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PACTIV CORPORATION

MACEDON FILMS SITE
MACEDON, NEW YORK

FIELD SAMPLING PLAN
MACEDON FILMS SITE
MACEDON, NEW YORK

Site # C859025
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Prepared For:
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Canandaigua, New York

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FIELD SAMPLING PLAN
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1.0 INTRODUCTION

URS Corporation – New York (URS) has prepared this *Field Sampling Plan* (*FSP*) on behalf of Pactiv Corporation (Pactiv). The site is being investigated under the Brownfield Cleanup Program (BCP) in accordance with Brownfield Cleanup Agreement Number B8-0669-04-06 (BCA) between Pactiv and the New York State Department of Conservation (NYSDEC). This *FSP* provides detailed descriptions of the routine field methods to be used during the investigation of the site. Specialized sampling methods, as needed, will be described in specific work plans and approved by NYSDEC.

This *FSP* has five sections. Section 2.0 includes a description of field procedures that will be used to implement the tasks outlined in the *Remedial Investigation Work Plan* dated September 2, 2004 and subsequent work plans submitted by Pactiv and approved by the NYSDEC in accordance with the BCA. Section 3.0 describes field quality assurance and decontamination procedures. Section 4.0 describes sample handling procedures. Section 5.0 is a list of references used to prepare this *FSP*. Copies of field forms that are referenced in this *FSP* can be found in Appendix A.

2.0 SAMPLING PROCEDURES

The scope of work for the field investigation of the site may consist of the following tasks:

- Collect subsurface soil samples;
- Install and develop groundwater monitoring wells;
- Collect groundwater samples from monitoring wells;
- Measure groundwater elevations;
- Collect indoor air samples.

The remainder of this section describes the procedures that will be followed to complete these tasks, as specified in NYSDEC approved workplans.

2.1 SUBSURFACE SOIL SAMPLING PROCEDURES

Soil borings will be advanced and continuous overburden soil samples will be obtained to verify the geologic profile and assure proper placement of the well screens. The collection of subsurface soil sampling may be conducted using discrete samplers and MacroCore™ open samplers with a Geoprobe™ unit mounted to a truck or van or using split-spoon samplers during drilling with a conventional drill rig equipped with hollow stem augers (HSAs).

Field Equipment

Some or all of the following equipment will be used during soil sampling:

- Field boring log sheet and field notebook;
- Photo-ionization detector (PID);
- Stainless-steel knife, trowels, spoons, scoops, and bowls;
- Personal protective equipment (PPE);
- Disposable gloves;
- Distilled/deionized water;
- Cleaning detergents and decontamination chemicals;
- Five-gallon pails for decontamination;
- Brushes;
- Sample bottles;
- Coolers;
- Sufficient ice or freezer packs to maintain the samples at four degrees Celsius; and
- Chain of Custody (COC) forms.

2.1.1 Soil Sampling Using Geoprobe™ Samplers

Discrete samplers will be used to collect samples obtained with a Geoprobe™. These samplers have an open tube design and measure approximately two-inches in diameter (outer) by 44-inches long. The samplers will be fitted with a removable cutting shoe. The sampler will be advanced to the desired depth. Each of the samplers will be fitted with a new acetate liner prior to collection of a sample. The acetate liner will be split open to log the soil and collect the soil samples.

The length of sample recovery, percent recovery, and soil description, including odors, will be recorded on the boring log. A copy of a field boring log sheet is provided in Appendix A.

If samples are to be sent to the laboratory for analysis, an aliquot of soil will be transferred to the volatile organic compound (VOC) sample containers immediately upon retrieval of the sampler. The VOC sample containers will be completely filled in order to minimize headspace in the containers.

A second aliquot of soil from the sampler will be retained for headspace analysis using a PID. Headspace analysis procedures are described in Section 2.1.3. The rationale behind this sequence of procedures (i.e., collecting a sample first, and then screening) is to minimize the loss of VOCs from samples that will be sent to a laboratory for analysis.

The remaining soil will be placed in a clean stainless-steel bowl. After removal of any stones, large twigs, or other vegetation, the sample will be thoroughly homogenized by mixing the sample in the bowl with a stainless-steel spoon. The sample will then be quartered in the bowl and each quarter will be mixed separately, before finally mixing the entire sample again and placing it in containers for non-volatile constituent analysis.

Field personnel will wear disposable gloves for the collection and handling of all samples and will be changed between each sample. A stainless-steel scoop or trowel may be used to fill the sample containers.

Samples that are to be sent for laboratory analysis will be packed into sample coolers containing sufficient bags of ice or freezer packs to maintain the samples at 4° Celsius (°C). All acetate liners will be discarded after use. Upon completion of sampling at each location, all sampling equipment will be decontaminated in accordance with the procedures described in Section 3.3. Quality assurance samples, including duplicate samples, equipment rinseate blanks, and trip blanks will be collected as necessary in accordance with the procedures described in Section 3.1 and the site-specific *Quality Assurance Project Plan* (*QAPP).* The sample custody procedures are described in Section 4.0.

2.1.2 Soil Sampling Using Stainless Steel Split-Spoons

The soil samples will be collected using two-inch diameter by two-foot long split-spoons in accordance with ASTM D-1586-84: *Standard for Penetration Test and Split-Barrel Sampling of Soils*. The split-spoons will be driven into the overburden materials using a 140-pound hammer-drop system until the desired depth of the boring is reached. The blow counts for each six-inch increment of penetration will be recorded on the boring log. The hollow stem augers (HSAs) will be advanced two feet after each split spoon is collected to avoid borehole cave-in. Furthermore, a plug inside of the HSAs will be advanced during drilling. The soil samples obtained from the split-spoon samplers will be collected and handled in a similar manner as the soil samples obtained from discrete samplers, described in Section 2.1.1.

Upon completion of sampling at each location, all sampling equipment will be decontaminated in accordance with the procedures described in Section 3.3. Quality assurance samples, including duplicate samples, equipment rinseate blanks, and trip blanks will be collected as necessary in accordance with the procedures described in Section 3.1 and the *QAPP*. The sample custody procedures for the soil samples are described in Section 4.0.

2.1.3 Headspace Analysis Procedures

Field screening of collected soil samples will be completed using headspace analysis using a photo ionization detector (PID) equipped with a 10.2 electron volt (eV) lamp to detect the presence of VOCs. Immediately upon retrieval of a soil sample, two aliquots of soil will be collected. One aliquot will be used to completely fill the VOC sample containers and the second aliquot will be used for headspace analysis using a PID. The rationale behind this sequence of procedures (i.e., collecting a sample first, and then screening) is to minimize the loss of VOCs from samples that will be sent to a laboratory for analysis.

The soil to be used for headspace analysis will be placed in new sealable polyethylene bags. Each bag will be labeled with the location, depth interval, and date of the soil sample. The soil will be allowed to warm to ambient temperature to allow the vapors in the soil to equilibrate with the air in the bag. If ambient temperature is less than 68° Fahrenheit (i.e. room temperature) the samples may be placed indoors to allow the soil to warm to room temperature. A measurement will be collected by inserting the probe of the PID through an opened corner of the bag. Care will be taken to avoid uptake of water droplets and soil particles. The highest meter response will be recorded as the headspace concentration. Each PID measurement will be recorded on the appropriate soil boring log or in a field notebook.

2.2 MONITORING WELL INSTALLATION PROCEDURES

This section describes the procedures that will be used to install monitoring wells using a drill rig. The procedures described in this section will provide monitoring wells that will:

- Provide reliable stratigraphic information about penetrated soils;
- Provide representative samples of groundwater for analysis;
- Permit collection of representative water level data; and
- Effectively isolate the separate hydrogeologic strata penetrated during drilling.

Some or all of the following equipment will be used during monitoring well installations:

- Drilling rig, drilling tools, and support truck with water tanks;
- Sheet of plywood, or mud box;
- Steam cleaner;
- Tremie pipe;
- Two-inch threaded polyvinyl chloride (PVC) well risers and screens with a minimum wall thickness of Schedule 40 and screen slot sizes of 0.010-inch and 0.020-inch;
- PVC or steel well caps and bottom plugs;
- Washed Morie No. 0 or equivalent quartz sand for filter pack with 0.010-inch slot screen;

- Washed Morie No. 1 or equivalent quartz sand for filter pack with 0.020-inch slot screen;
- Portland cement, Type I or II;
- Bentonite pellets;
- Powdered bentonite;
- Protective casings and/or roadboxes and padlocks;
- Concrete mix for surface completions;
- Polyethylene sheeting; and
- Field notebook, soil boring logs, and well construction logs.

2.2.1 Drilling, Borehole Logging, Well Installation, and Construction

All necessary access permits and utility clearances for underground utilities will be obtained prior to the start of drilling operations. All drill rigs will use necessary tools, supplies, and equipment, which will be supplied by the drilling subcontractor. The drill crew will consist of a NYS-licensed driller and one or more driller's assistants. Appropriate URS personnel will be onsite to supervise the drill crew and for logging the soils and sampling. Drilling subcontractor personnel will transport water to the rigs, clean tools, assist in the installation of security and marker pipes, construct the concrete aprons, and may develop the wells.

All soil boring and well construction details will be properly logged by the supervising field geologist. All notes will be entered on a standard boring log sheet (Appendix A) and field book. The following information will be recorded on the boring log sheet: project name and number, boring or well number and location, drilling contractor, drilling method and equipment, sampling method and equipment, start and finish time and date, and name of the supervising field geologist.

Supplies and equipment will be transported to the lay-down area designated onsite. Before moving onto the first well location, all reusable drilling equipment and tools will be steam-cleaned at a designated onsite decontamination station using a portable steam cleaner. Decontamination procedures are in Section 3.3.

During the advancement of the soil boring standard penetration tests will be performed in accordance with ASTM D-1586-84: *Standard for Penetration Test and Split-Barrel Sampling of Soils*. Soil sampling procedures, including field screening of the soil samples using head-space analysis are described in Section 2.1.3.

At each boring location, drilling will be conducted through a mud box or at a minimum a sheet of plywood with a hole cut through the center to contain the drill cuttings. Hollow stem augers (HSA) will be used to drill through the overburden materials. A plug will be lowered to the bottom of the HSA drill string (inside of the HSAs) and advanced with the HSAs during drilling, this plug will be removed during soil sample collection.

Groundwater Monitoring Well Construction

Overburden monitoring wells will be installed in the unconsolidated material using continuous-flight, 4.25-inch (or larger as necessary) inner diameter (ID) hollow-stem augers (HSAs) for two-inch wells.

URS' field personnel will prepare a soil boring log and maintain a time log of significant events during each working day. The soil boring logs will be used to record field classification of soils, sampling types and number of samples, sampling depths, first encountered and static groundwater levels, progress of drilling, final completion depth, and the nature and resolution of problems encountered. The Unified Soil Classification (USC) System will be used for soil descriptions.

After the boring is drilled to the required depth, a string of two-inch, flush-threaded, PVC well riser and screen will be installed through the HSAs. A threaded bottom plug will be placed at the bottom of the screen and the top of the well will be protected with a vented cap. The wells will be set at the desired horizon of the overburden materials with appropriate changes in screen length, if necessary. In general, the lengths of the monitoring well screens will be ten feet. The well riser will be of sufficient length to extend from the top of the screen to approximately six inches below grade for wells to be completed as flush-mount wells. If the well is to be completed above grade, the well riser will be of sufficient length to extend from the top of the screen to approximately two to three feet above the ground surface.

New two-inch diameter schedule 40 PVC screens and risers will be used for all overburden monitoring wells. The screen slot size will be selected by the URS personnel supervising the well installation based on the visual inspection of particle size of the material to be screened. The screen slot size (0.010- or 0.020-inch) and appropriate sand pack materials will be chosen to adjust for grain size variations in the formation and will be suited to the smallest grain-size within the screened-interval.

If fine-grained sand and silt are present in the screened interval, a 0.010-inch slot size screen will be used, otherwise a 0.020-inch slot size screen will be used for the coarser formation material. Washed Morie No. 0 or equivalent sand will be used for 0.010-inch slot screens. Washed Morie No. 1 or equivalent sand will be used for 0.020-inch slot screens.

If groundwater conditions permit, the top portion of the shallow well screens will be set approximately two feet above the water table to detect light nonaqueous phase liquids (LNAPLs), if present, and to allow for observations of seasonal water level fluctuations.

The sand pack will be installed around well screen to a depth extending two to three feet above the top of the screen. During installation of the sand pack, the augers will be withdrawn in small increments so as to avoid disturbing the sand pack. URS field personnel will record the amount of sand used. A weighted fiberglass tape will be used to measure the top of the sand pack and detect bridging of the sand pack material. If bridging is detected it will be corrected prior to the addition of more filter pack material.

A 24-inch thick (minimum) seal of bentonite pellets will be placed over the sand pack and hydrated. For shallow monitoring wells, where the top of the screen is above the water table, hydration of the bentonite clay pellets will be accomplished by adding potable water to the borehole and underspace. A bentonite-cement grout consisting of approximately seven pounds of powdered bentonite per 94-pound sack of Portland cement, and not more than six gallons of clean water per 94-pound sack of cement, will be introduced into the borehole annular space by injection under pressure using a tremie pipe. The grout will be allowed to set and cure for at least 48 hours before commencing well development or other activities, which might disturb the seal.

Wellhead Construction

All wells will be completed with protective stickup risers unless site conditions or use require flush-mount road boxes. A four-inch by four-inch five-foot long steel outer protective stickup riser with a hinged, lockable cover will be installed in the grout to a depth of 2.5 feet and equipped with a padlock. The integrity of the well will be protected with a new, lockable, sealing, vented well cap with an expandable O-ring, which forms an air-tight seal. All locks will be keyed alike.

The drilling subcontractor will construct a (2 foot x 2 foot x 0.5 foot) concrete apron around each well. Concrete aprons will be sloped to promote runoff away from the well. Concrete pads will be constructed within three days after wells have been installed.

Cuttings will be containerized in the New York State Department of Transportation's (NYSDOT) approved 55-gallon drums and disposed in accordance with relevant regulations by Pactiv. Drilling fluids will also be containerized for off-site disposal. The drums will be labeled and staged on-site.

2.2.2 Well Development

This section describes the groundwater monitoring well development procedures and quality control requirements. The following equipment will be used to develop the newly installed overburden monitoring wells.

- Centrifugal or Waterra inertial pump;
- New high density polyethylene (HDPE) tubing;
- New HDPE foot valves and surge blocks;
- Generator and extension cords with GFI protection;
- ASTM Type II or analyte-free distilled water;
- Water level indicator;
- Five-gallon bucket;
- Polyethylene sheeting;
- Well development record and field notebook; and
- Turbidity meter.

Well development will begin no sooner than 48 hours after grout placement and will be accomplished through a combination of surging and pumping using a centrifugal or Waterra pump. First, the high density polyethylene tubing with a surge block and foot valve will be lowered to the bottom of the well. The tubing will then be attached to the pump and the pump is started. The position of the foot valve will be raised and lowered across the screened interval to remove sediment and drilling fluids from the sand pack.

Development will continue for a maximum of five hours, until the well is pumped dry or until the discharged water contains no visible particles and turbidity is less than 50 NTU. Well development procedures will be documented in the field notebook or on a well development record. A copy of a well development record is provided in Appendix A.

The drilling contractor may develop the bedrock monitoring wells using a drill rig. The monitoring wells will be developed by alternately pumping and air-surging ten-foot intervals. Each interval will be surged until a turbidity of 50 NTU is reached or a maximum time of 30 minutes. Alternately pumping and surging will continue until a minimum of water is recovered equaling the approximate amount of drilling fluid lost during coring and reaming plus five screen volumes.

The development water from each well will be containerized and stored on-site in DOT-approved 55-gallon drums or a holding tank for later off-site disposal in accordance with relevant regulations by Pactiv.

2.2.3 Well Surveying

The locations and elevations of all new wells will be surveyed by a New York licensed surveyor, using a United States Geodetic Survey benchmark or other previously established relative site datum as a datum. The geographic location or horizontal survey measurement will also be surveyed to an accuracy of one foot.

A reference point will be marked on the top of the well riser at the time of construction. The elevation of the well riser will be surveyed to the reference point, and all future water level recordings will be made with respect to the reference point. The elevation of the reference mark at the top of the well riser on all monitoring wells will be surveyed to the nearest 0.01 foot. The ground elevation at the base of each well will also be surveyed to an accuracy of 0.1 foot.

The surveyor will provide tabular summaries of the vertical elevations and horizontal coordinates of the boring locations, benchmarks, and other reference points as specified in the work plan. The survey data will be used to update the existing base map that depicts boring locations, samples, and other reference points.

2.3 GROUNDWATER ELEVATION MEASUREMENT

Prior to groundwater sampling, groundwater elevations will be collected for all existing and newly installed monitoring wells. Some or all of the following equipment will be used to collect water level measurements.

- Electronic water level indicator with 0.01 feet graduations;
- Personal protective equipment (PPE);
- Disposable gloves;
- Distilled/deionized water; and

- Cleaning detergents and decontamination chemicals.

After the new wells have been developed, the new wells and the existing and accessible wells at the site will be gauged using an electronic water level meter to obtain water level elevations. The water level data will be used to further refine the groundwater flow regime beneath and near the site. Groundwater levels will be measured in all monitoring wells using the following procedures:

- Verify the identification of the monitoring well.
- Observe the wellhead for signs of deterioration. Record observations.
- Identify the surveyed elevation point on the well. If one does not exist, create a mark using a steel file. This mark will be the measuring point for subsequent rounds of water level measurements.
- Slowly lower the electronic water level indicator probe into the well.
- When the water level indicator contacts groundwater, note the point on the water level indicator as referenced by the measuring point on the well.
- Record the water level to within 0.01 foot in the field notebook or gauging form.
- Retrieve the water level indicator and re-lock the well.
- Decontaminate the water level indicator after each use with an Alconox/distilled water wash followed by a distilled water rinse.

The order of gauging will be based on the anticipated or known level of contamination in the well. The clean wells will be checked first. The gauging data will be recorded on a gauging form. A copy of a gauging form is provided in Appendix A.

2.4 GROUNDWATER SAMPLING PROCEDURES

Groundwater samples will be collected following the USEPA's low-flow sampling protocol (EPA/540/S-95/504) to obtain representative groundwater samples from the monitoring wells. Some or all of the following equipment will be used to collect groundwater samples:

- Sampling and purging logs;
- Peristaltic or Waterra Hydrolift-II pump;
- New or dedicated HDPE tubing;
- New or dedicated foot-valve;
- VOC sampling kit for Waterra pump;
- Personal protective equipment (PPE);
- Disposable gloves;
- Distilled/deionized water;
- Cleaning detergents for decontamination;
- Five-gallon pails for decontamination;
- Brushes;
- Laboratory-supplied sample bottles;
- Coolers;
- Sufficient ice or freezer packs to maintain the samples at four degrees Celsius; and
- Chain of Custody (COC) forms.

2.4.1 Well Purging and Stabilization

Purging procedures have a great influence on the reliability of groundwater samples, and inconsistent purging can be a source of variability among groundwater analyses. Therefore, purging procedures will be standardized as much as possible as described below. Once a specific purging procedure has been used and found suitable for a well, the same procedure will be used in subsequent purging events, when possible. The pur ge water from each well will be containerized and stored on-site in DOT-approved 55-gallon drums or a holding tank for later off-site disposal in accordance with relevant regulations by Pactiv.

Upgradient wells, background wells, and other wells that are considered to be relatively uncontaminated, based on available data, will be purged and sampled first, whenever feasible. This practice is intended to minimize the potential for cross-contamination from more contaminated wells.

Groundwater samples will be collected following the USEPA's low-flow sampling protocol for purging and sampling (EPA/540/S-95/504). Wells will be purged using a peristaltic pump with new or dedicated polyethylene tubing with a stainless steel foot valve. During purging, URS will monitor temperature, pH, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity using a multi-parameter meter connected to an in-line flow-though cell. Purging will be maintained a pumping rate that minimizes drawdown to less than 0.3 feet (typically 0.1 liters per minute [L/min] to 0.5 L/min). In all cases, the purge rate will not exceed one L/min. If drawdown cannot be maintained at less than 0.3 feet, then the condition will be noted. Samples will be collected following a minimum of 30 minutes of purging and once parameters have stabilized (within 10 percent for temperature, specific conductivity, DO and turbidity, within 0.1 pH units, within 10 mV for ORP over three consecutive readings collected at three- to five-minute intervals). The flow-through cell equipment will be calibrated daily in accordance with the manufacturer's instructions.

A maximum of five wetted screen volumes will be purged from those wells that are not purged dry. A wetted screen volume is defined as the volume of water within the screen. The volume wetted screen can be calculated using the following equation:

$$V \text{ (in cubic feet)} = \pi r^2 h$$

where:

- V = volume of water in well;
- π = 3.14;
- h = length of screen below the water table in feet; and
- r = well radius in feet.

This equation simplifies the following equation, which uses the diameter of the well in inches and a constant to convert the volume to gallons.

$$V \text{ (in gallons)} = h \times d^2 \times 0.0408$$

where d is the well diameter in inches.

The depth to water will be measured to the nearest 0.01 foot. The total depth of the well will be determined from well installation logs or by sounding the depth of the well by lowering the water level indicator to the bottom of the well.

2.4.2 Groundwater Sampling Procedures

This procedure describes steps involved in collecting groundwater samples after the well has been purged according to the methods in Section 2.4.1. The objectives of the activities covered by this procedure are to:

- Obtain groundwater samples for laboratory and field analysis;
- Ensure that the groundwater samples will be representative of actual groundwater quality;
- Ensure quality control and consistency during sampling; and
- Serve as a means to allow traceability of error(s) in sampling and data recording.

At wells that are not purged dry, groundwater sampling will commence immediately after purging without turning the pump off. The discharge hose will be disconnected or cut off from the flow-through cell prior to sampling to minimize cross-contamination. The groundwater samples will be collected using VOC sampling kits compatible with the Waterra Hydrolift II pump, if used.

Containers used for VOC analysis will be filled first using bottom-filling, small diameter tubing designed for VOC sampling with the pump, which reduces air bubbles and minimizes agitation so as to prevent aeration. The pumping rate will be lowered while VOC vials are being filled. After the VOC vials are filled, then the remaining sampling containers will be filled. At well locations where turbidity is greater than 50 NTUs then the groundwater samples for metals analysis, if required, will be field-filtered using a 0.45 micron (µm) in-line disposable filter. The aliquot for metals analysis will be preserved by adding a sufficient amount of concentrated nitric acid to maintain the sample at a pH of less than 2 standard units (SU).

If a peristaltic pump is used, a foot-valve will be placed on the bottom of the tubing prior to purging. When purging is complete, sampling containers (except VOCs) will be filled directly from the pump discharge line. At well locations where turbidity is greater than 50 NTUs then the groundwater samples for metals analysis will be field-filtered using a 0.45 µm in-line disposable filter. The aliquot for metals analysis will be preserved by adding a sufficient amount of concentrated nitric acid to maintain the sample at a pH of less than 2. The pump will then be turned off and the HDPE tubing will be disconnected from the pump. The VOC sampling vial will be filled by raising the tubing (with a foot-valve) from the well head and allowing the water to gently flow into the vial. The vial will be immediately capped such that no headspace or bubbles are present in the vial. This procedure ensures that the sample is representative of the purged interval and minimizes the potential for volatilization of VOCs, which may occur as a result of the pumping mechanism in the peristaltic pump.

The sample containers will be wiped dry and each sample container will be labeled. The sample number, date, time, location, depth, type of analysis, preservative, and sample collector's name will be recorded on the sample label. This information will also be recorded on the groundwater sampling data sheet along with a description of the physical appearance of the sample including color, clarity, suspended solids, and odor.

The samples will be placed in coolers with sufficient bagged ice or ice packs to maintain a temperature of 4EC during shipment. Sample vials for VOC analyses will be placed in resealable plastic bags prior to placement in the coolers. Quality assurance samples, including duplicates, equipment rinseate blanks, and trip blanks will be collected as necessary in accordance with the procedures described in Section 3.1 and the *QAPP*. The sample custody procedures for the groundwater samples are described in Section 4.0.

All data relating to weather conditions, time of collection, sampling method, field observation, sample location, and analysis will be recorded on a field sampling record or field notebook. A copy of a field sampling record is provided in Appendix A.

2.5 STAFF GAUGE MEASUREMENTS

In addition to groundwater elevation measurements, staff gauge measurements will be collected at the three staff gauging stations (Gauging Stations 1 through 3) in the canal spillway to help further evaluate the groundwater and surface water relationship. Some or all of the following equipment will be used to collect water level measurements.

- Electronic water level indicator with 0.01 feet graduations;
- Personal protective equipment (PPE);
- Disposable gloves;
- Distilled/deionized water; and
- Cleaning detergents and decontamination chemicals.

The staff gauge measurements will be measured from the marked surveyed elevation point and recorded to 0.01 foot in the field notebook or gauging form. Remark the surveyed elevation point as necessary with spray paint. The water level indicator will be decontaminated after each use with an Alconox/distilled water wash followed by a distilled water rinse. The gauging data will be recorded on a gauging form. A copy of a gauging form is provided in Appendix A.

2.6 INDOOR AIR INVESTIGATION

Indoor air samples may be collected within the building. Prior to sampling, the New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory Form will be completed for each area to be sampled. A copy of the Indoor Air Quality and Questionnaire and Building Inventory Form is provided in Appendix A.

Indoor and ambient air samples will be collected using a summa canister that is calibrated with a fixed-flow rate controller set by the laboratory, set to take in four to five liters of air over a designated period (e.g., 24 hours). Ambient blanks will be collected outside and upwind from the indoor air sampling locations. For indoor and ambient air samples, the summa canister will be placed at the breathing height and collected using the following procedures.

- Assign sample identification on the canister tag and record on the COC and summa canister sampling sheet.
- Remove the brass plug from the canister fitting and attach the precalibrated flow controller.
- Record canister serial number, sample identification, purge time, flow rate, PID readings, canister pressure, and sample start time on summa canister sampling sheet. If canister does not show a vacuum do not use.
- Assign sample identification on canister identification tag and record on COC.
- Take a digital photograph of canister set up and surrounding area.

At the end of the collection period, record gauge pressure and record end time on COC and close valve. A slight vacuum should remain in the canister, if the canister returns to ambient pressure the sample shouldn't be collected and the project manager will be contacted to discuss further action.

Quality assurance samples, including duplicates and ambient blanks will be collected as necessary in accordance with the procedures described in Section 3.1 and the *QAPP*.

3.0 QUALITY ASSURANCE FIELD PROCEDURES

This section describes the quality assurance procedures that will be followed while conducting the field investigation.

3.1 QUALITY ASSURANCE SAMPLES

As part of the quality assurance (QA) program, QA samples will be prepared and collected to provide control over the collection of environmental measurements and interpretation of the analytical data. Four types of QA samples will be prepared or collected: 1) field duplicate samples; 2) field (equipment rinseate) blanks; 3) ambient air blanks; and 4) trip blanks. Duplicate samples and field blanks will be prepared for all sampling parameters. Trip blanks will only be analyzed for VOCs when aqueous sampling for VOCs is conducted. The three types of QA samples are discussed in the following sections. In addition, matrix spike/matrix duplicates (MS/MSD) (organic analyses) or matrix spike/matrix duplicate (MS/MD) (inorganic analyses) samples will be collected in accordance with the *QAPP*.

3.1.1 Field Duplicate Samples

The analysis of blind duplicate samples provides a means of evaluating the relative precision of the sample collection and analytical procedures. An important factor in evaluating the analytical data from sample pairs is the homogeneity of the analyte within the sample matrix. Therefore, whenever possible, the field personnel will homogenize an aliquot from a discrete location or interval before the sample and duplicate are collected. However, in order to prevent the loss of VOCs, VOC samples must never be homogenized. In general, the handling of VOC samples will be minimized to preserve the physical integrity of the VOC fraction. Duplicate samples will be prepared for each sample matrix at a rate of one duplicate per twenty samples. Duplicates will be designated with fictitious sample identification following the format for field samples.

Duplicates of solid samples for VOC analysis will be obtained by alternately filling the sample containers for the sample and duplicate for VOC analysis with aliquots collected from the same discrete location or interval. Once samples for VOC analysis have been collected, the sample will be thoroughly homogenized. Following homogenization, the sample containers for the remaining parameters will be filled.

Duplicates of liquid samples will be obtained by alternately filling the sample and duplicate containers with aliquots of liquid collected with the same sampling device. VOC samples and duplicates will be collected first in order to minimize the potential for loss of VOCs. After the VOC samples are collected, any liquid remaining in the sampling device will be equally apportioned among all the sample containers. Upon retrieval of the next aliquot of liquid, the order in which the sample bottles are filled will change by one increment.

Duplicates of indoor air samples two summa canisters will be placed side by side and both summa canisters are to be opened and closed simultaneously.

3.1.2 Field and Equipment Rinseate Blanks

A field blank is used to test for potential contamination from ambient air. An equipment rinseate blank is used to test for potential contamination from sampling instruments used to collect and transfer samples from point of collection into sample containers. Field blanks will be collected at the discretion of the project manager. If re-usable equipment is used, equipment rinseate blanks will be collected at a rate of one per 20 samples per matrix.

A field blank is prepared by filling a sample container with analyte-free water from the laboratory. This container is then opened and exposed to the ambient atmosphere in the most contaminated area of the site. After this exposure, the field blank container is sealed and the field blank is then handled, transported, and analyzed in the same manner as the other analytical samples. Field blanks will be denoted as "FB" followed by the six digit date (i.e., FBYYYYMMDD).

Equipment rinseate blanks are prepared by passing laboratory-supplied analyte-free water (or the distilled/deionized water that is used for decontamination) through decontaminated sampling equipment and collecting it in an empty sample container for analysis. Note that it may be necessary for the lab to provide extra, full VOC vials to ensure sufficient volume of blank water to eliminate headspace. Rinseate blanks will be denoted with a "RB" followed by the six digit date (i.e.,: RBYYYYMMDD).

3.1.3 Trip Blanks

The primary purpose of a trip blank is to detect sources of VOC cross-contamination during shipment that might potentially influence VOC concentration values reported in actual samples. Thus, trip blanks serve as a mechanism of control on sample bottle preparation and blank water quality, as well as, sample handling. The trip blank is prepared by the laboratory and travels to the site with the empty sample bottles and back from the site with the collected samples in an effort to simulate sample handling conditions.

Contaminated trip blanks may indicate inadequate bottle cleaning or blank water of questionable quality. The following have been identified as potential sources of contamination:

- Laboratory reagent water;
- Sample containers;
- Cross contamination in shipment;
- Ambient air or contact with analytical instrumentation during preparation and analysis at the laboratory; and
- Laboratory reagents used in analytical procedures.

A trip blank consists of a set of sample bottles filled at the laboratory with analyte-free water. The trip blank and laboratory method blank water must originate from one common source and physical location within the laboratory. Trip blanks will be handled, transported, and analyzed in the same manner as the other analytical samples, except that the sample containers for the trip blanks will not be opened in the field. Trip blanks must return to the lab with the same set of bottles they accompanied to the field.

The trip blanks will be shipped and analyzed at a frequency of one trip blank per cooler per shipment of aqueous samples for VOC analysis. Trip blank sample identification consists of a "TB" followed by the six digit date (i.e.,: TBYYYYMMDD).

3.1.4 Ambient Air Blanks

Ambient air blanks can be collected by simply opening the summa canister valve for the designated 24 hour time frame upwind from the sampling locations.

3.2 FIELD EQUIPMENT CALIBRATION AND MAINTENANCE

Field equipment used during the investigation will be maintained and calibrated in accordance with the manufacturer's supplied equipment operation manuals. Equipment requiring calibration will be calibrated on a daily basis or according to the manufacturer's recommendations, whichever is more frequent.

Equipment that report erratic readings during use will be recalibrated. If erratic readings persist after recalibration, the equipment will be replaced with an equivalent model.

3.3 SAMPLING EQUIPMENT DECONTAMINATION PROCEDURES

Sampling equipment will be decontaminated in the laboratory or the field prior to site use and between sampling locations. The sampling device and equipment decontamination method will involve a non-phosphate detergent wash, tap water rinse, distilled/deionized water rinse, air drying, and a second distilled/deionized water rinse.

Drilling tools will be steam cleaned between each drilling location to prevent cross-contamination. A tap water rinse will be followed by another round of steam-cleaning. Decontamination will be conducted on the temporary decontamination pad constructed at the rear of the manufacturing buildings. The decontamination fluids will be containerized for proper off-site disposal by Pactiv.

Following well development and prior to sampling, the depth to groundwater in the new and existing wells will be measured using an electronic water level meter or interface probe. To avoid cross-contamination between wells, the water level meter or interface probe will be decontaminated after each use with an Alconox/distilled water wash followed by a distilled water rinse.

3.4 PROJECT FILES

Throughout the field investigation, URS field personnel will maintain field notebooks to document project activities. Each individual making an entry into a field notebook will date and sign their entry. The field notebook entries will contain accurate and inclusive information of the project activities. Only facts and observations will be written in the field notebooks.

In addition, URS field personnel will note all measurements, calculations, and data relating to location, date, time, weather conditions, and sample types directly on the appropriate field records.

Copies of field records, which include a soil boring log, a well development record, and a groundwater sampling data sheet, that will be completed in the field are provided in Appendix A.

Photographs may be taken during the field investigative activities. Each photograph will include a scale to show dimensions. All photographs will be labeled to include a description of the feature photographed, the location and depth (if applicable), and date the photograph was taken.

The field notebooks, field records, and photos will be maintained in the project files. The original (final) copies of the field sheets will be maintained by the field personnel and project manager in URS' office in Clifton Park, New York. The project manager will keep copies of all files while the project is active.

Other data files that will be maintained in the project files will include equipment calibration sheets, air monitoring records, analytical requests to subcontract laboratories, survey data, and chains of custody documentation.

Originals of the contract laboratory reports will be stored in the project files and maintained at the contracted laboratory. The laboratory analytical data will be entered into the laboratory's computer database. The data will be manipulated in order to achieve the quality assurance/quality control (QA/QC) and reporting requirements described in the *Quality Assurance Project Plan*. The laboratory will provide URS with a hard copy and electronic copy of the analytical data.

4.0 SAMPLE HANDLING AND CUSTODY

All samples will be collected and handled in a manner such that sample agitation, cross-contamination, and contact with the atmosphere is reduced or kept to minimum. Field personnel will wear new disposable gloves when collecting and handling samples, and will change gloves between sampling locations.

Sample chain of custody will be initiated by the laboratory with the selection and preparation of the sample containers. To reduce the chance for error, the number of personnel assuming custody of the sample and sample containers will be held to a minimum. Personnel involved in the chain of custody and transfer of samples will be briefed on the procedures and their purposes prior to the initiation of sampling.

4.1 FIELD SAMPLE CUSTODY

A Chain of Custody (COC) form will accompany the sample from initial sample container selection and preparation commencing at the laboratory, to the field for sample containment and preservation, through its return to the laboratory.

The Project Manager will notify the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival. Sample shipping containers (coolers or "shuttles") will be provided by the laboratory. The shipping containers will be insulated. All sample bottles within each shipping container will be individually labeled for identification.

The labels will include the following information:

- Site name;
- Sample number;
- Name of collector;
- Date and time of collection;
- Place of collection;
- Type of sample;
- Sample volume;
- Analyses required; and
- Preservative (if used).

If a sample shipping container has been assigned a unique identification number by the laboratory, then this number will be recorded on the COC.

Personnel receiving the sample containers will check each cooler for the integrity of the seals. Coolers or shuttles with broken seals will be returned to the laboratory, and the sample containers will not be used. The receiving personnel will break the seal, inspect the contents for breakage, and record and sign on the COC form that the sample containers have been received. A temporary seal will be affixed to each cooler until the sample containers are filled.

Sample Location Designation

This section describes the procedure for identifying each soil boring location, monitoring well location, sediment sampling location, and indoor air sampling location.

Each soil boring advanced using a conventional drill rig will be designated by a "MSB." Each soil boring advanced using a Geoprobe will be designated by a "MGP." The two digit year and number will follow the "MSB" or "MGP" name to associate the boring with a specific location. For example, soil boring number 3 advanced in 2004 will be identified as MSB-04-03.

The proposed well names for the overburden monitoring wells have been designated by a "MMW" followed by a number.

Indoor air sample locations will be denoted with a "MIA," followed by a number. The ambient air sample location will be denoted with "MAA" followed by a number.

Sample Designation

Each subsurface soil sample collected from a soil boring location will be identified using the following code: MSB-YY-ZZ (TT-BB) where:

MSB = soil boring;
TT= the starting depth (feet) of the interval from which the sample was collected;
BB = the end depth (feet) of the interval from which the sample was collected;
YY = the two digit year; and
ZZ = the boring location number.

For example, a subsurface soil sample collected from 8-10 feet from soil boring MSB-04-24 would be coded MSB-04-24 (08-10).

Groundwater samples will be identified by using the following code: MMW-ZZ (MM/DD/YYYY) where,

MMW-ZZ = location number.
MM/DD/YYYY = sample date.

For example, a groundwater sample to be collected from the well MMW-03 on January 1, 2004 will be coded MMW-03 (01/01/2004).

Each indoor air sample will be identified using the following code: MIA-YY-ZZ (MM/DD/YYYY) where:

MIA = indoor air sample;
MM/DD/YYYY = date sample collected; and
ZZ = the sample location number.

For example, an indoor air sample collected from surface water sampling location MIA-04-01 on January 1, 2004 would be coded MIA-04-01 (01/01/2004).

Ambient air samples will be identified using the following code: MAA-YY-ZZ (MM/DD/YYYY) where:

MAA = ambient air sample;
MM/DD/YYYY = date sample collected; and
ZZ = the sample location number.

For example, an indoor air sample collected from sampling location MAA-04-01 on January 1, 2004 would be coded MAA-04-01 (01/01/2004).

QC samples can be coded using this same system and simply adding a MS, MSD, or MD (for matrix spike, matrix spike duplicate, or matrix duplicate) to the end of the code. Blind duplicates can be coded using this system with a fictitious location number. The locations of each blind duplicate will be recorded in its respective the field sampling sheet.

Once the sample containers are filled, the samples will be immediately preserved, as required and stored at 4°C until delivered to the laboratory. Preservation requirements are provided in Table 1. The samples will be kept cool at 4°C using insulated containers containing sufficient ice or ice packs. If ice is used, the ice will be double-bagged at a minimum. VOC sample jars will be placed in resealable plastic bags prior to placement in coolers. The field sampler will indicate sample designation/location number in the spaces provided on the appropriate COC for each sample of water or soil. The COC will be signed and placed in the cooler. The cooler will be sealed. The samples will be delivered to the laboratory no later than 24 hours after sample collection.

If samples are split and sent to different laboratories, a copy of the COC will accompany the replicate sample. The original COC will accompany the sample for the primary laboratory. The "remarks" column of the COC will be used to record specific considerations associated with sample acquisition such as: sample type, container type, sample preservation methods, and analyses to be performed. The laboratory will maintain on file the completed original forms. Copies will be submitted as a part of the final analytical report.

The specific analyses for each sample are outlined in the workplan. Samples will be collected according to the procedures in this *FSP*. Samples will be hand-delivered or shipped in coolers with sufficient packing material and ice to insure that samples arrive at the laboratory intact, below 4EC, and within 18 hours of shipping.

4.2 LABORATORY SAMPLE CUSTODY

Receipt, storage, and tracking of samples submitted to the laboratory must be conducted according to NYSDEC ASP protocol to prevent sample contamination or loss, as well as, the production of invalid laboratory data as a result of sample deterioration or tampering.

5.0 REFERENCES

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TABLES

TABLE 1
ANALYTICAL METHODS, SAMPLE CONTAINERS AND PERSERVATION REQUIREMENTS, AND ANALYTICAL HOLDING TIMES

PACTIV CORPORATION
MACEDON FILMS SITE
MACEDON, NEW YORK

Analysis	Container	Preservation	Holding time
FIELD MEASUREMENTS			
Field pH	Flow-cell	N/A	Immediate
Dissolved Oxygen	Flow-cell	N/A	Immediate
Oxidation-reduction potential	Flow-cell	N/A	Immediate
Temperature	Flow-cell	N/A	Immediate
Specific conductivity	Flow-cell	N/A	Immediate
Turbidity	Flow-cell	N/A	Immediate
LAB MEASUREMENTS			
Aqueous Samples			
VOCs (EPA Method 8260B)	Three 40 ml septa vials, Glass	HCl to pH < 2, Cool 4 ^{o}C	Analyze within 10 days (7 days if not preserved with HCl)
SVOCs (EPA Method 8270C)	Two 1-Liter Glass	Cool 4 ^{o}C	Extract within five days; analyze within 40 days
Metals (EPA Method 6010B/7470A)	32 oz., Plastic	HNO_3 to pH < 2, Cool 4 ^{o}C	Analyze within 6 months (Mercury - 26 days)
Solid Samples			
VOCs (EPA Method 8260B)	4 oz. Glass jar, Teflon cap	Cool 4 ^{o}C	Analyze within 10 days.
SVOCs (EPA Method 8270C)	1-6oz. Glass jar, Teflon cap	Cool 4 ^{o}C	Extract within 5 days; analyze within 40 days.
Metals (EPA Method 6010B/7471A)	1-6oz. Glass jar, Teflon cap	Cool 4 ^{o}C	Analyze within 6 months (Mercury - 26 days)
Air Samples			
VOCs (EPA Method TO-14A)	6 Liter Summa Canister	--	Analyze within 30 days.

Notes:
VOCs indicates Volatile Organic Compounds
SVOCs indicates Semivolatile organic compounds
Holding times from validated time of sample receipt (VTSR) at the laboratory, except for method TO-14A, which is from time of sample collection.

APPENDIX A

FIELD FORMS

Well Development Record

Project:______________________________
Contractor:____________________________
Field Personnel:________________________
Project No.____________________________
Method of Development:________________

Site Location:__________________________
Well No.______________________________

Date	Weather / Temp.	Time	Static Water Level	pH (units)	Temp (°C)	Conductivity (umhos)	NTU	Appearance / Odor, etc.	Notes: Gallons removed, etc.

WATER LEVEL FIELD DATA SHEET

Project: ______________________________ Field Personnel

Date: ______________________________ ____________________

WELL #	TIME	DEPTH TO WATER	INSTRUMENT	NOTES

URS

URS Corporation - New York
28 Corporate Drive, Suite 200
Clifton Park, New York 12065
Tel. 518.688.0015
Fax 518.688.0022

DAILY FIELD RECORD

Project:______________________________ Date:________________________
Client:_______________________________ Contractor:___________________

From	To	Productive Hours	Activity/Comments
Total Productive Hours			LEVEL B / LEVEL C / LEVEL D (circle selection)

LABOR		**MATERIALS/SUPPLIES**	
UNITS	ACTIVITY	UNITS	ITEM

WEATHER:

____________________________________ URS ON-SITE COORDINATOR	____________________________________ CONTRACTOR REPRESENTATIVE

FIELD PARAMETER METER CALIBRATION SHEET

Instrument Model________________ Equipment #_________________

Project#__________________ Project Name______________________

Date	Initials	Battery	pH	Conductivity	Dissolved Oxygen	ORP	Turbidity	Comments
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	
			1 2 3 Point List Standards	1 2 3 Point List Standards	Barometer Zero Check (Y/N)	Checked (Y/N) Reading______ Calibrated (Y/N)	Standard Used:	

FIELD PARAMETER METER CALIBRATION SHEET

Project#____________________ Project Name________________________

Meter 1: __________________ Equipment #___________________
Meter 2: __________________ Equipment #___________________
Meter 3: __________________ Equipment #___________________
Meter 4:__________________ Equipment #___________________

Date	Initials	Meter 1	Meter 2	Meter 3	Meter 4	Comments
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	
		pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	pH SC Temp DO ORP Turb Other	

DISSOLVED OXYGEN SATURATION LIMIT VERSUS TEMPERATURE

T (^oF)	T(^oC)	O_2 Solubility (mg/L)
32	0	14.6
41	5	12.8
50	10	11.3
59	15	10.1
68	20	9.1
77	25	8.3
86	30	7.6
95	35	6.9
104	40	6.4

Dissolved oxygen saturation limit represents the maximum concentration expected (100% saturation). Only under extremely rare field conditions can DO be greater than the solubility.

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: ___________

Field Personnel:

____

____

Date: ______________________

Job No.: ______________________

Location: ______________________

Total Well Depth (from top of casing): ___________ feet

Depth to Water Surface Before Purging (from top of casing): - ___________ feet

Height of Water Column: a = ___________ feet

Screen Length b ___________ feet

Lesser of a and b ___________

Well Diameter (d): ___________ inches Gals per ft: (d^2 x 0.0408) = x ___________

One Wetted Screen Volume of Water Before Purging: = ___________ gallons or ___________ liters

Volume of Water Equal to three wetted screen volumes volumes: ___________ gallons or ___________ liters
(Wetted Screen Volume multiplied by 5.0) (1 gallon = 3.785 liters)

Purging Method: Bladder Pump/Waterra Pump/Peristaltic Pump Meter #___________________

Time	Volume Purged (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
Stabilization Criteria*		Drawdown < 0.3 feet	+/- 10%	+/-0.1 °C	+/- 0.1 SU	+/- 10%	+/- 10 mV	+/- 10%

Total Volume of Water Purged: ______________ gallons/liters

Sampling Data: - Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: ______________ feet
- Color: Odor: Sheen/Appearance:

Notes:

____

____

____

____

____

____

* - Based on three consecutive readings collected at five minute intervals. Minimum of 30 minutes of purging, maximum of five wetted screen volumes.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

WELL NO: ___________

Page ____ of _____

Field Personnel: ____________________

Date: ____________________

Time	Well Volumes (Gallons / Liters)	Depth to Water (feet)	SC (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)

Total Volume of Water Purged: ______________ gallons/liters

Notes:

URS

SURFACE WATER/SEDIMENT
SAMPLE RECORD

JOB No.: ____________________ Job Name: ___________________ Date: ______________

Location: ____________________ Samplers ____________________ Time: ______________

SAMPLE LOCATION: _______ ___________________________

SAMPLE ID: ________________ ___________________________

SAMPLE MATRIX (Circle One): Sediment / Surface Water

SAMPLE METHOD (Circle One): SW - Direct Fill / Dipper / Other _________
Sediment – Core / Dredge / Other _________

SAMPLE TYPE (Circle One): Point / Grab / Composite

SAMPLE DESCRIPTION:

FIELD TEST:	VALUE:
Temperature (°C/°F)	________________________
PH	________________________
Conductivity (umhos/cm)	________________________
Turbidity (NTU)	________________________
Dissolved Oxygen (mg/L)	________________________
ORP (mV)	________________________
Other	________________________

WEATHER: ____

COMMENTS ____

URS

Client____________________
Site____________________
Project____________________
Job Number____________________

SLUG TEST FIELD DATA

Test Number ________________ Well Number ______________

Field Crew _______________ Date _______________
____

Weather ____

Type of Slug _____________________ Volume _______________

Water Level Monitoring Transducer / Solinst (circle one) Instrument #___________

Time started _______________ Initial Displacement _______________

Static Depth to Water _________

Data File Name _________

Method of Transfer to Office __________ Date of Transfer to Office __________

TIME	STATIC	FALLING	RISING	COMMENTS

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LOCATION OF BORING	JOB NO.	CLIENT	LOCATION

DRILLING METHOD:

SAMPLING METHOD:

BORING NO.	
SHEET OF	
DRILLING	
START	FINISH
TIME	TIME
DATE	DATE

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DATUM

ELEVATION

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS:
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

DRILLING CONTR. ____

BY ____ DATE ____ CHK'D BY ____

5.1 (3) (REV. 11-88)

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH ASSESSMENT
BUREAU OF TOXIC SUBSTANCE ASSESSMENT

INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

This form must be completed for each residence involved in indoor air testing.

Preparer's Name ______________________ Date Prepared __________

Preparer's Affiliation ______________________ Phone No.__________

1. **OCCUPANT**

Name: ______________________

Address: ______________________

____

County: ______________________

Home Phone No. __________Office Phone No __________

2. **OWNER OR LANDLORD**: (If different than occupant)

Name: ______________________

Address: ______________________

____

Phone No. ______________________

A. Building Construction Characteristics

Type (circle appropriate responses): Single Family Multiple Dwelling Commercial

Ranch	2-Family
Raised Ranch	Duplex
Split Level	Apartment House ______ Units
Colonial	Number of floors ______
Mobile Home	Other specify ____________

Residence Age ______ General Description of Building Construction Materials ____________

____

Is the building insulated? Yes / No How air tight is the building ____________________

OSR-3 (continued)

B. Basement construction characteristics (circle all that apply):

1. Full basement, crawlspace, slab on grade, other _________
2. Basement floor: concrete, dirt, other __________
3. Concrete floor: unsealed, painted, covered; with _________
4. Foundation walls: poured concrete, block, laid up stone, other _________
5. The basement is: wet, damp, dry _______Sump present? y / n _____Water in sump? y / n ____
6. The basement is: finished, unfinished _______________
7. Identify potential soil vapor entry points (e.g., cracks, utility ports etc.)

   ____

8. Describe how air tight the basement is ____

   ____

C. HVAC (circle all that apply):

1. The type of heating system(s) used in this residence is/are:

Hot Air Circulation	Heat Pump
Hot Water Radiation	Unvented Kerosene Heater
Steam Radiation	Wood stove
Electric Baseboard	Other (specify) ______________________________

2. The type(s) of fuel(s) used is/are: Natural Gas, Fuel Oil, Electric, Wood Coal Solar

   Other (specify) ______________________________.

3. Is the heating system's power plant located in the basement or another area: ________________.
4. Is there air-conditioning? Yes / No Central Air or Window Units?

   Specify the location _____________________________

5. Are there air distribution ducts present? Yes / No
6. Describe the supply and cold air return duct work in the basement including whether there is a cold air return, the tightness of duct joints

   ____

   ____

OSR-3 (continued)

D. Potential Indoor Sources of Pollution

1. Has the house ever had a fire? Yes / No
2. Is there an attached garage? Yes / No
3. Is a vehicle normally parked in the garage? Yes / No
4. Is there a kerosene heater present? Yes / No
5. Is there a workshop, hobby or craft area in the residence? Yes / No
6. An inventory of all products used or stored in the home should be performed. Any products that contain volatile organic compounds or chemicals similar to the target compounds should be listed. The attached product inventory form should be used for this purpose.
7. Is there a kitchen exhaust fan? Yes / No Where is it vented? ____________________
8. Has the house ever been fumigated? If yes describe date, type and location of treatment. ____

E. Water and Sewage (Circle the appropriate response)

Source of Water

Public Water Drilled Well Driven Well Dug Well Other (Specify) _____________

Water Well Specifications:

Well Diameter __________________________ Grouted or Ungrouted _____________

Well Depth ____________________________ Type of Storage Tank ______________

Depth to Bedrock _______________________ Size of Storage Tank _______________

Feet of Casing __________________________ Describe type(s) of Treatment _______

____

Water Quality:

Taste and/or odor problems? y / n If so, describe ____

How long has the taste and/or odor been present? _______________________________________

Sewage Disposal: Public Sewer Septic Tank Leach Field Other (Specify) ____________________

Distance from well to septic system ________ Type of septic tank additive ________________

OSR-3 (continued)

F. Plan View

Draw a plan view sketch for each floor of the residence and if applicable, indicate air sampling locations, possible indoor air pollution sources and PID meter readings.

OSR-3 (continued)

G. Potential Outdoor Sources of Pollution

Draw a sketch of the area surrounding the residence being sampled. If applicable, provide information on the spill location (if known), potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system if applicable, and a qualifying statement to help locate the site on a topographical map.

Household Products Inventory

Occupant / residence ____

Investigator: ______________________ Date: _______________

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading

Household Products Inventory

Occupant / residence ______________________________

Investigator: ____________________ Date: ______________

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading