ENGINEERING AND OPERATIONS SERVICES
NEW YORK STATE SUPERFUND STANDBY CONTRACT

MULTI-SITE PRELIMINARY SITE ASSESSMENTS

Wheelock Avenue (Site No. 1-30-090)
Burnside Avenue (Site No. 1-30-091)
Michael Drive Industrial Area (Site No. 1-30-092)
Empire Electric Company (Site No. 2-24-015)
BQE/Ansbacher Color and Dye Factory (Site No. 2-24-016)
Designers Woodcraft (Site No. 2-24-020)
Carbona Products (Site No. 2-24-023)
Public School 60/62 and Ozone Industries (Site No. 2-41-021)

Work Assignment No. D002676-44.1

DRAFT

WORK PLAN AMENDMENT

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation

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1.0 WORK PLAN

1.1 INTRODUCTION

Lawler, Matusky & Skelly Engineers LLP (LMS) was given the work assignment of the Multi-Site Preliminary Site Assessments (PSA's) under terms of the State Superfund Standby Contract. The objective of the work assignment is to conduct a PSA on eight individual sites to determine the source of contamination at each site, determine the extent of contamination, and recommend the proposed classification of each site on the New York State Department of Environmental Conservation (NYSDEC) Registry of Inactive Hazardous Waste Disposal Sites (the Registry). A work plan was prepared and approved by the NYSDEC in May 1999 and the fieldwork was completed in September 1999. This amendment covers the additional work requested by NYSDEC for the Michael Drive Industrial Area (MDIA) site (No. 1-30-092). The additional work consists of the installation of 12 new wells in the vicinity of the MDIA in order to pinpoint the source of the contamination found in the Syossett Landfill well. The new wells plus the existing wells will be surveyed and all the wells plus three wells on the landfill will also be sampled and analyzed for target compound list (TCL) volatile organic compounds (VOCs). An amendment has also been done for the BQE/Ansbacher Color & Dye Factory site and the Public School 60/62 and Ozone Industries site since additional work was conducted as part of the PSA. The budget on the remaining five sites is unchanged.

1.2 BACKGROUND

Since the only additional work that is being requested is for the MDIA, BQE/Ansbacher Color and Dye Factory, and Public School 60/62 and Ozone Industries sites, this section only describes the background of these sites.

1.2.1 Michael Drive Industrial Area (Site No. 1-30-092)

The site is adjacent to the Long Island Railroad, and is ~1/4 mile west of the Syosset Landfill (NYSDEC ID #1-30-011). The Long Island Expressway is ~1/2 mile south of the site. This site is in a commercial/industrial area located in the Town of Oyster Bay in Nassau County. The area is suspected to contain one or more hazardous waste disposal sites based on the results of groundwater monitoring conducted as part of the Syosset Landfill remedial investigation (RI) operable unit 2. Samples collected in late 1993 from monitoring well RW-12I (which is screened at 350 feet below ground surface) indicated the presence of chlorinated solvents at levels above the New York State Class GA groundwater standards. Specifically, tetrachloroethylene (PCE) was found at 110 µg/l, 1,1,1-trichloroethane (1,1,1-TCA) was found at 75 µg/l, 1,1-dichloroethylene (1,1-DCE) was found at 27 µg/l, 1,1-dichloroethane (1,1-DCA) was found at 17

µg/l, and trichloroethylene (TCE) was found at 9.9 µg/l. (All of these contaminants have a class GA standard of 5 µg/l.)

Based on these results, NCDOH files were reviewed to determine whether there were any facilities directly upgradient of GW-12I that used or were using any of the compounds of concern. From this record search, five locations were determined to fit this description: (1) Emro Dry Cleaners (currently using PCE); (2) Space Machine Corp. (had discharges of 1,1,1-TCA and PCE); (3) Spiegel Associates (had discharges of 1,1,1-TCA); (4) Centroid (used 1,1,1-TCA); and (5) PMI Motors (used 1,1,1-TCA). These facilities are all located off of Michael Drive.

Based on this information the PSA was conducted to determine the source of the contamination in the well. A total of 10 wellpoints were installed to a depth of 150 ft in and around the area. Samples were collected from various intervals within each wellpoint and analyzed for TCL VOCs. Some contamination, although not at the same level as was discovered in the Syossett Landfill, well was found downgradient of Space Machines and PMI Motors, which led to the conclusion that these facilities may be the source of the contamination. Subsequently, three monitoring wells were installed to a depth of 120 ft – one upgradient and two downgradient of Space Machines. The results did not indicate conclusively that Space Machines is the source of the contamination. The draft report was prepared and transmitted to NYSDEC in December 1999. LMS recommended that additional studies were needed in order the conclusively state where the contamination is coming from. Upon review NYSDEC agreed that additional work was needed and that a source other than Space Machines or PMI Motors may exist. This other potential source(s) is the southeast of Space Machines; currently one building is occupied by Lockheed and the other building is operated by three businesses (Dupont-Merck, Aramark, and Maurice Villency). This amendment will investigate whether or not any of these businesses are the source of the contamination. NYSDEC requested that LMS prepare a work plan amendment to cover the additional PSA work on Michael Drive.

1.2.2 BQE/Ansbacher Color & Dye Factory (Site No. 2-24-016)

This site is located approximately 3,500 ft southeast of the East River in the Williamsburg section of Kings County, New York City. The area consists of one and two story masonry-constructed buildings that are involved in various light to heavy industrial uses. The site is bordered by North 8th St to the northeast, by Havenmeyer St to the northwest, by North 6th St to the southwest, and Macri Triangle to the southeast. Meeker Avenue runs through the middle of the site, and the elevated Brooklyn-Queens Expressway (BQE) runs above Meeker Avenue.

The site was formerly occupied by Ansbacher Color and Dye Factory, which operated on-site from 1907 to 1945. Although the exact site operations are unknown, it is assumed that the

facility manufactured paints and/or pigments for commercial and industrial use. Sanborn maps of the area indicate that pesticides may also have been manufactured at the site at one time.

The area was first investigated by the New York State Department of Transportation (NYSDOT) during the reconstruction of the BQE in 1988. During this work, NYSDOT collected samples of soil and groundwater for laboratory analysis. The results indicated hazardous levels of arsenic (up to 48 mg/kg) and lead (up to 29 mg/kg) in the soil, and elevated levels of arsenic (220 µg/l), cyanide (820 µg/l), and lead (568 µg/l) in perched groundwater. As part of the reconstruction, NYSDOT removed contaminated soil from the project footprint. No samples were collected outside the project footprint, which covers ~50% of the site area.

The PSA was conducted to determine the extent of metals contamination in the area in both the soil and water and to determine if the metals found in the soil are hazardous. A total of eight monitoring wells were installed at four locations with a shallow and deep monitoring well installed at each location. Three soil borings were drilled and samples collected from each boring for target analyte list (TAL) metals and cyanide and toxicity characteristic leaching procedure (TCLP) metals. Three shallow soil samples were collected within the Macri Triangle and analyzed for TAL metals and cyanide and TCLP metals. The monitoring wells were sampled and analyzed for TAL metals and cyanide. Since evidence of product existed in one of the wells during installation that well was also sampled and analzyed for TCL VOCs and TCL semi-volatile organic compounds (SVOCs). A survey of the eight monitoring wells was also done to determine groundwater flow direction.

The results indicated that metals, specifically arsenic, lead, and mercury, are found above the NYSDEC recommended cleanup objective on Meeker Avenue between Union Avenue and North 7th Street. One sample exhibited hazardous levels of arsenic. Arsenic and mercury are found above cleanup objectives in the shallow soil in Macri Triangle. Groundwater is severely impacted by metals in the area underneath the BQE. This amendment covers the additional work that was conducted as part of the PSA that was not part of the original scope of work. No further work is needed.

1.2.7 **Public School 60/62 (Former Voges Manufacturing)/Ozone Industries (Site No. 2-41-021)**

These sites are located approximately 0.5 miles north of Shellbank Basin (Jamaica Bay) in a commercial/industrial portion of the Ozone Park section of Queens. A residential neighborhood is located to the west, and the area is bisected by an abandoned, elevated section of the Long Island Railroad.

Historically, the 103-22 99th St property was occupied by Voges Manufacturing from 1920 until 1995. The company initially engaged in the manufacture of plastic buttons via an extrusion molding process. More recently, the company engaged in the manufacture of component parts for helicopters. Based on historical Material Safety Data Sheets (MSDS) presented to NYSDEC by the current owner, Voges purchased PCE up until May 1991 and may have utilized it as a degreaser for machined parts.

The property has been occupied by a New York City public school since the fall of 1996. During the construction of the school, an environmental investigation was conducted. This investigation revealed the presence of TCE in the groundwater at concentrations ranging from 190 µg/l in the upgradient well to 2,600 µg/l in the downgradient well. Based on this information, the former facility's MSDS, and on allegations made to the Regional Remediation Engineer by an informant claiming that hazardous wastes were disposed within the building by Voges Manufacturing employees, the NYSDEC designated the PS 60/62 property as a potential hazardous waste disposal site in September 1996.

The Ozone Industries property was first investigated by the NYSDEC in the winter of 1997. The lawyer for the former Voges Manufacturing Company indicated that there was a facility upgradient of the school property that utilized TCE in their site operations. This claim was researched with the Spills Program in Region 2, and was found to be true. The presence of a 2,000 gallon underground storage tank (UST) containing TCE was confirmed in the Chemical Bulk Storage Program's inventory. A spill was also reported in 1987 as a result of a tank test failure. The remediation of the spill consisted of the removal of the tank from service. This was completed in October 1992. Based on the above information, the PSA was conducted to determine the source of the TCE in the groundwater and the extent of contamination.

The PSA consisted of the installation of 21 probe points upgradient and downgradient of both the Ozone Industries and Public School 60/62 properties. Groundwater samples were collected from each point and analyzed for TCL VOCs. The results indicated that the highest levels of TCE were found directly downgradient of Ozone Industries and therefore, Ozone Industries is the source of the TCE in the groundwater. Subsequently, four piezometers were installed upgradient and downgradient of both Ozone Industries and Public School 60/62 to verify the groundwater flow direction. Each piezometer was also sampled and analyzed for TCL VOCs. The results confirmed the results from the probe points. This amendment covers the additional work that was conducted as part of the PSA. No further work is needed.

1.3 TASK 1 - WORK PLAN DEVELOPMENT

This task was not changed.

1.4 TASK 2 – IMPLEMENTATION OF THE APPROVED TECHNICAL SCOPE OF WORK

1.4.1 BQE/Ansbacher Color and Dye Factory

A total of $7413.87 is requested above the original budget for this site to cover the additional work not included under the original scope of work. This additional work included coordination with the Metropolitan Transit Authority (MTA) after it was discovered that two subway lines intersected at the site. This coordination included preparation of plans and specifications that were submitted to the MTA showing the exact locations and depths of the wells and borings as well as the location and depth of the subway lines. The proximity of the subway lines were discovered after the field work had been initiated and the drill rig mobilized to the site. Since the MTA required the detailed plans and specifications the drill rig had to be demobilized from the site and subsequently remobilized. Three of the borings were scheduled to be installed underneath the BQE. This required a different drill rig than was used at the other locations since the mast would not fit underneath the overhead BQE. This required negotiations with the driller. All purge and development water had to be containerized and transported to the Macri Triangle where it was recycled back into the groundwater. All drill cuttings had to be drummed and placed into the rolloff located underneath the BQE. All of these items required additional field and office time to accomplish. Even thought a valid permit was obtained to keep the rolloff underneath the BQE, LMS received a ticket which required time to resolve. As a resolution of the ticket, the sample required for disposal of the cuttings was analyzed with an accelerated turn around time. Since product was discovered in one of the borings underneath the BQE that was subsequently converted to a well, it was recommended that a sample for the groundwater be collected and analyzed for TCL VOCs and SVOCs. This analysis and the accelerated turn around time on the disposal analysis were not included as part of original scope of work.

1.4.2 Public School 60/62 and Ozone Industries

A total of $4679.85 is requested above the original budget to cover the work that was not included as part of the original work scope. The additional work included the installation of the four piezometers. LMS' AMS rig was remobilized to the site to install the piezometers. The piezometers were also surveyed by LMS in order to determine the groundwater elevation and flow direction. The groundwater from each piezometer was also sampled and analyzed for TCL VOCs. The additional cost covers the field and office time needed to plan and conduct the additional field work, equipment and material needed to install the piezometers, and the additional analytical cost for the extra analyses.

1.5 TASK 3 – FINAL REPORT

1.5.1 Michael Drive Industrial Area

An additional $2656.23 is requested above the original budget to cover the additional cost needed to prepare the report. This addition is actually the difference between the Task 3 overrun and the Task 2 underbudget amounts. The additional money is needed to cover two additional trips to the site by the report preparers to look at the site and obtain the tax map/owner names and addresses of the properties of concern. The site is complicated by the fact that there were several potential sources of contamination and the PSA data did not clearly indicate the exact source. Several approaches to interpretation of the data were looked into by various professionals in the office before the report was prepared. Additional time was also spent in reviewing and interpreting the information obtained on the site.

1.5.2 BQE/Ansbacher Color and Dye Factory

An additional $7500.01 is requested above the original budget to cover the additional cost needed to prepare the report for this site. The additional budget is needed since the report was more complicated than some of the other sites to prepare. This included detailed review of the NYSDOT reports to ascertain locations of previous samples, summarizing of this data, detailed review of the Sanborn maps to determine the exact location of the Ansbacher Color and Dye Factory, extensive conversations with the NYSDOT to determine the quantity of soil removed during the rehabilitation of the BQE, and review of the survey maps and preparation of the groundwater contour maps which indicated that the actual flow in the area was significantly different than the regional groundwater flow.

1.5.3 Public School 60/62 and Ozone Industries

An additional $4500 is requested above the original budget to cover the additional cost needed to prepare the report. The additional budget is needed since the report was more complicated to prepare than some other sites. The fact that there were two potential sources complicated the issues. The report required an intensive review of the four investigations previously conducted at the two sites, review of the EDR report which indicated the presence of two additional TCE tanks operated by Ozone Industries that were not reported previously, review of the Sanborn maps that indicated that Ozone Industries covered additional properties that were not previously identified and one of these properties had two of the TCE tanks. An additional trip to the tax department to identify these other properties and their current owners (none of the properties are currently owned by Ozone). The files were also extensively reviewed to determine which of the TCE tanks had leaked previously. The survey map of the piezometers and the groundwater contour map was also prepared as part of the report.

1.6 TASK 4 – ADDITIONAL PSA WORK

1.6.1 Draft/Final Work Plan

This subtask includes preparation of this amendment.

1.6.2 File Search/Site Reconnaissance

This subtask includes the time required to conduct a site reconnaissance to locate the 12 new wells and any additional file searches, i.e., tax records, EDR, etc. needed to conduct the additional work. Also included is the time required to obtain the requisite permits.

1.6.3 Well Installation

This subtask includes the cost to install the twelve new wells. The permit cost of $1500/well for the 12 new wells and three existing wells is also included under this subtask. This cost will only be billed to NYSDEC if the state elects to keep the wells operational after the project is finished. Twelve monitoring wells will be installed using 8-in diameter mud rotary drilling techniques using Revert® at the Michael Drive Industrial Site in Nassau County. Revert® is an organic polymer derived from the plant Guar (Cyamposis Tetragomolobus) which is a variety of a Leguminosal. The most significant benefit of Revert® is the degradation over time (3 to 4 days) to a water like consistency allowing development of the well without having to overcome the damage to the aquifer (mud cake) created using conventional bentonite. Four (4) shallow wells will be installed to depths of 120 ft below grade. The four shallow wells will be constructed as 2-in diameter PVC wells with 10 ft schedule 40 0.010 slot PVC screen. Three (3) wells will be installed to depths of 250 below grade. Each of these wells will consist of a 4-in diameter 10-ft length of 0.010 slot stainless steel screen with 4-in diameter schedule 80 PVC riser to the ground surface. The remaining five wells will be installed to depths of 360 ft below grade. Each of these wells will be constructed using 4-in diameter 10-ft length of 0.010 slot stainless steel screen with 4-in diameter schedule 80 PVC riser to the ground surface. Each well will have a centralizer placed immediately above the well screen such that it falls within the filter pack of the well, and additional centralizers placed at 50-ft intervals along the length of the well riser. A filter pack consisting of #1 grade Morie sand or equivalent will be placed around the well screen using a tremie pipe to insure that a adequate filter pack is in place around the well screen. A minimum of a five-foot bentonite slurry seal will then be place using a tremie pipe above the filter pack. A cement/bentonite grout will then be placed above the bentonite seal using a side discharge tremie pipe. Flush mounted well manholes will then be set in a 2-ft by 2-ft concrete pad. No split spoon or other sampling will be performed during the installation of the monitoring wells unless an unexpected condition encountered during drilling warrants sample collection.

Cuttings and fluid generated from drilling operations must be containerized and disposed of offsite. LMS will obtain all of the necessary permits to place the roll-offs in a pre-selected staging area. Drill cuttings will be allowed to settle out in the mud pan, segregated from the drilling fluid, and transferred to 15 cubic yard hazardous waste roll-offs. The drilling is expected to generate approximately 50 cubic yards of soil cuttings that will be containerized in 4 (four) lined hazardous waste roll offs.

The drilling subcontractor will transfer drilling fluid to an approximately 20,000 gal. or larger holding tank (i.e., Baker Tank) supplied by the disposal subcontractor. The disposal contractor will coordinate with LMS to periodically pump the liquid fraction of the tank into a tanker truck for disposal. The drilling is expected to be completed over a 4 to 8 week time period, and will generate around 20,000 to 30,000 gallons of drilling fluid. It is anticipated that the holding tank will have to be pumped out twice during the drilling operations. The holding tank will have to be emptied a third time at the conclusion of drilling project. It is expected that a vac-truck will be require to empty the tank at the conclusion of the drilling to remove any accumulated sludge that has settled in the holding tank. The disposal contractor will also be required to clean the holding tank, if required, prior to removal from the site.

All drilling wastes, (soil cuttings, liquids, and sludge) will be transported and properly disposed of by the disposal contractor. Each waste media will be sampled and analyzed for parameters requested by the disposal facility. To expedite the removal and keep the project moving, all waste analyses will on fast turn around. LMS expects all these wastes to be uncontaminated (i.e. levels of contamination so low to allow for disposal as uncontaminated wastes), and the budget estimates are based on disposal of uncontaminated wastes. However, if any of the samples indicate contaminated wastes, the disposal contractor has included unit prices for these wastes.

All drill equipment will be decontaminated between each well. Decontamination water, development water and purge water will be discharged to the ground surface adjacent to each well.

1.6.4 **Sampling**

This subtask includes the cost to collect groundwater samples from each of the 12 new wells, the three existing wells installed as part of the initial PSA work, and three wells located on the Syossett Landfill. The wells will be sampled and analyzed for TCL VOCs by Mitkem Corporation according the NYSDEC Analytical Services Protocol (ASP) Method 95-1. Additional samples that will be collected include a matirx spike/matrix spike duplicate/matrix spike blank and a trip blank. In order to complete the project by September the samples will done under fast-turnaround (48 hrs).

1.6.5 Surveying

This subtask includes the cost to survey the 12 new wells plus the three existing wells in order to develop a water table contour map. The survey will be conducted by YEC, Inc. and will be tied into the survey of the Syossett Landfill.

1.6.6 Draft PSA Report

This subtask includes revising the original PSA report to include the results of the additional investigation. Since there are new potential sources that will be investigated, a substantial revision is envisioned.

1.6.7 Final PSA Report

After receipt of comments from NYSDEC, the report will be revised and the requisite number of copies will be submitted to NYSDEC.

1.6.8 Task Management

The administrative costs associated with the task are included under this subtask. This includes reviewing subcontractor invoices, preparation of the CCR, preparation of the CAP, and monthly progress report.