

August 31, 2004

Mr. Scott Haitz  
Environmental Strategies Corporation  
11911 Freedom Drive  
Reston, Virginia 20190

Re: Emerson Power Transmission  
Ithaca, N.Y.  
Site # 7-55-010  
August 2, 2004 Indoor Air Assessment Work Plan

Dear Mr. Haitz:

The New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC) has reviewed the above-referenced document. The work plan is considered approved contingent that the following comments are agreed to and implemented.

- 1) **Please use micrograms per cubic meter (mcg/cu.m. or mcg/m<sup>3</sup>) for reporting of air and soil gas results. Internal guidance numbers are in these units and it will make communication much less confusing for all parties.**
  
- 2) **Detection limits @ VP-1 from the June 2004 vadose zone sampling, where all analytes reported were 'U', were too high for analytes of concern, especially TCE and vinyl chloride. Where a single analyte was detected, for example VP-7, detection limits for other VOCs were too high. That 120 mcg/m<sup>3</sup> of 1,1,1-TCA was detected is important; however, the TCE concentration at that same point may be more important from a health standpoint and its detection limit was 75 mcg/m<sup>3</sup>; much higher than we would wish to see. Upcoming sampling events need lower detection limits in the proposed subslab, indoor air, and ambient air samples. Additional standards must be calibrated so that a determination as to the nature of the interferences causing elevated detection limits can be made. Elevated detection limits may result in repeating sample events at the same location(s).**
  
- 3) **All the VOCs detected in any of the samples must be reported to provide more information about interference that other compounds may be causing.**

- 4) **ALL VOCs detectable by EPA TO-15 shall be reported.**
  
- 5) **Based on historical observations provided and concerns expressed at the public session held on August 4<sup>th</sup>, the locations to be sampled need to be expanded. Several properties along S. Albany St., Wood St., S. Geneva St. and Turner Place must be added to the sampling plan. There is concern that the area around VP-1 and VP-2 is impacted. There are historical reports of oil discharges down Turner Place and this area must be added to the sampling plan. Additional sampling locations are depicted on the attached map. (Attachment 1)**
  
- 6) **Ambient air must be monitored in four general areas during indoor air sampling events in these areas.** The areas are as follows: the Turner Place area, the area near the intersection of South Hill Terrace and South Cayuga Street, the lower portion of South Cayuga Street near the intersection with Spencer Street, and the area of South Geneva Street and Wood Street. These locations are noted on the attached map. (Attachment 1)
  
- 7) **Re: Section 4.0 Proposed Scope of Work. NYSDOH's Indoor Air & Analysis Sampling Guide stipulates that subslab, basement, and first floor air samples be collected at each residence. Given site-specific geology and historical data, these sample locations must be added to the work plan. In the event there is no apparent vapor barrier or floor slab, see comment 8 below.**
  
- 8) **The subslab sample shall be taken in close proximity, time wise, with the other indoor air samples and the ambient air samples to minimize disruption to the residents and provide concurrent, more meaningful data.**
  
- 9) **Based on the results of the presampling inspection/interview, a determination will be made by the NYSDOH whether Emerson will be required to obtain a subsurface vadose sample from those basements without a vapor barrier. If it is deemed necessary to collect soil vapor samples from these locations, a subfloor vadose sample should be obtained one to two feet below the surface of the dirt floor in lieu of the subslab sample. A tracer gas must be used to evaluate possible short circuiting of ambient air into the sampling container.**
  
- 10) **Re: Sections 4.1.2 and 4.2.1 Emerson must follow the entire NYSDOH guidance (Attachment 2). Of specific concern is the product inventory on all floors sampled, inventory form, resident's do's and don'ts, analyses detection limits and methods and the presampling inspection and sampling of homes. Environmental Strategies Consulting LLC's understanding of "ambient, normal use conditions" is contrary to the NYSDOH guidance. The NYSDOH guidance must be followed for the presampling inspection and preparation of the homes. Products not containing VOCs may also influence detection limits and should also be included in the inventory. Household products that may influence indoor air quality may be found in bathrooms and other locations. The residents should be notified of the recommendations listed on the first and second pages of the guidance well in advance of the sampling so that they may follow them. Guidance concerning ventilation and use of certain household products should be provided to the residents.**

- 11) **In order that consistency on sample frequency, ambient air and QA/QC goals be met, attached please find additional guidance in relation to slab with or without a barrier, ambient air and QA/QC. (Attachment 3) A Data Usability Summary Report (DUSR) must be included with the sample analysis results. Attached is guidance on developing a DUSR. (Attachment 4)**
- 12) **All VOCs detected by the laboratory should be reported for all samples.**
- 13) **A site specific Health and Safety plan is required for this work.**
- 14) **Additional vadose zone monitoring points must be installed to the south and west of South Albany and South Titus streets to more fully define vapor migration. There should be three to five additional points and they can be field-sited in cooperation with the NYSDEC to further define off site concerns.**
- 15) **Water samples must be taken from the reported artesian wells at 212 Wood Street and the slab flow reported at 222 Wood Street. They must be analyzed by EPA method 8260 and 8270. Please call for contact information at these two residences.**

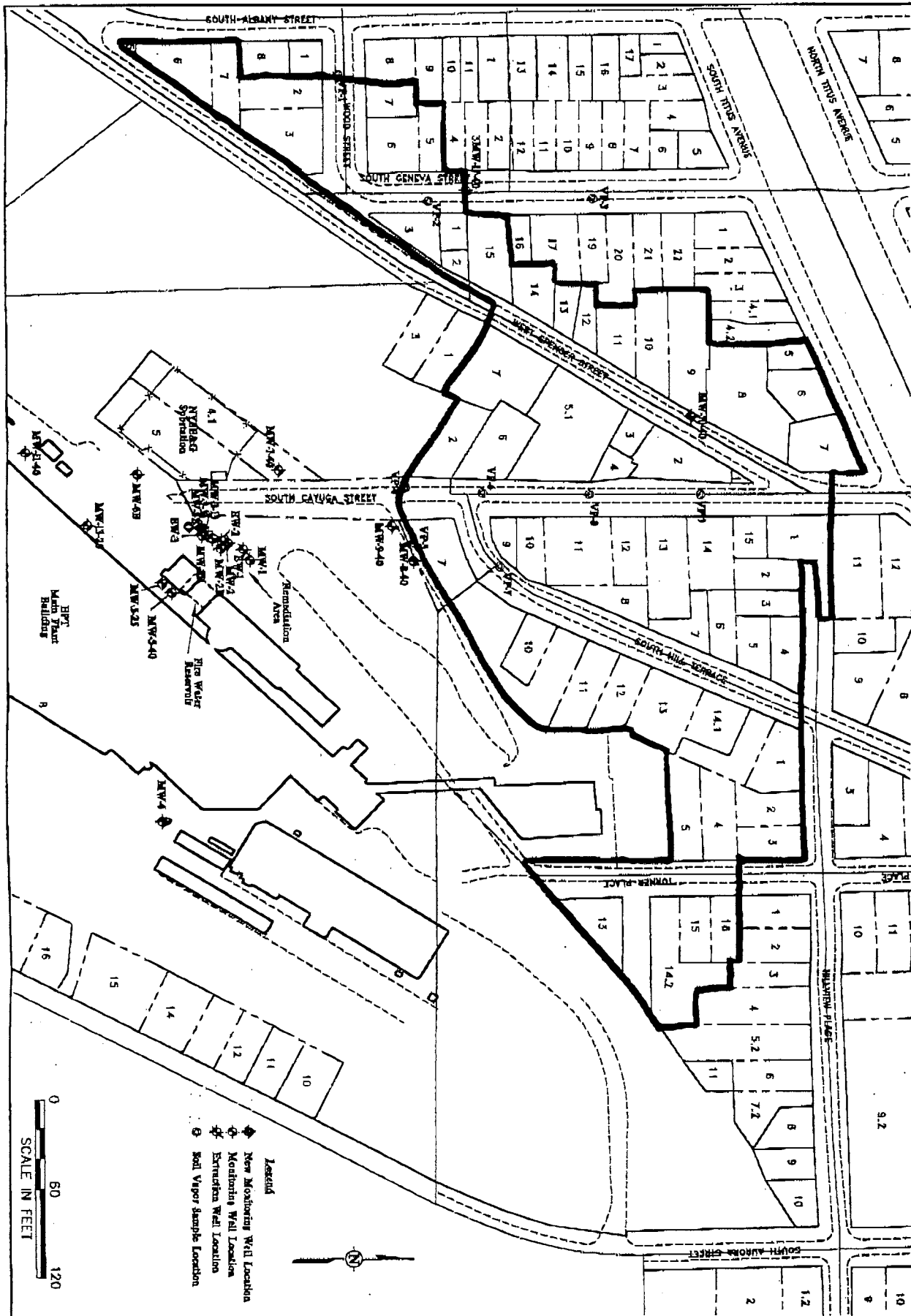
As noted, the above-referenced work plan is approved contingent on including the above technical comments. Project work can begin upon agreement with the NYSDOH and NYSDEC on the above items. Please provide a brief written notification of your concurrence with these comments via FAX at 315- 426-7408. Notify this office at least five business days in advance of commencing field work. If there are any questions, please contact this office at 315-426-7525.

Sincerely,

Carl S Cuipyllo  
Engineering Geologist

attachments

cc: Henri Hamel w/attachments  
Geoff Laccetti w/attachments  
Mary Jane Peachey w/attachments  
Stephan Maybee w/attachments  
James Burke w/attachments  
Tompkins County Public Library w/attachments



# Attachment 1

Emerson Power Transmission  
Ithaca, New York

DATE: 8/31/04

## ATTACHMENT 2

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

#### **INDOOR AIR SAMPLING & ANALYSIS GUIDANCE** **August 8, 2001**

#### **SCOPE:**

Air testing for specific chemical compounds can be performed to determine whether petroleum spills or other contaminant sources affect indoor air quality. This document provides guidance for preparing sites and collecting samples for laboratory analysis to ensure the integrity of the test results and allow for meaningful interpretation of the data.

Forms (attached)    - Indoor Air Quality Questionnaire and Building Inventory Form  
                              - Product Inventory Form

#### **OBJECTIVE:**

The purpose of this document is to outline the recommended procedure for testing indoor air for volatile organic chemicals (VOCs). The procedure includes pre-sampling inspection and preparation of homes, product inventories, collection of samples, analytical method selection.

#### **1. Pre-sampling inspection and preparation of homes:**

A pre-sampling inspection should be performed 2 or 3 days prior to testing (if possible) to evaluate the type of structure, floor layout and physical conditions of the building(s) being studied and to identify and minimize conditions that may affect or interfere with the proposed testing. This information along with information on sources of potential indoor contamination should be identified on the building inventory form. Portable organic vapor monitoring equipment (i.e. photoionization detectors (PIDs)) can be used to help evaluate potential interferences. Items to be included in the building inventory include use or storage of petroleum products including gasoline operated equipment, unvented kerosene heaters, recent use of petroleum based finishes or products containing petroleum distillates. Potential interferences should be corrected during the pre-sampling inspection. Removing the source from the indoor environment prior to testing is the most effective means of reducing the interference. Ensuring that containers are tightly sealed may be acceptable, but should be tested with a PID to demonstrate that the seal is tight. The inability to eliminate potential interference may be justification for not testing. Once these interfering conditions are corrected, aggressive ventilation may be needed prior to testing to eliminate residual contamination.

Any ventilation should be done twenty-four hours or more prior to the scheduled sampling time. If ventilation is deemed necessary, ventilate the house by opening windows and doors for at least 10 to 15 minutes. House ventilation should be avoided 24 hours prior to and during testing. During colder months, heating systems should be operating for at least twenty-four hours prior to the scheduled sampling time to maintain normal indoor temperatures above 65<sup>o</sup> F before and during sampling.

## **FOR 24 HOURS PRIOR TO SAMPLING, DO NOT**

- open any windows, fireplace dampers, openings or vents,
- operate ventilation fans unless special arrangements are made,
- smoke in the house,
- paint,
- use wood stove, fireplace or other auxiliary heating equipment, (eg. kerosene heater),
- operate or store automobile in attached garage,
- allow containers of gasoline or oil to remain within the house or garage area, except for fuel oil tanks,
- clean, wax or polish furniture or floors with petroleum or oil-based products,
- use air fresheners or odor eliminators,
- engage in any hobbies which use materials containing volatile organic chemicals,
- use cosmetics: including hairspray, nail polish, nail polish removers, perfume/cologne, etc.
- apply pesticides.

### **2. Product Inventories:**

Some household products contain volatile organic chemicals (VOCs) which can contribute to levels of VOCs in air. Products in buildings should be inventoried every time air is tested to provide an accurate assessment of the potential contribution of VOCs. Each room in the building should be inspected and products that contain VOCs should be listed on the Products Inventory Form along with PID readings obtained near the container. If available, the volatile ingredients should be recorded for each product. If the ingredients are not listed on the label, record the manufacturer's name and address or phone number if available.

### **3. Collection of Samples**

To characterize contaminant concentration trends and potential exposures, air samples should be collected from the basement, first floor living space, and from outdoors. In settings with diurnal occupancy patterns such as schools and office buildings, samples should be collected during normally occupied periods to be representative of typical exposure. Sample collection intakes should be approximately three feet above the floor level to represent breathing zones. To ensure that air is representative of the locations sampled and to avoid undue influence from sampling personnel, samples should be collected for 2 to 8 hours, but at least a one-hour period and personnel should avoid lingering in the immediate area of the sampling device while samples are being collected. Sample collection techniques vary depending on the analytical method(s) being used and sample flow rates must conform to the specifications in the sample collection method. Some methods require collecting samples in duplicate. Sampling personnel should be completely familiar with the sampling protocol for the particular method being used.

#### **a. Quality Assurance/Quality Control**

Extreme care should be taken during all aspects of sample collection to ensure that high quality data are obtained. The laboratory should use only certified clean sample collection devices. The sampling team members should avoid actions which cause sample interference such as pumping gas prior to testing or using permanent marking pens in the field. Once samples are collected, they should be stored according to the method protocol and delivered to the analytical laboratory as soon as possible. Samples should not exceed recommended holding times prior to being processed by the laboratory. Blanks should be submitted and analyzed with the samples to provide a quality check. Laboratory procedures for sample accession and chain of custody should be followed.

**b. Sampling Information**

Detailed information must be gathered at the time of sampling to document conditions during sampling to aid in interpretation of the test results. The information should be recorded on the building inventory form. Floor plan sketches should be drawn for each floor and should include the floor layout with sample locations, any chemical storage areas, garages, doorways, stairways, location of basement sumps and any other pertinent information including compass orientation (north). Outdoor plot sketches should include the building site, area streets, outdoor sample location, the location of potential interferences (such as gas stations, factories, lawn mowers), wind direction and magnetic orientation (north). In addition, any pertinent observations such as odors and PID readings should be recorded on the building inventory form and on associated sample accession forms.

The products inventory shall include those items discussed in Section 2.

**c. Sample Analysis**

New York State Law requires laboratories analyzing environmental samples from New York State to have current Environmental Laboratory Approval Program (ELAP) certification for certain contaminant categories and media (air, water, solid waste).

The goal of indoor air sampling is to evaluate exposure to VOCs by measuring levels low enough to compare to background indoor air levels. Therefore, the samples must be analyzed by methods that can achieve minimum detection limits of at least one part per billion (ppb) (1 to 7 micrograms per cubic meter (mcg/m<sup>3</sup>) depending on the molecular weight for each compound). Several analytical methods for VOCs in air are capable of achieving these detection limits including Environmental Protection Agency (EPA) Method TO-14A/TO-15 and EPA Method TO-1/TO-2. Prior to choosing an analytical method, the laboratory should verify they are capable of detecting target compounds.

Petroleum is a mixture of many individual compounds. Various petroleum products (i.e. gasoline, diesel, fuel oil) have different chemical constituents and specific aromatic and aliphatic compounds can be good indicators for individual petroleum products. Analytical methods using a mass spectrometer detector allow for the identification of aromatic and aliphatic hydrocarbons, and oxygenated compounds such as ethanol, acetone and methyl tertiary butyl ether (MTBE).

Target compounds for gasoline may include the aromatics: benzene, toluene, ethylbenzene and xylenes; C-4 to C-8 straight and branched aliphatics; and the oxygenate additive MTBE.

Target compounds for fuel oil may include the aromatics: benzene, toluene, ethylbenzene, xylenes, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, sec-butylbenzene and tert-butylbenzene; and C-9 to C-12 straight and branched aliphatic hydrocarbons.

Sampling for other potential contaminants may involve different target compound(s) and different analytical methodology.

For additional information contact Mr. Gerry McDonald or Mr. Michael Hughes of the Bureau of Toxic Substance Assessment (518) 402-7810.

**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. \_\_\_\_\_

**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 \_\_\_\_\_  
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) \_\_\_\_\_.

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 Ungouted \_\_\_\_\_  
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.**



## ATTACHMENT 3

### Substructure Soil Gas Sampling

Sub-slab soil gas samples will be obtained by a sampling port through a vapor barrier such as a floor slab or plastic liner. The procedures for subsurface soil gas collection will be dependent on construction of the basement area. In general, in homes with a crawl space or basement without an apparent vapor barrier, sub-slab samples will be collected at the discretion of the NYSDOH. For homes with an apparent vapor barrier, samples will be collected as a short-term duration (approximately one hour) grab sample in close proximity, time wise, to the collection of the indoor air sample. Prior to sampling, an occupant/owner interview and building survey must be performed to determine if an apparent vapor barrier exists.

Selection and preparation of a sample collection point will be performed by observing the condition of the building floor slab for apparent penetrations such as concrete floor cracks, floor drains, or sump holes. The floor conditions will be noted and a potential location for a temporary or permanent subsurface probe will be selected. The location should be central to the building away from the foundation walls and apparent penetrations. The proposed location will be reviewed with the occupant/owner and a description will be given of how the sampling will be performed. After receiving permission for sampling, from the occupant/owner, the location of sampling will be marked, documented and photographed.

Using a PID and a FID, indoor air and penetrations such as concrete floor cracks, floor drains, and sump holes will be screened. PID and FID readings will be recorded. If practicable, features such as floor drains or sumps should be sealed during the collection of the subsurface sample.

The following sampling preparation procedure is to be followed:

1. Drill a 1" diameter hole about 1" into the concrete using an electric hammer drill. Extend the hole through the remaining thickness of the slab using a 3/8" drill bit. Extend the hole about 3" into the sub-slab material using either a drill bit or a steel probe rod.
2. Insert a section of 3/8" O.D., 1/4" I.D. Teflon-line polyethylene tubing to the bottom of the floor slab.
3. Seal the annular space between the 1" hole and the 3/8" tubing by seating a tapered laboratory-grade silicone rubber plug perforated with a 3/8" hole into the hole and capping the stopper with a beeswax seal, if necessary.
4. Connect the tubing to a Teflon lined air sampling pump with a polyethylene discharge tubing. Purge approximately 1 liter of gas from the subsurface probe using the air sampling pump. The sampling pump discharge should be collected in a 1 liter Tedlar bag and screened using the PID and FID.
5. Disconnect the air sampling pump and plug the end of the tubing.

For preparation of the SUMMA<sup>®</sup> cannister and collection of the sample, the following procedure is to be followed:

1. Place SUMMA<sup>®</sup> cannister adjacent to subsurface probe.
2. Record SUMMA<sup>®</sup> cannister serial number on the chain of custody (COC).
3. Assign sample identification on cannister I.D. tag and record on COC.
4. Remove brass plug from cannister fitting.
5. Install pressure gauge/metering valve on cannister valve fitting.
6. Open and close cannister valve.
7. Record gauge pressure. Gauge pressure must read > 25" of Hg.
8. Remove brass plug from gauge and install particulate filter onto metering valve input.
1. Connect subsurface probe to end of in-line particulate filter.
10. Open cannister valve to initiate sample collection.
11. Take digital photograph of cannister setup and surrounding area.
12. Record local time on COC.

Procedure for termination of sample collection:

1. At end of sample collection period, record gauge pressure.
2. Record local time on COC.
3. Close cannister valve.
4. Disconnect polyethylene tubing and remove particulate filter and pressure gauge from cannister.
5. Install brass plug on cannister.
6. Remove temporary subsurface probe and properly seal hole in the slab.

For samples collected from a crawl space or basement without an apparent vapor barrier, the cannister will be placed at breathing zone height, or in a crawl space, about one to three feet above the floor. In general, areas near windows or other potential sources of air currents (drafts), and air supply vents should be avoided. All other sample procedures must be performed as described above for sub-slab sampling.

### **Indoor Air Sampling**

For indoor air sampling follow the sampling procedure for a basement without an apparent vapor barrier (See the paragraph above).

### **Ambient Air**

Ambient air samples are to be collected daily during the sampling of the implants sample. Ambient air samples are to be collected in the study area in the assumed upwind direction. Samples are to be collected into laboratory approved pre-evacuated and certified, stainless-steel SUMMA<sup>®</sup> canisters. The samples will be logged and recorded on a chain of custody form and will be shipped by the contractor to the designated analytical laboratory and analyzed for chlorinated VOCs only, by EPA Method TO-15 using selective ion monitoring (SIM). A detection limit of 1 ug/m<sup>3</sup> must be obtained. Ambient air must be screened with a properly calibrated PID and FID. All readings will be recorded by the contractor. The collected samples will be properly packaged and shipped by the contractor to the designated lab for analysis.

### **Quality Assurance/Quality Control (QA/QC)**

All analyses must be performed by an ELAP approved laboratory, and must follow ASP protocols with Category B deliverables. Shipping and analyses of the samples will be arranged by the contractor so that the holding time limits will not be exceeded. QA/QC measures must include the preparation of equipment blanks and trip blanks for soil gas samples. One ambient air sample per indoor air sampling cluster shall be collected on any and all days of sampling. The analysis of all QA/QC samples will be performed for the same compounds listed below, using the same USEPA methods. Laboratory prepared trip blanks will accompany soil vapor samples through the sampling cycle at two locations, and will be shipped and analyzed with the gas implant samples. Field duplicate samples will be taken from two gas implants. Duplicate samples must be obtained by sampling in parallel, not in series, with a tee-fitting arrangement. During duplicate sampling, flow rates must be adjusted to get equally representative samples in each canister.

### **Equipment Cleaning**

All subsurface tools and equipment used during the advance and installation of any soil gas point specified in this project will be cleaned using the best available NYSDEC approved method, prior to their introduction or re-introduction into any given point, at the discretion of the DEC representative.

One of the proposed cleaning methods incorporates the use of a high-pressure steam cleaner to wash the large diameter samplers and push rods used during the project. An alternative method, that may be used to clean large diameter samplers and push rods, involves a water wash, followed by an Alconox-solution wash and a final distilled water rinse. If oily residues are present, a pesticide grade methanol rinse will be added to remove any oily residues prior to the final distilled water rinse. One of these specifications shall be followed, in order to reduce the potential for cross contamination of any samples and to ensure that the integrity of each soil gas point is reasonably maintained.

## **Reporting**

The contractor will prepare a report, with a detailed description of all aspects of the installation and sampling of the soil gas points, indoor air and ambient air. The report must include all screening data and analytical laboratory data with a Data Usability Summary Report (DUSR). All indoor air and sub-slab sample results and screening information shall be included in the final report with personal identifiers removed. A separate cross reference chart shall be provided under separate cover *only* to the Department (NYSDEC), the NYS Department of Health (NYSDOH). The report must include a scaled map that indicates the location of each soil gas point and dwelling sampled with its respective sample identification number. The mapping effort will not require the services of a licensed surveyor.

## **ATTACHMENT 4**

### **New York State Department of Environmental Conservation Division of Environmental Remediation**

#### **Guidance for the Development of Data Usability Summary Reports**

##### **Background:**

The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data without the costly and time consuming process of third party data validation. The primary objective of a DUSR is to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

Though the substitution of a DUSR for a full third party data validation may seem to be a relaxation of the Division's quality assurance requirements, this is definitely not the case. The development of the DUSR must be carried out by an experienced environmental scientist, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. Furthermore, the DUSR is developed from a full New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC ASP) Category B or a United States Environmental Protection Agency Contract Laboratory Protocol (USEPA CLP) deliverables package.

The DUSR and the data deliverables package will be reviewed by quality assurance staff in the Technology Section, Division of Environmental Remediation. In most cases, we expect that this review will result in agreement or with only minor differences that can be easily reconciled. If data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later date on the same data package used for the development of the DUSR.

##### **Personnel Requirements:**

The Environmental Scientist preparing the DUSR must hold a Bachelors Degree in a relevant natural or physical science or field of engineering and must submit a resume documenting experience in environmental sampling, analysis and data review.

##### **Preparation of a DUSR:**

The DUSR is developed by reviewing and evaluating the analytical data package. During the course of this review the following questions must be asked and answered:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?
2. Have all holding times been met?
3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
4. Have all of the data been generated using established and agreed upon analytical protocols?
5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
6. Have the correct data qualifiers been used?

Evaluation of NYSDEC ASP Matrix Spike Blank (MSB) data - If the MSB recovery is less than the ASP criteria, the positive results should be qualified as J, estimated biased low. If the MSB recovery is less than the ASP criteria, but greater than 10%, the nondetects should be qualified J, biased low. If the MSB recovery is less than 10%, the nondetect data must be rejected.

Any Quality Control exceedances must be numerically specified in the DUSR and the corresponding QC summary sheet from the data package should be attached to the DUSR.

All data that would be rejected by the EPA Region 2 Data Validation Guidelines must also be rejected in the DUSR.

Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed. The DUSR shall also include recommendations on resampling/reanalysis. All data qualifications must be documented following the NYSDEC ASP guidelines or the EPA Region 2 data validation guidelines.

Contact Tim LeBarron of the Technology Section, Division of Environmental Remediation at (518) 402-9761, with any questions on the preparation of a DUSR.