

**SCHEDULE 1 – SCOPE OF WORK  
SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

**Task 1 – Preliminary Activities**

File Review

D&B Engineers and Architects, P.C. (D&B) will review available project documents for the Site provided by the New York State Department of Environmental Conservation (NYSDEC) under this subtask. As part of this subtask, D&B will prepare a figure for the project investigation area that will be used to depict proposed sampling locations. In addition, D&B will obtain an Environmental Data Resources (EDR) report including historical fire insurance maps and historical aerial photographs. The intent will be to gain an understanding of known and potential contamination and the historical operations in the vicinity of the Site, which may assist in identifying the source and developing site characterization (SC) environmental sampling locations.

Site Meeting/Inspection

Under this subtask, D&B will perform a Site visit in order to inspect the physical features, topography and access restrictions associated with the Site and surrounding properties. Based on documentation provided by the NYSDEC, several existing monitoring wells may be present both at the Site, as well as in the vicinity of the Site. In addition, two existing soil vapor monitoring points may be present at the Site. The approximate location of these monitoring wells and soil vapor monitoring points are depicted on Figure 1. Additionally, under this subtask, D&B will meet with representatives of the NYSDEC to discuss previous environmental investigation results and the approach for executing the SC. An objective of the Site visit will also be to identify indications of subsurface utilities and overhead obstructions that may affect potential locations of soil borings, groundwater probes and soil vapor samples.

Preparation of Schedule 2.11s

D&B will prepare Schedule 2.11s for the WA consistent with the NYSDEC's requirements. As part of this subtask, D&B will coordinate with standby subcontractors to obtain cost estimates based on the approved scope of work. D&B will also solicit quotes from non-standby subcontractors, as needed to obtain cost estimates. The Schedule 2.11s will be reviewed by D&B's Contract Manager and the NYSDEC's Project Manager prior to submission to the NYSDEC's Contracts and Payment Division.

## **SCHEDULE 1 – SCOPE OF WORK SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

### **Task 2 – Surveys/Investigations and Environmental Sampling and Implementation**

#### Mobilization

D&B will prepare for the SC and coordinate field work with the selected geophysical surveyor, direct push and waste disposal subcontractors under this subtask. D&B will verify that the direct push subcontractor contacted Dig Safely New York, and the appropriate utility companies, including non-member companies, and confirmation receipts from each utility were received and reviewed, and mark-outs were verified prior to intrusive work. D&B will also prepare a site-specific information form provided in Exhibit 11 of our Generic Health and Safety Plan (HASP).

D&B's cost estimate includes time for assisting the NYSDEC with property access negotiations, if necessary.

#### Geophysical Survey

A geophysical survey will be performed throughout the 310 Neighborhood Road property using Ground Penetrating Radar (GPR) and electromagnetics to investigate the Site for subsurface utilities; drainage piping and structures; and, possible underground storage tanks (USTs), cesspools or similar buried containers/structures. One of the primary objectives of the geophysical survey will be to locate possible former disposal structures associated with the site which may be source areas for subsurface contamination. In addition, all sampling locations within the 310 Neighborhood Road property will be cleared of utilities. The utility survey will be performed utilizing a magnetometer, pipe and cable locator, and ground penetrating radar to identify subsurface utilities or structures at or near proposed boring/groundwater probes/soil vapor sample locations.

Each anomaly and/or utility detected in the subsurface, will be identified on the ground surface by marking the limits with marking tape, pin-flags and/or paint. The location of the subsurface anomalies and utilities will be surveyed and added to the base map developed as part of the Site Survey, as appropriate. D&B will review the results of the geophysical survey in the field with the geophysical surveyor and also summarize the results in an e-mail to the NYSDEC. The complete results of the geophysical survey will be presented in the SC Report.

#### Soil Vapor Sampling

In accordance with DER-10 and NYSDOH's guidance document titled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", dated October 2006, soil vapor samples will be collected to evaluate the potential for soil vapor contamination. Five soil vapor probes (NRSV-01 through NRSV-05) will be installed using direct-push drilling techniques at the locations shown

## **SCHEDULE 1 – SCOPE OF WORK SITE CHARACTERIZATION**

### **310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK SITE NO. 152242 WA NO. D007620-43**

on Figure 2. Prior to drilling, each soil vapor probe location will be pre-cleared for buried utilities to a minimum depth of 5 feet below ground surface (bgs) using hand tools, air-knife and/or vacuum extraction technologies. In areas where drilling will be performed within 10 feet of a marked utility, or where site-specific conditions, utility type or utility owner requirements warrant, pre-clearing will be to 8 feet bgs.

In general, soil vapor probes will be set at approximately 7 feet bgs. The subsurface soil vapor probes will be constructed using stainless steel screens and polyethylene tubing. Probe screens will be approximately 6-inches long and constructed of double-woven stainless-steel wire. The probe screens will be installed at the bottom of the boreholes. Filter glass beads will be placed around the screened portion of each vapor probe extending from the bottom of the borehole to approximately 1-foot above the screen. Approximately 6 inches of washed sand will then be placed directly above the filter glass beads, followed by a bentonite seal above the washed sand to a depth of approximately 1-foot bgs.

After installation of the subsurface vapor probes, soil vapor samples will be collected and analyzed by an Environmental Laboratory Approval Program (ELAP) laboratory for volatile organic compounds (VOCs) via United States Environmental Protection Agency (USEPA) Method TO-15. Each probe will be connected via tubing to a laboratory-supplied SUMMA canister. The soil vapor probe will be purged using a low-flow sample pump to evacuate one to three volumes of soil vapor. A photoionization detector (PID) will be utilized to record VOC concentrations from the soil vapor probe in the parts per billion (ppb) range. Using a flow regulator calibrated at a flow rate not to exceed 0.2 liters per minute and a batch certified clean 6-liter capacity SUMMA canister, the sample collection time will be for 2 hours. In accordance, with the NYSDOH vapor intrusion guidance, tracer gas (i.e., helium) will be used at every soil vapor sampling location to ensure that an adequate surface seal has been created.

If the existing soil vapor monitoring points SV-1 and SV-2 as depicted on Figure 2 are located during the field activities, two soil vapor samples will be collected for laboratory analysis of VOCs via USEPA Method TO-15 following the same sampling procedure as detailed above, as an alternative to the installation and sampling of NRSV-01 and NRSV-02.

#### Soil Borings and Surface/Subsurface Soil Sampling

Prior to drilling, each soil boring location will be pre-cleared for buried utilities to a minimum depth of 5 feet bgs using hand tools, air-knife and/or vacuum extraction technologies. In areas where drilling will be performed within 10 feet of a marked utility, or where site-specific conditions, utility type or utility owner requirements warrant, pre-clearing will be to 8 feet bgs.

**SCHEDULE 1 – SCOPE OF WORK  
SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

Soil borings will be advanced at five (5) locations (NRSB-01 through NRSB-05) as shown on Figure 2 using direct-push drilling methods to approximately 20 feet bgs.

Additionally, up to two (2) locations may be completed in the central portion of the site following the results of the geophysical survey.

Soil samples will be collected continuously from the soil borings to a depth of approximately 20 feet bgs for characterization. Soil samples collected from each boring will be screened with a PID and inspected for indications of contamination (e.g., discoloration, staining, etc.). Geologic descriptions of the soil and field screening results will be recorded.

Up to three soil samples may be collected and submitted for laboratory analysis from each soil boring. One surface soil sample will be collected from the uppermost 6-inches of soil and immediately below any existing asphalt/concrete or vegetative cover. A second subsurface sample will be collected from the interval immediately above the groundwater surface. If warranted by the extent of observed contamination, a third subsurface sample will be collected from the interval exhibiting the greatest evidence of contamination based on field screening. For budgetary purposes, it is assumed that the NYSDEC will utilize a Standby Laboratory Services Contractor to perform all required analysis; therefore, the cost estimate does not provide for laboratory analysis.

Up to fifteen (15) subsurface soil samples will be analyzed (three per boring location) by an ELAP certified laboratory for Target Compound List (TCL) VOCs + 10 by USEPA Method 8260, TCL semivolatile organic compounds (SVOCs) + 20 by USEPA Method 8270, pesticides by USEPA Method 8081, polychlorinated biphenyls (PCBs) by USEPA Method 8082, TAL metals by USEPA Method 6010, mercury by USEPA Method 7470, and cyanide by USEPA Method 9010. The VOC samples will be collected and preserved in accordance with USEPA Method 5035 (e.g. En Core<sup>®</sup> or Terra Core<sup>®</sup> Sampler). Additionally, five (5) subsurface soil samples will be analyzed (one per boring location) by an ELAP certified laboratory for TAL per- and polyfluoroalkyl substances (PFAS) by USEPA Method 537 Modified.

Quality control samples, consisting of matrix spike, matrix spike duplicates and blind duplicates will be collected at a minimum frequency of one per twenty samples and analyzed for the same parameters as the environmental samples. Equipment blanks will also be collected at a frequency of one per twenty samples if non-disposable sampling equipment is used. Additionally, one equipment blank will be collected in association with the PFAS analysis. Category B data deliverable packages and Electronic Data Deliverables (EDDs, in EQuIS format) will be furnished by the laboratory.

## **SCHEDULE 1 – SCOPE OF WORK SITE CHARACTERIZATION**

### **310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK SITE NO. 152242 WA NO. D007620-43**

#### Discrete-Depth Groundwater Sampling

Up to five (5) discrete-depth groundwater samples (NRGP-01 through NRG-05) will be collected from the five (5) soil boring locations (NRSB-01 through NRSB-05), using a Screen Point 16 Discrete Groundwater Sampler, or equivalent system, as approved by the NYSDEC. The groundwater samples will be collected at approximately 15 feet bgs. In addition, at soil boring location NRSB-03, four (4) additional discrete-depth groundwater samples will be collected at 10-foot intervals to a depth of 55 feet bgs. For budgetary purposes, it is assumed that the NYSDEC will utilize a Standby Laboratory Services Contractor to perform all required analysis; therefore, the cost estimate does not provide for laboratory analysis.

During purging and sampling dissolved oxygen, oxidation/reduction potential, turbidity, temperature, conductivity and pH will be measured using a Horiba® or equivalent water quality meter. All groundwater samples collected from the shallowest sampling interval (approximately 15 feet bgs) will be analyzed by an ELAP-certified laboratory for TCL VOCs + 10 by USEPA Method 8260, TCL SVOCs + 20 by USEPA Method 8270, pesticides by USEPA Method 8081, PCBs by USEPA Method 8082, and both unfiltered and laboratory-filtered TAL metals by USEPA Method 6010, mercury by USEPA Method 7470, cyanide by USEPA Method 9010, 1,4-dioxane by USEPA Method 8270 SIM and TAL PFAS by USEPA Method 537 Modified. The deeper depth groundwater samples collected from NRSB-03 (approximately 25, 35, 45 and 55 feet bgs) will be analyzed by an ELAP-certified laboratory for TCL VOCs + 10 by USEPA Method 8260.

Quality control samples, consisting of matrix spike, matrix spike duplicates and blind duplicates will be collected at a minimum frequency of one per twenty samples and analyzed for the same parameters as the groundwater samples. Trip blanks will be included in each cooler shipped to the laboratory that contains groundwater samples to be analyzed for VOCs and will be analyzed for TCL VOCs + 10. Additionally, one equipment blank will be collected in association with the PFAS analysis. Category B data deliverable packages and Electronic Data Deliverables (EDDs, in EQUIS format) will be furnished by the laboratory.

#### Well Development of Existing Monitoring Well

One existing 4-inch monitoring well (MW-01) will be developed by standard surging and pumping techniques. Development will be considered complete when either the turbidity of the well is below 50 nephelometric turbidity units (NTUs), the well purges dry, or 10 well volumes have been removed, whichever occurs first.

## **SCHEDULE 1 – SCOPE OF WORK SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

### Water Level Measurements

At least one round of measurements will be collected from all existing monitoring wells. The total depth of each well and depth to water will be measured, from the top of each PVC casing, using an electronic water level meter to an accuracy of 0.01 foot. If evidence of non-aqueous phase liquid (NAPL) is observed, the NAPL depth and thickness will be measured. A PID headspace reading will also be measured from each well. Current groundwater flow direction is anticipated to be toward the south/southeast based on information provided by the NYSDEC.

### Groundwater Sampling

Up to eight (8) groundwater samples will be collected from three (3) select existing monitoring wells (MW-01, MW-04 and MW-X) and one (1) select existing well nest WN-X at five (5) select intervals WN-X 15', WN-X 20', WN-X 25', WN-X 30' and WN-X 35' using low-flow sampling methodologies. A PID headspace reading in each monitoring well will be measured prior to groundwater sample collection. In addition, the total depth of each well, depth to water, and if present, depth to NAPL, will be measured, from the top of each PVC casing, using an electronic oil-water interface probe. If NAPL is detected in a monitoring well, a sample of the NAPL will be obtained for analysis, if sufficient NAPL volume is present (NAPL analysis cost is not included in the cost estimate). If NAPL is encountered in a monitoring well, a groundwater sample will not be collected from that well. During purging and sampling dissolved oxygen, oxidation/reduction potential, turbidity, temperature, conductivity, and pH will be measured using a Horiba® or equivalent water quality meter.

Groundwater samples collected from the existing monitoring wells (MW-01, MW-X and WN-X 15') will be analyzed by an ELAP-certified laboratory for TCL VOCs + 10 by USEPA Method 8260, TCL SVOCs + 20 by USEPA Method 8270, pesticides by USEPA Method 8081, PCBs by USEPA Method 8082, and both unfiltered and laboratory-filtered TAL metals by USEPA Method 6010, mercury by USEPA Method 7470, cyanide by USEPA Method 9010, 1,4-dioxane by USEPA Method 8270 SIM and TAL PFAS by USEPA Method 537 Modified.

The remaining groundwater samples collected from the existing monitoring wells (MW-04, WN-X 20', WN-X 25', WN-X 30' and WN-X 35') will be analyzed by an ELAP-certified laboratory for TCL VOCs + 10 by USEPA Method 8260.

Quality control samples, consisting of matrix spike, matrix spike duplicates and blind duplicates will be collected at a minimum frequency of one per twenty samples and analyzed for the same parameters as the groundwater samples. Trip blanks will be included in each cooler shipped to the laboratory that contains groundwater samples to be analyzed for VOCs and will be analyzed for TCL VOCs + 10. Additionally, one equipment blank will be collected in association with the PFAS

## **SCHEDULE 1 – SCOPE OF WORK SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

analysis. Category B data deliverable packages and Electronic Data Deliverables (EDDs, in EQUIS format) will be furnished by the laboratory.

### Investigation Derived Waste

Efforts will be made to minimize generation of investigation derived waste (IDW). IDW is anticipated to include the following: decontamination fluid, used personal protective equipment (PPE), used disposable sampling equipment, well purge and development water and soil cuttings. Wash and rinse water used for equipment decontamination, development water, purge water and soil cuttings will be containerized in DOT-approved 55-gallon drums for off-site disposal. Used PPE and disposable sampling equipment will be removed from the Site and disposed as solid waste, unless grossly contaminated. For waste characterization purposes, one liquid sample of the IDW will be analyzed for total PCBs, full toxicity characteristic leaching procedure (TCLP) and Resource Conservation and Recovery Act (RCRA) characteristics. In addition, one soil sample will be collected from the IDW to be analyzed for full TCLP, RCRA characteristics and total PCBs for waste characterization purposes. Grossly contaminated material, if encountered, will be drummed separately. Materials containerized for off-site disposal will be removed from the Site by a NYSDEC-permitted waste transporter pending the results of the waste characterization sampling. The cost estimate is based on using results of analyses of soil and groundwater samples for characterization of IDW in conjunction with the waste characterization samples specified above. Containerized materials will be clearly marked to indicate the contents of the containers, the date of collection, and the source of the material. The cost estimate is based on the disposal of six (6) 55-gallon drums of non-hazardous waste.

### Field Procedures, Analytical Methods and Quality Assurance

All investigation and sampling activities will be performed in accordance with D&B's Generic Field Activities Plan (FAP) and Generic Quality Assurance Project Plan (QAPP), which have been approved for use on our Standby Contract. All laboratory analysis will be performed in accordance with the latest edition of the NYSDEC Analytical Services Protocol. The laboratory will be a NYSDOH ELAP certified laboratory. Category B deliverables will be submitted for the project samples in the required EQUIS Electronic Data Deliverable format.

**SCHEDULE 1 – SCOPE OF WORK  
SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

**Task 3 – Site Characterization Report**

Site Characterization Report

D&B will prepare a SC Report in accordance with the applicable provisions of DER-10. The SC Report will summarize the findings of the field investigation and will include text, tables, and figures, which show the concentrations of contaminants identified. The SC Report will also include background information obtained from available project documents, summarize the EDR report, and describe the subsurface characteristics of the areas investigated, including physical features, geology and hydrogeology.

If appropriate based on the results, the SC Report will include a determination regarding whether a hazardous waste, hazardous substances, or petroleum release that constitutes a significant threat has occurred at the Site.

Data Usability Summary Report

Category B laboratory report deliverables and Electronic Data Deliverables (EDDs, in EQUIS format) will be furnished by the analytical laboratory. D&B will prepare a Data Usability Summary Report (DUSR). The DUSR will provide an evaluation of analytical data with the primary objective of determining whether or not the data, as presented, satisfies the project specific criteria for data quality and data use.

Project Schedule

<b>Task No.</b>	<b>Task Description</b>	<b>Est. Time of Completion</b>
1	Preliminary Activities <ul style="list-style-type: none"><li>• File Review</li><li>• Site Meeting/Inspection</li><li>• Submit Schedule 2.11s and SOW</li><li>• NYSDEC WA Package Approval</li></ul>	November 2018



**SCHEDULE 1 – SCOPE OF WORK  
SITE CHARACTERIZATION**

**310 NEIGHBORHOOD ROAD, MASTIC BEACH, NEW YORK  
SITE NO. 152242  
WA NO. D007620-43**

<b>Task No.</b>	<b>Task Description</b>	<b>Est. Time of Completion</b>
2	Surveys/Investigations and Environmental Sampling and Implementation <ul style="list-style-type: none"> <li>• Mobilization</li> <li>• Geophysical Survey</li> <li>• Soil Vapor Sampling</li> <li>• Soil Borings and Surface/Subsurface Soil Sampling</li> <li>• Discrete-Depth Groundwater Sampling</li> <li>• Well Development</li> <li>• Water Level Measurements</li> <li>• Groundwater Sampling</li> <li>• IDW Disposal</li> </ul>	6 Months After Notice to Proceed
3	Site Characterization Report <ul style="list-style-type: none"> <li>• Site Characterization Report</li> <li>• Data Usability Summary Report</li> <li>• Electronic Data Deliverables</li> </ul>	9 Months After Notice to Proceed



L:\3150-43 310 NR RD\Figure 1.mxd Site Visit.mxd (9/10/2018)