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November 7, 2003

Mr. John Rashak, P.E.
New York State Department of Environmental Conservation
Region 3 Headquarters
21 South Putt Corners Road
New Paltz, NY 12561-1696

Re: Interim Remedial Measures Work Plan
Huck manufacturing facility, Kingston, New York
Voluntary Cleanup Program Agreement Index Number: A3-0372-9807

Dear Mr. Rashak:

ESC Engineering of New York, P.C., on behalf of Federal-Mogul Corporation, has prepared the following interim remedial measures (IRM) work plan for the Huck manufacturing facility in Kingston, New York.[1] In accordance with our October 1, 2003, meeting with the New York State Department of Environmental Conservation (NYSDOH) and the New York State Department of Health (NYSDOH), this work plan includes proposed IRMs to address indoor air quality within the main building and within the attached office building, volatile organic compounds (VOCs) in shallow soil in the eastern parking lot, VOCs in onsite and offsite soil gas, and VOCs in deeper soil above the water table in two isolated areas of the property. The proposed IRMs are subdivided into the following tasks:

- Task 1 – address indoor air quality at attached office building
- Task 2 – install and operate a soil vapor extraction (SVE) system
- Task 3 – address indoor air quality at the main manufacturing building
- Task 4 – address VOCs in deeper soil under the main building

ESC Engineering, on behalf of Federal-Mogul, is requesting an expedited review and approval of Tasks 1 and 2 so these measures can be implemented as soon as possible. The proposed schedule for implementing these tasks is discussed in a subsequent section of this work plan.

Previous Investigations

This section of the work plan summarizes the results of previous investigations performed by ESC Engineering that are relevant to the proposed IRMs. Specifically, this section reviews the VOC results from soil investigations performed in the former metal finish area, eastern parking lot transformer area, and former degreaser area; onsite and offsite soil gas investigations; and the onsite indoor air investigations.

[1] The property owned by Federal-Mogul at 85 Grand Street in Kingston, New York, has historically been referred to by several names, including Hucktrol, Huck Installation Equipment Division, and Huck International, Installation Equipment Division. For consistency, the subject property will be referred to in this document, and in future correspondence, as the Huck manufacturing facility.

ESC Engineering performed soil and groundwater investigations at the site in March 2002 and August 2003. The results of the March 2002 investigations were presented to the NYSDEC in the Supplemental Investigative Report, dated November 2, 2002. ESC Engineering is currently preparing a report on the additional soil and groundwater investigations conducted in August 2003 and the report will be submitted to the NYSDEC by November 25, 2003. A table summarizing the soil VOC results from the relevant areas of concern at the site is presented in Enclosure A. Indoor air and soil gas sampling activities were conducted at the site in April and August 2003. The results of the April 2003 investigations were summarized in ESC Engineering's Indoor Air and Soil Gas Sampling Report, dated July 18, 2003. The results of the August 2003 indoor air and soil gas investigations are presented in this document. Tables summarizing the results of the indoor air and soil gas investigations are presented in Enclosure B.

Soil Investigations

Below is a summary of the soil investigation activities conducted in three areas of the site. This section addresses only the results of soil samples analyzed for VOCs. In accordance with ESC Engineering's Supplemental Investigative Work Plan, dated June 18, 2000, the VOC results have been compared to the recommended soil cleanup objectives provided in the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels, dated January 24, 1994.

Eastern Parking Lot Transformer Area

ESC Engineering advanced 16 soil borings in the eastern parking lot to delineate the horizontal and vertical extent of VOCs in soil (Figure 1). These borings include SB-4 through SB-7, SB-9 through SB-14, SB-35, SB-36, SB-47, SB-48, SB-64, and SB-65. Soil samples were collected from each boring at 1 to 3 feet below ground surface (bgs) and 6 to 8 feet bgs. Soil samples were also collected from the 2-foot-thick interval directly above the water table (i.e., approximately 16 to 18 feet bgs) at borings SB-9 and SB-14. The soil samples collected from 1 to 3 feet and above the water table were analyzed for VOCs. Samples collected from 6 to 8 feet were analyzed only if constituents were detected in the 1 to 3 foot interval above the evaluation criteria.

The analytical results indicated the presence of trichloroethene (TCE; 29,000 micrograms per kilogram [ug/kg] to 370,000 ug/kg), tetrachloroethene (PCE; 2,500 ug/kg to 110,000 ug/kg), acetone (490 ug/kg to 8,300 ug/kg), and methylene chloride (2,800 ug/kg) at concentrations above the evaluation criteria in the 1 to 3 foot interval of SB-4, SB-6, SB-7, SB-10, SB-36, SB-64, and SB-65 (Figure 1). The evaluation criteria for these compounds are 700 ug/kg for TCE, 1,400 ug/kg for PCE, 200 ug/kg for acetone, and 100 ug/kg for methylene chloride. No VOCs were detected above the evaluation criteria in samples collected from these borings at 6 to 8 feet bgs. The sample collected at SB-14 in the 2-foot-thick interval directly above the groundwater contained 890 ug/kg of TCE, which is slightly above the evaluation criteria of 700 ug/kg.

ESC Engineering anticipates conducting limited additional soil sampling to define the southern extent of VOCs in shallow soil in the eastern parking lot. The proposed investigation will be described in the upcoming report summarizing the August 2003 investigations.

Former Metal Finish Area

ESC Engineering advanced nine soil borings in the former metal finish and chemical storage area (SB-1 though SB-3, SB-8, SB-34, SB-37, SB-38, SB-42, and SB-49) to evaluate the horizontal and vertical extent of VOCs in soil (Figure 1). Soil samples were collected from each boring at 1 to 3 feet bgs and samples were collected for chemical analysis above the water table from SB-1 (17.5 to 19.5 feet bgs) and SB-38 (13 to 15 feet bgs). No VOCs were detected above the evaluation criteria in these borings in the 1 to 3 foot interval or in the 13 to 15 foot interval of SB-38. The sample collected from SB-1 directly above the water table contained TCE at a concentration of 47,000 ug/kg, which is above the evaluation criterion of 700 ug/kg (Figure 1). Based on the absence of VOCs at concentrations above the evaluation criteria above the water table in soil borings SB-9 and SB-38, this area of affected soil appears to be limited in horizontal extent. ESC Engineering anticipates conducting limited additional soil sampling above the water table in this area to determine the western and northern limits of VOCs detected at SB-1. The proposed investigation will be described in the upcoming report summarizing the August 2003 investigations.

Former Degreaser Area

ESC Engineering advanced five soil borings (SB-29, SB-30, SB-33, SB-66, and SB-67) in the former degreaser area to evaluate the horizontal extent of VOCs in soil above the water table. Investigations in this area by a previous consultant indicated that VOC concentrations in the upper portion of the vadose zone are below the evaluation criteria. Soil samples were collected from each boring directly above the water table for chemical analysis. The analytical results from SB-33 indicated 65,000 ug/kg of TCE and 93,000 ug/kg of PCE. No VOCs were detected above the water table in the remaining borings at concentrations above the evaluation criteria. Therefore, the horizontal extent of VOCs in soil above the water table in this area is limited.

Soil Gas Investigations

On April 30, and August 11 through 15, 2003, ESC Engineering collected 24 soil gas samples at the locations designated SG-1 through SG-24 on Figure 2. The soil gas samples were collected to determine the presence and horizontal extent of VOCs in soil gas onsite and offsite. The soil gas samples were collected at a depth of approximately 6 feet bgs using 6-liter Summa canisters and dedicated 6-inch-long, 0.5-inch-diameter, stainless steel screens and Teflon tubing. The soil gas samples were collected in accordance with the procedures outlined in the NYSDEC and NYSDOH-approved work plan, dated April 2, 2003. The soil gas samples were analyzed for TCE, PCE, and cis-1,2-dichloroethene (cis-1,2-DCE) by U.S. Environmental Protection Agency (EPA) Method TO-15. The soil gas results indicated the presence of TCE in 22 samples at concentrations from 1.7 parts per billion by volume (ppbv) to 97,000 ppbv. PCE was detected in 22 samples at concentrations from 4.8 ppbv to 45,000 ppbv and cis-1,2-DCE was detected in 10 samples at concentrations from 2.7 ppbv to 8,800 ppbv (Table 2; Enclosure B).

The highest concentrations of the target VOCs were detected onsite along the eastern property line (Figure 2). These levels decrease abruptly toward the east at SG-1 through SG-3, to the west at SG-5, and to the north at SG-6. As described above, shallow soil in the northern portion of the

eastern parking lot contains elevated concentrations of TCE and PCE from 1 to 3 feet bgs. These soils are believed to be the primary source for VOCs in soil gas. The majority of the property is covered with buildings, concrete sidewalks, or asphalt, with the exception of a small grassy area around the office building and the narrow landscaped areas in the eastern and southern parking lots. Furthermore, the pavement of Grand Street and Tenbroeck Avenue directly abuts the paved portions of the site. Therefore, given the shallow depth of VOCs in soil in the eastern parking lot, and the fact that the majority of the site is covered with an impervious surface, the VOCs appear to be volatilizing and migrating horizontally under this cap and into the utility corridors.

Indoor Air Investigations

On April 29, 2003, ESC Engineering collected two indoor air samples inside the main building in the office complex and in the space formerly leased by Scheffel Furniture. The soil gas samples were analyzed for TCE, PCE, and cis-1,2-DCE by EPA Method TO-15. The indoor air sample locations are designated IA-1 and IA-2 on Figure 3. These sample locations were selected to evaluate indoor air quality in the two areas of the main building that were routinely occupied. The Scheffel Furniture space was being used for furniture refinishing during the sampling activities, but has since been vacated. ESC Engineering completed the NYSDOH's indoor air quality questionnaire for each sample location and inventoried the VOC-containing products stored in each space (Enclosure C). Products containing VOCs were recorded on the NYSDOH's "Household Products Inventory Form" along with the VOC ingredients and the concentration of organic vapors detected near the lid of the containers, which were measured with a photoionization detector (PID; Enclosure C).

The analytical results indicated the presence of TCE in sample IA-1 at a concentration of 1.7 ppbv and in sample IA-2 at a concentration of 10 ppbv. Low levels of PCE and cis-1,2-DCE were also detected in the office complex (Table 1; Enclosure B). A copy of the laboratory reports are included in Enclosure D.

In accordance with the proposed scope of work in ESC Engineering's Indoor Air and Soil Gas Sampling Report, dated July 18, 2003, ESC Engineering collected 12 additional indoor air samples inside the main building and one outdoor air sample in August 2003. The purpose of the additional sampling activities was to confirm the results from IA-1 and IA-2 and to evaluate the indoor air quality in the remainder of the main building. In addition, indoor air samples were collected on the first floor (IA-6) and basement (IA-7) levels of the attached office building. The additional indoor air sample locations are designated IA-3 through IA-16 on Figure 3. ESC Engineering completed the NYSDOH's indoor air quality questionnaire and household products inventory form for each sample location and used a PID to measure the organic vapor concentration near the lid of containers with VOC ingredients (Enclosure C).

The analytical results from the additional indoor air samples indicated low levels of TCE in each sample at concentrations ranging from 3.3 ppbv to 48 ppbv. PCE was detected in 13 samples at concentrations from 1.3 ppbv to 10 ppbv and cis-1,2-DCE was detected in 11 samples at concentrations from 0.5 ppbv to 9.5 ppbv. TCE was detected in the attached office building at concentrations of 18 ppbv on the first floor and 31 ppbv in the basement. PCE was detected in the office building at 10 ppbv on the first floor and 6.9 ppbv in the basement. cis-1,2-DCE was

not detected in the office building. TCE was the only compound detected in outdoor air sample OA-2 at a concentration of 0.77 ppbv. A copy of the analytical results is presented in Enclosure D.

The concentration of TCE detected in the former Scheffel Furniture space (3.3 ppbv) and inside the main office complex (14 ppbv) in August 2003 were similar to the concentrations detected in these areas in April 2003. The concentration of TCE detected in sample IA-4 (11 ppbv), which was collected directly outside the office door, was similar to the concentration detected inside the office at sample IA-3 (14 ppbv). These data suggest that the repeated opening and closing of the office door may result in a TCE concentration inside the office that is similar to the TCE level in the surrounding indoor air. TCE was detected in the office bathroom at a concentration of 35 ppbv, which is higher than in the office area. These data suggest that the bathroom's isolated location may reduce mixing with the surrounding indoor air, or VOCs may be entering the bathroom along a potential seam between the floor slab and a below-grade sump in that room. The sump reportedly collects sanitary waste before it is pumped overhead and out to the sanitary sewer. The TCE concentrations detected in the remaining areas of the main building are relatively homogenous (Figure 3).

Proposed Scope of Work

Task 1 – Address Indoor Air Quality in the Attached Office Building

A two-story brick office building is attached to the southeast corner of the main manufacturing building. The main portion of the building was constructed in the early 1900s and measures approximately 48 feet by 48 feet and has a basement (Figure 3). An approximately 10.5 by 24.5-foot addition is located on the west side of the building and is underlain by a crawl space. The crawl space is believed to have an earthen floor and is accessible from the basement area through openings in the west wall of the basement. As discussed above, ESC Engineering collected an indoor air sample in the basement of the structure in August 2003 for analysis of TCE, PCE, and cis-1,2-DCE. The indoor air sample contained 31 ppbv of TCE and 6.9 ppbv of PCE (Table 1; Enclosure B). cis-1,2-DCE was not detected in the indoor air sample.

ESC Engineering is proposing to install a sub-slab depressurization system in the basement of the office building to prevent the infiltration of soil gas. The sub-slab system will be similar to systems installed to address radon gas and will likely consist of one or more polyvinyl chloride (PVC) conduits that penetrate the floor slab, a blower fan to create a slight vacuum below the slab, and a stack that extends up the outside of the building. After the system has been operating for approximately 1 month, ESC Engineering proposes to collect indoor air samples from the basement and first floor areas and an ambient air sample from outside the building using 6-liter Summa canisters. The indoor and outdoor air samples will be analyzed for TCE, PCE, and cis-1,2-DCE by EPA Method TO-15. ESC Engineering will provide the sample results to the NYSDEC within 4 weeks of sample collection.

Task 2 – Installation and Operation of Soil Vapor Extraction System

ESC Engineering is proposing to install a SVE system at the site to achieve the following objectives: to remediate shallow soils (less than 6 feet bgs) in the eastern parking lot containing

VOCs (primarily TCE and PCE) above the evaluation criteria; to collect and treat soil gas containing VOCs along the eastern and southern property lines and in the adjacent offsite areas; and to address VOCs in soil gas under the former manufacturing building in the vicinity of the former metal finish and chemical storage area and the main office complex. Typically, a pilot test would be performed to predict the flow rate of air removed from the subsurface as a function of the vacuum level applied and the resulting radius of influence. However, in an effort to expedite the collection and treatment of VOCs in soil gas onsite and offsite, ESC Engineering has used best engineering judgement to design the proposed system. Actual operating air flow rates, vacuum, and radius of influence will be determined during start-up of the SVE system. Based on the observed radius of influence of the proposed SVE system, and further delineation of affected soil in the southern portion of the eastern parking lot area, the SVE system may be expanded with additional extraction pipes to achieve the system objectives.

SVE System Piping Layout

The piping layout for the SVE system is based on the analytical results from previous soil gas, soil, and indoor air investigations, as well as best engineering judgement. The shallow subsurface in the treatment zone of the SVE system consists of a fine to medium grained sand. The targeted treatment zone extends from beneath the pavement to approximately 6 feet bgs. Because the treatment zone is shallow, and one of the objectives is to remove soil vapor from the site boundary and adjacent offsite areas, vapor extraction trenches are proposed. Three extraction pipes will be placed in a single trench, each with a unique screened interval, which allows the flexibility to extract soil gas from selected portions of the trench. Figure 4 presents the proposed SVE system piping layout and the estimated radius of influence of the horizontal extraction pipes. Line 1 consists of approximately 120 feet of 4 or 6-inch inside-diameter (ID) screened or slotted PVC pipe along the former finish and chemical storage area of the main building. The objective of Line 1 is to remediate shallow vadose zone soils in the eastern parking lot in excess of TAGM and collect and treat vapors containing VOCs that may have accumulated beneath the former manufacturing building. Line 2 consists of approximately 200 feet of 4 or 6-inch ID screened or slotted PVC pipe along a portion of the eastern property line adjacent to Grand Street. This extraction line will address shallow soils in the parking area (shown in blue on Figure 4) and soil gas containing VOCs along Grand Street (both onsite and offsite). Line 3 consists of approximately 490 feet of 4 or 6 inch ID screened or slotted PVC pipe along Grand Street and along the southwestern property line where soil gas samples indicated elevated levels of VOCs. The yellow shaded area of Figure 4 illustrates the estimated area of influence by the SVE system. The flow rate within each of the three lines can be adjusted based on performance monitoring and actual site conditions once the system is operating. ESC Engineering may install valves on the extraction lines at critical locations to give further flexibility in isolating portions of the extraction lines, if necessary.

Figure 5 presents three cross-sections of the extraction trench. The top of the extraction pipes will be a minimum of 3.5 feet bgs. Screened/slotted pipe located in the same trench as solid pipe will be offset by installing this pipe below the invert of the solid pipe. This will minimize any potential restriction in horizontal airflow that may occur if the pipes are installed at the same invert elevation. The slot size of the screen will be 0.040-inch or larger continuous wrap. A larger slot size than what is typically used for groundwater wells is possible because the lower air

velocities that occur in slotted pipe reduce the potential for entrainment of small particles. The screens and solid pipe will be joined by threaded couplings or thermowelding. A sand filter pack will be placed around the pipes in the trench to provide a secure bedding for the pipe and enhance air flow into the pipe. Excavated soil will then be placed in the trench on top of the filter pack for treatment. A flowable fill (e.g., a mixture of cement, fly ash, and sand aggregate) will be placed above the soil backfill as a low permeability layer to enhance the lateral vacuum influence of the trench and prevent short circuiting to the atmosphere. The backfill will be compacted to approximately 90 percent optimum standard density if the reused soil is cohesive. A geomembrane surface cover will be placed above the flowable fill to provide an additional seal and will be overlain by crushed stone. The crushed stone will be replaced with asphalt next spring when the asphalt facilities reopen. Any remaining excavated soil that cannot be placed back into the trench will be stockpiled on two layers of polyethylene sheeting and covered or placed in rolloff containers for characterization and offsite disposal in accordance with applicable federal, state, and local regulations.

SVE Operating Parameters and Treatment Equipment

The overall system pneumatics were considered to design and select the appropriate treatment equipment. Friction loss for the system components and piping was calculated based on an estimated gas flow rate into the SVE piping and an assumed vacuum level. A gas flow rate of 1.25 cubic feet per minute (cfm) per linear foot of screened pipe was assumed for this analysis. This is an estimated value for sandy silt (R.S. Means, 2002). A hydraulic analysis was conducted for Lines 1 and 2 combined and separately for Line 3. The assumed vacuum required at the pipe screen for each line is 5.88 inches of mercury (Hg). Combining the required vacuum of the well screen, friction headloss across the approximate screen length of Lines 1 and 2, and minor losses at the building, the expected total system vacuum at the blower inlet is 6.08 inches Hg. The calculated extraction flow rate for Lines 1 and 2 is 400 cfm (1.25 cfm x 320 feet of screened pipe). A second blower unit is proposed for Line 3. The expected total system vacuum at the blower inlet for Line 3 is 6.8 inches Hg. The calculated extraction flow rate for Line 3 is 612.5 cfm (1.25 cfm x 490 feet). These vacuum and flow rates are predicted and are subject to change depending on several factors, including variations in soil type along the length of the screen, balancing of flow rates at each line, and unknown subsurface structures and utilities.
To facilitate operation and future expansion of the proposed SVE system, two blower units will be operated in parallel. Soil vapor extracted from Lines 1 and 2 will be conveyed through one blower unit and soil vapor extracted from Line 3 will be conveyed through a second blower unit. Moisture will be separated from the vapor stream with an air/water separator. Liquids removed from the vapor stream will be collected in an appropriate container (Department of Transportation-authorized 55-gallon drums) using a manual drain. The collected liquids will be characterized and transported offsite for treatment or disposal in accordance with federal, state, and local requirements.

To control this dynamic flow regime, a dilution air valve, filter, and vacuum relief valve will be installed before each blower to ensure the blower is operating at maximum efficiency. The type of blowers used for this application will be a regenerative blower or positive displacement blower. Regenerative blowers are typically used for applications requiring less than 80 inches of

water vacuum and positive displacement blowers are typically used for medium-range vacuum levels (20 to 160 inches of water).

A discharge silencer will be installed after each blower to reduce noise. The vapor stream will then be treated with two 2,000-pound vapor phase granular activated carbon (GAC) units in series before discharge to the atmosphere by a discharge stack. The size of the GAC units may be modified based on final design considerations (total system flow rate, pressure, VOC loading). Vapor phase GAC was selected as the most appropriate control technology based on the soil gas VOC concentrations detected at the site. Vapor phase GAC is applicable for VOC concentrations ranging from 0 to 5,000 parts per million volume (ppmv) and is appropriate for the removal of the chlorinated compounds present in soil and soil gas at this site (Army Corp of Engineers, 1995). The soil gas data indicated that TCE concentrations ranged from 3,700 to 97,000 ppbv, PCE ranged from 200 to 45,000 ppbv, and cis-1,2-DCE concentrations ranged from nondetectable to 8,800 ppbv in the two shaded areas on Figure 4. To understand the estimated VOC mass loading into the SVE system, average concentrations of TCE, PCE, and cis-1,2-DCE were calculated in each of the two areas of the site being addressed by this system as tabulated below.

Average Soil Gas Concentrations (ppbv)		
Compound	Soil Remediation Area	Vapor Remediation Area
TCE	39,483	17,000
PCE	5,916	18,470
cis-1,2-DCE	2,510	966

The estimated total system extraction flow rate for the proposed SVE system is 1,012 cfm and the worst case initial concentration of TCE is expected to be 39,483 ppbv, PCE at 18,740 ppbv, and cis-1,2-DCE at 2,510 ppbv. Using the estimated system extraction rate and average vapor concentrations, the system will initially collect approximately 19 pounds of TCE per day, 10 pounds of PCE per day, and 0.88 pounds of cis-1,2-DCE per day. The expected activated carbon consumption during the SVE start-up is approximately 255 pounds of VOCs per day; therefore, breakthrough should occur on the first carbon unit in approximately 8 days. The concentrations of VOCs in the extracted vapor stream should decrease with time, which will result in a subsequent decrease in activated carbon consumption. A conservative estimate of the VOC removal efficiency of activated carbon canisters in series is 98 percent. Influent and effluent VOC concentrations will be verified during system start-up and the mass of VOCs removed will be recorded over time. ESC Engineering understands that emissions from the proposed SVE system are not subject to air permitting and registration requirements because it meets the definition of an exempt or trivial air emission source under NYSDEC requirements.

The SVE system will incorporate telemetry and instrumentation that will allow for automated operation. The air/water separator will be outfitted with a high level switch that will shutdown the system to prevent condensate collection in this unit from overflowing. The blower will be wired to shut off in case of high pressure in the outlet air line to protect the motors. In addition, the outlet of the blower will be equipped with a temperature switch that will shut down the system if the discharge air temperature exceeds a predetermined set temperature. Temperature control is necessary to prevent motor overload on the blower and protect the integrity of the

activated carbon. Both blower systems will also be outfitted with typical telemetry including flow, vacuum, and pressure indicators, as well as flow control valves, sample ports, and vacuum relief valves at the blower inlet and outlet. Controls and inputs from sensors will interface with a master control panel. A process and instrumentation diagram detailing the SVE system is provided as Figure 6.

All of the SVE treatment equipment will be housed in an enclosure to be constructed at the approximate location shown on Figure 4. The building will include an overhead or double door and personnel door. The footprint of the building will be large enough to house additional treatment equipment if the SVE system is expanded. Enclosure plans, sections, and details will be prepared at a later date by the selected remedial subcontractor.

Site-specific conditions including buildings, active subsurface utilities, and current tenant operations may affect the final system configuration and the location of the treatment system enclosure. Any variations from the proposed layout and design will be documented in the final IRM Summary Report.

System Start-Up and Operation

After installing the SVE system, system start-up and testing activities will be performed before initiating full-scale (normal) operations. Start-up and testing activities will be performed in accordance with manufacturer's recommendations. All equipment will be operated to verify that it functions in accordance with design specifications.

System start-up activities will be conducted once all of the equipment has been inspected and operated satisfactorily. The blowers will be energized and set at a minimum vacuum, slowly increasing the vacuum once the system stabilizes. The vacuum will be increased incrementally to facilitate periodic inspection of the entire system to ensure proper operation. Once the system is operating at or close to the expected operating point, the entire system will be checked including air flow, pressure, vacuum, and temperature from each of the three extraction lines. Equalization of the system may take up to several days. Once steady-state operation is achieved, operational efficiency data from each extraction line will be collected including:

- gas flow rates
- applied vacuum
- VOC extraction rates
- condensate generation rates
- efficiency of GAC units

Telemetry installed with the system will provide the gas flow and vacuum rates. Condensate generation rates will be calculated by manual measurements. Measurement of VOC removal rates and efficiency of GAC units will be acquired using a PID and vapor sampling. The actual sampling program will be determined during system start-up and presented in an Operation and Maintenance (O&M) Plan.

The spatial distribution of pressure gradients around each extraction line will be evaluated by measuring vacuum/pressure at select monitoring points. Monitoring points will be installed onsite and offsite to measure vacuum influence and to allow the collection of soil gas samples (Figure 7). The vacuum and vapor monitoring points will be installed by advancing a soil boring to a depth of approximately 6 feet using a drill rig equipped with 3.25-inch ID hollow-stem augers. Depending on the cohesiveness of the unconsolidated materials, the augers may be withdrawn from the hole and the monitoring point will be constructed in the open borehole. Alternatively, the points will be constructed through the augers as the augers are withdrawn from the borehole. The vapor monitoring point will consist of a 6-inch-long stainless steel wire mesh screen attached to a sufficient length of 0.25-inch ID Teflon or Teflon-lined tubing to reach the ground surface. The wire-mesh screens will have an outside-diameter of 0.5 inch and a screen pore size of 0.0057 inch. The screen and tubing will be lowered to the bottom of the borehole and approximately 1 foot of quartz sand will be placed around the screen and tubing to create a 1-foot-thick sample interval. An approximately one-foot-thick granular bentonite seal will be placed on top of the sand pack and the bentonite will be hydrated with potable water. A vacuum monitoring point will be installed on top of the bentonite seal. The vacuum monitoring point will be constructed of one-inch ID schedule 40 PVC casing and will consist of 2.5 feet of 0.01-inch machine-slotted PVC screen and 1.5 feet of solid PVC riser. An approximately 1.75-foot-thick sand pack will be placed around the well casing. The remainder of the borehole will be filled with a cement-bentonite grout. Each monitoring point will be completed with a flush-mounted protective steel cover set in a concrete pad. The construction details for the vacuum and vapor monitoring point is presented on Figure 5.

Figure 4 presents the estimated radius of influence for the three extraction lines. The actual radius of influence will be determined based on vacuum measurements from the newly installed vacuum monitoring points. Operation of this system will provide the actual relationship for vacuum level versus airflow in the subsurface at the site. This information will be used to design additional vapor extraction trenches in areas that are not being influenced by the initial system design. The SVE system will be designed to handle additional vacuum and flow requirements associated with future expansion activities, if necessary.
System performance will also be evaluated by periodically collecting soil gas samples from the proposed monitoring points. This data will be used to demonstrate that soil gas containing VOCs in the areas of concern are being addressed by this remedial system. The actual frequency of collecting soil gas samples will be determined after the system has operated and maintained a steady-state condition.

Task 3 – Indoor Air Quality Inside the Main Manufacturing Building

The SVE system described in Task 2 includes a horizontal extraction pipe (i.e., Line 1) along the main building at the north edge of the eastern parking lot. In addition to removing contaminant mass from shallow soils in the eastern parking lot, ESC Engineering anticipates that the vacuum radius of influence from this pipe will extend under the building and prevent the infiltration of soil gas into the building in the former metal finish area, where the highest TCE level was detected in indoor air, and in the vicinity of the main office complex.

After the SVE system reaches steady state operation, ESC Engineering proposes to collect two rounds of indoor air samples from within the main building to evaluate the effectiveness of the system in improving the indoor air quality. The indoor air samples will be collected at the locations designated IA-17 through IA-21 on Figure 3, using the procedures outlined in the Indoor Air and Soil Gas Sampling Work Plan, dated April 2, 2003. Currently, ESC Engineering anticipates collecting the indoor air samples after approximately 1 month of system operation and after three months of operation. However, the air exchange rate inside the building must be further evaluated before the sampling schedule can be finalized. For example, if the indoor air samples are collected too soon after system start-up, VOCs may be detected that were present before the system was activated. Based on ESC Engineering's evaluation of the indoor air exchange rate for the main building, a revised schedule will be submitted to the NYSDEC and NYSDOH (if necessary) for conducting the indoor air sampling.

If the results of the indoor air samples do not show an improvement in indoor air quality, ESC Engineering will evaluate alternatives to enhance the existing SVE system in preventing the infiltration of soil gas into the building. Potential alternatives may include installing sub-slab depressurization systems at key locations within the building or installing additional horizontal extraction pipes inside the building or along the exterior building walls, or a combination of these approaches.

Task 4 – VOCs in Deeper Soil

As discussed at the October 1, 2003, meeting with NYSDEC and NYSDOH, ESC Engineering has identified chlorinated VOCs in soil directly above the water table in two isolated areas of the site: the former metal finish and chemical storage area; and the former degreaser area. As discussed in the previous investigations section of this document, the horizontal extent of VOCs in the former degreaser area has been delineated. However, the northern and western extent of affected soil in the metal finish and chemical storage area has not been completely delineated. Additional soil borings will likely be proposed in this area as part of the upcoming report summarizing the results of the August 2003 soil and groundwater investigations. Once the extent of VOCs is defined, ESC Engineering will evaluate potential remedial alternatives for these areas, if necessary.

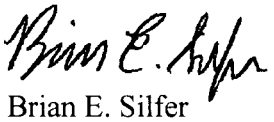
Project Schedule and Reporting

ESC Engineering has begun to solicit proposals for the installation of the sub-slab depressurization system below the office building and anticipates completing the system installation by December 19, 2003. In addition, ESC Engineering is scheduled to begin the installation of the SVE system during the week of December 1, 2003, and complete the construction activities before December 25, 2003. The treatment equipment will be ordered by approximately November 12, 2003, and will be delivered to the site and installed by mid-January 2004. The final IRM Summary Report will be submitted to the NYSDEC within 60 days of completing system installation and start-up activities.

ESC Engineering, on behalf of Federal-Mogul, expects to proceed with the implementation of Tasks 1 and 2 during the week of December 1, 2003. Therefore, we would appreciate receiving any comments from the NYSDEC and NYSDOH on these tasks on or before November 21, 2003, if possible.

Please contact us at (315) 655- 3900 with any question regarding the proposed IRMs, or other aspects of the project.

Sincerely yours,



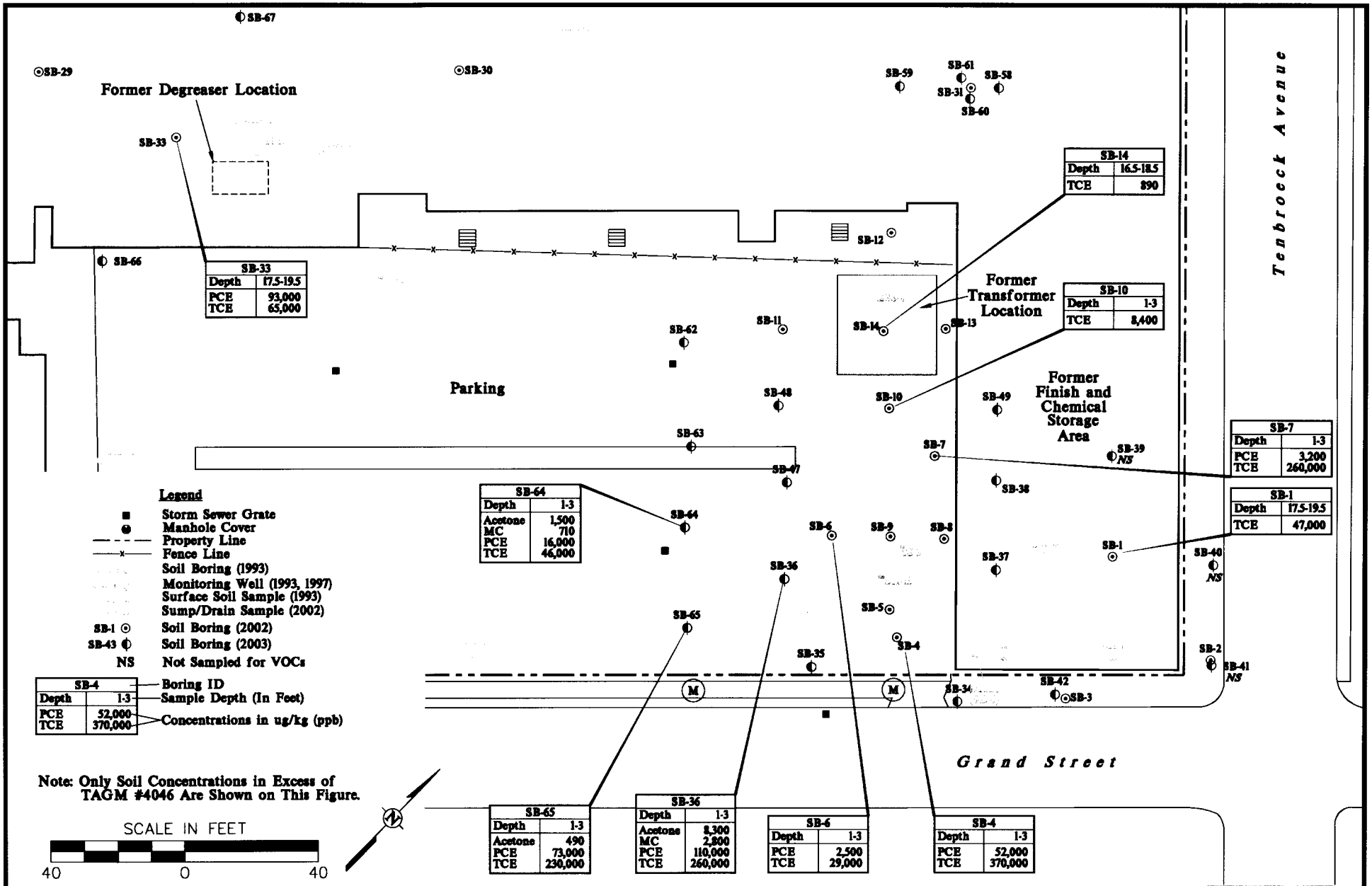
Brian E. Silfer
General Manager

BES:sel
q:\client\fedmogul\kingston\irm 11-03\final november 7.doc

Enclosures

cc\encl: Deborah W. Christian, Esquire, New York State Department of Environmental Conservation
Ms. Kristin Kulow, New York State Department of Health
Mr. Mark Bauer, c/o Federal-Mogul Corporation
Mr. Jeffrey Hassen, Environmental Strategies Corporation
Joel Sachs, Esquire, Keane & Beane, P.C.

Figures



ESC Engineering of New York, P.C.

Figure 1

SUMMARY OF SOIL RESULTS ABOVE EVALUATION CRITERIA

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL–MOGUL CORPORATION

Drawn By:	EGC
Checked:	TMM
Approved:	BES
DWG Name:	13800837

Legend

Storm Sewer Grate
Storm Sewer
Abandoned Storm Sewer
Sanitary Sewer
Property Line
Fence Line
Soil Gas Sampling Location (April 2003)
Soil Gas Sample Location (August 2003)
25 TCE Concentration in Soil Gas
ND Not Detected

Temper Avenue
Cornell Street
Thomas Avenue
Smith Avenue
Bruyn Avenue
CSX Transportation, Inc. Tracks
Stephan Street
Derrenbacher Street
Foxhall Avenue
Abbey Street
Shufeldt Street
Stanley Street
Fenbrook Avenue
Grand Street
Madden Street
Arlington Pl.
Fort Street

SG-11 15,000
SG-24 1,200
SG-10 10,000
SG-23 2.6
SG-12 19,000
SG-13 1,200
SG-14 470
SG-15 38
SG-16 1,900
SG-17 340
SG-18 25
SG-19 3,800
SG-20 1.7
SG-21 ND
SG-22 ND
SG-4 650
SG-5 2,700
SG-6 6,100
SG-7 62,000
SG-8 97,000
SG-9 26,000
SG-1 2,300
SG-2 7,400
SG-3 6,800

Warehouse
Bank
Office Building
Manufacturing Building
Former Degreaser Location
Former Transformer Location
Former Finish and Chemical Storage Area
Former Heat Treat Area
Covered Storage Areas
Suspected Disposal Area
Former Heating Oil Underground Storage Tank
Potential Underground Storage Tank
5,000-gal. AST
Former Underground Storage Tank
Potential UST

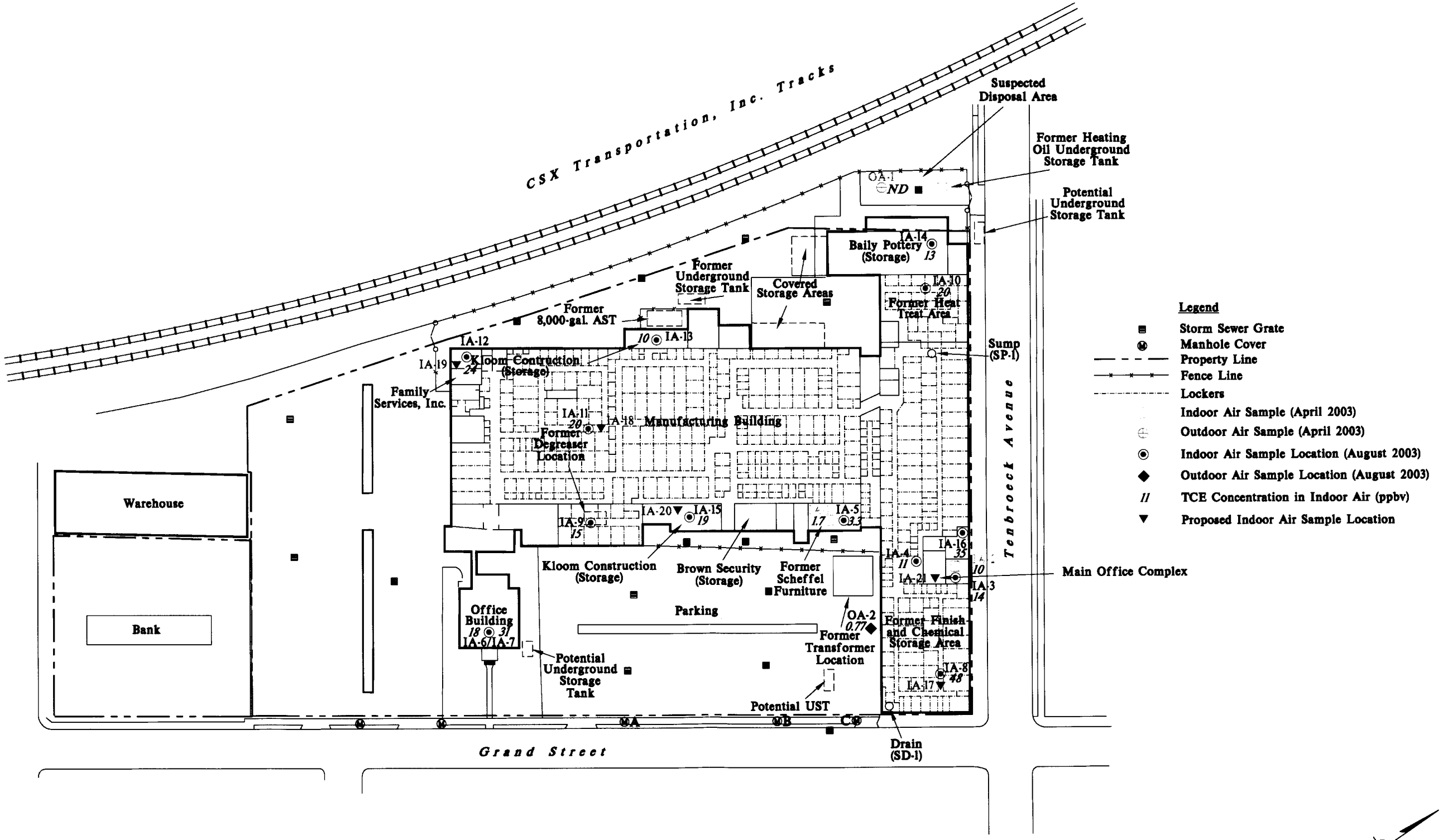
0 160 320
SCALE IN FEET

Drawn By: EGC
Checked:
Approved:
DWG Name: 13800829

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL

Figure 2
SOIL GAS
SAMPLE LOCATION PLAN

ESC
ENGINEERING OF
NEW YORK, P.C.



Drawn By: EGC
Checked: TMM
Approved: BES
DWG Name: 13800828

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR FEDERAL–MOGUL

Figure 3
INDOOR AIR SAMPLE LOCATION PLAN

ESC ENGINEERING OF NEW YORK, P.C.

Legend

- Storm Sewer Grate
- Manhole Cover
- Property Line
- Fence Line
- BH-1 Soil Boring (1993)
- MW-1 Monitoring Well (1993, 1997)
- SS-1 Surface Soil Sample (1993)
- SP-1 Sump/Drain Sample (2002)
- SB-1 Soil Boring (2002)
- SB-43 Soil Boring
- SG-19 Soil Gas
- 25 TCE Concentration in Soil Gas
- Proposed Vapor and Vacuum Monitoring Location
- 4"ø or 6"ø Extraction Screen
- 4"ø or 6"ø Extraction Conveyance Piping
- Soil Remediation Area
- Soil Gas Remediation Area

CSX Transportation, Inc.

Tenbroeck Avenue

Grand Street

Warehouse

Bank

Office Building

Manufacturing Building

Parking

Former Degreaser Location

Former Underground Storage Tank

2,000-gal. AST

Covered Storage Area

Covered Storage Area

Former Heat Treat Area

Former Transformer Location

Former Finish and Chemical Storage Area

Proposed Location of Treatment Enclosure

Line 1

Line 2

Line 3

Line 3

Line 2

Drain (S.T.-1)

SG-16 1,900

SG-17 340

SG-4 650

SG-1 2,300

SG-2 7,400

SG-3 6,800

SG-12 19,000

SG-10 10,000

SG-11 15,000

SG-9 26,000

SG-8 97,000

SG-6 6,100

SG-5 3,700

SCALE IN FEET

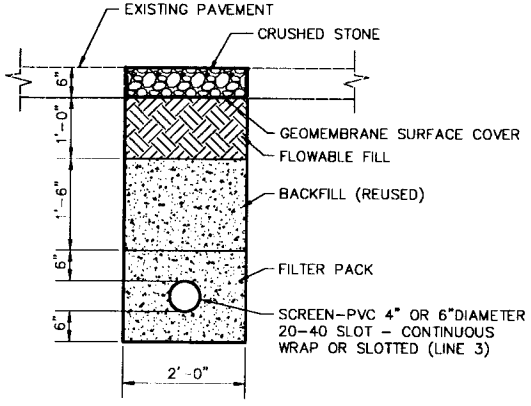
50 0 50

Drawn By:	EGC
Checked:	TMM
Approved:	BES
DWG Name:	13800835

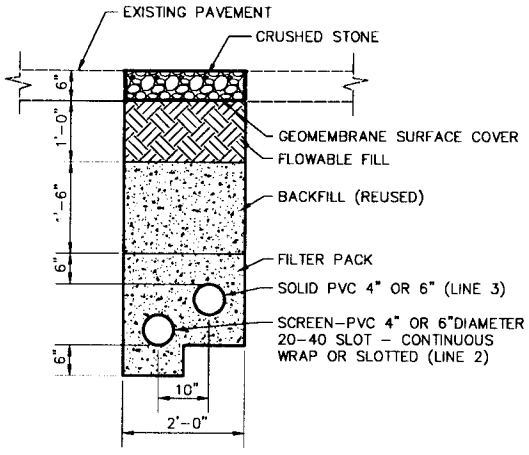
HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL CORPORATION

Figure 4
CONCEPTUAL SOIL VAPOR EXTRACTION SYSTEM LAYOUT

ESC
ENGINEERING OF NEW YORK, P.C.



SECTION A-A



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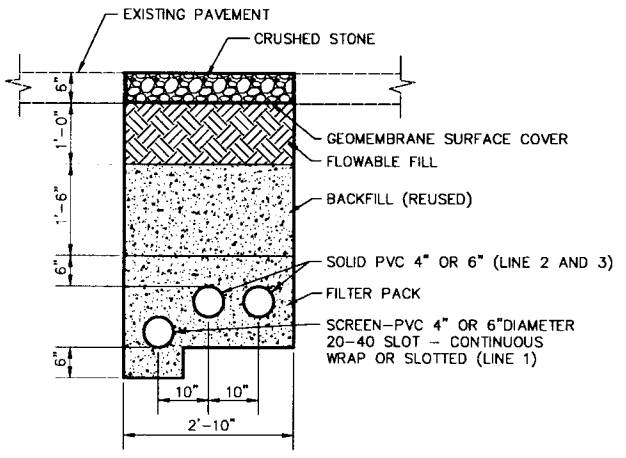
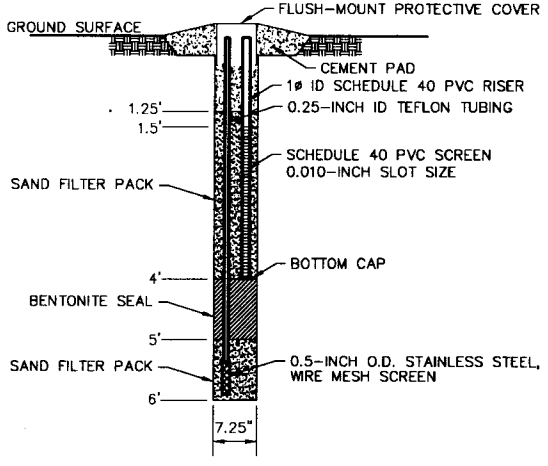


SECTION C-C



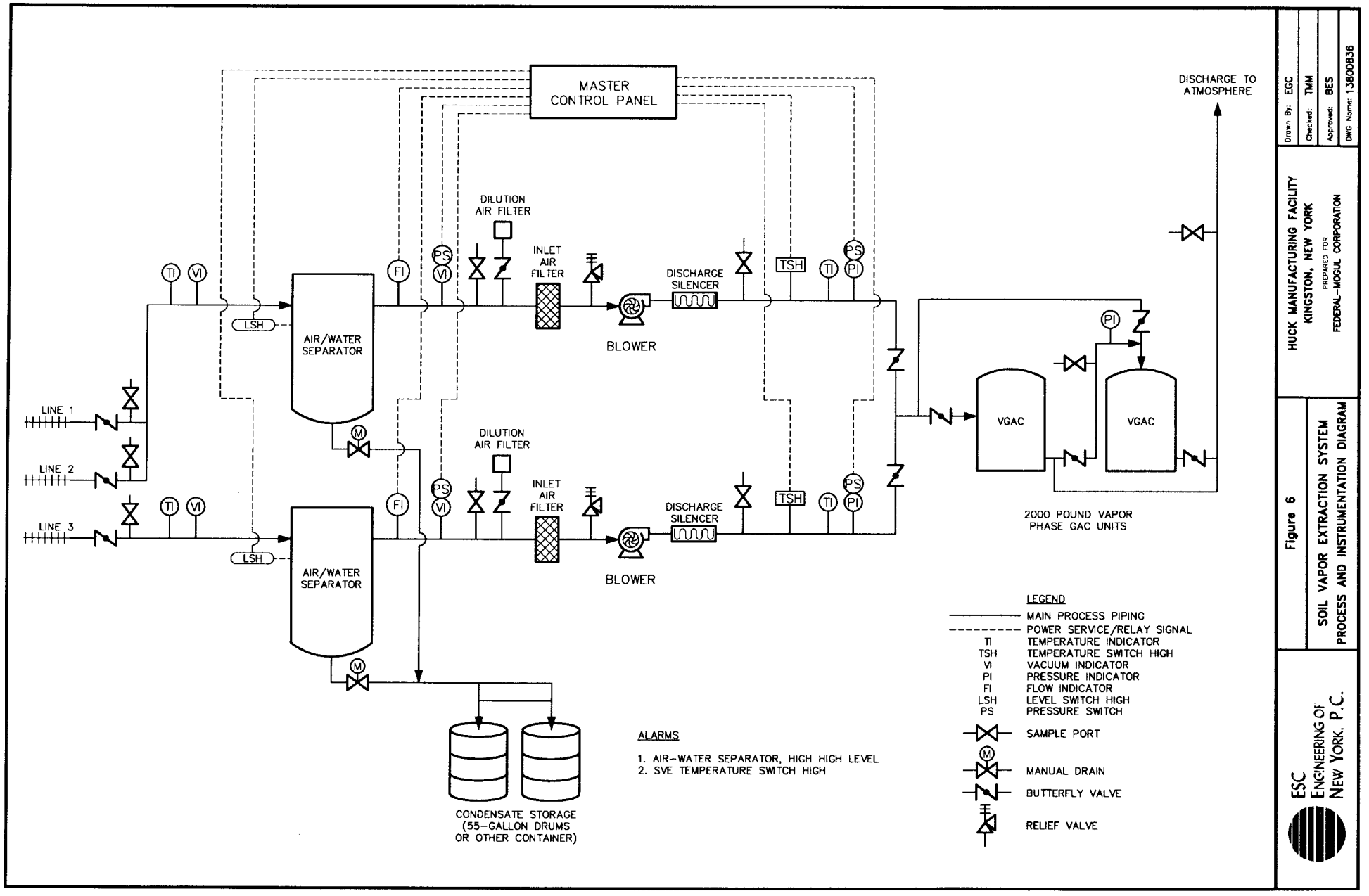
VAPOR AND VACUUM MONITORING WELL CONTRUCTION DIAGRAM

Drawn By: EGC
Checked: TMM
Approved: BES
DWG Name: 13800839

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL CORPORATION

Figure 5
SITE WORKS DETAILS AND VAPOR/VACCUUM
MONITORING WELL CONSTRUCTION DIAGRAM

ESC
ENGINEERING OF
NEW YORK, P.C.



Drawn By: EGC
Checked: TMM
Approved: BES
DWG Name: 13800836

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR
FEDERAL-MOGUL CORPORATION

Figure 6
SOIL VAPOR EXTRACTION SYSTEM
PROCESS AND INSTRUMENTATION DIAGRAM

ESC
ENGINEERING OF
NEW YORK, P.C.

Legend

- Storm Sewer Grate
- Storm Sewer
- Abandoned Storm Sewer
- Sanitary Sewer
- Property Line
- Fence Line
- Soil Gas Sampling Location (April 2003)
- Soil Gas Sample Location (August 2003)
- 25 TCE Concentration in Soil Gas
- ND Not Detected
- Proposed Vapor and Vacuum Monitoring Location
- 4"ø or 6"ø Extraction Screen
- 4"ø or 6"ø Extraction Conveyance Piping
- Soil Remediation Area
- Soil Gas Remediation Area

Bruyn Avenue

CSX Transportation, Inc. Tracks

SG-15 38

SG-14 470

SG-13 1,200

Suspected Disposal Area

Former Heating Oil Underground Storage Tank

Potential Underground Storage Tank

SG-16 1,900

MW-3

MW-9

Covered Storage Area

Former Heat Treat Area

MW-7

8,000-gal. AST

Former Underground Storage Tank

Fenbrook Avenue

SG-17 340

MW-1

Manufacturing Building

MW-8

Former Degreaser Location

SG-11 15,000

Warehouse

SG-24 1,200

Former Transformer Location

SG-5 3,700

Office Building

Former Finish and Chemical Storage Area

SG-4 650

SG-18 25

Foxhall Avenue

Smith Avenue

SG-10 10,000

Bank

MW-2

MW-4

Potential Underground Storage Tank

MW-5

SG-9 26,000

MW-6

SG-8 97,000

Potential UST

SG-7 62,000

SG-6 6,100

A B C

Grand Street

SG-12 19,000

SG-3 6,800

SG-2 7,400

SG-1 2,300

SG-19 3,800

Shufeldt Street

SG-23 26

Arlington Pl.

0 80 160

SCALE IN FEET

Drawn By: EGC | Checked: | Approved: | DWG Name: 13800840

HUCK MANUFACTURING FACILITY
KINGSTON, NEW YORK
PREPARED FOR FEDERAL-MOGUL

Figure 7

PROPOSED VAPOR AND VACUUM MONITORING LOCATION PLAN

ESC ENGINEERING OF NEW YORK, P.C.

Enclosure A – Summary of VOC Results in Soil

Table 1

Summary of VOC Soil Results
Huck manufacturing facility, Kingston, New York
March 19 through 29, 2002, and August 11 through 15, 2003 (a)

Boring ID	Evaluation	SB-1			SB-2	SB-3	SB-4		SB-5
Sample ID	Criteria (b)	SB01010	SB91010 (c)	SB01175	SB02010	SB03010	SB04010	SB04060	SB05010
Depth (ft)		1-3	1-3	17.5-19.5	1-3	1-3	1-3	6-8	1-3
VOCs (ug/kg)									
Acetone	200	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NVL	11	ND	1,700 J	ND	ND	8,200	ND	11
Methylene Chloride	100	ND	10 J	ND	ND	ND	ND	ND	6
Tetrachloroethene	1,400	ND	ND	ND	ND	ND	52,000 J	ND	43
Trichloroethene	700	83	23	47,000 J	ND	14	370,000 E	ND	290 E

Boring ID	Evaluation	SB-6		SB-7		SB-8	SB-9	
Sample ID	Criteria (b)	SB06010	SB06060	SB07010	SB07060	SB08010	SB09010	SB09160
Depth (ft)		1-3	6-8	1-3	6-8	1-3	1-3	16-18
VOCs (ug/kg)								
Acetone	200	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	ND	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NVL	140 J	ND	670 J	ND	ND	ND	3 J
Methylene Chloride	100	ND	ND	ND	ND	ND	ND	11
Tetrachloroethene	1,400	2,500	ND	3,200	ND	16	ND J	7
Trichloroethene	700	29,000 E	ND	260,000 E	ND	170	11	300 E

Table 1 (continued)

Summary of VOC Soil Results
Huck manufacturing facility, Kingston, New York
March 19 through 29, 2002, and August 11 through 15, 2003 (a)

Boring ID	Evaluation	SB-10		SB-11	SB-12	SB-13	SB-14	
Sample ID	Criteria (b)	SB10010	SB92010 (d)	SB11010	SB12010	SB13010	SB14010	SB14165
Depth (ft)		1-3	1-3	1-3	1-3	1-3	1-3	16.5-18.5
VOCs (ug/kg)								
Acetone	200	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	ND	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NVL	2 J	ND	ND	ND	6	ND	ND
Methylene Chloride	100	ND	ND	ND	5	ND	ND	ND
Tetrachloroethene	1,400	ND	ND	ND	ND	13	ND	1,000
Trichloroethene	700	130	8,400	13	24	88	120	890

Boring ID	Evaluation	SB-29		SB-30		SB-33	SB-34	SB-35
Sample ID	Criteria (b)	SB29010	SB29163	SB30010	SB30162	SB33175	SB34010	SB35010
Depth (ft)		1-3	16.3-18.3	1-3	16.2-18.2	17.5-19.5	1-3	1-3
VOCs (ug/kg)								
Acetone	200	ND	ND	ND	ND	ND	13	14
2-Butanone	300	ND	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NVL	ND	ND	2 J	4 J	2,000	ND	2 J
Methylene Chloride	100	ND	8	ND	10	ND	ND	ND
Tetrachloroethene	1,400	40	ND	12	12	93,000	17	6
Trichloroethene	700	57	ND	43	210 E	65,000	150	27

Table 1 (continued)

Summary of VOC Soil Results
Huck manufacturing facility, Kingston, New York
March 19 through 29, 2002, and August 11 through 15, 2003 (a)

Boring ID	Evaluation	SB-36		SB-37	SB-38		SB-42	SB-47
Sample ID	Criteria (b)	SB36010	SB36060	SB37010	SB38010	SB38135	SB42010	SB47010
Depth (ft)		1-3	6-8	1-3	1-3	13.5-15.5	1-3	1-3
VOCs (ug/kg)								
Acetone	200	8,300 J	8 J	9 J	34 J	15	14	19
2-Butanone	300	ND	ND	3 J	11 J	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	1 J	2 J	ND
cis-1,2-Dichloroethene	NVL	5,800 J	ND	ND	41	14	ND	1 J
Methylene Chloride	100	2,800 J	3 J	4 J	15 J	16	11	ND
Tetrachloroethene	1,400	110,000	ND	ND	6 J	2 J	ND	12
Trichloroethene	700	260,000	1 J	ND	480	150	9	100

Boring ID	Evaluation	SB-48	SB-49	SB-64	SB-65	SB-66		SB-67
Sample ID	Criteria (b)	SB48010	SB49010	SB64010	SB65010	SB66122	SB191122 (e)	SB67120
Depth (ft)		1-3	1-3	1-3	1-3	12.2-14.2	12.2-14.2	12-14
VOCs (ug/kg)								
Acetone	200	19 J	23 J	1500 J	490 J	11	5	8 J
2-Butanone	300	ND	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NVL	ND	72	530 J	2000	ND	ND	ND
Methylene Chloride	100	ND	16	710 J	ND	3 J	ND	10
Tetrachloroethene	1,400	7	5 J	16,000	73,000	ND	ND	ND
Trichloroethene	700	100	490	46,000 E	230,000 E	1 J	ND	3 J

a\ J = estimated concentration below detection limit; ND = nondetect; E = estimated value; ug/kg = micrograms per kilogram; VOCs = volatile organic compounds; NVL = no value listed.

b\ Evaluation criteria are the New York State Technical and Administrative Guidance Memorandum (TAGM) #4046 Appendix A, Table 1, Recommended Soil Cleanup Objectives (January 1994).

c\ SB91010 is a duplicate sample of SB01010.

d\ SB92010 is a duplicate sample of SB10010.

e\ SB191122 is a duplicate sample of SB66122.

(Shaded concentrations are those that exceed evaluation criteria.)

Table 1 (continued)

Summary of VOC Soil Results
Huck manufacturing facility, Kingston, New York
March 19 through 29, 2002, and August 11 through 15, 2003 (a)

Boring ID	Evaluation	SB-36		SB-37	SB-38		SB-42	SB-47
Sample ID	Criteria (b)	SB36010	SB36060	SB37010	SB38010	SB38135	SB42010	SB47010
Depth (ft)		1-3	6-8	1-3	1-3	13.5-15.5	1-3	1-3
VOCs (ug/kg)								
Acetone	200	8,300 J	8 J	9 J	34 J	15	14	19
2-Butanone	300	ND	ND	3 J	11 J	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	1 J	2 J	ND
cis-1,2-Dichloroethene	NVL	5,800 J	ND	ND	41	14	ND	1 J
Methylene Chloride	100	2,800 J	3 J	4 J	15 J	16	11	ND
Tetrachloroethene	1,400	110,000	ND	ND	6 J	2 J	ND	12
Trichloroethene	700	260,000	1 J	ND	480	150	9	100

Boring ID	Evaluation	SB-48	SB-49	SB-64	SB-65	SB-66		SB-67
Sample ID	Criteria (b)	SB48010	SB49010	SB64010	SB65010	SB66122	SB191122 (e)	SB67120
Depth (ft)		1-3	1-3	1-3	1-3	12.2-14.2	12.2-14.2	12-14
VOCs (ug/kg)								
Acetone	200	19 J	23 J	1500 J	490 J	11	5	8 J
2-Butanone	300	ND	ND	ND	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NVL	ND	72	530 J	2000	ND	ND	ND
Methylene Chloride	100	ND	16	710 J	ND	3 J	ND	10
Tetrachloroethene	1,400	7	5 J	16,000	73,000	ND	ND	ND
Trichloroethene	700	100	490	46,000 E	230,000 E	1 J	ND	3 J

a\ J = estimated concentration below detection limit; ND = nondetect; E = estimated value; ug/kg = micrograms per kilogram; VOCs = volatile organic compounds; NVL = no value listed.

b\ Evaluation criteria are the New York State Technical and Administrative Guidance Memorandum (TAGM) #4046 Appendix A, Table 1, Recommended Soil Cleanup Objectives (January 1994).

c\ SB91010 is a duplicate sample of SB01010.

d\ SB92010 is a duplicate sample of SB10010.

e\ SB191122 is a duplicate sample of SB66122.

(Shaded concentrations are those that exceed evaluation criteria.)

Enclosure B – Summary of Indoor Air and Soil Gas Results

Table 1

Indoor Air Results
Huck manufacturing facility
Kingston, New York
April 29 and August 13, 2003

Sample ID	IA-1	IA-2	IA-3	IA-4	IA-5	IA-6	IA-7	IA-8	IA-9
Parameter (ppbv)									
cis-1,2-Dichloroethene	ND	1	1.1	0.88	ND	ND	ND	9.5	0.86
Tetrachloroethene	ND	1.2	1.6	1.2	ND	10	6.9	3.5	5.8
Trichloroethene	1.7	10	14	11	3.3	18	31	48	15

Sample ID	IA-10	IA-11	IA-12	IA-13	IA-14	IA-15	IA-16
Parameter (ppbv)							
cis-1,2-Dichloroethene	1.3	1.2	0.5	0.59	0.88	2.5	1.3
Tetrachloroethene	4.3	7.5	3.9	2.6	2.8	9.7	1.3
Trichloroethene	20	20	24	10	13	19	35

a/ Indoor air samples analyzed by U.S. Environmental Protection Agency Method TO-15; ND = compound not detected above laboratory detection limits.

Table 2

Soil Gas Results
Huck manufacturing facility
Kingston, New York
April and August 2003 (a)

Sample ID	SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	SG-7	SG-8	SG-9
Parameter (ppbv)									
cis-1,2-Dichloroethene	ND	470	240	6.5	140	160	2,900	8,800	2,900
Tetrachloroethene	130	2,800	6,200	110	1,500	200	6,300	21,000	45,000
Trichloroethene	2,300	7,400	6,800	650	3,700	6,100	62,000	97,000	26,000

Sample ID	SG-10	SG-11	SG-12	SG-13	SG-14	SG-15	SG-16	SG-17	SG-18
Parameter (ppbv)									
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	2.7	ND	ND	ND
Tetrachloroethene	510	9,900	210	380	17	7.2	1,700	130	38
Trichloroethene	10,000	15,000	19,000	1,200	470	38	1,900	340	25

Sample ID	SG-19	SG-20	SG-21	SG-22	SG-23	SG-24
Parameter (ppbv)						
cis-1,2-Dichloroethene	47	ND	ND	ND	ND	ND
Tetrachloroethene	4,600	4.8	5.3	ND	ND	51
Trichloroethene	3,800	1.7	ND	ND	2.6	1,200

a/ Soil gas samples analyzed by U.S. Environmental Protection Agency Method TO-15; ND = compound not detected above laboratory detection limits.

Enclosure C – NYSDOH Indoor Air Quality Questionnaires

OSR - 3

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. *Indoor air samples IA-6/IA-7*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving-Office Building (First Floor and Basement)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. ___ Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Same as above*

Address: *Same as above*

Phone No. *Same as above*

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 *2 with basement*
Mobile Home	Other specify *Brick office building*

Residence Age *late 1800s* General Description of Building Construction Materials *Brick exterior. First floor is finished as office spaces with carpet and tile floors, plaster walls (or wallboard) and plaster and drop ceilings.*

Is the building insulated? (Yes) /No How air tight is the building *Appears tight*

OSR-3 (continued)

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

1. (Full basement,) crawlspace, slab on grade, other _____ *crawl space under western portion of building*

2. Basement floor: (concrete,) dirt, other _____

3. Concrete floor: (unsealed,) painted, covered; with _____

1. Foundation walls: poured concrete, block, laid up stone, other *laid up brick*

5. The basement is: wet, damp, dry _____ Sump present? y/(n) Water in sump? y / n *NA*

6. The basement is: finished, (unfinished) _____

7. Identify potential soil vapor entry points (e.g., cracks, utility ports etc.)
Pipe protruding from floor along west wall, UST piping (former) penetrates north wall.

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: *Natural-gas boiler*

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: *basement*

4. Is there air-conditioning? (Yes) /No Central Air or Window Units? *Central Air*

Specify the location *First and second floor*

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

AC ductwork is covered in insulation blanket and could not be inspected.

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. _____*Pest control on preventive basis*_____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: *NA*

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 __*NA*____ Type of septic tank additive _____*NA*____

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving-Office Building (First Floor and Basement)*

Investigator: *Brian Silfer* Date: *8/11/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
UPSTAIRS		
Liquid paper		
Stamper Refill Ink		
Expo Dry Erase Markers		
Sharpie Pens		
WD-40	*Petroleum distillates*	
Compressed Gas Duster	*Dichlorodifluoromethane*	
DOWNSTAIRS *(PID reading of ambient air = 0.0 ppm)*		
Valspar Spray Paint	*Acetone/xylene*	*0.0*
Raid Ant Killer	*Petroleum distillates*	*0.1/0.0*
Sunnyside Denatured Alcohol Solvent	*Ethyl alcohol, methanol*	*0.0*
Lynsol Clean Air Solvent	*Ethyl alcohol*	*6.0*
Behr Porch Floor Paint	*Propylene glycol*	*0.1*
Skid Tex	-	*0.0*
Latex Trim Paint	*Propylene glycol, ethylene glycol*	*0.0*
DAP Caulk	*None listed*	*0.0*
Ben Moore Alkyd Paint	*Xylene, stoddard solvent*	
Paint thinner	*Mineral spirits*	

OSR - 3

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. *Indoor air sample IA-8*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving and Storage (Main Building)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Cinder block and brick walls, concrete floor, wooden roof structure, wood sub-roof*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

   (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) _*Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: __*No central system, each unit with own thermostat.*

4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location _*Main office complex only*___

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   _____*NA*_____

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 *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: ***NA***

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving - Former Metal Finish Area*

Investigator: *Brian Silfer* Date: *8/11/03*

Product description (dispenser, size, manufacturer ...)	VOC Ingredients	PID Reading (ppm)
Indoor air sample IA-8 will be collected in the aisle between storage units 18 and 19. No materials are stored in the aisles. No information is available regarding the materials stored in the adjacent lockers. Ambient air PID reading is approximately 1.0 to 1.1 ppm.		

OSR - 3

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. *Indoor air sample IA-9*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving and Storage (Main Building)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Cinder block and brick walls, concrete floor, wooden roof structure, wood sub-roof*

Is the building insulated? Yes (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

   (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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*

4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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) *(two motor cycles)*
4. Is there a kerosene heater present? Yes / (No)
5. Is there a workshop, hobby or craft area in the residence? (Yes) /No *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: ***NA***

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 *NA* Type of septic tank additive *NA*

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving - Main Building Degreaser Area*

Investigator: *Brian Silfer* Date: *8/11/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Indoor air sample IA-9 will be collected in the aisle near storage unit 406. There are no materials stored in the aisle. No information on materials in adjacent storage units. The ambient air PID reading is 0.9 ppm.		

OSR - 3

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. *Indoor air sample IA-10*

Preparer's Name *Brian Silfer* Date Prepared *8/12/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving and Storage (Main Building)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Cinder block and brick walls, concrete floor, wooden roof structure, wood sub-roof*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

(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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*
4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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) *(two motor cycles)*
4. Is there a kerosene heater present? Yes / (No)
5. Is there a workshop, hobby or craft area in the residence? (Yes) /No *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: ***NA***

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving - Former Heat Treat Area*

Investigator: *Brian Silfer* Date: *8/12/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Indoor air sample IA-10 will be collected in the aisle near storage unit 108. There are no materials stored in the aisle. No information on materials in adjacent storage units. The ambient air PID reading is 0.0 ppm.		

OSR - 3

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. *Indoor air sample IA-11*

Preparer's Name *Brian Silfer* Date Prepared *8/12/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT**

Name: *Allways Moving and Storage (Main Building)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

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

Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Sample location is below second story offices (locker 387). Floor of offices is 2x10 joists with bridging and wood plank subfloor. Other aspects of building construction is same as other sample locations within the storage area of the main building (i.e., cinder block and brick walls, concrete floor, wooden roof structure, wood sub-roof).*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

(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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*
4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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) *(two motor cycles)*
4. Is there a kerosene heater present? Yes / (No)
5. Is there a workshop, hobby or craft area in the residence? (Yes) /No *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: ***NA***

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving*

Investigator: *Brian Silfer* Date: *8/12/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Indoor air sample IA-11 will be collected below second story offices near locker 387. There are no materials stored near locker 387 and no information is available regarding the materials within the lockers. The ambient air PID reading is 0.0 ppm.		

OSR - 3

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. *Indoor air sample IA-12*

Preparer's Name *Brian Silfer* Date Prepared *8/12/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Family Services, Inc.*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. _____

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

_____

Phone No. *845-339-5676*

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 *Office Area*

Residence Age *>100 years* General Description of Building Construction Materials *General construction is the same as the main building (i.e., cinder block and brick walls, concrete floor, wooden roof structure, wood sub-roof), but space is finished as an office with wood paneling on the walls, carpeted floor, drop ceiling, fluorescent lights. Bathroom has tile floor and tile/wallboard walls.*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *N/A - Electric*

4. Is there air-conditioning? Yes/ No Central Air or Window Units? *Uncertain-No AC units identified and none were in operation*
   Specify the location _____

5. Are there air distribution ducts present? Yes/No *None visible*

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

   None visible

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. _____*Unknown*_____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: *NA*

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: *NA*

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Family Services*

Investigator: *Brian Silfer* Date: *8/12/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
No chemicals in plain sight within either office room.		

OSR - 3

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. *Indoor air sample IA-13*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Klomm Construction (Storage)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. _____

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

_____

Phone No. *845-339-5676*

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 *>100 years* General Description of Building Construction Materials *Concrete floor (unsealed), brick walls, sloped wooden roof supports and subroof. Red (water?) pipes penetrate north wall (sprinkler). Brass pipe penetrates east wall and goes into floor slab. Pipe cemented into floor. Door opening to main storage area of main building.*

Is the building insulated? Yes (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

   (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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*

4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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 *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: ***NA***

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence ___*Klomm Construction (Storage)*___

Investigator: __*Brian Silfer*_____ Date: *8/11/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
No materials stored in the space. Ambient air PID reading is 1.5 ppm.		

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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. *Indoor air sample IA-14*

Preparer's Name *Brian Silfer* Date Prepared *8/12/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving/Bailey Pottery (The majority of the space is occupied by Allways storage units. A small area at the south end is leased by Bailey Pottery for storage. This form is for the Bailey space.)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Brick walls, cement floor, an overhead door for access, wooden roof support and sub-roof. Space is separated from Allways' space by a 2x4 and plywood wall.*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

   (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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*

4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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 *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: *NA*

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: *NA - no water use*

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 *NA* Type of septic tank additive *NA*

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving/Bailey Pottery*

Investigator: *Brian Silfer* Date: *8/12/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Cardboard boxes		
Firebrick		
Equipment in wood crates		
50 bags of pigment/additive		
The indoor air sample IA-14 will be collected in the Allways Storage portion of the building in the aisle. No materials are stored in the aisle and no information is available regarding the materials within the lockers. The ambient air PID reading is 0.0 ppm.		

OSR - 3

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. *Indoor air sample IA-15*

Preparer's Name *Brian Silfer* Date Prepared *8/12/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Klomm Construction (Roofer)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. _____

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

_____

Phone No. *845-339-5676*

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 *>100 years* General Description of Building Construction Materials *Cinderblock and brick walls, finished inside with paneling and drop ceiling, tile floor over concrete, three small windows. West wall is common with main building - door present.*

Is the building insulated? Yes /No *Unknown - no insulation visible* How air tight is the building *Moderate to tight - no obvious holes*

OSR-3 (continued)

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

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: *No obvious source of heating or cooling - inactive air purifying system in drop ceiling. Baseboard heat in south end of space.*

   Hot Air Circulation — Heat Pump

   Hot Water Radiation — Unvented Kerosene Heater

   Steam Radiation — Wood stove

   Electric Baseboard — Other (specify) *None observed*

2. The type(s) of fuel(s) used is/are: Natural gas, Fuel Oil, Electric, Wood, Coal, Solar Other (specify) *NA*
3. Is the heating system's power plant located in the basement or another area: *NA*
4. Is there air-conditioning? Yes/ (No) Central Air or Window Units?

   Specify the location _____
5. Are there air distribution ducts present? (Yes) /No *Ducts appear to be associated with inactive air purifying system that was likely part of former Huck operations.*
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

   NA

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) *None observed*
5. Is there a workshop, hobby or craft area in the residence? Yes/ (No)
   (Room is storage for roofing supplies)
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.
   _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: *NA*

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: *NA - public water*

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving - Klomm Construction*

Investigator: *Brian Silfer* Date: *8/12/03*

PID reading of ambient air in building = 0.3 ppm.

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Gas-powered compressor with gas cans		*120+*
Gen Flex Seam Adhesive	*Label obscured - toluene/xylene*	*5.8*
Gen Flex (EPDM) Primer	*Light aliphatic solvent, aromatic hydrocarbon solvent*	*0.0*
GS Ruffing Granules	*None listed*	*0.0*
Master Mechanic Hydraulic Oil	*None listed*	*0.0*
Geocel Acrylic Roof Patch	*None listed*	*0.5*
Gen Flex Clear Primer	*Light aliphatic solvent, aromatic hydrocarbon solvent*	*0.8*
Frontier Plastic Cement	*Petroleum distillates*	*1.5*
Gen Flex Bonding Adhesive	*Toluene, hexane, heptane, phenolic resin, polychloropropene*	*10.7*
Verisco White Seam Adhesive	*Toluene, acetone, ethylbenzene, xylene, distillates*	*0.0*
Geocel Construction Sealant (tube)	*Aromatic hydrocarbons, resins, polyisopropylene*	*0.0*
NPI Urethane Sealant	*Mineral spirits*	*0.0*
Latex Caulk	*None listed*	*0.0*
Silicone Sealant	*None listed*	*0.0*
PVC Cement	*MEK/acetone, PVC resin*	*0.0*
Various latex and acrylic paints		*0.0*
Monsey Bakor Aluminum roof coating	*Petroleum distillates*	*1.7*
Weather-Tite Pourable Foam Insulation	*Polyurethane polymer, methylene bis (phenyl isocyanate), methylene bis (phenyl isocyanate) isomers*	*0.0*
Karnak Flashing Cement	*Mineral spirits*	*0.7*
Ben Moore Metal & Wood Enamel	*Stoddard Solvent*	*0.0*
Sealoflex CT (in Ziplock bags)	*None listed*	*0.0*
Geocel 2315 LRF Brushable Sealant	*PCE*	*0.0*
NAPA Cars Choke & Cleaner	*Xylene*	*0.0*
QD Electronic Cleaner	*Methanol, n-hexane, isohexane, petroleum distillates*	*0.0*
WD-40	*Petroleum distillates*	*0.0*
Karnak Perfect Seal Aluminum Coating	*None listed*	*6.3 (at cover)*

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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. *Indoor air sample IA-16*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving and Storage (Main Building)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Bathroom has concrete floor with sump, brick/sheet metal walls, drop ceiling.*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

   (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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*
4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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 *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: *NA*

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: *NA*

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 *NA* Type of septic tank additive *NA*

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving - Main Office Bathroom*

Investigator: *Brian Silfer* Date: *8/11/03*

(Note: PID readings around sump cover are 0.5 to 0.6 ppm. Background is 0.4 to 0.5 ppm.)

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Easy-Off Oven Cleaner	*None*	*0.0*
Raid Ant and Roach Killer	*Petroleum distillates*	*0.0*
Turtle Wax Lemon Furniture Polish	*None listed*	*0.0*
Guardsman One-Wipe	*"Propellant"*	*0.0*
Lime Away	*None listed*	*0.0*
CLR	*None listed*	*0.0*
Bissell Potpourri Spray	*None listed*	*0.0*
Windex	*None listed*	*0.0*

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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. *Indoor air sample IA-3*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving & Storage (Main Office)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. ___ Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Same as above*

Address: *Same as above*

Phone No. *Same as above*

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 *>100 years* General Description of Building Construction Materials *Cinder block and brick walls, concrete floor, wood roof supports, wood-planked roof*

Is the building insulated? Yes (No) How air tight is the building *Moderately*

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: *22 gas-fired units*

   (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) *Main building formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central heating system, each unit with own thermostat.*

4. Is there air-conditioning? Yes / (No) Central Air or Window Units?

   Specify the location _____

5. Are there air distribution ducts present? Yes / (No) *Heat blows out of gas-fired units*

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

   NA

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) *(2 motor cycles are stored inside the building)*
4. Is there a kerosene heater present? Yes / (No)
5. Is there a workshop, hobby or craft area in the residence? (Yes) /No *(Small storage area in main office – see product inventory form)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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 *NA – public water*

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

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

Distance from well to septic system *NA* Type of septic tank additive *NA*

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Allways Moving – Main Office*

Investigator: *Brian Silfer* Date: *8/11/03*

PID reading of ambient air in Main office = 0.6 ppm.

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Lysol Kitchen Cleaner	*None*	*0.0*
Painters Touch Multi-Purpose Latex Paint	*None listed*	*0.0*
Testers Model Paint	*None listed*	*0.0*
Delta Ceram Coat Acrylic Paint (G) (unopened)	*None listed*	
Black electrician tape/duct tape	*None listed*	*1.5 (black tape)*
Loctitie Stone Repair (2 part)	*Epoxy resin, o-cresyl glycidyl ether, polymercaptan, amine resin*	*0.0*
Super Strength Epoxy (unopened)	*Tetraethylenetetramine*	*0.0*
Crazy Glue (unopened)	*Cyanoacrylate*	*0.0*
Probond Model & Hobby Cement	*MEK*	*0.0*
Valspar Gloss Enamel	*Acetone, xylene*	*NA**
Loctite – Quicktite	*Cyanoacrylate*	*NA**
STP Power Steering	*Petroleum distillates, ethylene glycol monobutyl ether*	*NA**
Mohawk Furniture Wash	*Mineral spirits, VOCs – 19%*	*NA**
Pipe Thread Compound	*None listed*	*NA**
Mohawk Silicone Dry Lubricant	*Petroleum distillates, petroleum propellant*	*NA**
Old English Scratch Cover (4)	*Petroleum distillates*	*NA**
Sanford Expo White Board Cleaner	*None listed*	*NA**
Mr. Gasket Plexiglass Cleaner	*None listed*	*NA**
Rustoleum Painter's Touch	*Acetone, xylene*	*NA**
Rustoleum Specialty Lacquer	*Toluene, petroleum distillates*	*NA**
Minwax Wood Finish	*Aliphatic hydrocarbons*	*NA**
Oatey CPVC Cement	*MEK, tetrahydrofuran, epic resin, cyclohexanone, amorphus silica*	*NA**
Porcelain Touch-up	*Toluene, xylene*	*NA**
Minwax Polyurethane	*Petroleum thinners*	*NA**
Minwax Fast Drying Polyurethane	*Mineral spirits*	*NA**
Liquid Leaf	*Xylene*	*NA**
Monel Master Paint	*Petroleum distillates*	*NA**
Plastic Wood	*Acetone*	*NA**
Carver Tripp Wood Stain	*Petroleum distillates*	*NA**
Behr Enamel	*Ethylene glycol*	*NA**

* NA = not analyzed on August 11, 2003. PID reading was collected on April 28, 2003 (see Main Office OSR-3 form completed on April 28, 2003 for PID reading.)

Household Products Inventory (continued)

Occupant / residence *Allways Moving – Main Office*

Investigator: *Brian Silfer* Date: *8/11/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Unknown enamel (covered with paint)	*Acrylic polymer, propylene glycol, trimethylpentanediol isobutyrate*	*NA**
Olympic Acrylic Paint	*Alkyd resin, isobutyrate, copper phthalocyanine*	*NA**
Unknown paint (obscured label)	*Mineral spirits*	*NA**
OOPS	*Petroleum distillates*	*NA**
Goof Off	*Xylene, methyl carbitol surfactant*	*NA**
Plastic Polish – NUVUS	*None listed*	*NA**
Megular's Mirror Glaze	*Petroleum distillates*	*NA**
Brasso	*Petroleum distillates*	*NA**
3-in-1 Oil	*Petroleum distillates*	*NA**
Power Care Engine Oil	*None listed*	*NA**
Titebond Wood Glue	*None listed*	*NA**
Elmers Glue	*None listed*	*NA**
Duro Contact Cement	*1,1,1-Trichloroethane*	*NA**
Epoxy Hardener	*Tetraethylenetramine*	*NA**
The Grabbers Fix-All Adhesive	*Xylene, VM&P naphtha, ethylbenzene*	*NA**
Panef Lock De-Icer	*None listed*	*NA**
Dow Corning 839 Silicone Adhesive	*Acthyltrimethoxysilane, dimethylsiloxane, dimethylvinyl terminated alkoxy-functional siloxane, diisopropoxy di ethoxyacetoacetyl titanate*	*NA**
Elmers Probond	*MEK*	*NA**
5-gallon bucket Fuel/Oil Mix	*None listed*	*NA**
Liquid Paper (green)	*None listed*	*NA**
Expo Dry Erase Pens	*None listed*	*NA**
Sanford Sharpie Pens	*None listed*	*NA**
NAPA Motor Oil	*None listed*	*NA**
Lime-A-Way	*None listed*	*NA**

* NA = not analyzed on August 11, 2003. PID reading was collected on April 28, 2003 (see Main Office OSR-3 form completed on April 28, 2003 for PID reading.)

OSR - 3

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. *Indoor air sample IA-4.*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT** Name: *Allways Moving and Storage (Main Building)*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *845-339-5676*

2. **OWNER OR LANDLORD**: (If different than occupant) Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *Same above*

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 *>100 years* General Description of Building Construction Materials *Cinder block and brick walls, concrete floor, wooden roof structure, wood sub-roof*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

OSR-3 (continued)

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

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: *Twenty-two gas-fired units*

   (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) *Formerly had back-up fuel oil heat*

3. Is the heating system's power plant located in the basement or another area: *No central system, each unit with own thermostat.*

4. Is there air-conditioning? (Yes) /No Central Air or Window Units?

   Specify the location *Main office complex only*

5. Are there air distribution ducts present? Yes /(No) *Heat blows directly out of each gas-fired unit; ceiling fans in raised roof area in wing parallel to Tenbroeck Avenue.*

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

   NA

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 *(Small shop area in back of main office)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: ***NA***

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: ***NA***

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 ___*NA*___ Type of septic tank additive ___*NA*___

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence ___*Allways Moving - Near Entrance to Main Office*___

Investigator: __*Brian Silfer*_____ Date: *8/11/03*

Product description (dispenser, size, manufacturer …)	VOC Ingredients	PID Reading (ppm)
Indoor air sample IA-4 will be collected within the main building just outside door to the main office. This area is an aisle between the main office and nearby storage units. No materials are stored in this area - only a beverage vending machine, a snack vending machine, and two candy vending machines. Ambient air PID reading is 1.2 ppm (0.6 ppm outside).		

OSR - 3

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. *Indoor air sample IA-5*

Preparer's Name *Brian Silfer* Date Prepared *8/11/03*

Preparer's Affiliation *ESC Engineering of New York, PC* Phone No. *315-655-3900, ext. 221*

1. **OCCUPANT**

Name: *Former Scheffel Furniture*

Address: *85 Grand Street*

Kingston, NY 12401

County: *Ulster*

Home Phone No. *NA* Office Phone No. *NA [space currently vacant]*

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

Name: *Allways Moving and Storage*

Address: *Same as above*

Phone No. *845-339-5676*

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 *>100 years* General Description of Building Construction Materials *Cinder block and brick walls, finished inside with paneling and drop ceiling, cement slab-on-grade floor. Space shares west wall common with main building. Floor partially tiled. Overhead door opening to plant has been sealed off with wood framed/plywood wall, but is not airtight (i.e., gaps were observed).*

Is the building insulated? Yes / (No) How air tight is the building *Moderately*

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: *No*.
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

   NA

   _____

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 *(Space used for furniture refinishing)*
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. _____ *No* _____

E. Water and Sewage (Circle the appropriate response)

Source of Water

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

Water Well Specifications: *NA*

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: *NA*

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.

See Figure 3 in report.

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.

Outdoor air sample OA-2 was collected in the eastern parking lot at the location designated OA-2 on Figure 3.

Household Products Inventory

Occupant / residence *Former Scheffel Furniture*

Investigator: *Brian Silfer* Date: *48/11/03*

Product description (dispenser, size, manufacturer ...)	VOC Ingredients	PID Reading (ppm)
Scheffel Furniture has vacated the space. Items stored in space include electric generator, motor cycle, walk behind lawn mower, chain saw, wire mesh screen, sheet metal (i.e., storage unit components)		
Power Care Generator Oil	*None listed*	*2.2*
Gas Stabilizer	*Mineral spirits*	6.5
Gas Treatment	*Petroleum distillates*	*4.4*
Gas can (capped)		*67*
Gas/oil mix		*189*

Enclosure D – Indoor Air and Soil Gas Results

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: OA-2

GC/MS Volatiles

Lot-Sample #...: H3H190105-001 **Work Order #...:** FWHF41AA **Matrix.....:** AIR
Date Sampled...: 08/13/03 **Date Received..:** 08/16/03
Prep Date.....: 08/28/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3245417
Dilution Factor: 2.09 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.42	ppb(v/v)
Tetrachloroethene	ND	0.42	ppb(v/v)
Trichloroethene	**0.77**	**0.42**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	107	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-4

GC/MS Volatiles

Lot-Sample #...: H3H190105-002	**Work Order #...:** FWHF61AA	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/28/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3245417		
Dilution Factor: 1.69	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**0.88**	**0.34**	**ppb(v/v)**
Tetrachloroethene	**1.2**	**0.34**	**ppb(v/v)**
Trichloroethene	**11**	**0.34**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	110	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-3

GC/MS Volatiles

Lot-Sample #...: H3H190105-003	**Work Order #...:** FWHF71AA	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/28/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3245417		
Dilution Factor: 1.77	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**1.1**	**0.35**	**ppb(v/v)**
Tetrachloroethene	**1.6**	**0.35**	**ppb(v/v)**
Trichloroethene	**14**	**0.35**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	106	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-16

GC/MS Volatiles

Lot-Sample #...: H3H190105-004	**Work Order #...:** FWHF81AD	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/28/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3245417		
Dilution Factor: 1.8	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**1.3**	**0.36**	**ppb(v/v)**
Tetrachloroethene	**1.3**	**0.36**	**ppb(v/v)**
Trichloroethene	**35**	**0.36**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	97	(70 - 130)
Toluene-d8	99	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-8

GC/MS Volatiles

Lot-Sample #...: H3H190105-005	**Work Order #...:** FWHF91AA	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3244129		
Dilution Factor: 1.86	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**9.5**	**0.37**	**ppb(v/v)**
Tetrachloroethene	**3.5**	**0.37**	**ppb(v/v)**
Trichloroethene	**48**	**0.37**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	104	(70 - 130)
Toluene-d8	105	(70 - 130)
4-Bromofluorobenzene	106	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-10

GC/MS Volatiles

Lot-Sample #...: H3H190105-006 **Work Order #...:** FWHGA1AA **Matrix.....:** AIR
Date Sampled...: 08/13/03 **Date Received..:** 08/16/03
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 1.94 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**1.3**	**0.39**	**ppb(v/v)**
Tetrachloroethene	**4.3**	**0.39**	**ppb(v/v)**
Trichloroethene	**20**	**0.39**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	103	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-14

GC/MS Volatiles

Lot-Sample #...: H3H190105-007	**Work Order #...:** FWHGC1AA	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3244129		
Dilution Factor: 1.73	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**0.88**	**0.35**	**ppb(v/v)**
Tetrachloroethene	**2.8**	**0.35**	**ppb(v/v)**
Trichloroethene	**13**	**0.35**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	102	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-9

GC/MS Volatiles

Lot-Sample #...: H3H190105-008	**Work Order #...:** FWHGD1AA	**Matrix.....:** AIR	
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03		
Prep Batch #...: 3244129			
Dilution Factor: 1.71	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**0.86**	**0.34**	**ppb(v/v)**
Tetrachloroethene	**5.8**	**0.34**	**ppb(v/v)**
Trichloroethene	**15**	**0.34**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	97	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	101	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-11

GC/MS Volatiles

Lot-Sample #...: H3H190105-009	**Work Order #...:** FWHGE1AA	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3244129		
Dilution Factor: 1.77	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**1.2**	**0.35**	**ppb(v/v)**
Tetrachloroethene	**7.5**	**0.35**	**ppb(v/v)**
Trichloroethene	**20**	**0.35**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	95	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-13

GC/MS Volatiles

Lot-Sample #...: H3H190105-010	**Work Order #...:** FWHGG1AA	**Matrix.....:** AIR	
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03		
Prep Batch #...: 3244129			
Dilution Factor: 1.81	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**0.59**	**0.36**	**ppb(v/v)**
Tetrachloroethene	**2.6**	**0.36**	**ppb(v/v)**
Trichloroethene	**10**	**0.36**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	92	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-5

GC/MS Volatiles

Lot-Sample #...: H3H190105-011 **Work Order #...:** FWHGH1AA **Matrix.....:** AIR
Date Sampled...: 08/13/03 **Date Received..:** 08/16/03
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 1.68 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.34	ppb(v/v)
Tetrachloroethene	ND	0.34	ppb(v/v)
Trichloroethene	**3.3**	**0.34**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	94	(70 - 130)
Toluene-d8	99	(70 - 130)
4-Bromofluorobenzene	99	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-15

GC/MS Volatiles

Lot-Sample #...: H3H190105-012	**Work Order #...:** FWHGJ1AA	**Matrix.....:** AIR	
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/28/03	**Analysis Date..:** 08/28/03		
Prep Batch #...: 3245417			
Dilution Factor: 2.27	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**2.5**	**0.45**	**ppb(v/v)**
Tetrachloroethene	**9.7**	**0.45**	**ppb(v/v)**
Trichloroethene	**19**	**0.45**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	103	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-6

GC/MS Volatiles

Lot-Sample #...: H3H190105-013	**Work Order #...:** FWHGK1AA	**Matrix.....:** AIR
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3244129		
Dilution Factor: 1.74	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.35	ppb(v/v)
Tetrachloroethene	**10**	**0.35**	**ppb(v/v)**
Trichloroethene	**18**	**0.35**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	92	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-7

GC/MS Volatiles

Lot-Sample #...: H3H190105-014 **Work Order #...:** FWHGL1AA **Matrix.....:** AIR
Date Sampled...: 08/13/03 **Date Received..:** 08/16/03
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 1.78 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.36	ppb(v/v)
Tetrachloroethene	**6.9**	**0.36**	**ppb(v/v)**
Trichloroethene	**31**	**0.36**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	96	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: IA-12

GC/MS Volatiles

Lot-Sample #...: H3H190105-015	**Work Order #...:** FWHGM1AA	**Matrix.....:** AIR	
Date Sampled...: 08/13/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03		
Prep Batch #...: 3244129			
Dilution Factor: 1.92	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**0.50**	**0.38**	**ppb(v/v)**
Tetrachloroethene	**3.9**	**0.38**	**ppb(v/v)**
Trichloroethene	**24**	**0.38**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	97	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-6

GC/MS Volatiles

Lot-Sample #...:	H3H190105-016	**Work Order #...:**	FWHGN1AA	**Matrix.....:**	AIR
Date Sampled...:	08/14/03	**Date Received..:**	08/16/03		
Prep Date.....:	08/28/03	**Analysis Date..:**	08/28/03		
Prep Batch #...:	3245417				
Dilution Factor:	796.5	**Method.....:**	EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**160**	**160**	**ppb(v/v)**
Tetrachloroethene	**200**	**160**	**ppb(v/v)**
Trichloroethene	**6100**	**160**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	87	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	97	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-7

GC/MS Volatiles

Lot-Sample #...: H3H190105-017	**Work Order #...:** FWHGP1AA	**Matrix.....:** AIR	
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03		
Prep Batch #...: 3244129			
Dilution Factor: 3383.4	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**2900**	**680**	**ppb(v/v)**
Tetrachloroethene	**6300**	**680**	**ppb(v/v)**
Trichloroethene	**62000**	**680**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	105	(70 - 130)
4-Bromofluorobenzene	103	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-8

GC/MS Volatiles

Lot-Sample #...: H3H190105-018	**Work Order #...:** FWHGQ1AA	**Matrix.....:** AIR	
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/28/03	**Analysis Date..:** 08/28/03		
Prep Batch #...: 3245417			
Dilution Factor: 12401	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**8800**	**2500**	**ppb(v/v)**
Tetrachloroethene	**21000**	**2500**	**ppb(v/v)**
Trichloroethene	**97000**	**2500**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	101	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	104	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-9

GC/MS Volatiles

Lot-Sample #...: H3H190105-019	**Work Order #...:** FWHGR1AA	**Matrix.....:** AIR
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3244129		
Dilution Factor: 1894.7	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**2900**	**380**	**ppb(v/v)**
Tetrachloroethene	**45000**	**380**	**ppb(v/v)**
Trichloroethene	**26000**	**380**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	104	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	103	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-10

GC/MS Volatiles

Lot-Sample #...: H3H190105-020	**Work Order #...:** FWHGT1AA	**Matrix.....:** AIR
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/28/03	**Analysis Date..:** 08/28/03	
Prep Batch #...: 3245417		
Dilution Factor: 559.3	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	110	ppb(v/v)
Tetrachloroethene	**510**	**110**	**ppb(v/v)**
Trichloroethene	**10000**	**110**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	105	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	105	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-11

GC/MS Volatiles

Lot-Sample #...: H3H190105-021 **Work Order #...:** FWHGV1AA **Matrix.....:** AIR
Date Sampled...: 08/14/03 **Date Received..:** 08/16/03
Prep Date.....: 08/28/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3245417
Dilution Factor: 816.87 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	160	ppb(v/v)
Tetrachloroethene	**9900**	**160**	**ppb(v/v)**
Trichloroethene	**15000**	**160**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	106	(70 - 130)
4-Bromofluorobenzene	106	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-12

GC/MS Volatiles

Lot-Sample #...: H3H190105-022	**Work Order #...:** FWHGW1AA	**Matrix.....:** AIR	
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/28/03	**Analysis Date..:** 08/29/03		
Prep Batch #...: 3245417			
Dilution Factor: 990.33	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	200	ppb(v/v)
Tetrachloroethene	**210**	**200**	**ppb(v/v)**
Trichloroethene	**19000**	**200**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	108	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-22

GC/MS Volatiles

Lot-Sample #...: H3H190105-023 **Work Order #...:** FWHGX1AA **Matrix.....:** AIR
Date Sampled...: 08/14/03 **Date Received..:** 08/16/03
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 3.35 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.67	ppb(v/v)
Tetrachloroethene	ND	0.67	ppb(v/v)
Trichloroethene	ND	0.67	ppb(v/v)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	100	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-21

GC/MS Volatiles

Lot-Sample #...: H3H190105-024 **Work Order #...:** FWHG01AA **Matrix.....:** AIR
Date Sampled...: 08/14/03 **Date Received..:** 08/16/03
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 4.28 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.86	ppb(v/v)
Tetrachloroethene	**5.3**	**0.86**	**ppb(v/v)**
Trichloroethene	ND	0.86	ppb(v/v)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	101	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	102	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-20

GC/MS Volatiles

Lot-Sample #...: H3H190105-025 **Work Order #...:** FWHG11AA **Matrix.....:** AIR
Date Sampled...: 08/14/03 **Date Received..:** 08/16/03
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 4.72 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.94	ppb(v/v)
Tetrachloroethene	**4.8**	**0.94**	**ppb(v/v)**
Trichloroethene	**1.7**	**0.94**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	102	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-19

GC/MS Volatiles

Lot-Sample #...: H3H190105-026	**Work Order #...:** FWHG21AA	**Matrix.....:** AIR	
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03		
Prep Date.....: 08/28/03	**Analysis Date..:** 08/29/03		
Prep Batch #...: 3245417			
Dilution Factor: 189	**Method.....:** EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	**47**	**38**	**ppb(v/v)**
Tetrachloroethene	**4600**	**38**	**ppb(v/v)**
Trichloroethene	**3800**	**38**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	110	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	108	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-18

GC/MS Volatiles

Lot-Sample #...: H3H190105-027	**Work Order #...:** FWHG31AA	**Matrix.....:** AIR
Date Sampled...: 08/14/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/29/03	
Prep Batch #...: 3244129		
Dilution Factor: 4.54	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.91	ppb(v/v)
Tetrachloroethene	**38**	**0.91**	**ppb(v/v)**
Trichloroethene	**25**	**0.91**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	97	(70 - 130)
Toluene-d8	105	(70 - 130)
4-Bromofluorobenzene	101	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-17

GC/MS Volatiles

Lot-Sample #...: H3H190105-028 **Work Order #...:** FWHG41AA **Matrix.....:** AIR
Date Sampled...: 08/15/03 **Date Received..:** 08/16/03
Prep Date.....: 09/02/03 **Analysis Date..:** 09/02/03
Prep Batch #...: 3246353
Dilution Factor: 16 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	3.2	ppb(v/v)
Tetrachloroethene	**130**	**3.2**	**ppb(v/v)**
Trichloroethene	**340**	**3.2**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	106	(70 - 130)
Toluene-d8	106	(70 - 130)
4-Bromofluorobenzene	106	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-16

GC/MS Volatiles

Lot-Sample #...: H3H190105-029	**Work Order #...:** FWHG51AA	**Matrix.....:** AIR
Date Sampled...: 08/15/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/28/03	**Analysis Date..:** 08/28/03	
Prep Batch #...: 3245417		
Dilution Factor: 96.13	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	19	ppb(v/v)
Tetrachloroethene	**1700**	**19**	**ppb(v/v)**
Trichloroethene	**1900**	**19**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	105	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-15

GC/MS Volatiles

Lot-Sample #...: H3H190105-030	**Work Order #...:** FWHG61AA	**Matrix.....:** AIR
Date Sampled...: 08/15/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/29/03	**Analysis Date..:** 08/30/03	
Prep Batch #...: 3244129		
Dilution Factor: 3.76	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	2.7	0.75	ppb(v/v)
Tetrachloroethene	7.2	0.75	ppb(v/v)
Trichloroethene	38	0.75	ppb(v/v)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	96	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-14

GC/MS Volatiles

Lot-Sample #...: H3H190105-031 **Work Order #...:** FWHG71AA **Matrix.....:** AIR
Date Sampled...: 08/15/03 **Date Received..:** 08/16/03
Prep Date.....: 09/03/03 **Analysis Date..:** 09/03/03
Prep Batch #...: 3247137
Dilution Factor: 27.3 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	5.5	ppb(v/v)
Tetrachloroethene	**17**	**5.5**	**ppb(v/v)**
Trichloroethene	**470**	**5.5**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	101	(70 - 130)
Toluene-d8	105	(70 - 130)
4-Bromofluorobenzene	104	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-13

GC/MS Volatiles

Lot-Sample #...: H3H190105-032	**Work Order #...:** FWHG81AA	**Matrix.....:** AIR
Date Sampled...: 08/15/03	**Date Received..:** 08/16/03	
Prep Date.....: 08/28/03	**Analysis Date..:** 08/28/03	
Prep Batch #...: 3245417		
Dilution Factor: 66.67	**Method.....:** EPA-2 TO-15	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	13	ppb(v/v)
Tetrachloroethene	**380**	**13**	**ppb(v/v)**
Trichloroethene	**1200**	**13**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	105	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	106	(70 - 130)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXD601AA **Matrix.....:** AIR
MB Lot-Sample #: H3I010000-129

Prep Date.....: 08/29/03
Analysis Date..: 08/29/03 **Prep Batch #...:** 3244129
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXD601AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I010000-129
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**92**	**(70 - 130)**	**EPA-2 TO-15**
Benzene	**92**	**(70 - 130)**	**EPA-2 TO-15**
Toluene	**91**	**(70 - 130)**	**EPA-2 TO-15**
Chlorobenzene	**93**	**(70 - 130)**	**EPA-2 TO-15**
Trichloroethene	**92**	**(70 - 130)**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	98	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXD601AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I010000-129
Prep Date.....: 08/29/03 **Analysis Date..:** 08/29/03
Prep Batch #...: 3244129
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**10.0**	**9.18**	**ppb(v/v)**	**92**	**EPA-2 TO-15**
Benzene	**10.0**	**9.19**	**ppb(v/v)**	**92**	**EPA-2 TO-15**
Toluene	**10.0**	**9.11**	**ppb(v/v)**	**91**	**EPA-2 TO-15**
Chlorobenzene	**10.0**	**9.30**	**ppb(v/v)**	**93**	**EPA-2 TO-15**
Trichloroethene	**10.0**	**9.17**	**ppb(v/v)**	**92**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	98	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXFC51AA **Matrix.....:** AIR
MB Lot-Sample #: H3I020000-417

Prep Date.....: 08/28/03
Analysis Date..: 08/28/03 **Prep Batch #...:** 3245417
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	103	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXFC51AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I020000-417
Prep Date.....: 08/28/03 **Analysis Date..:** 08/28/03
Prep Batch #...: 3245417
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**92**	**(70 - 130)**	**EPA-2 TO-15**
Benzene	**88**	**(70 - 130)**	**EPA-2 TO-15**
Toluene	**90**	**(70 - 130)**	**EPA-2 TO-15**
Chlorobenzene	**90**	**(70 - 130)**	**EPA-2 TO-15**
Trichloroethene	**90**	**(70 - 130)**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	95	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXFC51AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I020000-417
Prep Date.....: 08/28/03 **Analysis Date..:** 08/28/03
Prep Batch #...: 3245417
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**10.0**	**9.19**	**ppb(v/v)**	**92**	**EPA-2 TO-15**
Benzene	**10.0**	**8.79**	**ppb(v/v)**	**88**	**EPA-2 TO-15**
Toluene	**10.0**	**8.96**	**ppb(v/v)**	**90**	**EPA-2 TO-15**
Chlorobenzene	**10.0**	**8.99**	**ppb(v/v)**	**90**	**EPA-2 TO-15**
Trichloroethene	**10.0**	**9.01**	**ppb(v/v)**	**90**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	95	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	98	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXHGD1AA **Matrix.....:** AIR
MB Lot-Sample #: H3I030000-353

Prep Date.....: 09/02/03
Analysis Date..: 09/02/03 **Prep Batch #...:** 3246353
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	106	(70 - 130)
4-Bromofluorobenzene	104	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXHGD1AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I030000-353
Prep Date.....: 09/02/03 **Analysis Date..:** 09/02/03
Prep Batch #...: 3246353
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**97**	**(70 - 130)**	**EPA-2 TO-15**
Benzene	**98**	**(70 - 130)**	**EPA-2 TO-15**
Toluene	**99**	**(70 - 130)**	**EPA-2 TO-15**
Chlorobenzene	**99**	**(70 - 130)**	**EPA-2 TO-15**
Trichloroethene	**98**	**(70 - 130)**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	101	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXHGD1AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I030000-353
Prep Date.....: 09/02/03 **Analysis Date..:** 09/02/03
Prep Batch #...: 3246353
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**10.0**	**9.69**	**ppb(v/v)**	**97**	**EPA-2 TO-15**
Benzene	**10.0**	**9.80**	**ppb(v/v)**	**98**	**EPA-2 TO-15**
Toluene	**10.0**	**9.88**	**ppb(v/v)**	**99**	**EPA-2 TO-15**
Chlorobenzene	**10.0**	**9.88**	**ppb(v/v)**	**99**	**EPA-2 TO-15**
Trichloroethene	**10.0**	**9.84**	**ppb(v/v)**	**98**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	99	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	101	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXKCH1AA **Matrix.....:** AIR
MB Lot-Sample #: H3I040000-137

Prep Date.....: 09/03/03
Analysis Date..: 09/03/03 **Prep Batch #...:** 3247137
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	102	(70 - 130)
Toluene-d8	104	(70 - 130)
4-Bromofluorobenzene	102	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXKCH1AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I040000-137
Prep Date.....: 09/03/03 **Analysis Date..:** 09/03/03
Prep Batch #...: 3247137
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**94**	**(70 - 130)**	**EPA-2 TO-15**
Benzene	**93**	**(70 - 130)**	**EPA-2 TO-15**
Toluene	**95**	**(70 - 130)**	**EPA-2 TO-15**
Chlorobenzene	**95**	**(70 - 130)**	**EPA-2 TO-15**
Trichloroethene	**94**	**(70 - 130)**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	98	(70 - 130)
Toluene-d8	99	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3H190105 **Work Order #...:** FXKCH1AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I040000-137
Prep Date.....: 09/03/03 **Analysis Date..:** 09/03/03
Prep Batch #...: 3247137
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**10.0**	**9.45**	**ppb(v/v)**	**94**	**EPA-2 TO-15**
Benzene	**10.0**	**9.28**	**ppb(v/v)**	**93**	**EPA-2 TO-15**
Toluene	**10.0**	**9.52**	**ppb(v/v)**	**95**	**EPA-2 TO-15**
Chlorobenzene	**10.0**	**9.54**	**ppb(v/v)**	**95**	**EPA-2 TO-15**
Trichloroethene	**10.0**	**9.38**	**ppb(v/v)**	**94**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	98	(70 - 130)
Toluene-d8	99	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-23

GC/MS Volatiles

Lot-Sample #...:	H3I080161-001	**Work Order #...:**	FXTQP1AA	**Matrix.....:**	AIR
Date Sampled...:	08/15/03	**Date Received..:**	08/16/03		
Prep Date.....:	09/09/03	**Analysis Date..:**	09/09/03		
Prep Batch #...:	3254533				
Dilution Factor:	1	**Method.....:**	EPA-2 TO-15		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)
Tetrachloroethene	ND	0.20	ppb(v/v)
Trichloroethene	**2.6**	**0.20**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	109	(70 - 130)
4-Bromofluorobenzene	102	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: SG-24

GC/MS Volatiles

Lot-Sample #...: H3I080161-002 **Work Order #...:** FXTQV1AA **Matrix.....:** AIR
Date Sampled...: 08/15/03 **Date Received..:** 08/16/03
Prep Date.....: 09/09/03 **Analysis Date..:** 09/09/03
Prep Batch #...: 3254533
Dilution Factor: 51.96 **Method.....:** EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
cis-1,2-Dichloroethene	ND	10	ppb(v/v)
Tetrachloroethene	**51**	**10**	**ppb(v/v)**
Trichloroethene	**1200**	**10**	**ppb(v/v)**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	109	(70 - 130)
4-Bromofluorobenzene	104	(70 - 130)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H3I080161 **Work Order #...:** FX5G91AA **Matrix.....:** AIR
MB Lot-Sample #: H3I110000-533

Prep Date.....: 09/09/03
Analysis Date..: 09/09/03 **Prep Batch #...:** 3254533
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
cis-1,2-Dichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb(v/v)	EPA-2 TO-15

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	104	(70 - 130)
Toluene-d8	108	(70 - 130)
4-Bromofluorobenzene	102	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H3I080161 **Work Order #...:** FX5G91AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I110000-533
Prep Date.....: 09/09/03 **Analysis Date..:** 09/09/03
Prep Batch #...: 3254533
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	**91**	**(70 - 130)**	**EPA-2 TO-15**
Benzene	**92**	**(70 - 130)**	**EPA-2 TO-15**
Toluene	**91**	**(70 - 130)**	**EPA-2 TO-15**
Chlorobenzene	**92**	**(70 - 130)**	**EPA-2 TO-15**
Trichloroethene	**93**	**(70 - 130)**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	101	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H3I080161 **Work Order #...:** FX5G91AC **Matrix.....:** AIR
LCS Lot-Sample#: H3I110000-533
Prep Date.....: 09/09/03 **Analysis Date..:** 09/09/03
Prep Batch #...: 3254533
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,1-Dichloroethene	**10.0**	**9.06**	**ppb(v/v)**	**91**	**EPA-2 TO-15**
Benzene	**10.0**	**9.25**	**ppb(v/v)**	**92**	**EPA-2 TO-15**
Toluene	**10.0**	**9.13**	**ppb(v/v)**	**91**	**EPA-2 TO-15**
Chlorobenzene	**10.0**	**9.24**	**ppb(v/v)**	**92**	**EPA-2 TO-15**
Trichloroethene	**10.0**	**9.31**	**ppb(v/v)**	**93**	**EPA-2 TO-15**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	101	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	100	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters