifer (UGA) is the uppermost hydrogeologic unit on Long Island and forms the present day land surface. Upper Pleistocene deposits of poorly sorted sand and gravel are found from the surface to a depth of approximately 80 ft. below ground surface (bgs). This aquifer is nearly continuous across Long Island, indicating that almost all groundwater recharge must infiltrate through the UGA to reach the aquifers below.

The Magothy aquifer is located beneath the UGA and is in direct hydraulic connection with the UGA. This aquifer consists of fine sands and silt mixed with clay lenses in the upper portions

and fine sands, silt and small amounts of clay in the lower portions. The Magothy formation is the principal source of fresh water on Long Island and because of its composition, most public water supply wells are screened in the lower regions.

Within the study area, the depth of the water table is believed to lie between 55-70 ft. bgs. Groundwater in the study area is generally contaminated by VOCs either originating from within the New Cassel Industrial Area or other upgradient sources.

IV Scope of Work

Task 1: Work Plan Development

Task 1A The Engineer will develop a Draft Work Plan. The Draft Work Plan will include the following:

- Summary of the site reconnaissance and record review described below:
    - Review of the November 2007 report prepared by O'Brien & Gere under State Superfund Standby Contract Work Assignment #D00490-40
    - Site Reconnaissance with the NYSDEC Project Manager scheduled by the NYSDEC within two weeks of the Engineer's acceptance of the Work Assignment.
- A general scope of work for the Soil Vapor Intrusion Investigation
- Identification of the preliminary field activities
- A detailed level of effort for work plan development
- Preliminary level of effort and budget for the Soil Vapor Intrusion Investigation
- Preliminary schedule of milestones and deliverables
- List of key staff, their titles and responsibilities
- Preliminary subcontracting list including a Minority/Women-owned Business Enterprise (M/WBE) Utilization Plan

Task 1B The Final work plan will be delivered to the NYSDEC by the Engineer within one week after the NYSDEC's acceptance of the Draft Work Plan. Development of a Final Work Plan will include, if necessary, a meeting between the consultant's representatives and appropriate NYSDEC staff in Albany to review comments and details of the Draft Work Plan. The NYSDEC will allow reasonable time for revision and submission of the Final Work Plan. The Final Work Plan will include the following:

- Detailed level of effort and budget for all work, including subcontracting.
- All pertinent information to conduct field activities including sampling locations, analytical methods, and a detailed schedule of progress with milestones and deliverables. Any decisions to be made in the field will be clearly stated.
- Summary of the site reconnaissance and record review described above.
- Staffing Plan that identifies and states the responsibilities of the primary staff who are to manage and oversee these characterizations.
- The identity of the subcontractors and the M/WBE commitment
- Site specific Health and Safety Plan, Quality Assurance Project Plan, and a Citizen Participation Plan as follows:
    - Health and Safety Plan
        - This plan will be developed based on the most recent Federal State and Local statues and regulations. The plan will include a section on Community Health and Safety as well as Community Air Monitoring.
    - Quality Assurance Project Plan
        - A plan must be generated by the Engineer that identifies the steps taken to protect sample quality throughout the Work Assignment. Samples that are to be analyzed at a lab must be analyzed by a NYSDOH ELAP certified Lab that has ELAP certification for the methods selected. This plan must comply with all elements in Schedule 1, Work Element V of the standby contract. A third party that is independent of the laboratory that analyzed the samples and independent of the consulting firm must validate all samples collected. A Data Usability Report must be generated by the Engineer's QA officer and delivered to the NYSDEC with the report.
    - Citizen Participation Plan
        - The Engineer will be called upon to develop a Citizen Participation Plan which will identify groups, individuals, and officials that may be interested in any remedial activities that take place at these sites. This plan will involve determining the addresses of adjacent property owners and local officials, advocacy groups. The Engineer may be called upon to provide information and help plan a pre-characterization public meeting or generate a fact sheet to be distributed to the addresses complied.

When the Work Plan is approved by the NYSDEC, a notice to proceed will be sent from the NYSDEC to the Engineer. Work Plan development will be scheduled so a Notice to Proceed

can be issued within 90 days of Work Assignment acceptance. No work beyond Task 1 will begin until a Notice to Proceed is issued by the NYSDEC.

Task 2: Site Investigation

A field investigation will be conducted to determine the sources of contamination at each site and its threat to human health or the environment. The consultant must complete the following specific subtasks for each site:

- Base Map Development
    - Prior to sampling, an initial map of the site must be developed to locate sampling points and show relevant features (roads, structures, etc.). The scale must be one inch to 40 feet and the general groundwater flow must be represented for areas of concern within the site.
- Survey
    - During the field work the location (within 0.1 feet) of each sample point will be determined and presented on the revised base map with a scale of one inch to 40 feet.
- Soil Vapor Intrusion Investigation
    - The soil vapor intrusion investigation will be performed in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006
    - This work assignment includes sampling of up to 18 structures (up to 20 sampling locations, including three located within the W.T. Clark school) located in the area immediately south of Old Country Road and Grand Boulevard. Locations will be based upon the recommendations of the previously cited report. Prior to the structure air sampling, an inspection of general site conditions will be performed at each property location. The pre-sampling inspection will determine the locations for the sub-slab vapor, indoor air and outdoor air sampling.
    - Sub-slab vapor samples shall be collected with a laboratory-certified summa canister regulated for a 24-hour sample collection. The analysis for sub-slab vapor samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound. VOC analysis for this Work Assignment will be by EPA method TO-15.
    - One indoor air sample will be collected from each residential property while three indoor air samples will be collected from the W.T. Clark school. Samples will be collected from the basement area (if applicable) or from the first floor if there is no basement. All indoor air samples will be collected with a laboratory-certified summa canister regulated for a 24 hour sample collection. The analysis for

indoor air samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound except for TCE which will have a detection limit of 0.25 $\mu g/m^3$.

- Outdoor air samples will be collected with a laboratory-certified summa canister regulated for a 24-hour sample collection. At least one outdoor air sampling location will be collected for each structure sampled for indoor air and sub-slab soil vapor. The analysis for outdoor air samples will achieve detection limits of 1.0 $\mu g/m^3$ for each compound except for TCE which will have a detection limit of 0.25 $\mu g/m^3$.

- Reporting for indoor air and sub-slab sampling will include information pertaining to the installation, collection and sampling of the properties. No conclusions shall be contained within the reports. A database shall also be included compiled from data validated by a qualified data validator.

- Data Validation

  - All samples collected must be validated by a party that is independent of the laboratory which performed the analyses and the consultant which performed the fieldwork. A usability analysis will be conducted by a qualified data validator and a Data Validation/Usability report will be submitted to the NYSDEC.

Task 3: Site Characterization Report

Documents will be, in addition to hard copies, provided electronically to the NYSDEC in Adobe Acrobat (.pdf) format. Preliminary reports and supporting documents for the final reports must also be delivered to the NYSDEC. These preliminary and supporting documents must contain a cover page indicating that they are not the finalized documents and state the percent of work this document represents and the amount of work that remains. At the time of Work Assignment completion, the Engineer will submit all final documents and data that were generated during the Work Assignment to the NYSDEC. All data generated under this Work Assignment shall be submitted in an electronic data deliverable (EDD) that complies with the Division's Electronic Data Warehouse Standards or as otherwise directed by the NYSDEC.

At the time of completion of the Work Assignment services, the Engineer shall deliver to the NYSDEC the original copies, two reproducible copies, plus additional copies, of all final plans, drawings, specifications, computations, designs, construction data, reports, record drawings, and all other documents and data pertaining to the work which is the subject of the Work Assignment to the extent that the information has not already been furnished.

- Throughout the Work Assignment

  - The Engineer will continuously monitor and evaluate budget and project status. A Cost Control Report, Project Report, and Progress Schedule Update will be generated by the Engineer and delivered to the NYSDEC on a monthly basis. A

quarterly report indicating M/WBE utilization by amount of work in dollars assigned to and accomplished by M/WBE will also be delivered to the NYSDEC.

- After Field Work is completed
  - The Final Site Characterization Report must include the following:
    - Summary of all data collected as part of the field work or records search. Include maps, tables, and other visual aides as warranted.
    - Summary of the hydrological and physical condition of the site, as pertaining to soil vapor.
    - Summary of the activities that took place during the field investigation included surveyed map locations and identify areas of concern.
    - Recommendations for additional sampling areas and types, include narrative on data gaps and usability of the data.

V Period of Performance

This Work Assignment will be completed within twelve months of the Notice to Proceed.

VI Work Assignment Cost Authorization

Eight thousand dollars is authorized for work plan development. No additional funds will be authorized until the work plan is approved.

VII Budget

ITEM	BUDGET
Work Plan Development	$8,000
Site Surveys	$4,000
Structure and Outdoor Air Sampling	$40,000
Data Validation	$5,000
Sample Analysis	$15,000
Reports	$25,000
Total	$97,000

From: Michael Cruden
To: Andrea Indelicato
Date: 6/26/2008 8:05:13 AM
Subject: Fwd: Conceptual approval for the SVI investigation, off-site - Sites No. 130043A-V.

please prepare issuance to CDM ID

>>> Chittibabu Vasudevan 6/18/2008 3:47 PM >>>
Sal: The attached files represent a conceptual approval memorandum for this work and the work assignment. To further the soil vapor intrusion investigation south of Old Country Road for the New Cassel Industrial Area Sites, the estimated budget is $97,000 with $8,000 for work plan development.

The purpose of this Engineering Standby Contract Work Assignment is to conduct a Soil Vapor Intrusion Investigation for 17 residences and the W.T. Clark High School. These are located within the area affected by the off-site groundwater plumes originating in the New Cassel Industrial Area, and were identified in a previous study (WA #D00490-40) as potential candidates for additional indoor air sampling.

Pl let me know if you need further information.

Thanks

Chittibabu Vasudevan, Ph.D.,P.E.("Vasu")
Director, Remedial Bureau A
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7015
Phone: (518) 402-9625
Fax: (518) 402-9627
e-mail: cxvasude@gw.dec.state.ny.us