ATTACHMENT 7 OF OPERATION, MONITORING AND MAINTENANCE PLAN

Quality Assurance Project Plan

90 -30 Metropolitan Avenue Site
Rego Park, Queens, New York

NYSDEC VCP Number: V00253-2

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This Quality Assurance Project Plan (QAPP) describes the quality assurance (QA) and quality control (QC) procedures and the sampling and analysis procedures to be used during groundwater monitoring and SVE system effluent monitoring.

1.0 QA/QC OBJECTIVES

The QA/QC objectives are applicable to all data-gathering activities at the Site. QA/QC objectives are incorporated into sampling, analysis, and quality assurance tasks associated with monitoring activities.

The primary data user for this project is FPM. The Site owner and the NYSDEC will also be provided with the data. No other data users are anticipated.

The collected data are intended to assess the current nature and extent of groundwater impacts at the Site, including ambient groundwater conditions, to assess the performance of the remedial measures, and to evaluate the SVE system effluent. These data will allow for the evaluation of groundwater conditions, confirmation of SVE effluent concentration, and possible modification of the remedial system.

The following applicable or relevant and appropriate requirements for the Site groundwater have been identified:

- The NYSDEC Class GA Ambient Water Quality Standards (1998), which are used to evaluate the groundwater chemical analytical results; and
- The NYSDEC Air Guide 1 Annual Guidance Concentrations (AGCs) and Short-Term Guidance Concentrations (SGCs), which are used to evaluate the SVE effluent results.

2.0 SAMPLING QUALITY ASSURANCE PROCEDURES

The Quality Assurance (QA) procedures to be utilized during the groundwater monitoring activities and the SVE effluent sampling activities are described below.

Decontamination Procedures

Dedicated disposable equipment (disposable bailers, gloves, cord, Tedlar bags, etc.) will be utilized whenever possible to reduce the risk of cross-contamination. When it is not possible to use disposable equipment, all non-disposable downhole or sampling equipment (i.e., submersible pump, PVC bailers) will be decontaminated prior to use at each location. The equipment to be decontaminated will be scrubbed in a bath of potable water and low-phosphate detergent followed by a potable water rinse. The equipment will then be rinsed with distilled water. A methanol rinse will also be utilized for removal of oily contamination, if present. The equipment will then be allowed to air dry prior to use if time permits and shall receive a final distilled water rinse. The decontaminated equipment will be wrapped in aluminum foil (shiny side out) for transport if necessary.

Sample Designation

All samples will be identified with sequential numbers referencing the sampling location from which they were obtained. If additional samples are collected from the same location, they will be clearly labeled with the sampling date and time so as to facilitate identification. All sample depths will be referenced to the top of the well casing.

Sample Containers, Packaging, and Shipment

All samples will be collected into laboratory-provided new sample containers with appropriate preservatives, if necessary. Containers with preservatives will be labeled as such. Table 2.1 documents the sample container type, preservation, and analysis for the primary and QA/QC samples.

All filled sample containers of groundwater will be placed in a laboratory-supplied cooler and packed with ice to depress the temperature to 4 degrees Celsius. The filled coolers will be secured with tape and custody seals will be placed along cooler openings in a manner to reveal if the cooler was opened during transit. All filled Tedlar bags of SVE effluent will be containerized appropriately in shipping boxes. The secured coolers and shipping boxes will be delivered to the laboratory by FPM or by an overnight carrier. In the event the samples cannot be delivered to the laboratory overnight, the samples will remain in the custody of FPM personnel overnight and the samples will be delivered to the laboratory the following day.

TABLE 2.1
SAMPLING MATRIX
90-30 METROPOLITAN AVENUE SITE, REGO PARK, QUEENS, NEW YORK

Sample Type	Sample Name	Sampling Protocol	Analytes and Methods	Laboratory Deliverables	Sample Containers	Preservation
Primary Groundwater Samples	Well name, as appropriate	If no free-phase product, purge and sample.	TCL VOCs by SW 846, Method 8260B	Category B	Two VOA vials	HCl, cool to 4°C
SVE Effluent Sample	SVE effluent	Fill and secure Tedlar bag	VOCs by Method TO-15	Category A	Tedlar bag	None
QA/QC Samples	Equipment Blank	One per day for groundwater	Same as matrix	Category B	Two VOA vials	HCl, cool to 4°C
	Trip Blank	One per cooler containing for groundwater	TCL VOCs	Category B	Two VOA vials (filled by lab)	HCl (by lab), cool to 4°C
	Blind Duplicate	One per 10 groundwater samples	Same as matrix	Category B	Two VOA vials	HCl, cool to 4°C

Chain-of-Custody Procedures

For each day of sampling, a chain-of-custody sheet will be completed and submitted to the laboratory together with the associated sample coolers and/or boxes. A copy of the chain-of-custody will be retained by FPM. The chain-of-custody sheet will include the project name, the sampler's signature, the sampling locations, the date and time, and analysis parameters requested. If the samples are shipped using an overnight courier, the air bill number will be placed on the chain-of-custody to facilitate tracking, if necessary.

Samples will be tracked through the field collection, laboratory analysis, and laboratory report preparation processes. FPM will perform the sample tracking and assemble and review the analytical results as they are received.

QA/QC Samples

QA/QC samples will be obtained during the groundwater sampling events. QA/QC samples for groundwater will include equipment blank samples, trip blank samples, duplicate samples, and matrix spike/matrix spike duplicate (MS/MSD) samples.

One equipment blank sample per day of sampling will be obtained. Each equipment blank sample will be prepared by pouring laboratory-supplied, deionized water through the dedicated or decontaminated sampling equipment and into a set of sample containers. The equipment blank samples will be tested for the same analytes as the groundwater samples. The equipment blank sample results will be reviewed to evaluate the potential for field or laboratory contamination and will be used to attest to the quality of the decontamination procedures.

One trip blank sample will be provided by the laboratory for each cooler containing groundwater samples to be submitted to the laboratory for VOC analysis. The trip blank samples will be prepared by the laboratory from analyte-free, deionized water and will remain in the coolers in which the samples are stored. Trip blank samples will be analyzed for VOCs. The purposes of trip blank samples are to ensure that no cross-contamination of VOCs occurs in the sample cooler and to attest to laboratory quality.

MS/MSD samples will be submitted to the laboratory by obtaining an extra volume of groundwater sample. Preparation of the spike and spike duplicate will be performed by the laboratory. The frequency of MS/MSD samples will be one per groundwater sample delivery

group (20 primary samples). The purpose of the MS/MSD samples is to confirm the accuracy and precision of the laboratory.

Blind duplicate samples for groundwater will be obtained at a frequency of at least one duplicate sample per 10 primary samples. Each blind duplicate sample will be prepared by obtaining an extra volume of groundwater sample. The purpose of the blind duplicate samples is to attest to the precision of the laboratory.

3.0 ANALYTICAL QUALITY ASSURANCE PROCEDURES

Sample Analyses

All samples will be submitted to New York State Department of Health ELAP-certified laboratories. The laboratory testing for the groundwater samples will conform to NYS ASP methods with Category B data reporting and deliverables. Laboratory testing for the SVE effluent samples will be conducted using Method TO-15 with Category A (report only) deliverables. Laboratory testing and data reporting will be performed by subcontracted laboratories. The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods. Laboratory analyses will include internal QC sample analyses and checks.

The laboratory reports will include sample analytical results, methods of analysis, reportable field and laboratory QA/QC sample analytical results, method limits of detection, and sample practical quantification limits (PQLs). All groundwater samples will be analyzed for Target Compound List (TCL) VOCs and all SVE effluent samples will be analyzed for VOCs using Method TO-15.

Data Validation

The laboratory results from all groundwater samples obtained and analyzed will be subjected to data validation in accordance with USEPA guidelines for organic data review. The data validation will verify that the analytical results are of sufficient quality to be relied upon to assess the groundwater quality at the Site. A Data Usability Summary Report (DUSR) will present the data validation results, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability and completeness.

Data Evaluation

Data collected during the monitoring will be assembled, reviewed, and evaluated to assure satisfaction of the monitoring objectives. Data evaluated will include chemical analytical data, field reports, and other project documents. The data collected will be organized and analyzed to evaluate the nature and extent of groundwater impacts, including the nature of ambient groundwater, and the performance of the remedial measures at the Site. Data will be presented and evaluated in the Annual Site Management Report.

4.0 QA/QC PERFORMANCE

QA/QC performance shall be assessed in each DUSR and in each groundwater monitoring report in the Annual Site Management Report. QA/QC assessment shall include the following:

- An evaluation of whether the QA/QC program is adequate to identify potential issues with data completeness, accuracy or precision;
- A review of monitoring equipment maintenance procedures and schedules to confirm their performance; and
- An evaluation of whether corrective actions are necessary for any of the monitoring or QA/QC procedures or equipment.

If corrective actions are identified, they will be implemented in subsequent monitoring events.