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130041 - FUMEX SANITATION

Final Work Plan
Remedial Investigation

Fumex Sanitation Site
New Hyde Park, Nassau County, New York
NYSDEC Site #1-30-041
Work Assignment #D002925-13

Prepared for:

New York State
Department Of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Michael Zagata
Commissioner

Division Of Hazardous Waste Remediation

Michael J. O'Toole, Jr., P.E.
Director

Prepared by:

Camp Dresser & McKee
100 Crossways Park West
Woodbury, New York 11797-2012

February 1996

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
50 Wolf Road, Albany, New York 12233-7010

Michael D. Zagata
Commissioner

FEB 28 1996

Mr. Michael A. Memoli, P.E.
Camp, Dresser and McKee
100 Crossways Park West
Woodbury, NY 11797

Re: State Superfund Standby Contract
Work Plan Approval
Work Assignment #D002925-13
Fumex Sanitation, Site #1-30-041

Dear Mr. Memoli:

This is to acknowledge receipt of the work plan dated February, 1996 for the above-referenced project. The subject work plan is for a Remedial Investigation, (RI), at Fumex Sanitation. The Department hereby approves the work plan and authorizes Camp, Dresser and McKee to proceed with the project.

The following constitutes the budget for this work assignment:

Prior approved work plan budget	$ 0
Approved increase in budget for this work plan	$105,976
Total approved work plan budget	$105,976
Unapproved budget items	
Subcontracts	$ 0
Other items	$ 0
Total work assignment budget	$105,976

You are authorized to expend only approved budget funds. These funds will not be available for payment until the Office of the Comptroller (OSC) approves the work plan. This process generally takes approximately four weeks. Unapproved budget items must be included in a revised work plan budget and receive written Department approval before expenditure.

Camp, Dresser and McKee is hereby given notice to proceed with the work described in this work assignment. All work described shall be completed according to the schedule in the approved work plan.

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Section 1
Introduction

The Remedial Investigation (RI) Work Assignment (D002925-13) for the Fumex Sanitation Site (Fumex), located in the Village of New Hyde Park, Nassau County, New York, was authorized by the New York State Department of Environmental Conservation (NYSDEC), under the State Superfund Standby Contract (SSSC). The Work Assignment, and NYSDEC authorization for the expenditure of work plan development cost funds, was assigned to Camp Dresser & McKee (CDM) in a letter received on October 31, 1995 (NYSDEC 1995).

This document is the Fumex site RI draft work plan, the first deliverable to the NYSDEC under the work assignment (NYSDEC 1995). Corresponding documents under separate cover are the Fumex site RI draft Site Operations Plan/Quality Assurance Project Plan (SOP/QAPP) (CDM 1995), which includes a draft site Health and Safety Plan (HASP), and draft Minority Owned Business Enterprise/Woman Owned Business Enterprise (MBE/WBE) Utilization Plan (CDM 1995).

1.1 Site Background and History

The following sections provide a description of the Fumex site.

1.1.1 Site Location, Ownership, and Use

The Fumex site is located at 131 Herricks Road in the Village of New Hyde Park, Nassau County, New York. It encompasses approximately 1 acre of land and includes a one story masonry and metal frame building, with no basement. The site building is bounded to the west by a paved parking lot. Fumex Sanitation has operated a commercial termite extermination facility at this site since 1952 and land use prior to 1952 is unknown by CDM.

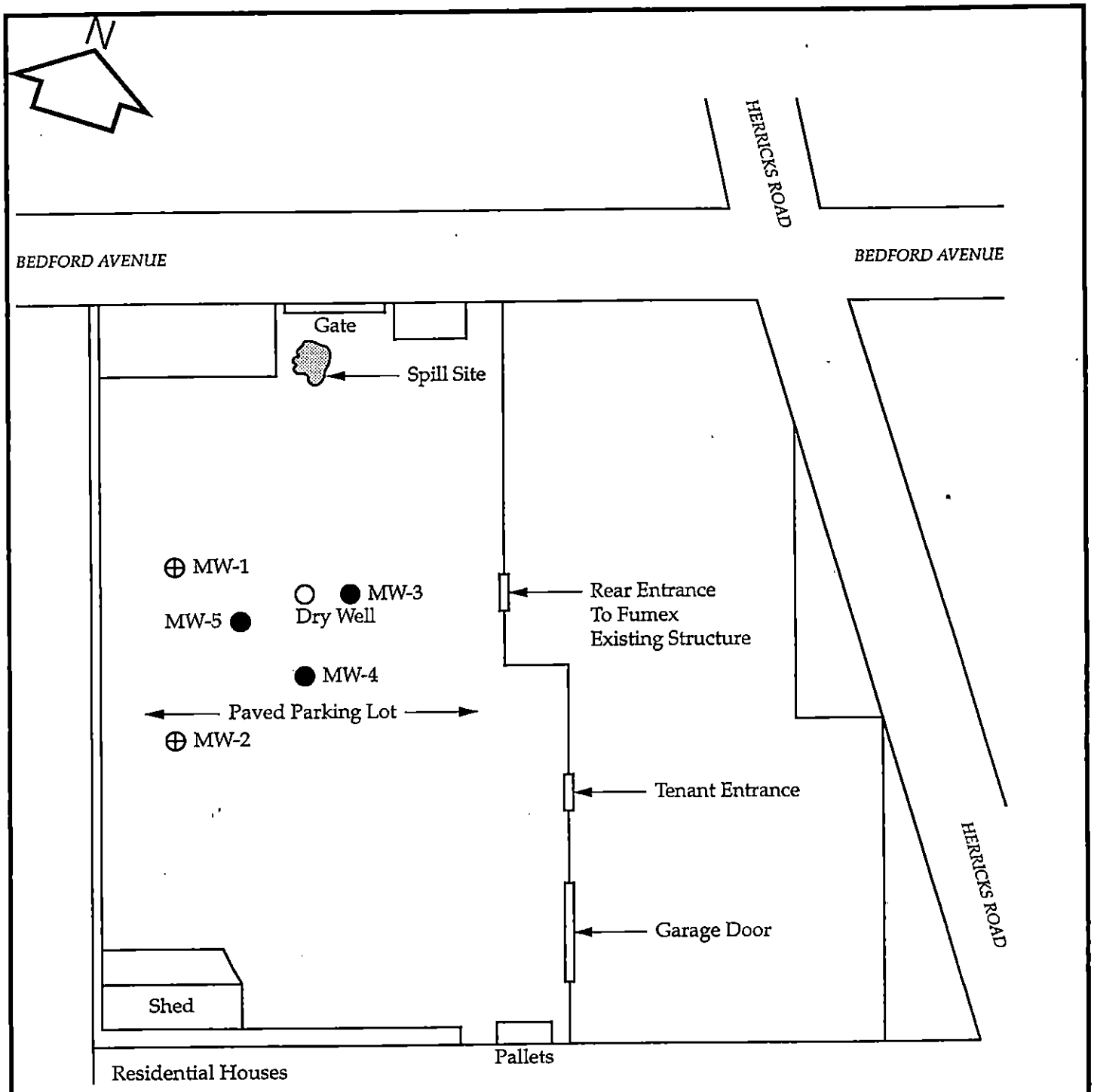
The site is bounded on the north by Bedford Avenue, on the south by a parking lot, on the east by Herricks Road, and on the west by residential houses, and Armstrong Road (see Figure 1-1). The area surrounding the site consists of industrialized/commercial properties as well as residential properties south of the site.

In 1992, Fumex Sanitation, Inc. changed its name to S.S. Sanitation, Inc. The sole officer and shareholder is Steven Schwimmer, who has filed for bankruptcy pursuant to Chapter 7 of the bankruptcy code. S.S. Sanitation, Inc. no longer operates at this facility.

1.1.2 Site History

Fumex Sanitation Inc., is a New York Corporation originally formed on December 6, 1948. Fumex has operated a commercial termite extermination business at this site since 1952. In August 1981, a drum of chlordane rinse water stored at this site was knocked over, spilling approximately 30 gallons of the rinse water onto the asphalt parking lot behind Fumex. The material entered two stormwater catch basins on the adjacent road (Bedford Ave.) and a dry well in Fumex's parking lot.

Fumex also regularly sprayed their then unpaved parking lot with 1-2% chlordane for insect control from 1952 to 1978.



LEGEND:

- ○ - Dry Well
- ⊕ - 4" Diameter Monitoring Well
- ● - 2" Diameter Monitoring Well

Not To Scale

CDM

environmental engineers, scientists, planners & management consultants

Fumex Site - New Hyde Park, New York
NYSDEC Site #1-30-041

Site Plan

Figure 1-1

In 1986, the NYSDECs Region 1 office entered into an order on consent with Fumex to determine the extent of chlordane in the soil and groundwater at the site and evaluate remedial alternatives.

A hydrogeological investigation was conducted in 1986 by Fumex to satisfy the requirements of the Order on Consent. Three monitoring wells were installed at the site, in addition to the two wells that were previously installed. The five wells have been sampled and the results are as follows:

Chlordane Concentrations in Groundwater (concentrations in ppb)

Monitoring Well	July 1984	Dec. 4, 1986	Dec. 10, 1986
1	39	96	99.7
2	53	40	20.1
3	NS	NS	0.89
4	NS	55	3.6
5	NS	56	16.3

Note : NS = Not Sampled

Soil samples were collected during the installation of these monitoring wells. The chlordane concentrations reported in these samples show that the highest concentrations were found in MW-5 and that the concentrations in all wells generally decreased with depth. The results are as follows:

Chlordane Concentrations in Soil (ppb)

Monitoring Well	July 1984	Nov. 1986	Dec. 1986
1	1530 (25 - 27') 105 (35 - 37') 14 (40 - 42')	NS	NS
2	9 (30 - 32')	NS	NS
3	NS	1492 (10 - 12') 96.9 (20 - 22') 308 (30 - 32') 90.3 (40 - 42') 59.4 (50 -52')	480 (45 - 47')
4	NS	417 (10 - 12') 1344 (20 - 22') 700 (30 - 32')	670 (30 - 32')
5	NS	1500 (10 - 12') 1494 (20 - 22') 619 (30 - 32')	1500 (30 - 32') 1400 (45 - 47')

Note: NS = Not Sampled.

Based on the results of this investigation, a Phase 1 investigation was conducted in 1989. In 1989 Fumex was notified of the site's inclusion in the Registry on Inactive Hazardous Waste Disposal Sites in New York State. Steven Schwimmer was notified of his status as a responsible party in 1994. Counsel for Mr. Schwimmer responded that he did not wish to enter into an Order on Consent with the Department to remediate the site.

1.2 Environmental Setting

The following sections provide a description of the environmental setting at the Fumex site.

1.2.1 Site Topography

The Atlantic Coastal Plain physiographic province of North America is located along Long Island. Two lines of hills made of glacial debris exist along the northern and central part of Long Island. The northern moraine is the Harbor Hill moraine and the central moraine is the Ronkonkoma moraine. These moraines converge in western Long Island. The topography between these two moraines is relatively flat and gentle (Lawler, Matusky & Skelly, 1989).

The Fumex site lies on this relatively flat and gentle topography between the two moraines. There is a slight increase in elevation to the east and west of the site.

1.2.2 Geology

The subsurface conditions beneath the site consist of sediments from the Pleistocene glacial outwash. These sediments consist of stratified sands and gravels which were deposited by the melting glacials of the receding Harbor Hill moraine. These surficial (Pleistocene glacial) sediments are approximately 100-150 thick and are very permeable. Beneath these sediments, till from the Ronkonkoma moraine may be located. This till consists of relatively impermeable clay, sand and boulders (Lawler, Matusky & Skelly, 1989).

Cretaceous sediments are located beneath the Pleistocene glacial outwash sediment. These cretaceous sediments consist of the younger Magothy formation and the older Raritan formation. The Magothy formation is composed of 300 to 400 ft. thick, moderate to highly permeable, fine to medium sand. Coarse sand or sandy clay lenses are also found in the Magothy formation. The Raritan formation includes the Raritan clay and Lloyd sand formations. The Raritan clay is an impermeable clay layer with sand and gravel lenses. The Raritan clay is approximately 100 to 150 ft. thick. The Lloyd sand underlies the other formations and consists of fine to coarse sand and gravel. The Lloyd sand has a moderate permeability and is nearly 150 ft. thick (Smolensky, 1989).

Precambrian crystalline rock, including mica schist, gneiss and granite, is the bedrock which underlies Long Island. The bedrock has minor water-bearing fractures and is relatively impermeable. The bedrock depth is approximately 830 ft. near the Fumex site (Lawler, Matusky & Skelly, 1989).

1.2.3. Hydrogeology

The groundwater reservoir of Long Island consists of sediments from the Pleistocene and Late Cretaceous glacial outwash. The Precambrian bedrock is considered the lower limit of the aquifer due to its relative impermeability. There are three water-producing aquifers: (1) the Upper Glacial aquifer, (2) the Magothy formation, and (3) the Lloyd sand of the Raritan formation (Smolensky, 1989).

The Upper Glacial aquifer consists of permeable Pleistocene outwash sands and gravels. It is located at a depth of 47 ft. below land surface and is approximately 45 to 50 ft. above mean sea level. This aquifer is approximately 100 ft. thick. Groundwater flows southwest in the area of the Fumex site. Very small amounts of this aquifer are used for industrial purposes (Lawler, Matusky & Skelly, 1989).

The Magothy formation is composed of moderately to highly permeable sands with intermittent clay layers. These clay layers form less permeable areas in the aquifer. The Magothy formation is used as the primary aquifer for public drinking water in Nassau County. The aquifer is approximately 400 ft. thick.

The Lloyd sand of the Raritan formation is located beneath the Magothy aquifer. An impermeable Raritan clay formation divides the Magothy aquifer and the Lloyd sand. The Lloyd sand aquifer is located between 650 to 700 ft. below the surface near the site and is considered a confined aquifer because its water is under artesian conditions. Deep public supply wells are located in this aquifer, within a few miles of the Fumex site (Lawler, Matusky & Skelly, 1989).

Percolation of rainwater through the soil is the primary means of recharge to the aquifers. The Upper Glacial aquifer is replenished directly by water from the surface. The Upper Glacial aquifer and Magothy aquifer are hydraulically connected. The slow, vertical migration of water downward supplies the Magothy aquifer. The Lloyd sand is also supplied by the slow, vertical migration of water, through the Raritan clay.

1.2.4 Surface Water and Drainage

Several sporadic ponds are located within 0.5 miles of the site. These ponds may be used as recharge basins. Hempstead Lake is located approximately 4 miles southeast of the site in Hempstead Lake State Park. Valley Stream is located approximately 5 miles southwest of the site. Valley Stream drains into Jamaica Bay. Site runoff is directed towards the onsite dry well. Runoff from outside the site is most likely directed to the local stormwater collection system (Lawler, Matusky & Skelly, 1989).

1.3 Project Objective

The objective of this Work Assignment, i.e., project, is to complete a RI pursuant to NYSDEC requirements, which includes the following:

- Work plan development (including a SOP/QAPP, HASP, and MBE/WBE Utilization Plan)
- Site characterization (remedial investigation [RI])

This document is the draft RI work plan deliverable. Corresponding documents (draft SOP/QAPP, which includes a draft site HASP, and draft MBE/WBE Utilization Plan are submitted to the NYSDEC concurrently under separate cover.

The objectives of the RI for the Fumex site are to 1) identify possible contamination source areas 2) define the groundwater contamination 3) identify any receptors, 4) determine if the adjacent properties have been

negatively impacted by the contamination and 5) evaluate if a second phase RI, a feasibility study (FS) and/or IRM will be necessary.

Specifically, the principal elements of the RI for the Fumex site are:

- to characterize the existing concentrations of chlordane in the drywell by collecting sediment samples from the drywell on site.
- to characterize the hydrogeology of the site including the general flow direction(s) of the aquifer, and the hydraulic relationship between the five monitoring wells based on two rounds of synoptic water level measurements.
- to characterize the present concentration of chlordane in the groundwater (if it exists) on site.
- to inventory the extent of potentially affected areas by identifying nearby homes or businesses that may use private water supply wells.
- to develop a working Citizen Participation Plan that describes the site-specific citizen participation activities that will take place to compliment the remedial investigation.

(fumex\wkpn\sec1.wpd)

Section 2
Scope of Work and Description of Tasks

The Fumex site RI will be implemented in accordance with the scope of work defined in Attachment 1 to Work Assignment No. D002925-13 (NYSDEC 1995). The project is organized into two major tasks and related subtasks, as detailed below.

2.1 Task 1 - Work Plan Development

A detailed work plan will be developed for the Fumex site RI. The objective of the work plan and associated documents is to provide a site specific, detailed plan for conducting the site RI so that data generated during the project will be technically accurate and properly documented, and meet the objective of the project (as discussed in Section 1.2 of this work plan) as well as to ensure that the RI is conducted in compliance with the Occupational Safety and Health Administration (OSHA) regulations.

Work plan preparation for the site RI will consist of two subtasks: Subtask 1.1 - Draft Work Plan (including the preparation of a draft RI SOP/QAPP, that includes a draft site HASP, draft RI MBE/WBE Utilization Plan) and a draft CPP Citizen Participation Plan; Subtask 1.2 - Final Work Plan (including the preparation of a final RI SOP/QAPP and HASP, and a final RI MBE/WBE Utilization Plan), the funds for which were authorized in the work assignment (NYSDEC 1995). Task 1 is currently in progress.

2.1.1 Subtask 1.1 - Draft RI Work Plan

This deliverable, the draft RI Work Plan, Subtask 1.1 of Task 1 - Work Plan Development, consists of the following:

- A discussion of the site background and history, including a summary of past operations and constituents of concern.
- A description of major project tasks and subtasks for the Fumex site RI.
- A detailed discussion of RI (site characterization) activities.
- A work assignment (project) progress schedule with noted milestones and deliverables.
- A staffing plan identifying management and technical staff to be assigned to the project, and resumes of key project staff.
- A work assignment budget broken down by project task.
- Identification of areas of work requiring subcontracting.
- A MBE/WBE utilization plan identifying subcontracts most likely to result in MBE/WBE utilization.

Also, during the development of the draft RI Work Plan, the following activities were conducted:

- The project file for the Fumex site was made available to CDM by the NYSDEC Project Manager for review on November 16, 1995.

- On November 21, 1995 CDM project staff and the NYSDEC Project Manager conducted a site visit. During the site visit, a visual walkover was made of the site and locations of sampling sites were identified.

- A scoping session was held on December 8, 1995 with CDM project staff and the NYSDEC Project Manager to discuss and confirm the proposed groundwater monitoring and sediment sampling regime .

This deliverable is accompanied by a corresponding draft RI SOP/QAPP (that includes a draft site HASP) and a draft RI MBE/WBE Utilization Plan. Seven (7) copies of the draft work plans will be submitted to the NYSDEC. For budgetary purposes, it is assumed that NYSDEC comments on the draft work plan will be discussed via telephone conference.

2.1.2 Subtask 1.2 - Final RI Work Plan

Subtask 1.2 - Final RI Work Plan will consist of preparing a final work plan for the Fumex site RI that incorporates comments from NYSDEC, New York State and Nassau County Department of Health (NYSDOH, NCDOH) on the draft work plan. Any other agency comments, as well as comments received after the first public fact sheet is distributed will be addressed in a technical memorandum to the NYSDEC.

The final RI work plan, including the final RI SOP/QAPP with HASP, Citizen Participation Plan and MBE/WBE Utilization Plan, will be prepared upon receipt of one set of NYSDEC comments. The Citizen Participation Plan will contain a public contacts list, including but not limited to the following: residents within a 1000' radius of the Fumex site, local civic, environmental and economic groups potentially interested in this matter, elected representatives on the town, county and state level and local media. In addition, a discussion of the Fumex site history and the proposed exchanges of information with the public will be documented as will the agency contacts for the NYSDEC, NYSDOH and NCDOH.

Seven copies of the final RI work plan will be submitted to the NYSDEC. Site work will not commence until CDM has received NYSDEC approval of the final work plan, including final approval of the project budget and scope.

2.2 Task 2 - Remedial Investigation

Field investigations during this initial phase of the site RI will be performed to determine the nature, extent and source(s) of contamination at the site. Samples collected during the RI will be analyzed for target compound list (TCL) pesticides (see Table 2-1).

The work associated with the RI, site characterization, has been divided into four subtasks. Subtask 2.1 consists of the characterization of sediment at the site; Subtask 2.2 consists of the characterization of the site hydrogeology; Subtask 2.3 consists of a characterization of the inventory of potentially affected areas (nearby homes or businesses using private water supply wells); and Subtask 2.4 consists of a preliminary RI report.

2.2.1 Subtask 2.1 - Sediment Characterization

Sediment quality in the drywell at the site will be evaluated. Three samples will be analyzed for TCL Pesticides. The proposed sediment sample location is shown in Figure 1-1. Detailed procedures for the surface water and sediment sampling are discussed in the draft RI SOP/QAPP .

For budgetary purposes, it is assumed that:

- Required equipment is as described in the draft RI SOP/QAPP.
- A supply of potable water will be available on-site. In addition, potable water will be brought to the site by CDM.
- Four sediment samples will be obtained using a split spoon sampler. The samples will be collected by the contracted driller, SJB Services, and sent to the contract laboratory for TCL Pesticide analysis.
- Prior to drilling of a borehole, all split spoons will be steam-cleaned , washed with liquinox and rinsed with distilled/deionized water. At the drywell, split spoons will be washed with liquinox and rinsed with distilled/deionized water between sampling events.
- The sediment samples will be obtained from the top 1-3 feet, from the depth between 10-15 feet, from the depth between 20-25 feet and from the depth between 45-50 feet below the drywell sediment surface.
- QA/QC samples (as specified in Table 8-2 of the draft SOP/QAPP [CDM 1995]) will be sent to the contract laboratory for TCL Pesticides analysis.
- All work will be performed using Level D PPE (see draft HASP [CDM 1995]).
- A budget of $1,000 is provided for RI consumable supplies. The NYSDEC will be notified of consumable supply costs greater than $1,000; NYSDEC will reimburse these costs upon receipt of cost backup/justification.
- No meetings at the NYSDEC office in Albany, New York will be needed.

2.2.2 Subtask 2.2 - Hydrogeologic Characterization

The objective of the site hydrogeologic characterization is to evaluate groundwater quality (nature, extent and source[s] of contamination) and flow at the Fumex site. Specifically, the goals of the site hydrogeologic characterization are:

- to characterize the hydraulic relationship between the monitoring wells (to the extent possible based on two rounds (at least 3 months apart) of synoptic water level measurements in the monitoring wells).
- to characterize groundwater quality at the site.

2.2.2.1 Synoptic Groundwater Level Measurements

The initial stage of the collecting groundwater level measurements will involve the services of a land surveyor. The surveyor will determine the elevation of the top of each of the 5 well casings after they have been repaired. CDM will collect two rounds of synoptic water level measurements, one immediately prior to the first RI groundwater sampling event and a second during the second round of groundwater sampling during a different season (at least 3 months following the first round of measurements). Water level measurements will be taken at monitoring wells MW-1 through MW-5, to an accuracy of 0.01 ft. Detailed procedures for the measurement of water levels are described in the draft RI SOP/QAPP.

For budgetary purposes, it is assumed that:

- Required equipment is as described in the draft RI SOP/QAPP.
- A supply of potable water will be available on-site. In addition, potable water will be brought to the site by CDM as needed.
- It is assumed that synoptic ground water level measurements can be performed on the same day as the monitoring well sampling.
- YEC, Inc will perform a site survey on the five monitoring wells. The accuracy of the well elevation will be within 0.01 ft.

TABLE 2-1

Target Compound List (TCL)
Contract Required Quantitation Limits (CRQL)*

Pesticides/Aroclors	CAS Number	Quantitation Limits* Water ug/L	Soil ug/Kg	On Column ng
alpha-BHC	319-84-6	0.05	1.7	5
beta-BHC	319-85-7	0.05	1.7	5
delta-BHC	319-86-8	0.05	1.7	5
gamma-BHC (Lindane)	58-89-9	0.05	1.7	5
Heptachlor	76-44-8	0.05	1.7	5
Aldrin	309-00-2	0.05	1.7	5
Heptachlor epoxide	1024-57-3	0.05	1.7	5
Endosulfan I	959-98-8	0.05	1.7	5
Dieldrin	60-57-1	0.1	3.3	10
4,4'-DDE	72-55-9	0.1	3.3	10
Endrin	72-20-8	0.1	3.3	10
Endosulfan II	33213-65-9	0.1	3.3	10
4,4'-DDD	72-54-8	0.1	3.3	10
Endosulfan sulfate	1031-07-8	0.1	3.3	10
4,4'-DDT	50-29-3	0.1	3.3	10
Methoxychlor	72-43-5	0.50	17.0	50
Endrin ketone	53494-70-5	0.10	3.3	10
Endrin aldehyde	7421-36-3	0.10	3.3	10
alpha-Chlordane	5103-71-9	0.05	1.7	5
gamma-Chlordane	5103-74-2	0.05	1.7	5
Toxaphene	8001-35-2	5.0	170.0	500
AROCLOR-1016	12674-11-2	1.0	33.0	100
AROCLOR-1221	11104-28-2	1.0	67.0	200
AROCLOR-1232	11141-16-5	1.0	33.0	100
AROCLOR-1242	53469-21-9	1.0	33.0	100
AROCLOR-1248	12672-29-6	1.0	33.0	100
AROCLOR-1254	11097-69-1	1.0	33.0	100
AROCLOR-1260	11096-82-5	1.0	33.0	100

* Quantitation Limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the Laboratory for soil/sediment, calculated on dry weight basis, as required by the Protocol, will be higher.

file: xtab7-1.xls

- All work will be performed using Level D PPE (see draft RI HASP [CDM 1995])
- No meetings at the NYSDEC Albany, New York office will be needed.

2.2.2.2 *Collection and Analysis of Groundwater Samples*

A groundwater sample will be collected from each of the existing monitoring wells MW-1 through MW-5 after the wells have been repaired and redeveloped. Each sample will be analyzed for TCL Pesticides. Detailed procedures for groundwater sampling are discussed in the RI SOP/QAPP.

For budgetary purposes, it is assumed that:

- Redevelopment of the monitoring wells will be accomplished over a 3 day period. It is assumed that one CDM person will work three 10-hour days for this to occur. The redevelopment of the wells will be accomplished by the pump and surge method.
- Required equipment is described in the draft RI SOP/QAPP.
- A supply of potable water will be available on-site. In addition, potable water will be brought to the site by CDM as needed.
- Well purge water will be returned to the ground via the dry well on-site pending characterization of the bottom of the well in the sediment characterization subtask.
- Disposable dedicated bailers will be used.
- A total of 5 groundwater samples will be collected and sent to the contract laboratory for TCL Pesticides during each of the two sampling rounds.
- QA/QC samples (as specified in Table 8-2 of the draft SOP/QAPP will be sent to the contract laboratory for TCL Pesticide analysis.
- Monitoring wells recover at a reasonable rate, and sampling can be conducted within 2 hours of purging.
- Monitoring wells will be sampled at a rate of 5 wells per two, ten hour work days, with 2 CDM people. Total is 20 hours per person for 2 persons (40 hours, total).
- All work will be performed using Level D PPE (see draft HASP[CDM 1995]).
- A budget of $1,000 is provided for RI consumable supplies. NYSDEC will be notified of consumable supply costs greater than $1,000; NYSDEC will reimburse these costs upon receipt of cost backup/justification.
- No meetings at the NYSDEC Albany, New York office will be needed.

2.2.3 *Subtask 2.3 - Survey of Area Wells*

A survey of businesses, industries and residences downgradient of the site will be conducted to determine the number of properties that obtain water for either primary or secondary purposes, from private wells.

Additionally, available historic information and titles shall be located and reviewed. The potential sources and areas of chlordane contamination will be identified. In addition the previous use of additional pesticides will be reviewed at this site to determine if additional analyses are appropriate.

For budgetary purposes it is assumed that:

- The United States Geological Survey (USGS) and Nassau County Department of Public Works (NCDPW) will be contacted to assist in the inventory of public and private wells within a 1000-foot radius downgradient of the Fumex site.
- The NYSDOH will be contacted to obtain well information on both municipal and private wells in the area.
- Local water authorities will be contacted to obtain well information on municipal and private wells in the area.
- A tax map of the area will be obtained and all property owners within a 1000-foot radius downgradient of the Fumex site will be identified.
- Because chlordane is not expected to migrate from the Fumex site in the groundwater, the private well survey will focus on the closest properties within a 1000-foot radius downgradient of the Fumex site. These properties are located in a region of Nassau County which is fully serviced by public water, therefore no private wells are expected in this area. However, it is estimated that up to 150 residences downgradient of the Fumex site will be surveyed. These properties will be identified and questionnaires will be delivered to these residences to identify which properties may contain private wells.
- Two field days will be required for 2 CDM people for follow-up on the private well questionnaire. Total is 20 hours per person for 2 days (40 hours total).
- No sampling of private wells is budgeted in this work plan.
- If additional laboratory analyses are required due to previous pesticide use at this site NYSDEC will be notified; NYSDEC will reimburse these costs upon receipt of cost backup/justification.
- A historic records and title search will be performed on the Fumex site. This search will be performed back to the year 1940 or to the sites first obvious use, whichever is earlier.
- No meetings at the NYSDEC Albany, New York office will be needed.

2.2.4 Subtask 2.4 - Draft RI Report

A draft RI report will be prepared upon completion of Subtasks 2.2.1, 2.2.2, and 2.2.3, and receipt of laboratory sample analytical results. As part of Subtask 2.4, a RI Report will be prepared to present and summarize field investigation activities, to identify areas and pesticides of concern at the site and to present site remedial action

objectives and alternatives, if necessary. The RI report will also indicate if a second phase RI is necessary. Specifically, the draft RI Report will include the following:

- An introduction, including report purpose, site background, description, history, environmental setting, and previous investigation summary.
- A description of the RI, including field activities associated with site characterization. This may include a description of site physical and chemical data, constituent sources, geology, groundwater/hydrogeology characteristics, and sediment characteristics.
- A description of the nature of Pesticide-affected media at the site, including results of RI site characterization activities with respect to site groundwater and sediment.
- Conclusions, including data limitations and any recommendations for additional work, as well as remedial action objectives and potentially applicable remedial action alternatives.
- Appendices, including sample analytical data, a data validation report, and a data usability report.

Seven copies of the draft RI report will be submitted to the NYSDEC for review and comment. The RI report will be revised once to incorporate one set of NYSDEC written comments. One meeting (scoping session) will be conducted at the NYSDEC Albany, New York office to discuss NYSDEC comments on the draft RI report. One public information meeting will be attended by the CDM Project Manager after the completion of the Draft RI report. Seven double-sided copies of the final RI will be submitted to NYSDEC.

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SECTION 3
Work Assignment Progress Schedule

The following tabulation provides the proposed project schedule and key milestones and deliverables for this work assignment. As currently planned, field work will be initiated two weeks after written receipt of work plan approval and notice to proceed from the NYSDEC. Field activity duration (actual field time) is estimated to be two weeks, if no delays are experienced due to inclement weather, site access problems, or for any other reasons beyond the control of CDM.

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

	Milestone	Date
	RI WORK PLAN DEVELOPMENT	
	TASK 1:	
	RI WORK PLAN DEVELOPMENT	
	TASK 1:	
1.	Receipt of Work Assignment	10/31/95
2.	Return of signed copy of Work Assignment (10 days)	11/10/95
3.	Scoping session to review TASK 1 requirements	12/08/95
4.	**RI Work Plan Development (First Draft)**	**12/27/95**
5.	NYSDEC written comments to CDM	01/08/96
6.	**Final RI Work Plan**	**02/14/96**
7.	**Public Information Fact Sheets Distributed** 02/21/96	
8.	NYSDEC Approval of RI/ Work Plan and Notice to Proceed (TASK 2)	02/28/96
	REMEDIAL INVESTIGATION	
	TASK 2:	
9.	**Technical Memorandum to Address Any Outstanding Public Comments and Agency Comments**	**03/13/96**
10.	RI Field Work (2 weeks)	03/20/96 -04/03/96
11.	RI Sample Analysis and Data Validation (7 weeks)	04/03/96 -05/22/96
12.	Second Round Synoptic Groundwater Level Measurements & Monitoring Well Sampling	07/08/96 -07/12/96
13.	RI Sample Analysis and Data Validation	07/15/96 -09/09/96
14.	**Data Validation and Usability Report (2 weeks)**	**09/20/96 - 10/04/96**
15.	**Draft RI Report**	**10/11/96**
16.	**Public Meeting**	**11/04/96**
17.	NYSDEC Written Comments to CDM	

	And Meeting with NYSDEC to discuss RI Report	11/18/96
18.	**Revised Final RI Report**	**12/02/96**
19.	NYSDEC Approval of Final RI Report	01/06/97 -02/4/97

Note: Deliverables and deliverable dates are in bold print.

A bar chart schedule summary by task and subtask, as discussed in Section 2.0 of this work plan, is shown on Figure 3-1.

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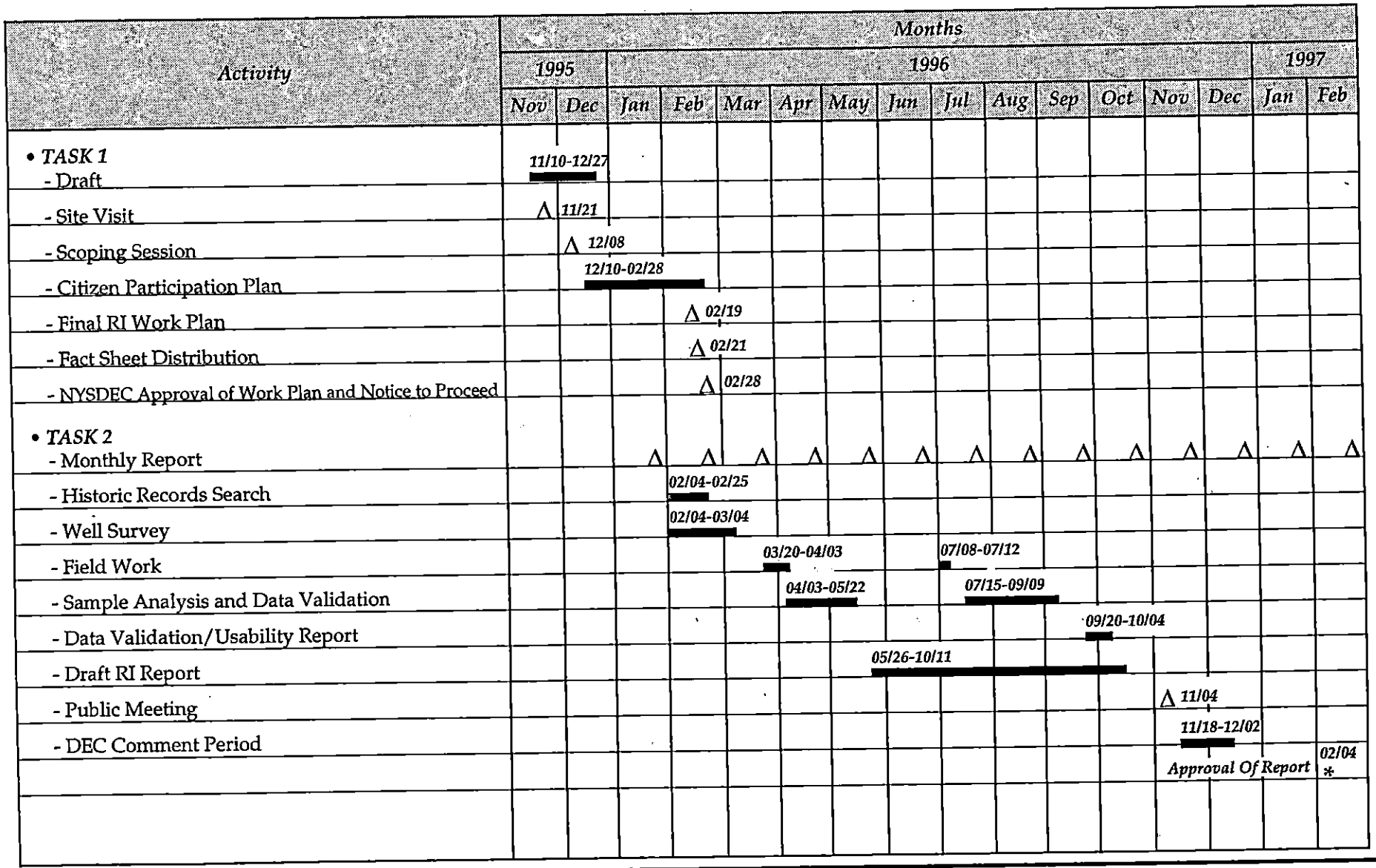


Fumex Site - New Hyde Park, New York
NYSDEC Site #1-30-041

Bar Chart Project Schedule

CDM

environmental engineers, scientists, planners & management consultants

Figure 3-1

Section 4
Staffing Plan

The staffing plan identifies CDM management and technical staff to be assigned to complete the tasks outlined in Section 2 and their areas of responsibility. Figure 4-1 shows the project organizational chart.

4.1 Program Manager - Michael Memoli, P.E.

The primary responsibilities for program management activities rest with the Program Manager (PRM). The Program Manager, Mr. Michael 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 as well as to CDM's Officer-In-Charge. He has authority to assign staff, negotiate and execute contracts and amendments, and execute subcontracts. The PRM will communicate directly with CDM's Project Manager.

4.2 Deputy Program Manager - D. Lee Guterman

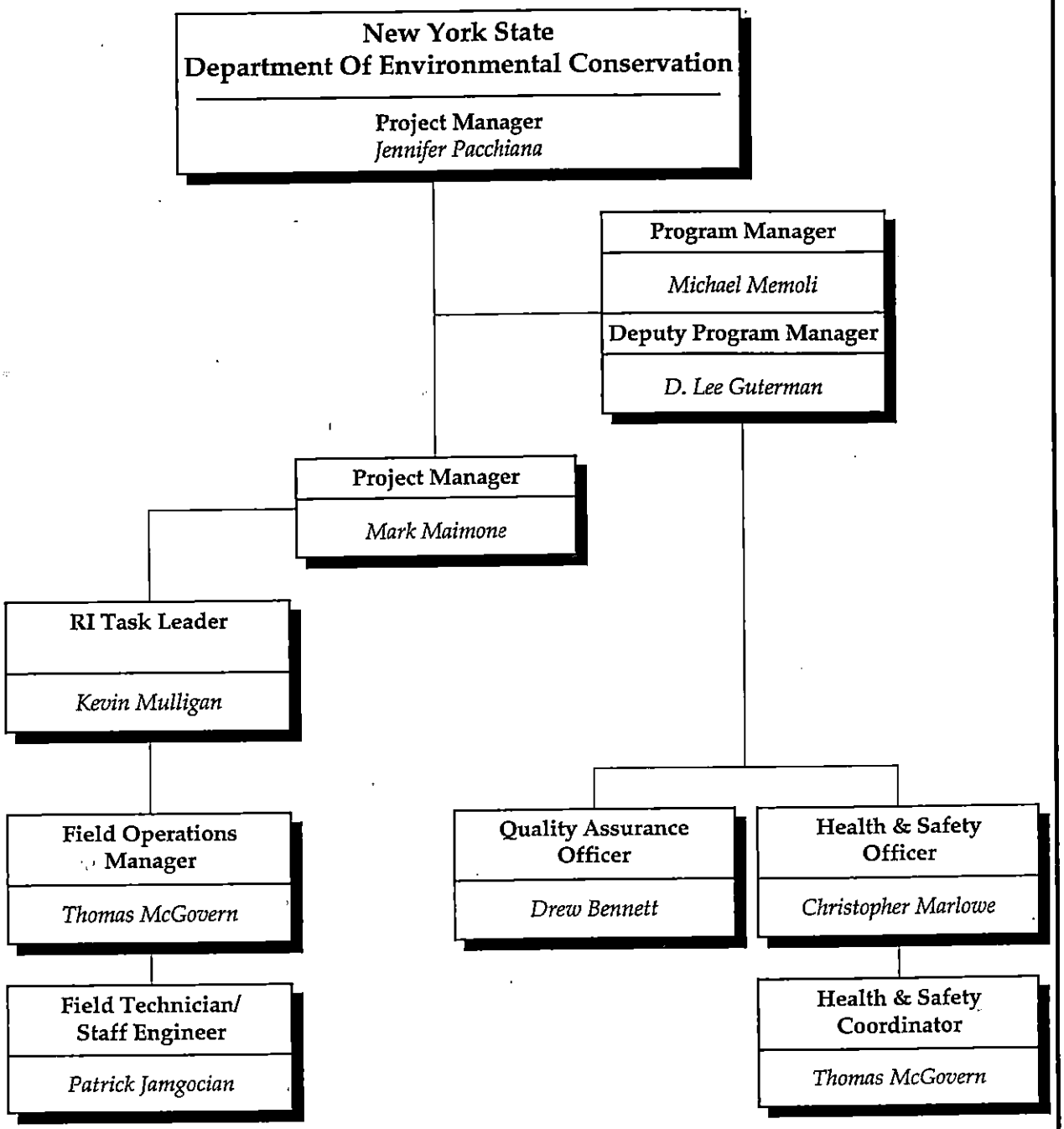
The Deputy Program Manager, Ms. Lee Guterman, will assist the Program Manager in all aspects of program administration. Ms. Guterman will be directly responsible for: 1) continuous contact with NYSDEC technical and Figure 4-1 contract administration staff, 2) technical, financial and administrative management on individual tasks and the overall program, 3) standardization of procedures, 4) implementation and oversight of cost control procedures for all assigned activities, and 5) implementation and maintenance of a resource and schedule reporting system. Ms. Guterman will be directly accountable to CDM's Program Manager and directly responsible for the performance of the contract on a day to day basis.

4.3 Program Quality Assurance Officer - Drew Bennett

The Program Quality Assurance Officer, Mr. Drew Bennett, will monitor QC activities of program management and technical staff, and 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. The QAO or his/her designee shall conduct periodic field ans sampling audits, interface with the analytical laboratory to make requests ans resolve problems, interface with the data validator and develop a project specific data usability report.

4.4 Health and Safety Officer - Chris Marlowe

The Program Health and Safety Officer, Mr. Chris Marlowe, will review and make recommendations on health and safety plans for compliance with OSHA requirements. He will develop a site HASP, perform 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.



CDM

environmental engineers, scientists, planners & management consultants

Fumex Site - New Hyde Park, New York
NYSDEC Site #1-30-041

Work Assignment Organization Chart

Figure 4-1

4.5 Project Manager - Mark Maimone

The Project Manager, Mr. Mark Maimone, will have overall responsibility for the technical and financial aspects of this project. He 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 project deliverables and adherence to QA/QC procedures, and manage subcontractors. He will serve as CDM's point of contact for this project.

4.6 RI Task Leader - Kevin Mulligan

The RI Task Leader, Mr. Kevin Mulligan will serve as a technical advisor and coordinator for the site RI. He will be directly accountable to the Project Manager. Having almost 8 years of experience as an environmental engineer, specifically with respect to water and groundwater quality issues, Mr. Mulligan will perform the evaluation of the sampling results to determine the extent of possible remediation necessary.

4.7 Field Operations Manager - Tom McGovern

The Field Operations Manager, Tom McGovern will be responsible for the execution of field activities, in accordance with the SOP/QAPP, including water-level measurement, sample collection, sample shipment, and the completion of chain-of-custody forms. As the site Health and Safety Coordinator, Mr. McGovern will be responsible for ensuring that the site HASP is consistently implemented during field activities and that a copy of the site-specific HASP and the CDM Health and Safety Manual are maintained at the site at all times. He will also be responsible for upgrading or downgrading personnel protection based on actual site conditions at the time of the investigation. The Coordinator must also present an overview of the HASP to field personnel prior to initiating any field activities. He will contact the CDM Program Health and Safety Officer and Project Manager if any questions or issues arise, during the conductance of field activities, that he cannot answer. He will be directly accountable to the Project Manager and RI Task Leader.

4.8 Field Technician/Staff Engineer - Patrick Jamgocian

The Field Technician, Mr. Patrick Jamgocian, will be responsible for conducting the site sampling and investigation activities, including but not limited to the following: groundwater, and sediment samples, sample shipment and chain-of-custody, and monitoring health and safety conditions in accordance with the NYSDEC-approved site HASP. He will be directly accountable to the Project Manager and RI Task Leader.

Mr. Jamgocian will also serve as the Project Staff Engineer, assisting the Task RI Leader with the development of the site RI.

4.9 Other Project Staff

Below is a listing of additional CDM staff members who we anticipate to be assigned to this project and their respective responsibilities. CDM will endeavor to utilize these individuals. If, for any reason, these staff become unavailable and substitutions and/or additions are required, NYSDEC will be given advance notification.

Nanette Vignola (VI) - Senior Scientist/Citizen Participation Plan Specialist
Thomas Horn (III) - Alternate Field Technician

Dennis Grove (II)	-	Equipment Maintenance
Vince Eugene (I)	-	Alternate Field Technician or Equipment Maintenance
Denise Taggart	-	Word Processing
Nancy Cohen	-	Alternate Word Processing
Chris Kalny (II)	-	Drafting and AutoCADD
Robert Gencorelli (II)	-	Alternate Drafting and AutoCADD

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Section 5
Budget Estimate

The following section presents a detailed breakdown of the total cost for each task and subtask outlined in Section 2.0 of this work plan.

Schedule 2.11(a), Summary of Work Assignment Price, provides an overview of the total budget estimate for the work assignment, including subcontract costs. Three separate rate schedules have been prepared, under Schedule 2.11(b), for the portion of the project to be performed before and after the change in reimbursement rates for Direct Salary Cost on June 30, 1996. In Schedule 2.11(b), direct Labor Hours and Costs Budgeted are provided for each labor classification and are derived using corresponding average reimbursement hourly rates in accordance with Schedule 2.10(a) of our contract. Because the duration of this project is anticipated to extend past June 30, 1996 and into February 1997, three separate rate schedules have been prepared under Schedule 2.11(b). Schedule 2.11(b-1) presents the administrative labor hours associated with the non-technical aspects of the work assignment. Total non-direct salary costs are itemized in Schedule 2.11(c).

A list of equipment required for the execution of the work assignment is detailed in Schedule 2.11(d)2 and 2.11(d)5. Estimated costs for consumable supplies, including personal protective equipment and miscellaneous field supplies are provided in Schedule 2.11(d)5. Personal protective equipment has been budgeted in accordance with Schedule 2.10(b) of our contract. Cost-plus-fixed-fee subcontracts are presented in detail in Schedule 2.11(e). Subcontractor costs for unit price subcontracts are provided in Schedule 2.11(f).

The Monthly Cost Control Report, summarizing fiscal information, is presented in Schedule 2.11(g), with a summary of labor hours detailed in Schedule 2.11(h).

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Schedule 2.11(a)

Summary of Work Assignment Price

Work Assignment Number D002925-13
Fumex Site

1.	Direct Salary Costs (Schedules 2.10(a) and 2.11(b))	$31,656
2.	Indirect Costs (Schedule 2.10(g))	$52,739
3.	Direct Non-Salary Costs (Schedules 2.11(c)(d))	$4,412

Subcontract Costs

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

	Name of Subcontractor	Services To Be Performed	Subcontract Price
A.	YEC, Inc.	Surveying	$1,700
4.	Total Cost-Plus-Fixed-Fee Subcontracts		$1,700

Unit Price Subcontracts (Schedule 2.11(f))

	Name of Subcontractor	Services To Be Performed	Subcontract Price
A.	E3I	Analytical Laboratory	$4,800
B.	Chemworld	Data Validation	$651
C.	SJB Services Inc.	Well Drilling & Installation	$5,798
5.	Total Unit Price Subcontracts		$11,249
6.	Subcontract Mangement Fee (Schedule 2.11(f))		$0
7.	Total Subcontract Costs (lines 4+5+6)		$12,949
8.	Fixed Fee (Schedule 2.10(h))		$4,220
9.	Total Work Assignment Price (Lines 1+2+3+7+8)		$105,976

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Engineer Camp Dresser & McKee
Project Name Fumex Site
Work Assignment No. D002925-13

Schedule 2.11 (b)

NSPE		IX	VIII	VII	VI	V	IV	III	II	I	Technical Report Typing	Admin./ Support	Total Est. Hours	Total Est. LOE
Average Salary Rates	1996	$52.60	$47.30	$39.24	$35.51	$29.33	$27.46	$22.38	$20.14	$17.10	$16.97	$16.97		
	1997	$55.23	$49.67	$41.20	$37.29	$30.80	$28.83	$23.50	$21.15	$17.95	$17.81	$17.81		
Task 1	Work Plan Development			35	12		116		27	72	28	6	296	$7,336.84
Task 2	Remedial Investigation - 1996			38			28		127	95	52	14	354	$7,562.30
	Remedial Investigation - 1997	8		97	32		100		113	205	108	14	677	$16,757.04
													0	$0.00
													0	$0.00
													0	$0.00
													0	$0.00
													0	$0.00
													0	$0.00
Subtotal 1996 Hours		0	0	73	12	0	144	0	154	167	80	20	650	
Subtotal 1997 Hours		8	0	97	32	0	100	0	113	205	108	14	677	
Estimated Cost		$441.84	$0.00	$6,860.92	$1,619.40	$0.00	$6,837.24	$0.00	$5,491.51	$6,535.45	$3,281.08	$588.74		$31,656.18

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Engineer Camp Dresser & McKee
Project Name Fumex Site
Work Assignment No. D002925-13

Schedule 2.11 (b) - 1
Program Management Hours

NSPE		IX	VIII	VII	VI	V	IV	III	II	I	Technical Report Typing	Admin./ Support	Total Est. Hours	Total Est. LOE
Average Salary Rates	1996	$52.60	$47.30	$39.24	$35.51	$29.33	$27.46	$22.38	$20.14	$17.10	$16.97	$16.97		
	1997	$55.23	$49.67	$41.20	$37.29	$30.80	$28.83	$23.50	$21.15	$17.95	$17.81	$17.81		
Task 1	Work Plan Development			11			4				4	6	25	$1,991.30
Task 2	Remedial Investigation - 1996			31			4				28	14	77	$5,709.26
	Remedial Investigation - 1997	3		31			4				28	14	80	$6,457.44
													0	$0.00
													0	$0.00
													0	$0.00
													0	$0.00
													0	$0.00
													0	$0.00
Subtotal 1996 Hours		0	0	42	0	0	8	0	0	0	32	20	102	
Subtotal 1997 Hours		3	0	31	0	0	4	0	0	0	28	14	80	
Estimated Cost		$463.93	$0.00	$8,190.78	$0.00	$0.00	$938.00	$0.00	$0.00	$0.00	$2,916.82	$1,648.47		$14,158.00

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Schedule 2.11 (c)

Direct Non-Salary Costs

Work Assignment Number D002925-13

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Estimated Cost
A. Sample Analysis			
Federal Express Shipment (to/from laboratory - 3 times)	$125.00 /shipment(50lb.)	6 shipments	$750.00
B. Miscellaneous			
1. Phone/Fax	$6.75 /call	125 calls	$843.75
2. Mail or Federal Express	$0.32 /mailing (letters)	900 mailings	$288.00
Federal Express report to NYSDEC	$75.00 /shipment (25lb.)	5 shipments	$375.00
3 Level D protection	$12.00 /man-day	8 man-days	$96.00
4 Historic Title Search	$150.00 /search	1 search	$150.00
5 Travel:			
Car to Site (RT to New Hyde Park) say 18 round trips	$0.23 /mile	850 miles	$195.50
Car to Public Meetings	$0.23 /mile	60 miles	$13.80
Cars to Albany - NYSDEC	$0.23 /mile	2000 miles	$460.00
Tolls	$10.00 /trip	5 trips	$50.00
Personal vehicle use (2 round trips to Edison, NJ)	$0.23 /mile	200 miles	$46.00
Tolls	$10.00 /trip	2 trips	$20.00
Total Direct Non-Salary Costs			$3,288.05

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Work Assignment N D002925-13

Schedule 2.11(d)2
Maximum Reimbursement Rates for Consultant/Subconsultant - Owned Equipment

Item	Purchase Price x 85%	Capital Recovery and Usage Rate ($/Unit of Time)	Maximum Days for Usage Rate	Estimated Usage (Unit of Time)	Estimated Usage Cost (Col.3 x Col.4)	Non-Billable Amount
pH meter	$335	$3 /day	107 days	4 days	$12.00	
Conductivity-Temp. meter	$61	$1 /day	115 days	4 days	$4.00	
Water level meter	$250	$2 /day	125 days	4 days	$8.00	
D.O. meter	$1,275	$13 /day	98 days	4 days	$52.00	
Submersible 2"	$375	$3 /day	125 days	4 days	$12.00	
Submersible 4"	$375	$3 /day	125 days	4 days	$12.00	
Turbidimeter	$760	$6 /day	126 days	4 days	$24.00	
				Total:	$124.00	$0.00

[1] Usage Rate = Capital Recovery Rate + O&M Rate

[2] The maximum usage rate for an item of equipment reverts to the O&M rate when the total recovery reimbursement rate exceeds 85% of the purchase price.

[a] Maximum number of days for usage rate is exceeded.

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Work Assignment No. D002925-13

Schedule 2.11(d)5

Consumable Supplies

Item	Estimated Quantity	Unit Cost	Total Budget Cost (Col. 2 x Col. 3)
Miscellaneous Supplies		Lump Sum	$1,000
Total			$1,000

Note: Consumable Supplies are expected to include:

Log book
Liquinox
Clear tape
Duct tape
Strapping tape
Paper towels
DI water
Vermiculite
Disposable bailers
1/8 inch poly rope
1/4 inch poly rope
Peristaltic pump hose
Zip lock bags
Disposable cameras/developing
Disposable trowels
Plastic sheeting
Ice

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SCHEDULE 2.11(E)
COST PLUS-FIXED-FEE SUBCONTRACTS
WORK ASSIGNMENT # D002925-13
FUMEX SANITATION SITE #1-30-041

December 21, 1995

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	TOTAL PRICE
YEC, Inc.	Surveying	$1,699.99

A. DIRECT SALARY COSTS

NSPE LEVEL	LABOR CLASSIFICATION	AVERAGE REIMBURSEMENT RATE		MAXIMUM REIMBURSEMENT RATE		ESTIMATED NUMBER OF HOURS	ESTIMATED DIRECT SALARY COST
VIII	Principle	1996	$44.94	1996	$48.53	2	$89.88
IV	Licensed Surveyor	1996	$29.55	1996	$32.50	12	$354.60
II	Rodman	1996	$17.79	1996	$19.92	8	$142.32
Total Direct Salary Costs:							$586.80

FOOTNOTES:

1) The 1996 rates will be held firm until 10/31/96.

2) Reimbursement will be limited to the lesser of either the individuals actual hourly rate or the maximum rate for each labor category.

3) Reimbursement will be limited to the maximum reimbursement rate for the professional responsibility level of the actual work performed.

4) Only those labor classifications indicated with an asterisk will be entitled to overtime premium.

5) Reimbursement for technical time of principals, owners and officers will be limited to the maximum reimbursement rate of that labor category, the actual hourly labor rate paid, or the Federal GS-18 job rate, whichever is lower.

6) The maximum rates in each labor category can be modified only by mutual agreement and approved by both the Department and the Comptroller.

7) This footnote applies to Schedules for years 4 through 7 only. If the U.S. cost-of-living index increases at a rate greater than 6% compounded annually, the maximum salary rates will be subject to renegotiation for future years of the contract. There shall be no retroactive adjustments of payment as a result of renegotiated salary schedules.

SCHEDULE 2.11(E)
COST PLUS-FIXED-FEE SUBCONTRACTS
WORK ASSIGNMENT # D002925-13
FUMEX SANITATION SITE #1-30-041

B. INDIRECT COSTS

Indirect costs shall be paid based on a percentage of direct salary costs incurred which shall not exceed a maximum of 125% or the actual rate calculated in accordance with 48 CFR Federal Acquisition Regulation, whichever is lower.

Amount budgeted for indirect costs is: $ 733.50

C. MAXIMUM REIMBURSEMENT RATES FOR DIRECT NON-SALARY COSTS

ITEM		MAXIMUM REIMBURSE-MENT RATE	ESTIMATED NUMBER OF UNITS	ESTIMATED DIRECT NON-SALARY COST
TRAVEL	Van Rental	$74 /day	2 days	148.00
	Gas and Tolls	$10 /trip	1 trip	10.00
EXPENSES	Survey Equipment	$65 /day	1 day	65.00
SUPPLIES	Telephone/fax/ postage/copies	$10 /task	1 task	10.00
Total Direct Non-Salary Cost				$233.00

D. FIXED FEE (11.11% of Total Direct and Indirect Salary Costs)

The fixed fee is: $146.69

TOTAL SUBCONTRACT COSTS $1,699.99

Schedule 2.11 (f)
Unit Price Subcontractors
Summary
WA# D002925-13

Name of Subcontractor		Services to be Performed	Subcontract Price	Management Fee
Energy & Environmental Engineering, Inc.		Sample Analysis	$4,800.00	$0.00
CHEMWORLD, Inc.		Data Validation	$651.00	$0.00
SJB Services		Split Spoon Sampling & Well Development	$5,798.00	$0.00
Item		**Maximum Reimbursement Rate**	**Estimated No. of Units**	**Total Estimated Costs**
Groundwater Sample Analysis		$210.00 / Sample	15	$3,150
Sediment Analysis		$275.00 / Sample	6	$1,650
Data Validation		$31.00 / Sample	21	$651
Drilling Services			-	$5,798.00
			Subtotal	$11,249.00
			Subtotal Mgmt.	$0.00
			Total	$11,249.00

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Schedule 2.11 (f)1

Unit Price Subcontracts
Work Assignment Number D002925-13

1. NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MGMT. FEE
SJB Inc.	Well Development, Split Spoon Sampling	$5,798.00	$0.00

	Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Estimated Cost
1.	Mob/Demob	$1,200.00 /Each	1	$1,200.00
2.	Soil Borings			
	4.25 in. ID Hollow Stem Augers	$10.00 /foot	50	$500.00
	2.0 inch Split Spoon sampling	$7.00 /each	4	$28.00
	Personal protective equipment	$0.00 /day	6	$0.00
3.	Well Repair			
	Well Repair	$140.00 /hour	4	$560.00
	Flush Mount 4" I.D. protector	$130.00 /each	5	$650.00
4.	Well Development			
	Well Development	$140.00 /foot	20	$2,800.00
5.	Miscellaneous			
	Steamer Rental	$60.00 /day	1	$60.00

Subtotal-Subcontract Price	$5,798.00
Subcontract Management Fee (3)	$0.00
TOTAL	$5,798.00

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Schedule 2.11 (f)2

Unit Price Subcontracts
Work Assignment Number D002925-13

1. NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MGMT. FEE
E3I	Analytical Laboratory	$4,800.00	$0.00

Item	Analytical Method	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Estimated Cost
1. Groundwater / Surface Water (aqueous)				
TCL Pesticides	91-3	$210.00 /Sample	14	$2,940.00
2. Soil / Sediment (non aqueous)				
TCL Pesticides	91-3	$275.00 /Sample	6	$1,650.00
3. Aqueous - Field/Trip Blanks for soil sampling events				
TCL Pesticides	91-3	$210.00 /Sample	1	$210.00

Subtotal - Subcontract Price	$4,800.00
Subcontract Management Fee	$0.00
TOTAL	$4,800.00

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Schedule 2.11 (f)3

Unit Price Subcontracts
Work Assignment Number D002925-13

1.	NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MGMT. FEE
	Chemworld Environmental	Data Validation	$651.00	$0.00

	Item	Analytical Method	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Estimated Cost
1.	Groundwater / Surface Water (aqueous)				
	TCL Pesticides	91-3	$31.00 /Sample	14	$434.00
2.	Soil / Sediment (non aqueous)				
	TCL Pesticides	91-3	$31.00 /Sample	6	$186.00
3.	Aqueous - Field/Trip Blanks for soil sampling events				
	TCL Pesticides	91-3	$31.00 /Sample	1	$31.00
TOTAL					$651.00

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Schedule 2.11 (f)3

Unit Price Subcontracts

Work Assignment Number D002925-13

1. NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MGMT. FEE
Chemworld Environmental	Data Validation	$713.00	$0.00

Item	Analytical Method	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Estimated Cost
1. Groundwater / Surface Water (aqueous)				
TCL Pesticides	91-3	$31.00 /Sample	14	$434.00
2. Soil / Sediment (non aqueous)				
TCL Pesticides	91-3	$31.00 /Sample	6	$186.00
3. Aqueous - Field/Trip Blanks for soil sampling events				
TCL Pesticides	91-3	$31.00 /Sample	1	$31.00
TOTAL				$651.00

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Engineer: Camp Dresser & McKee
Project Name: Fumex Sanitation
Work Assignment No.: D002925-13
Task #/Name: Task 1
Complete: 0%

Date Prepared: 31-Jan-96
Billing Period:
Invoice No.:

Schedule 2.11(g)
MONTHLY COST CONTROL REPORT
TASK 1 - WORK PLAN DEVELOPMENT

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	$0.00	$0.00	$0.00	$0.00	$7,337	$7,337	$7,337	$0
2. Indirect Costs 166.6 %	$0.00	$0.00	$0.00	$0.00	$12,223	$12,223	$12,223	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0.00	$0.00	$0.00	$0.00	$19,560	$19,560	$19,560	$0
4. Travel	$0.00	$0.00	$0.00	$0.00	$232	$232	$232	$0
5. Other Non-Salary Costs	$0.00	$0.00	$0.00	$0.00	$711	$711	$711	$0
6. Subtotal Direct Non-Salary Costs	$0.00	$0.00	$0.00	$0.00	$943	$943	$943	$0
7. Subcontractors - 7a. Subcontract Mgt. Fee	$0.00 $0.00	$0.00 $0.00	$0.00 $0.00	$0.00 $0.00	$0 $0	$0 $0	$0 $0	$0 $0
8. Total Work Assignment Cost	$0.00	$0.00	$0.00	$0.00	$20,503	$20,503	$20,503	$0
9. Fixed Fee	$0.00	$0.00	$0.00	$0.00	$978	$978	$978	$0
10. Total Work Assignment Price	$0.00	$0.00	$0.00	$0.00	$21,481	$21,481	$21,481	$0

Project Manager _____ Date _____
Mark Maimone

file = A:\SCHEDULE\XK211G.WK3

Engineer: Camp Dresser & McKee
Project Name: Fumex Sanitation
Work Assignment No.: D002925-13
Task #/Name: Task 2
Complete: 0%

Date Prepared: 31-Jan-96
Billing Period:
Invoice No.:

Schedule 2.11(g)
MONTHLY COST CONTROL REPORT
TASK 2 - PERFORMANCE OF REMEDIAL INVESTIGATION

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	$0.00	$0.00	$0.00	$0.00	$24,319	$24,319	$24,319	$0
2. Indirect Costs 166.6 %	$0.00	$0.00	$0.00	$0.00	$40,516	$40,516	$40,516	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0.00	$0.00	$0.00	$0.00	$64,835	$64,835	$64,835	$0
4. Travel	$0.00	$0.00	$0.00	$0.00	$483	$483	$483	$0
5. Other Non-Salary Costs	$0.00	$0.00	$0.00	$0.00	$2,986	$2,986	$2,986	$0
6. Subtotal Direct Non-Salary Costs	$0.00	$0.00	$0.00	$0.00	$3,469	$3,469	$3,469	$0
7. Subcontractors	$0.00	$0.00	$0.00	$0.00	$12,949	$12,949	$12,949	$0
7a. Subcontract Mgt. Fee	$0.00	$0.00	$0.00	$0.00	$0	$0	$0	$0
8. Total Work Assignment Cost	$0.00	$0.00	$0.00	$0.00	$81,254	$81,254	$81,254	$0
9. Fixed Fee	$0.00	$0.00	$0.00	$0.00	$3,242	$3,242	$3,242	$0
10. Total Work Assignment Price	$0.00	$0.00	$0.00	$0.00	$84,495	$84,495	$84,495	$0

Project Manager _____ Date _____
Mark Maimone

file = A:\SCHEDULE\WK211G.WK3

Engineer Camp Dresser & McKee
Project Name Fumex Sanitation
Work Assignment No. D002925-13
Task #/Name Summary
Complete 0%

Date Prepared 31-Jan-96
Billing Period
Invoice No.

Schedule 2.11(g)
MONTHLY COST CONTROL REPORT
SUMMARY

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	$0.00	$0.00	$0.00	$0.00	$31,656	$31,656	$31,656	$0
2. Indirect Costs 166.6 %	$0.00	$0.00	$0.00	$0.00	$52,739	$52,739	$52,739	$0
3. Subtotal Direct Salary Costs and Indirect Costs	$0.00	$0.00	$0.00	$0.00	$84,395	$84,395	$84,395	$0
4. Travel	$0.00	$0.00	$0.00	$0.00	$715	$715	$715	$0
5. Other Non-Salary Costs	$0.00	$0.00	$0.00	$0.00	$3,697	$3,697	$3,697	$0
6. Subtotal Direct Non-Salary Costs	$0.00	$0.00	$0.00	$0.00	$4,412	$4,412	$4,412	$0
7. Subcontractors	$0.00	$0.00	$0.00	$0.00	$12,949	$12,949	$12,949	$0
7a. Subcontract Mgt. Fee	$0.00	$0.00	$0.00	$0.00	$0	$0	$0	$0
8. Total Work Assignment Cost	$0.00	$0.00	$0.00	$0.00	$101,756	$101,756	$101,756	$0
9. Fixed Fee	$0.00	$0.00	$0.00	$0.00	$4,220	$4,220	$4,220	$0
10. Total Work Assignment Price	$0.00	$0.00	$0.00	$0.00	$105,976	$105,976	$105,976	$0

Project Manager _____ Date _____
Mark Maimone

file = A:\SCHEDULE\WK211G.WK3

Engineer Camp Dresser & McKee
Project Name Fumex Site
Work Assignment No. D002925-13

Date Prepared 12/20/95
Billing Period
Invoice No.

MONTHLY COST CONTROL REPORT (SCHEDULE 2.11[h])
SUMMARY OF LABOR HOURS
NUMBER OF DIRECT LABOR HOURS EXPENDED TO DATE*/ESTIMATED NUMBER OF DIRECT LABOR HOURS TO COMPLETION

LABOR CLASSIFICATION	IX EXP/EST	VIII EXP/EST	VII EXP/EST	VI EXP/EST	V EXP/EST	IV EXP/EST	III EXP/EST	II &I EXP/EST	ADM./SUPPORT EXP/EST	TOTAL NO. OF DIRECT LABOR HRS. EXP/EST
Task 1 - Work Plan Preparation	0 / 0	0 / 0	0 / 35	0 / 12.0	0 / 0.0	0 / 116.0	0 / 0	0 / 99	0 / 34.0	0 / 296
Task 2 - Remedial Investigation	0 / 8	0 / 0	0 / 135	0 / 32	0 / 0	0 / 128	0 / 0	0 / 540	0 / 188	0 / 1031
TOTAL HOURS	0 / 8	0 / 0	0 / 170	0 / 44	0 / 0	0 / 244	0 / 0	0 / 639	0 / 222	0 / 1327

file =A:\SCHEDULE\XK211H.WK3

Section 6
Description of Subcontracting Needs

CDM proposes to engage subconsultants to provide the following services for this work assignment:

Services to be Provided	Firm
Chemical Analytical Laboratory	Energy & Environmental Enginering 35 Medford Street Somerville, MA 02143
Drilling Services	SJB Drilling Services, Inc. Fisher Road East Syracuse, NY 13057
Site Survey	YEC, Inc. 612 Cottage Way Valley Cottage, New York 10989
Data Validation	ChemWorld Environmental Inc. 14 Orchard Way North Rockville , MD 20854-6128

(Fumex\wkpn\sec6)

Section 7
MBE/WBE Utilization Plan

To meet the requirements of the MBE/WBE program, CDM has prepared the following projected EEO and MBE/WBE contract goals.

MBE/WBE Contract Goals

1. Total Dollar Value of the Work Assignment - $105,976
2. MBE Percentage/Amount Applied to the Work Assignment (6.1 percent)
3. WBE Percentage/Amount Applied to the Work Assignment (0.6 percent)
4. MBE/WBE Combined Total (6.7 percent)

Minority and woman-owned firms are expected to participate as noted on the following table:

Proposed MBE/WBE

Services to be Provided	Description of Services	Firm Performing Services	Proposed Subcontract Price
Data Validation	Perform data validation on environmental samples in accordance with NYSDEC data validation protocol.	ChemWorld Environmental (WBE)	$651
Site Survey	Obtain vertical coordinates for the five monitoring wells.	YEC, Inc. (MBE)	$1,700
Chemical Analytical Laboratory	Perform laboratory services for chemical analyses of samples collected in accordance NYSDEC analysis protocol.	Energy & Environmental Engineering, Inc. (MBE)	$4,800

(fumex\wkpn\sec7.wpd)

Section 8
References

Donaldson, C.D., Water Table on Long Island, New York, March 1979, USGS Open-file Report 82-163.

Kilburn, C., 1979, Hydrogeology of the Town of North Hempstead, Nassau County, NY, Long Island Water Resources Bulletin 12, NCDPW.

Lawler, Matusky and Skelly Engineers, 1989, Fumex Sanitation Inc., Engineering Investigations at Inactive Hazardous Waste Sites, Phase I Investigation. August 1989.

New York State Department of Environmental Conservation (NYSDEC) 1992. Division Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, HWR-92-4046. November 16, 1992.

New York State Department of Environmental Conservation (NYSDEC) 1995. Letter from Jennifer Pacchiana, Environmental Engineer, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, to Ms. Zenida Breitsein, Zinman and Chetkof. November 15, 1995.

New York State Department of Environmental Conservation (NYSDEC) 1995. Letter from Raymond E. Lupe, P.E., Chief Contract Development Section, Bureau of Program Management, Division of Hazardous Waste Remediation, to Michael A. Memoli, P.E., Camp Dresser and McKee, Inc. (CDM). October 31, 1995.

Roux Associates, 1987, Hydrogeologic Investigation of Fumex Sanitation, Inc., Site, Prepared for Rivkin, Radler, Dunne and Bayh. January 5, 1987.

Smolensky, D.A., Buxton, H.T., Shernoff, P.K., Hydrogeologic Framework of Long Island, New York, USGS, Hydrologic Investigations Atlas, 1989.

U.S. Soil Conservation Service, 1976, General Soil Map, Nassau County, New York, Prepared for Suffolk County Soil Conservation Service. July 1976.

(Fumex\wkpn\sec8)

APPENDIX A

EXISTING MONITORING WELL LOGS

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

WELL LOG

Project: Fumex 03107
Client: Same
Page: 1 Of 2
Logged By: Paul Supple
Owner:
Well No.: MW-3
Loc.:
M.P. Elevation: 94.84
Drilling Started: 11/25/86 Ended: 11/25/86
Driller: Testwell Craig
Type Of Rig: Hollow Stem Auger

WELL DATA

Hole Diam. (in.): 6
Final Depth (ft.): 55
Casing Diam. (in.): 2
Casing Length (ft.): 45
Screen Setting (ft.): 45-55
Screen Slot & Type: .020 PVC
Well Status: Monitoring

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.
12/3/86	46.34	48.53
12/10/86	45.72	49.12

SAMPLER

Type: Split-spoon
Hammer: 140 lb.
Fall: 30 in.

DEVELOPMENT

15 gallons sand bailer

Elev. (1)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1	.5	.5' - 2.0'	2,5,8			.3' black top Light brown medium to coarse sand; dry; .2' fine gravel layer at center of core.
	2	1.7	5' - 7'	40,20,57,61		5	Brown and tan alternating layers of medium to coarse sand and gravel; dry.
	3	1.8	10' - 12'	10,21,29,29		10	Brown and tan medium to coarse sand, some gravel; dry; occasional orange laminations. (Lab sample)
	4	1.5	15' - 17'	7,14,20,27		15	Tan fine to coarse sand, trace fine gravel; dry; lower .2' orange-brown medium sand, trace fine gravel.
	5	1.5	20' - 22'	7,19,26,31		20	Light brown medium to coarse sand, some gravel; dry; occasional orange colored layers. (Lab sample)
	6	.5	25' - 27'	13,14,26,34		25	Light brown fine to medium sand, little gravel; dry; some orange laminations; pulverize quartz cobble at tip.
	7	1.5'	30' - 32'	16,29,29,29		30	Orange-brown fine to medium sand and gravel; dry. (Lab sample)

REMARKS:

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

WELL LOG

Project See page one
Client
Page 2 Of 2
Logged By
Owner
Well No. MW-3
Loc.
M.P. Elevation
Drilling Started Ended
Driller
Type Of Rig

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	8	1'	35' – 37'	6,16,25,26		35	Alternating layers of tan, orange and brown fine to coarse sand, some fine gravel; dry.
	9	1'	40' – 42'	2,9,17,17		40	Buff well sorted medium sand, little fine gravel; dry; occasional orange lamination. (lab sample)
	10	1.5	45' – 47'	2,14,19,20		45	Same as above, lower .2' wet.
	11	2'	50' – 52'	13,16,25,29		50	Brown medium sand, some fine gravel; wet. (Lab sample)
	12	NR	55' – 57'	100/.2'		55	
	13	1.5'	60' – 62'	7,12,27,28		60	Brown well sorted medium to coarse sand, trace fine gravel; wet. B.O.B. 62'

NSULTING GROUND WATER GEOLOGISTS
)UX ASSOCIATES INC

WELL LOG

ject Fumex 03107
ent Same
ge 1 Of 2
gged By Paul Supple
ner
ll No. MW-4
:
. Elevation 94.76
lling Started 11/25/86 Ended
ller Testwell Craig
pe Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 6
Final Depth (ft.) 55
Casing Diam. (in.) 2
Casing Length (ft.) 45
Screen Setting (ft.) 45-55
Screen Slot & Type .020 PVC
Well Status Monitoring

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.
12/2/86	46.19	48.57
12/10/86	45.73	49.03

SAMPLER

Type Split-spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

15 gallons sand bailer

lev. (t)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1	.5'	.5' - 2'	5,7,11			.3' Black top Upper .2' brown gravel and fine to coarse sand; dry. Lower .3' brown silt, trace of embedded fine gravel; moist.
	2	1.3	5' - 7'	7,21,49,52		5	Tan fine to medium well sorted quartz sand, trace fine gravel; dry; becoming more gravelly in lower .3'.
	3	1.8	10' - 12'	12,33,45,39		10	Light brown medium to coarse sand and fine gravel; dry. (Lab sample)
	4	1.2	15' - 17'	9,8,31,38		15	0-.7' Same as above .7-1.2' Alternating layers of tan, orange-brown, and dark brown medium sand; dry.
	5	1.5	20' - 22'	7,23,29,35		20	Tan and orange brown medium to coarse sand, some gravel; dry. (Lab sample)
	6	1.5	25' - 27'	6,14,25,29		25	Orange-brown medium to coarse sand, some fine gravel; dry, occasional red lamination.
	7	1.5	30' - 32'	9,16,20,24		30	Same as above (Lab sample)

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

WELL LOG

Project See page One
Client
Page 2 Of 2
Logged By
Owner
Well No. MW-4
Loc.
M.P. Elevation
Drilling Started Ended
Driller
Type Of Rig

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP (2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	8	1'	35' – 37'	5,17,26,26		35	Orange-brown and tan medium to coarse sand and gravel; dry.
	9	1.5'	40' – 42'	1,10,13,16		40	Tan well sorted medium sand; dry; occasional thin layers of orange-brown medium sand.
	10	1.5'	45' – 47'	7,13,23,20		45	Same as above.
	11	1.5'	50' – 52'	9,18,15,32		50	Light brown well sorted fine to medium sand, trace fine gravel; wet.
	12	.5'	55' – 57'	36,36,52,46		55	Brown fine to medium sand, and gravel; wet; tight.
							B.O.B. 57'

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

WELL LOG

Project: Fumex 03107
Client: Same
Page: 1 Of 2
Logged By: Paul Supple
Owner:
Well No.: MW-5
Loc.:
M.P. Elevation: 94.80
Drilling Started: 12/1/86 Ended: 12/1/86
Driller: Testwell Craig
Type Of Rig: Hollow Stem Auger

WELL DATA

Hole Diam. (in.): 6
Final Depth (ft.): 55
Casing Diam. (in.): 2
Casing Length (ft.): 45
Screen Setting (ft.): 45-55
Screen Slot & Type: .020 PVC
Well Status: Monitoring

G W READINGS(1)

Date	DTW MP (2)	Elev. W.T.
12/2/86	46.29	48.51
12/10/86	45.72	49.08

SAMPLER

Type: Split-spoon
Hammer: 140 lb.
Fall: 30 in.

DEVELOPMENT

15 gallons sand bailer

Elev. (1)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1	.5	.5' – 2'	6,7,7			.3 black top Brown medium to coarse sand, trace gravel; dry.
	2	2'	5' – 7'	29,39,100/.5'		5	Brown medium to coarse sand and gravel; upper 1.7' wet, correct in places
	3	1.2'	10' – 12'	18,38,49,54		10	Light brown medium to coarse sand and gravel; dry. (Lab sample)
	4	1.5'	15' – 17'	5,25,40,37		15	Upper .3' same as above – 1' layer dark brown well sorted medium sand; dry. Orange-brown coarse sand and gravel in tip.
	5	1.5'	20' – 22'	12,21,31,40		20	Orange-brown medium sand, little gravel, occasional ½-inch red-brown layers; dry. (Lab sample)
	6	1.3'	25' – 27'	9,22,19,20		25	Orange-brown medium to coarse sand, little gravel; dry.
	7	1.2'	30' – 32'	11,21,28,29		30	Tan medium to coarse sand and gravel; dry. (Lab sample)

REMARKS: (1) In feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

WELL LOG

Project Fumex 03107
Client See page One
Page 2 Of 2
Logged By
Owner
Well No. MW-5
Loc.
M.P. Elevation
Drilling Started Ended
Driller
Type Of Rig

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP (2)	Elev. W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	8	1.5'	35' – 37'	7,18,24,24		35	Alternating layers of light brown and orange brown fine to coarse sand and gravel; dry.
	9	1.0'	40' – 42'	10,14,20,25		40	Tan medium well sorted sand; dry; some orange and dark brown laminations.
	10	1.5'	45' – 47'	4,10,21,16		45	Same as above Wet at tip of spoon.
	11	2'	50 52	8,17,26,26		50	Brown fine to coarse sand, some fine gravel; wet.
	12	1'	55 – 57	27,78,55,100		55	Brown fine to coarse gravel and coarse sand, trace silt; wet.
						60	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing