New York State Department of Environmental Conservation
625 Broadway • Albany, New York 12233

Pre-Design Investigation Report and Interim Remedial Measures Evaluation / Work Plan

21-03 44th Avenue
Long Island City, New York
Site # 241107

Work Assignment # D-004443-2

June 2010

Report Prepared By:

Malcolm Pirnie, Inc.

855 Route 146, Suite 210
Clifton Park, New York 12065
518-250-7300

0266383

MALCOLM PIRNIE

New York State Department of
Environmental Conservation
Albany, New York

Pre-Design Investigation Report and Interim Remedial Measures Evaluation / Work Plan

---

21-03 44th Avenue
Long Island City, New York
Site # 241107

Work Assignment # D-004443-2

June 2010

I certify that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER10) and that all activities were performed in full accordance with the DER approved work plan and any DER approved modifications.

Daniel J. Loewenstein, P.E.
New York #066594

Malcolm Pirnie, Inc
855 Route 146, Suite 210
Clifton Park, New York 12065

0266383

Contents

Figures

Tables

Tables (continued)

Appendices

1. Introduction

The New York State Department of Environmental Conservation (NYSDEC) tasked Malcolm Pirnie, Inc. (Malcolm Pirnie) to perform a Pre-Design Investigation and evaluate/design Interim Remedial Measures (IRM) for groundwater and, if necessary, indoor air at the 21-03 44th Avenue Site (ID # 241107), in Long Island City, Queens County, New York (Figure 1). The work was conducted under the NYSDEC State Superfund Standby Contract No. D004443-2.

In accordance with NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation (DER-10), and discussions with the NYSDEC Project Manager, the interim remedial goal for the 21-03 44th Avenue Site is to intercept a groundwater plume of chlorinated volatile organic compounds (CVOCs) in the overburden emanating from the north side of 44th Avenue between 21st Street and 22nd Street, and to mitigate the potential for vapor intrusion into buildings on the south side of 44th Avenue.

This report summarizes pre-design investigation activities and sampling, and the scope of two potential IRMs, which would utilize either a permeable reactive barrier (PRB) or vacuum extraction of groundwater to intercept the plume. The potential IRM designs include the following for each option:

- The design basis for the interim remedial measure.
- Design details for the interim remedial measure.
- Proposed Operations and Monitoring requirements for the interim remedial measure.

2. Site Background

2.1. Site Description

The site is located in an urban area of Long Island City, Queens County, New York (Figures 1 and 2). It includes the sidewalk/street area immediately above and in the vicinity of a broken sewer line near the location of three groundwater monitoring points placed on the sidewalk in front of the building at 21-03 44th Avenue. Impacted areas include the southern sidewalk of 44th Avenue, an alley on the south side of 44th Avenue between the Bark Frameworks Building east of the alley, and the CESCO Building west of the alley.

The immediate surrounding land uses are commercial and industrial. The building at 21-03 44th Avenue is currently in use as commercial office space and as a taxi leasing business, and prior uses of the building include metal plating. A New York City high school is located approximately three hundred fifty feet to the south of the site. There are isolated residential properties located approximately five hundred feet to both the southeast and southwest along 44th Drive, and the closest primarily residential block is approximately seven hundred feet to the south along 45th Avenue. The site is almost entirely paved, with the exception of tree wells and the gravel-covered alley on the south side of 44th Avenue. Photographs of the site area are presented in Appendix A.

Contamination appears to have entered the environment from the broken sewer pipe that connects the building at 21-03 44th Avenue and the main sewer beneath 44th Avenue. The site was listed on the NYS Registry of Inactive Hazardous Waste Sites in August of 2008.

2.2. Geology/Hydrogeology

Overburden materials observed during the pre-design investigation and during previous work (by others), are generally composed of fine to medium sand, trace amounts of coarse sand and fine gravel, and concrete and brick debris. Overburden materials are largely assumed to be either non-native fill materials or re-worked native materials. Consistent with previous work, bedrock was encountered between 17 and 20 feet below ground surface (bgs) during the 2009 pre-design investigation, with overburden groundwater encountered between 14 and 15 feet bgs. Previous investigations documented overburden groundwater flow to the south-southeast. The hydraulic gradient measured during the pre-design investigation was approximately 0.003.

2.3. Site History and Previous Investigations

Based on information provided by NYSDEC, the surrounding area was historically used for industrial and commercial purposes. Past occupants of the property located at 21- 03 44th Avenue, Block 441, Lot 9 (owned by Bern Associates, LLC), include Premier Metal Etching Company (1st floor) and the Radium Dial Company (2nd floor) (1936-1950), Ernst Industries Slide Fastener Manufacturer (1970) and ACME Associates, Inc. (1977-1996). Past use of the surrounding properties included a carpet cleaning company and metal novelties manufacturer. The Information Technology High School (ITHS) located down-gradient of the site was once occupied by a metal plating and finishing facility that later became a drapery hardware manufacturer and distributor.

As summarized in the most recent site investigation report (CDM, 2009), previous investigation and remedial activities have focused on two properties within the project area:

- 21-03 44th Avenue, Block 441, Lot 9, owned by Bern Associates, LLC
- 21-16 44th Road, Block 438, Lots 23 and 26, the current location of the ITHS

Collectively, these investigations have revealed a groundwater plume of CVOCs (primarily PCE) and hexavalent chromium, which appears to emanate from a broken sewer pipe that connects the building at 21-03 44th Avenue and the sanitary sewer beneath 44th Avenue. A summary of the investigation at 21-03 44th Avenue is provided in Section 2.3.1.

2.3.1. 21-03 44th Avenue

Bern Associates, LLC conducted a series of site investigations, characterizations and remedial activities (over the course of several years). Detailed information about the work performed is included in the reports titled "Phase I Environmental Site Assessment 21-03 44th Avenue Long Island City, New York" and "Phase II Environmental Evaluation 21-03 44th Avenue, Long Island City, New York" prepared by Leggette, Brashears, and Graham, Inc. (LBG). According to the NYSDEC, the building is now owned by Exclusive Realty Services, LLC.

In May 2004 analysis of sediment/soil samples collected from sewer system clean outs and sumps beneath the building revealed the presence of heavy metals, VOCs and SVOCs at concentrations exceeding soil clean-up objectives. In June 2004, remediation, consisting of removal of the subsurface structures and cleaning out an additional six inches of sediment from beneath a soft bottomed structure was performed. Analysis of ground water collected from seven monitoring wells (MW-1 through MW-7) installed around the property's perimeter and in the courtyard to the east of the building revealed the presence of VOCs (including PCE) and metals (including chromium) at concentrations exceeding the NYSDEC Class GA Standards. In February 2005,

additional sampling and remedial work was performed, revealing the presence of Total Petroleum Hydrocarbons (TPH) and heavy metals, including hexavalent chromium, at concentrations exceeding soil clean-up objectives. In August 2005, sump drain piping and additional soil north and east of the sump grave were excavated due to the presence of elevated levels of hexavalent chromium. A 7,500 gallon #4 heating oil underground storage tank (UST), located in the courtyard between the Bern Associates property and the Thomas C. Wilson property (near MW-7), was also closed in-place. Inspection of the tank and the absence of impacted soils excavated from above the tank, suggested that there had not been a release from the tank.

Seven additional soil borings were advanced throughout the site to evaluate if any additional source areas of contamination were present. Concentrations of VOCs and hexavalent chromium in these soil samples were less than the soil clean-up objectives. Analysis of additional groundwater samples from the seven groundwater monitoring wells installed in 2004 revealed the presence of VOCs and metals at concentrations that exceed NYSDEC Class GA Standards.

A Phase I Environmental Site Assessment (ESA) was conducted in August 2006 as a precursor to the potential sale of the property. The Phase I ESA concluded that historic operations at the site and surrounding properties had potentially negatively impacted the site. From December 2006 through February 2007 a Phase II ESA was conducted to evaluate the source of groundwater contamination, CVOCs in particular. These activities identified the presence of PCE in groundwater up-gradient and side-gradient of the site with increasing PCE concentrations in monitoring well #1 (MW-1) between June 2005 and January 2007 and an absence of breakdown products potentially indicative of a continuous source up-gradient and/or side gradient of the property. Evaluation of the site's sewer system revealed the presence of a break in the pipe immediately up-flow from the sewer access pit VSS-2 and a break 26 feet downstream from sewer access pit VSS-3. Soil borings and associated sampling focused on evaluation of subsurface conditions in the areas where compromised piping was observed revealed the presence of PCE, chromium, and hexavalent chromium at concentrations greater than the corresponding soil and groundwater standards. These investigations indicated that the primary source of groundwater contamination may be associated with a release from the broken sewer pipe in the vicinity of the 21-03 44th Avenue north sidewalk.

3. Pre-Design Investigation

The pre-design investigation was designed to obtain the data necessary to design an interim remedial strategy. The base scope of work included the installation of one additional groundwater monitoring well and eight pilot groundwater extraction wells, groundwater sampling, and sub-slab soil vapor and indoor air sampling. A NYSDOH Environmental Laboratory Approval Program (ELAP) and NYSDEC Analytical Services Protocol (ASP)-approved analytical laboratory analyzed all samples collected during the investigation. ASP Category B data packages were produced for each sample. A Data Usability Summary Report (DUSR) was prepared by a third party data validator upon the receipt of specified analytical data to ensure that the quality of the data was sufficient for remedial planning. All groundwater, soil vapor, and air sample collection, handling activities, and QA/QC sampling were conducted in accordance with Malcolm Pirnie's Generic Quality Assurance Project Plan (QAPP), which has previously been submitted to the NYSDEC for work conducted under the NYSDEC State Superfund Standby Contract Nos. D004439 and D004443.

3.1. Geophysical Survey

The geophysical survey at the site was conducted by Radar Solutions International, of Waltham, Massachusetts, on August 25, 2009. A combination of ground penetrating radar (GPR) and electromagnetic induction (EM) were used to locate potential buried pipelines, utilities, and other subsurface structures in advance of well drilling in the right-of-way and alley between Bark Frameworks and CESCO Buildings. Interpreted results are presented in Appendix B.

3.2. Groundwater Well Installation

Extraction point and monitoring well installations were performed by Zebra Environmental, of Lynbrook, New York, on September 17, 18, and 21, 2009 using a direct-push drill rig. Eight pilot groundwater extraction points (designated EW-1 through EW-8) and one additional groundwater monitoring well (designated MW-217) were installed at the site, as shown on Figure 3. One-inch I.D. Schedule-40 PVC extraction points were installed using a direct-push drill rig equipped two-inch inside diameter (I.D.) steel casing. All wells were installed at the top of bedrock (inferred from geoprobe refusal), with two feet of continuous 0.02-inch slot Schedule-40 PVC screens below the water table at the bottom of the point. The two-foot screen was utilized to prevent, to the extent possible, the introduction of air into the well (i.e., through the lowering of the water table) during the extraction testing, which would have limited the radius of

influence of the extraction point. Monitoring well MW-217 was installed using a direct-push drill rig equipped three-inch inside diameter (I.D.) steel casing and constructed of one-inch I.D. Schedule-40 PVC. The well was installed to the top of bedrock, with 10 feet of continuous 0.01-inch slot Schedule-40 PVC screen intercepting the water table. Each extraction point/well was completed with a flush-mounted protective casing. Extraction point/well construction logs are presented in Appendix C.

3.3. Groundwater Sampling

On October 1, 2009 one groundwater sample was collected from each of the eight monitoring wells (MW-1BA, MW-2BA, MW-8BA, MW-217, MW-210D, MW-211S, MW-211D, MW-212D) surrounding the extraction point network using a peristaltic pump and low-flow groundwater sampling procedures. Groundwater parameters, including temperature, dissolved oxygen, reduction-oxidation potential, pH, and turbidity were measured during purging. Groundwater samples were collected once groundwater parameters had stabilized in accordance with the protocols presented in the QAPP. The samples were sent to Mitkem Laboratories of Warwick, Rhode Island, a NYSDOH ELAP and NYSDEC ASP-approved analytical laboratory, under chain-of-custody procedures for analysis of the following parameters:

- TCL VOCs (+ TICs) by USEPA Method 8260B; and
- Hexavalent chromium by Method SM3500

The groundwater sample from MW-211D was also analyzed for:

- TCL SVOCs (+ TICs) by USEPA Method 8270C;
- TAL Metals by USEPA Methods 6010C and 7470A; and
- The following geochemical parameters: hardness, alkalinity, total organic carbon, chemical oxygen demand, and sulfate.

These additional parameters were used in the evaluation of treatment methods for extracted groundwater, and geochemical conditions for in-situ treatment, in the IRM designs.

Prior to the start of groundwater sampling, water levels were measured from the entire monitoring well network, including wells on 44th Road, 21st Street, and the Northern Alleyway. Groundwater elevations are summarized on Table 1. Groundwater purge logs are presented in Appendix D.

3.4. Vapor Intrusion Characterization

On November 23 and 24, 2009 sub-slab soil vapor and indoor air samples were collected from the Bark Frameworks building at 21-24 44th Avenue and the CESCO Building located at the southeast corner of 44th Avenue and 21st Street. Samples collected from

the Bark Frameworks building included: two sub-slab soil vapor samples collected from the basement; one indoor air sample collected in the basement; and one indoor air sample collected from the utility access space beneath the first floor. Samples collected from the CESCO building included: three sub-slab soil vapor samples collected from the basement; and one indoor air sample collected in the basement.

Each sample was collected using Summa canister sampling procedures in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006. All samples were collected over a 24-hour time period. Each sample was analyzed for VOCs using USEPA Method TO-15 by Air Toxics, Ltd., of Folsom, California. Building questionnaire forms showing the layout of the building and clerical inventories are presented in Appendix E. Photographs of building interiors, sampling locations, and product inventories are presented in Appendix A. Photographs from the CESCO Building are shown in Photos 7 through 22, while photographs from the Bark Frameworks Building are shown in Photos 24 through 33.

3.5. Survey and Mapping

Upon completion of the pre-design extraction point/well installation field activities, the location of each new extraction point/well was surveyed to the nearest 0.1-foot horizontally referenced to the same on-site datum used to create the site base map. Monitoring well and extraction point measurement points for top of casing and ground surface were surveyed to the nearest 0.01-foot vertically referenced to the same on-site datum used to create the site base map. Site survey was conducted by YEC, Inc. of Valley Cottage, New York on July 29 and October 1, 2009.

3.6. Hydraulic Conductivity Testing

Both rising head and falling head (for comparison) hydraulic conductivity tests were performed on the 44th Avenue monitoring wells on April 15, 2010. These wells were:

- MW-1BA
- MW-2BA
- MW-8BA
- MW-210D
- MW-211D
- MW-212D

The purpose of the testing was to evaluate the site-specific hydraulic conductivity of the overburden materials to support potential IRM designs. Each test was performed by introducing a slug of known volume into the well and recording the corresponding

change in water levels using a pressure transducer. Upon reaching equilibrium, the slug was removed and the corresponding recovery of water levels in the well was recorded. Water levels were also measured manually during the testing to corroborate the pressure transducer results.

The results of the hydraulic conductivity testing are presented in Table 2. As shown in the table, based on the results of the rising head tests, the average hydraulic conductivity of the overburden materials is approximately 7 to 8 feet per day (ft/day) ($2.6x10^{-3}$ centimeter per second).

3.7. Disposal of Investigation Derived Waste

Investigation derived wastes were handled in accordance with the NYSDEC Proposed TAGM for the disposal of groundwater generated during site investigations. Well purge water was containerized in a U.N.-approved, 55-gallon steel drum that was labeled and staged in the alley between the Bark Frameworks and CESCO Buildings. Malcolm Pirnie maintained a log of the container and its contents, which was evaluated upon receipt of results of the analytical data obtained during field investigations for final removal and disposal. Waste removal and disposal was performed by TIER Environmental Services, LLC. of Gap, Pennsylvania on November 5, 2009. The waste disposal manifest is provided in Appendix F.

3.8. Data Validation

Data validation was performed by Data Validation Services of North Creek, New York for the samples collected during the pre-design investigation to ensure that the procedures were effective and that the data generated provide sufficient information to achieve the project objectives. The Data Usability Summary Report is included in Appendix G and summarized below. All data was classified as usable as reported, or usable with some minor qualification.

3.8.1. Groundwater

Seven samples and the field duplicate reported in SDG H1928, showed elevated responses for one of the surrogate standards in the undiluted analyses. Detected results in the undiluted analyses of these samples were qualified as estimated and may have a high bias.

The detection of 1,4-dichlorobenzene in the CESCO Sump sample was edited to non-detection based on presence in the associated blank.

Reporting limits and detected values for acetone and 2-butanone were qualified as estimated and may have a low bias, based on low relative response factors in the project calibration standards.

Dichlorodifluoroethane in the samples (except MW-210D and MW-217D), and 2,2-dichloropropane in MW-210D and MW-217D, were qualified as estimated based on calibration standards.

3.8.2. Soil Vapor and Indoor Air

Detections for ethanol in the samples were qualified as estimated with a possible high bias due to elevated recovery in the associated LCS.

Due to poor mass spectral quality, ethanol in BF-SS-1 and 4-methyl-2-pentanone in BF-IA-1 were qualified as tentative identifications with estimated values.

Due to very poor mass spectral quality, ethanol in C-SS-2, 1,3,5-trimethylbenzene in BF-IA-1, C-SS-01, C-IA-1, and C-SS-3, and benzene in C-SS-3, AA-1, BF-PIT, and C-IA-1 were edited to reflect non-detection at elevated reporting limits.

Due to high analyte concentrations, some samples were processed at initial dilution which resulted in elevated reporting limits for analytes not detected.

3.9. Laboratory Results

Laboratory results for samples collected during the pre-design investigation are summarized in Table 3 (groundwater) and Table 4 (soil vapor and indoor air). A graphical depiction of the groundwater analytical results is provided on Figure 4, which shows detected analytes at each location and highlights those contaminants and their concentrations which exceed the NYSDEC Class GA Groundwater Standard, as applicable. Figure 5 depicts vapor intrusion characterization sample results for CVOCs. Analytical laboratory reporting forms for samples collected during the investigation are provided in Appendix H.

3.9.1. Groundwater

As shown on Table 3 and Figure 4, tetrachloroethene and trichloroethene were the most frequently detected VOCs in groundwater samples collected during the pre-design investigation. At least one of these compounds was present at concentrations greater than the corresponding Class GA Standard in groundwater samples from MW-210S, MW-211D, MW-217, MW-1BA, and MW-8BA. Hexavalent chromium was detected at concentrations greater than the corresponding Class GA Standard in groundwater samples from MW-211D (total chromium and hexavalent chromium) and MW-1BA.

As shown in Table 3, SVOCs were not detected in the groundwater sample from MW-211D.

3.9.2. Soil Vapor and Indoor Air

As shown on Table 4 and Figure 5, tetrachloroethene and/or trichloroethene were present in two of the three sub-slab vapor soil samples from the CESCO building at elevated concentrations. Additionally, trichloroethene was present in one of the two sub-slab vapor soil samples from the Bark Frameworks building at an elevated concentration. According to the NYSDEC and NYSDOH, indoor air concentrations of these compounds are not of immediate concern. However, additional monitoring is currently being conducted by the NYSDEC in both buildings using passive 30-day passive samplers. The results of the sampling will be reported under separate cover.

4. Pre-Design Investigation Summary

Chlorinated VOCs, consisting primarily of PCE and TCE, were present in groundwater samples at concentrations greater than the corresponding NYSDEC Class GA Groundwater Standards in five of the site monitoring wells. Groundwater samples from these five wells also contained hexavalent chromium, two at concentrations greater than the corresponding NYSDEC Class GA Groundwater Standard. The two wells containing the highest PCE and TCE concentrations also contained the highest hexavalent chromium concentrations, suggesting a similar source. Based on pre-design investigation groundwater sampling, the CVOC groundwater plume at the site is of comparable horizontal (lateral) extent as previous sampling and total CVOC concentrations are comparable or lower than the previous sampling event.

Elevated concentrations of PCE and TCE were present in sub-slab soil vapor samples collected from both buildings on the south side of 44th Avenue in the area of the CVOC groundwater plume. These compounds were also detected in the indoor air samples collected from the basement of each building.

5. Pilot Testing

Based on discussions with the NYSDEC, it was concluded that either a permeable reactive barrier (PRB) utilizing zero-valent iron (ZVI) to treat groundwater in-situ through abiotic reductive dechlorination, or groundwater extraction utilizing a network of extraction wells, would be the preferred approaches for intercepting the groundwater plume of CVOCs emanating from the north side of 44th Avenue between 21st Street and 22nd Street. An interceptor trench scenario was also considered, but was determined to be prohibitively intrusive and expensive for an IRM due to the presence of numerous utilities and the geotechnical concerns associated with a relatively deep excavation near existing structures. Likewise, treatment using in-situ chemical oxidation was also considered. However, due to the relatively short lifetime of chemical oxidants in the subsurface (days to months depending on the oxidant), it was decided that this was not an efficient approach to the IRM as multiple re-mobilizations and re-injections would be required to maintain the treatment zone until the source of contamination could be investigated and remediated.

A ZVI PRB emplaced using injection techniques would use readily available and well understood methods. In addition, pilot testing of a PRB would involve placement and monitoring of PRB materials on a scale that would essentially result in implementation of the IRM. Therefore PRB pilot testing was not conducted as part of this project. However, pilot testing was necessary to establish parameters for design of a groundwater extraction IRM. Accordingly, a field pilot test was conducted from October 20 through 21, 2009 to evaluate design parameters for a groundwater extraction remedial system. The objectives of the pilot study were to:

- Evaluate the radius of influence (ROI) of vacuum extraction at the site.
- Assess the rate at which groundwater could be extracted from the overburden.
- Evaluate the effectiveness of vacuum extraction for removal of impacted groundwater.

5.1. Pilot Test Setup

Due to the relatively thin saturated thickness of the overburden, and the shallow water table, vacuum extraction of groundwater was utilized for the pilot testing as the use of submersible pumps would have been problematic. The pilot test was conducted using the newly installed extraction points EW-1 through EW-8, which were installed in a row approximately perpendicular to the groundwater flow at distances of approximately 10

feet on center, as shown on Figure 3. As discussed in Section 3.2, extraction points EW-1 through EW-8 were installed with two foot screens at the bottom of the points to maximize the extraction rate (by limiting the potential for introduction of air into the well point) given the limited saturated formation thickness. Prior to the pilot testing, pressure transducers were installed in monitoring wells MW-210D, MW-211D, and MW-212D on the south side of 44th Avenue, and MW-1BA, MW-2BA, MW-8BA, and MW-217 on the north side of 44th Avenue. Vacuum was induced at each wellhead utilizing a mobile compressor and venturi manifold and piped through a central manifold to a transfer tank which was then pumped to an appropriately sized tank pending removal and disposal at a permitted facility at the conclusion of the test. Each point was equipped with a valve to allow for testing with different well configurations. Vacuum extraction point configuration details are shown in Table 4.

5.2. Pilot Test Implementation

Total system vacuum levels remained relatively constant throughout the pilot test, while the number and spacing of extraction points utilized was varied to evaluate combined drawdown in the surrounding monitoring wells. The parameters for each portion of the pilot test are summarized in chronological order below.

- Configuration 1: Extraction point EW-4 at vacuum of -19 inches of mercury (in. Hg) for approximately one hour and 30 minutes with an average combined flow rate of 0.39 gallons per minute (gpm).
- Configuration 2: Extraction points EW-1, EW-4, and EW-8 at vacuum of -19 in. Hg for approximately one hour with an average combined flow rate of 1.9 gpm.
- Configuration 3: Extraction points EW-4 and EW-8 at vacuum of -19 in. Hg for approximately 40 minutes with an average combined flow rate of 2.8 gpm.
- Configuration 4: Extraction points EW-2, EW-4, and EW-8 at vacuum of -15 in. Hg for approximately two hours and 25 minutes with an average combined flow rate of 1.1 gpm.
- Configuration 5: Extraction points EW-2, EW-3, EW-4, and EW-8 at vacuum of -15 in. Hg for approximately three hours and 53 minutes with an average combined flow rate of 1.7 gpm.
- Configuration 6: Extraction points EW-2, EW-3, EW-4, EW-7, and EW-8 at vacuum of -17 to -18 in. Hg for approximately one hour and 40 minutes with an average combined flow rate of 2.3 gpm.
- Configuration 7: Extraction points EW-2, EW-3, EW-4, EW-6, EW-7, and EW-8 at vacuum of -15 to -17 in. Hg for approximately one hour and 40 minutes with an average combined flow rate of 2.9 gpm.

- Configuration 8: Extraction points EW-2, EW-3, EW-4, EW-5, EW-6, EW-7, and EW-8 at vacuum of -15 to -17 in. Hg for approximately three hours and 40 minutes with an average combined flow rate of 2.9 gpm.

Water levels in the surrounding monitoring wells were measured manually throughout the test to evaluate extraction influence and pre-test conditions for each extraction configuration, as well transducer data would not be available for download until the end of the pilot test. Extraction flow rates were calculated each time the transfer tank was filled and pumped to the staging tank by dividing the amount of groundwater pumped by the extraction time.

5.3. Pilot Testing Results

The results of the vacuum extraction pilot testing are summarized in Table 4 and on Figures 6 though 8. As shown in Table 4 and Figures 6 and 7, maximum flow rates were observed when all extraction wells were being utilized simultaneously, which also corresponded to maximum drawdown in those observation wells with influence from extraction. Overall, flow rates during the pilot test were likely limited by the formation, as observed through the high air/water ratio of the extracted fluids. Based on observed flow rates during each extraction configuration, extraction points in the eastern half of the extraction network appeared to yield more water than those in the western half. As shown in Figure 8, at maximum extraction rate, observed drawdown was up to approximately 0.2 feet primarily in monitoring wells MW-211D and MW-212D, with much less influence observed in MW-8BA and MW-217. It should be noted that the spikes observed in the water level time series for MW-211D and MW-212D correspond to times when extraction was interrupted to accommodate vehicular traffic or during times of transfer pump usage, which caused a decrease in vacuum pressure of the system. Barometric pressure data for the pilot test time period are shown on Figure 8 for comparison. As shown on Figure 8, little to no influence was observed in monitoring wells MW-210D, MW-1BA, and MW-2BA, whose water levels during the course of the pilot appear to be dominantly influenced by barometric pressure and not groundwater extraction.

The results of the pilot testing showed a small radius of influence, generally limited to the immediate area of the extraction wells. This result suggests that the saturated overburden has a limited capability for transmitting groundwater. Given the nature of the overburden materials, which are generally composed of coarse-grained materials, this limited radius of influence is likely due to the small thickness of the saturated overburden. The relatively low flow obtained during the test, therefore, likely represented the dewatering of the area immediately around the extraction wells. This result would not preclude the use of groundwater extraction as an IRM since the goal of the IRM is to intercept the groundwater plume and dewatering of the treatment zone would accomplish that goal. However, such an IRM would have to be accomplished through the use of vacuum

extraction since the limited recharge to the wells would preclude the use of submersible pumps. In addition, it is anticipated that the installation of larger-diameter wells in well-emplaced filter media would facilitate groundwater extraction by providing more surface area through which to extract groundwater and a better connection to the saturated overburden materials.

5.3.1. Groundwater Capture Evaluation

The pilot testing resulted in the extraction of approximately 2,300 gallons of groundwater over 18-hours of pumping at a maximum groundwater extraction rate of 2.9 gpm, most of which was generated in the eastern portion of the pilot test area. The results of a pumping test performed at the New York City high school located down gradient of the site indicated that the hydraulic conductivity of the overburden in the area ranges from approximately 100 feet per day (ft/d) to 1,000 ft/d. However, the results of the site-specific hydraulic conductivity testing performed at the 44th Avenue wells (Section 3.6) estimate that the average hydraulic conductivity of the overburden at the site is 7.4 ft/day. Utilizing these data, along with an assumed effective porosity of 0.25 and a calculated gradient of 0.0028, yields an average linear velocity of approximately 0.08 ft/day.

Utilizing these data, along with an assumed effective porosity of 0.25 and a calculated gradient of 0.0028, yields an average linear velocity of approximately 0.1 ft/d. Given a cross-sectional area of approximately 600 square feet (ft^2) (100 ft long x 6 feet of saturated thickness), the discharge through the treatment zone would be approximately 400 gallons per day (gpd). Capture of this amount of groundwater would require an average pumping rate of approximately 0.3 gpm, assuming an equal distribution of pumping across the treatment zone.

5.4. Disposal of Investigation Derived Waste

Groundwater extracted during the pilot test was containerized in a 5,000 gallon storage tank that was staged on the south side of 44th Avenue in front of CESCO Building during the pilot test. Waste removal and disposal was performed by Clean Water of New York, Inc. of Staten Island, New York on October 21, 2009. The waste disposal manifest is provided in Appendix F.

6. Interim Remedial Measure Work Plan

As discussed in Section 5, it is anticipated that a ZVI PRB installed using injection methods could be effective in intercepting the CVOC groundwater plume at the site. This is supported by the previous use of direct-push techniques at the site and the relatively uniform stratigraphy and therefore hydraulic conductivity. Zero valent iron is ideally suited for treatment of CVOCs, with the added benefit of reducing hexavalent chromium to non-soluble species. Additionally, once installed, a PRB would not require extensive operations and maintenance (O&M), with only routine groundwater monitoring.

The results of the pilot testing indicate that the use of vacuum extraction dewatering methods could also be effective in intercepting the CVOC groundwater plume. In addition, it is likely that the installation of extraction points using standard drilling methods and well construction techniques (i.e., hollow stem auger drilling and sand/filter pack screen emplacement) will result in greater yields than those obtained through the temporary narrow diameter direct-push points utilized during the pilot test.

Accordingly, this IRM Work Plan incorporates two options:

Option 1: A ZVI PRB, emplaced using injection methods.

Option 2: Vacuum extraction of groundwater through permanently-installed extraction wells.

Aspects of the potential IRMs are presented below. Drawings showing IRM system design requirements for groundwater extraction are presented in Appendix I. The drawings in Appendix I depict the conceptual construction of the groundwater extraction IRM systems and should not be considered contract drawings suitable for construction. It is assumed that construction drawings of a final groundwater IRM system, if implemented, would be provided to the NYSDEC by the selected IRM contractor prior to construction of the system.

6.1. IRM Assumptions

The IRM Work Plan includes the following assumptions:

- The contaminants of concern (COCs) for the IRM are CVOCs and hexavalent chromium.

- The goal of the IRM is to significantly reduce the concentration of chlorinated VOCs and hexavalent chromium in the overburden groundwater plume migrating from the 21-03 44th Avenue site. The contaminant-specific objective of the interim remedy is to achieve New York State groundwater standards immediately down gradient of the treatment area. However, as this is an interim measure being undertaken without the benefit of complete source area delineation or a full characterization of subsurface conditions, it is acknowledged that achieving the contaminant specific objective may not be possible at all locations throughout the treatment zone.
- Only the overburden groundwater will be addressed as part of the IRM. The depth to water in the IRM area is approximately 14 feet bgs and the depth to bedrock is approximately 17 to 20 feet bgs (based on geoprobe refusal).
- The Option 2 treatment system building, controls, and associated equipment (i.e., granular activated carbon vessels) can be placed in the alley between the Bark Frameworks and CESCO buildings, and the NYSDEC will be responsible for obtaining permission to utilize the alley for this purpose.
- Treated groundwater generated under Option 2 can be discharged to the sanitary sewer on 44th Avenue, access to which is controlled by the New York City Department of Environmental Protection (DEP).
- Permits/agreements from the City of New York and local utilities, likely including, but not limited to, work on the sidewalk/street; connection to the sanitary sewer; connection to telecommunications; connection to the electrical supply; placement/construction of the treatment building; and discharge of treated groundwater will be required to conduct the work. A permit to discharge air from a groundwater extraction IRM may also be required based on the final system design; however, the groundwater IRM described herein assumes treatment of the air through vapor phase granular activated carbon, for which a discharge permit would likely not be required. The IRM construction contractor will be responsible for obtaining all permits required to construct and operate the IRM system.

6.2. Option 1: Zero-Valent Iron Permeable Reactive Barrier (PRB)

6.2.1. PRB Design

PRB design for the site is based on a 110 foot long reactive zone consisting of atomized ZVI within the sidewalk on the south side of 44th Avenue, centered on the alley on the south side of the street (Figure 9).

One process for injection of atomized ZVI into the subsurface is called the FerOx^{SM} process. This process consists of a food-grade, sponge-iron microscale powder, which is suspended in water to create a slurry. The iron-water mixture is fed into a nitrogen gas stream that is then injected into the subsurface. FerOx^{SM} injections can be conducted in open boreholes or via direct-push injection points. The quantity of ZVI injected depends on the concentration of the contaminants, the mass flux of the contaminant through the

treatment area, and the site geology. The amount of ZVI emplaced by this method ranges from 0.25 percent to 2 percent of the soil mass in the treatment area (ITRC 2005).

Therefore, the critical elements in PRB design are:

- Contaminant type (i.e., treatability using ZVI);
- Estimated contaminant half-life in the PRB (to derive required residence time);
- Plume size and distribution, including vertical thickness of the contaminated area;
- Site geology and hydrogeology (linear groundwater velocity) (Gavaskar et al, 2000; USEPA, 1998; ITRC, 2005).

6.2.1.1. Contaminant Treatability

Both chlorinated VOCs and hexavalent chromium can be treated by ZVI; however, the treatment mechanisms are different. Iron-driven dechlorination of VOCs involves destruction of contaminants, with no immediate effect or contaminant accumulation within the iron zone. The degradation process is an abiotic reductive dehalogenation process that occurs on the surface of the granular iron, with the iron acting as an electron source. Reductive mechanisms include: (1) direct electron transfer to the adsorbed halocarbon at the metal-water interface, resulting in dechlorination and production of Fe(II); (2) dechlorination by Fe(II), formed from corrosion of Fe(0); and (3) reaction of H_2 formed from the anaerobic corrosion of Fe(II), which might react with the halocarbons if an effective catalyst is present.

In contrast, hexavalent chromium in groundwater is removed with granular iron through reduction of the oxidized metal species followed by precipitation of the reduced species [Cr(III)] in the PRB. Over time, the granular iron becomes "consumed" and will no longer support the reduction reaction. Estimates of chromium breakthrough and the resulting "lifespan" of the reactive wall are dependent on the velocity of groundwater moving through the system and on the influent concentration of chromium (i.e. the mass flux of contaminant) (Envirometals 2010).

6.2.1.2. Contaminant Treatment Time

Envirometals Technologies, Inc. (ETI), the current patent-holder on the iron PRB process, provided estimates of contaminant half-lives based on the site-specific conditions. ETI maintains a database and associated algorithms for estimating the residence time required to treat contaminants to the applicable standards. Based on degradation rates from ETI's database and the maximum anticipated groundwater concentration of PCE and TCE, an estimated residence time of approximately 2 days would be required to degrade the VOCs to less than standards (5 ug/l). Therefore, based on the estimated groundwater velocity at the site of approximately 0.1 ft/day, a

continuous iron thickness of 0.2 ft would be required for PCE and TCE treatment. It is important to note that this thickness assumes a continuous barrier and total contact between the contaminants and the ZVI. A factor of safety is typically added to this value when evaluating direct-injection of ZVI as a continuous barrier cannot be assumed for this method of ZVI emplacement.

Based on a typical consumption rate of 2 milligrams (mg) of hexavalent chromium per 1 gram (g) of iron, the required iron thickness for 15 years of operation for the maximum detected hexavalent chromium concentration of 140 ug/L would theoretically be less than 0.01 feet assuming a groundwater velocity of 0.1 feet per day. However, as discussed above, a factor of safety is added to this value for direct injection of ZVI.

6.2.1.3. Amount of ZVI Required for Treatment

Since the treatment mechanism for chlorinated VOCs and hexavalent chromium is different, the total ZVI required for treatment is the sum of the thickness required for VOC treatment and that required for hexavalent chromium removal. Therefore, a ZVI thickness of 0.21 ft would, theoretically, provide a sufficient treatment zone at the site, assuming a continuous barrier and complete contact with the contaminants.

Assuming a single line of injection points, and a radius of influence of approximately 5 feet per injection point (verbal communications: Envirometals 2010; ARS 2010), yields a ZVI-amended treatment zone of approximately 10 feet. Utilizing a ZVI application rate of 2 percent of the soil mass in the treatment area, and a factor of safety (FS) of 2, yields the following ZVI mass.

Treatment Zone Volume: 110 ft. (length) x 8 ft. (thickness) x 10 ft. (width) = 8,800 ft^3
Estimated Soil Density: 110 lbs/ft^3 (sand and gravel – literature value)
Estimated Soil Mass: 968,000 lbs
2% of Soil Mass = 19,360 lbs ZVI x 2 (FS) = 38,720 lbs ZVI

As a check, the amount of ZVI theoretically required to treat the contaminants in a continuous barrier is calculated as follows:

Volume ZVI = length of treatment zone × thickness × width
= 110 ft × 8 ft × 0.21 ft = 185 ft^3
ZVI Density: 180 lbs/ft^3 (Envirometals 2010)
Estimated Theoretical Required ZVI Mass: 33,300 lbs ZVI

Based on this assessment, a row of injection points spaced at approximately 5 feet would be required to create the approximately 10 foot thick reactive zone required for treatment of the contaminants. This would require approximately 21 injection points over the 110 foot treatment zone on the 44th Avenue south sidewalk.

6.2.1.4. Plume Size and Distribution

As discussed previously, the goal of the IRM is to treat contaminants in the saturated overburden. Therefore the thickness of the PRB would be from the water table (approximately 14 feet bgs) to the bedrock surface (approximately 20 feet bgs). Based on the results of groundwater sampling conducted as part of the pre-design investigation and previous work, the width of the plume is approximately 100 feet.

6.2.1.5. Geology and Hydrogeology

As discussed in Section 2.2, the overburden materials observed during the pre-design investigation and during previous work (by others), are generally composed of fine to medium sand, trace amounts of coarse sand and fine gravel, and concrete and brick debris. This material is amenable to the ZVI injection technology as it will allow for greater distribution of the ZVI from each injection point. Likewise, the shallow gradient and relatively low hydraulic conductivity are also amenable to the PRB technology as they result in lower linear groundwater velocities and greater residence times in the PRB.

6.2.2. PRB Components

A summary of the PRB design parameters based on the site investigation data and the information presented above is provided in Table 6, below.

Table 6: Summary of ZVI PRB Parameters

Parameter	Design Value	
Contaminants	**Groundwater Standard (ug/l)**	**Maximum Anticipated Influent Concentration (ug/l)**
PCE	5	2,300
TCE	5	33
Hexavalent chromium	50	140
Required Residence Time for PCE and TCE Treatment(days)[a]	2	
Estimated Linear Groundwater Velocity (ft/day)	0.1	
Theoretical ZVI PRB Width Required for PCE and TCE Treatment (ft)	0.2	
Theoretical ZVI PRB Width Required for Hexavalent Chromium Treatment (ft)[b]	0.01	

Table 6 (continued)

PRB Dimensions

PRB Length (ft)	110
Maximum Saturated Thickness (ft)	8
PRB Width (ft)[c]	10

Notes:
a: Per Envirometals data review
b: Per Envirometals date review
c: Assumes 5 foot radius of influence

6.2.2.1. Injection Points

The exact injection locations would be determined in the field based on review of buried utilities and the injection radius of influence determined during initial injection work. Injection of the ZVI will be performed using direct-push drilling techniques, emplacing the ZVI from approximately 12 feet bgs to the top of bedrock at approximately 20 feet bgs within the treatment zone.

6.2.2.2. Monitoring Points

The existing groundwater monitoring well network, with the addition of a monitoring well immediately down-gradient of the proposed PRB to replace MW-203D, would be used to monitor the effectiveness of treatment. Additional wells (approximately three) would be installed within the reactive zone after injection to verify the distribution of ZVI and to monitor groundwater conditions within the reactive zone.

6.2.3. Estimated Cost

As shown in Table 7, based on estimates provided by PRB contractors and the review provided by ETI, it is anticipated that the cost for placement and monitoring of a ZVI PRB would be approximately $626,000, assuming a 10-year operational period. This operational period was chosen based on the assumption that the IRM would be required during the time necessary to indentify and remediate the source of the contamination.

6.3. Option 2: Vacuum Extraction

6.3.1. Design Groundwater Extraction Rate

The pilot test resulted in a maximum groundwater extraction rate of the approximately 3 gpm. As noted previously, it is possible that this extraction rate may be increased through the installation of permanent injection points installed using standard well construction methods. Based on the results of the pilot test and the site-specific hydraulic conductivity testing, it is unlikely that the total flow from the extraction points would exceed 5 gpm. Accordingly, the IRM design is based on a maximum groundwater extraction rate of 5 gpm.

6.3.2. Vacuum Extraction Technique

As discussed in the Section 5.1, the pilot test utilized a 180 cubic foot per minute (CFM) capacity air compressor equipped with a venturi manifold to generate the vacuum required for groundwater extraction. Reductions in pipe sizes were used to enhance the vacuum to allow for extraction of groundwater to the maximum depth of the extraction points. Although this method was suitable for the pilot testing, use of air compressors is a relatively inefficient method for generating vacuum as a large compressor motor is needed to produce a relatively small vacuum. Accordingly, the IRM design assumes the use of rotary claw vacuum pumps to provide the necessary vacuum pressures. Use of the rotary claw vacuum pumps requires that some air be allowed to enter the system. Rather than introducing ambient air into the system at the blower, the IRM design introduces air in the well through the use of a "stinger" or "drop-tube" set-up to capture soil vapor potentially containing CVOCs in addition to extracting groundwater.

6.3.3. Remedial System Requirements

The IRM system will be comprised of extraction wells, manifold piping, and a treatment building. Design requirements for each of these items are discussed below.

6.3.3.1. Extraction Wells

Well details for the remedial system are shown on Sheet 4 of the IRM drawings contained in Appendix I. The extraction wells will be constructed of 4-inch nominal diameter Schedule 40 PVC riser and screen. The extraction well screens will be 2 feet long and will be installed at the top of the bedrock surface. A 1-inch Schedule 40 PVC groundwater extraction stinger will be installed inside the 4-inch riser and screen. The stinger will be adjustable to account for variations in extraction rate and/or overburden groundwater levels. Use of the stinger set-up will result in more efficient extraction of groundwater through the narrow pipe while, at the same time, allowing for proper construction of a larger-diameter extraction well to maximize groundwater yield.

6.3.3.2. Piping

Each extraction well will be finished with a sub-grade pitless adaptor and flush-mount well cover and connected directly to the treatment building by individual underground laterals. The laterals will be manifolded within the treatment building to allow for adjustment of the system on a well-by-well basis from a single location. The extraction well lateral piping will be constructed of Schedule 40 PVC. All piping will be buried a minimum of approximately 3 feet bgs to prevent freezing during the winter months and to prevent disturbance to surface operations.

6.3.3.3. Treatment Building

The treatment building will be placed at the southern end of the alley between the CESCO building and Bark Frameworks. The building will be heated and fan-cooled, and

will include all equipment necessary for operation of the remedial system. This equipment will include, but may not be limited to:

- Two (2) rotary claw vacuum pumps capable of providing a total combined air flow of 300 actual cubic feet per minute (ACFM) at a designed vacuum pressure of 22 inches of mercury (in. Hg).
- Vertical air/water separator.
- Ten leg vacuum manifold.
- Low-profile tray-style air stripper capable of removing the CVOCs from the extracted groundwater at a maximum rate of 5 gpm.
- Bag filters for removal of sediment from the extracted groundwater prior to treatment.
- Vapor- and liquid-phase granular activated carbon (GAC) as required for air and groundwater discharge.
- Control panel with programmable logic controller (PLC) equipped for remote system operation, including alarms that will be capable of automatically shutting down the IRM system.

If required by the local building authority (i.e., City of New York), all equipment in the treatment building will be certified as explosion-proof.

6.3.4. Estimated Cost

As shown in Table 8, it is anticipated that the cost for construction and operation of a groundwater extraction IRM would be approximately $1,059,000, assuming a 10-year operational period. This operational period was chosen based on the assumption that the IRM would be required during the time necessary to indentify and remediate the source of the contamination.

7. IRM System Operation, Maintenance, and Reporting

7.1. Option 1: PRB

Once installed, a PRB would passively treat groundwater as it flows through the reactive zone, requiring only routine groundwater monitoring utilizing monitoring wells up-gradient, within, and down-gradient of the PRB. The existing well network at the site consists of an adequate number of monitoring points for this purpose, with the exception of an immediately down-gradient well, which would need to be installed to replace MW-203D, and wells in the reactive zone.

7.2. Option 2: Vacuum Extraction

The remedial system will operate continuously. Daily operational monitoring, bi-weekly system checks, and quarterly monitoring events will be conducted during the operation of the remedial system. Daily operational system monitoring will be conducted remotely through the PLC telemetry. A record of daily operation will be maintained during the operation of the remedial system. The bi-weekly system checks will be conducted at the site to monitor system performance and confirm that equipment is functioning properly. The quarterly monitoring events will also be conducted at the site and will evaluate overall performance of the remedial program and provide information to support any changes to the system to increase mass removal and/or shorten the time required for remediation. Monthly monitoring may also be necessary depending on the type of permits required for the treated water and/or air discharge.

Bi-weekly system checks will consist of the following activities:

- Site walkover to evaluate if remedial equipment is functioning properly.
- Recording of system performance parameters (i.e., flows, pressures, and temperatures).
- Any required maintenance.
- Monitoring of vapor concentrations in the vacuum extraction off-gas and groundwater extraction rates.
- Flow measurements at individual wells.
- Balancing of flows.
- Volatile vapor concentration measurements at each extraction well.

Quarterly monitoring will consist of the same activities as the bi-weekly system checks, plus the following activities:

- Sampling of extracted air and groundwater.

Records of bi-weekly and quarterly system checks will be maintained throughout the operation of the remedial system.

7.3. Groundwater Monitoring

One baseline monitoring event prior to system installation and/or operation and semi-annual groundwater monitoring will be conducted during the operation of the remedial system to evaluate the effect of the remediation on groundwater concentrations at the site and in down-gradient areas. The following groundwater monitoring wells will be sampled during each monitoring event.

- MW-1BA
- MW-8BA
- MW-211S
- MW-211D
- Replacement Well for MW-203D
- MW-205S
- MW-205D
- MW-206S
- MW-206D
- MW-207S
- MW-207D

Additional wells to be sampled under the PRB scenario would include three wells (east, center, and west) placed within the reactive zone.

Prior to groundwater sampling, groundwater levels will be measured in all existing wells at the site. Groundwater sampling will be conducted using the United States Environmental Protection Agency (USEPA) Low-Flow Sampling Protocol (USEPA 1998). Field parameters will be measured during purging and sampling to verify the effectiveness of purging and to evaluate any changes in the geochemical characteristics of the site groundwater. These parameters will include temperature, pH, oxidation-reduction potential, specific conductivity, turbidity, and dissolved oxygen. Each groundwater sample will be analyzed for TCL VOCs and hexavalent chromium by a New York State Department of Health (NYSDOH) ELAP-certified analytical laboratory.

Groundwater monitoring results will be presented in semi-annual monitoring reports. Semi-annual monitoring will continue for at least the first year of remedial system operation, after which time the required frequency of groundwater monitoring will be reevaluated based on the remedial system and groundwater monitoring data.

7.4. Reporting

The following reports will be prepared and submitted to the NYSDEC during the operation of the chosen IRM.

- **IRM Startup Report**: A report will be prepared and submitted following the startup of the remedial system. The report will include all data collected during the startup period, including (as applicable): injection volumes, injection pressures, ZVI radius of influence, flows, pressures, system balancing data, off-gas monitoring, and groundwater extraction rates. The report will also include final as-built drawings showing the locations and specifications of all remedial equipment including injection points, wells, piping, and treatment building.
- **Semi-Annual Groundwater Monitoring Reports**: Semi-annual monitoring reports will be prepared upon the receipt of analytical data from the monitoring events. The reports will include a discussion of sampling activities, presentation of analytical results for groundwater sampling, and a summary of system operation and maintenance during the monitoring period.
- **Annual Report**: Annual reports will be prepared at the end of each calendar year during system operation. The reports will include (as applicable):
    - Overall performance of the remedial system;
    - Summary of system operational parameters (i.e., flows, pressures, etc.);
    - Contaminant mass removal estimates;
    - Analytical results for off-gas and extracted groundwater samples;
    - Summary of groundwater monitoring results; and
    - Recommendations for modifications to the remedial system and/or monitoring program based on system performance.

8. Data Gaps and Comparison of IRM Options

8.1. Data Gaps

The pre-design investigation confirmed the lateral extent of VOCs and hexavalent chromium in the groundwater in the area of the potential IRM. As mentioned previously, the vertical extent of contamination is not defined as bedrock groundwater was not investigated as part of the study. Likewise, the down gradient extent of the contamination is not defined. However, this information is not required to evaluate an IRM with the goal of intercepting the overburden groundwater contamination.

Although the treatment mechanisms and anticipated contaminant residence times associated with ZVI are reasonably well documented by both calculations and empirical data (as provided through the ETI database), site-specific batch testing of ZVI treatment efficacy for both chlorinated VOCs and hexavalent chromium would provide a more precise estimate of the required ZVI mass and PRB thickness.

8.2. Comparison of IRM Options

Table 9, below, presents a comparison of the ZVI PRB (Option 1) and groundwater extraction (Option 2) IRMs evaluated herein. As shown in the table, both treatment methodologies assessed and presented in this Work Plan are capable of achieving the goal of the IRM. However, installation of a ZVI PRB would likely be more practicable as it does not require the construction of a surface treatment building, which would be administratively difficult to site, or the discharge of treated water and air. The ZVI PRB also has the added benefit of treating the hexavalent chromium in the groundwater and greatly reduced operations and maintenance requirements as compared to the groundwater extraction IRM.

Table 9: Comparison of IRM Options

Metric	Option 1: ZVI PRB	Option 2: Groundwater Extraction
Capable of intercepting groundwater plume given site conditions?	Yes	Yes
Treatment of chlorinated VOCs?	Yes	Yes
Treatment of hexavalent chromium?	Yes	Additional treatment technologies would be required for extracted water
O&M Requirements	Groundwater monitoring	Periodic operational checks, carbon change-outs, effluent monitoring, power, groundwater monitoring

Table 9 (continued)

Metric	Option 1: ZVI PRB	Option 2: Groundwater Extraction
Surface structures?	None	Treatment building
Discharges	None (in-situ treatment)	Treated air (atmosphere) and water (sewer)
Estimated capital cost	$395,000	$542,000
Estimated O&M costs (10 years)	$230,000	$520,000

9. References

Camp Dresser and McKee, 2009. Site Characterization/Plume Tracking Report for 21-03 44th Avenue.

Envirometals, 2010. Potential Application of Granular Iron or EHC PRB at a Site in Long Island City, NY, Letter to Malcolm Pirnie, Inc., 26 May 2010

Gavaskar, Arun, N. Gupta, B. Sass, R. Janosy, J. Hicks, 2000. Final Design Guidance for Application of Permeable Reactive Barriers for Groundwater Remediation. Battelle, Columbus, OH, March 31, 2000.

Interstate Technology Regulatory Council (ITRC), 2005. Permeable Reactive Barriers: Lessons Learned/New Directions, February 2005.

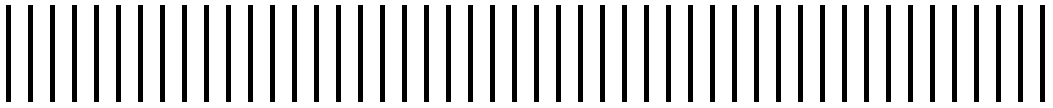
New York State Department of Environmental Conservation, 2002. Draft DER-10 Technical Guidance for Site Investigation and Remediation.

United States Environmental Protection Agency (USEPA), Region II, 1998. Ground Water Sampling Procedure, Low Stress (Low Flow) Purging and Sampling Standard Operating Procedure.

United States Environmental Protection Agency (USEPA), Office of Solid Waste and Emergency Response, 1998. Permeable Reactive Barrier Technologies for Contaminant Remediation. EPA/600/R-98/125, September 1998.

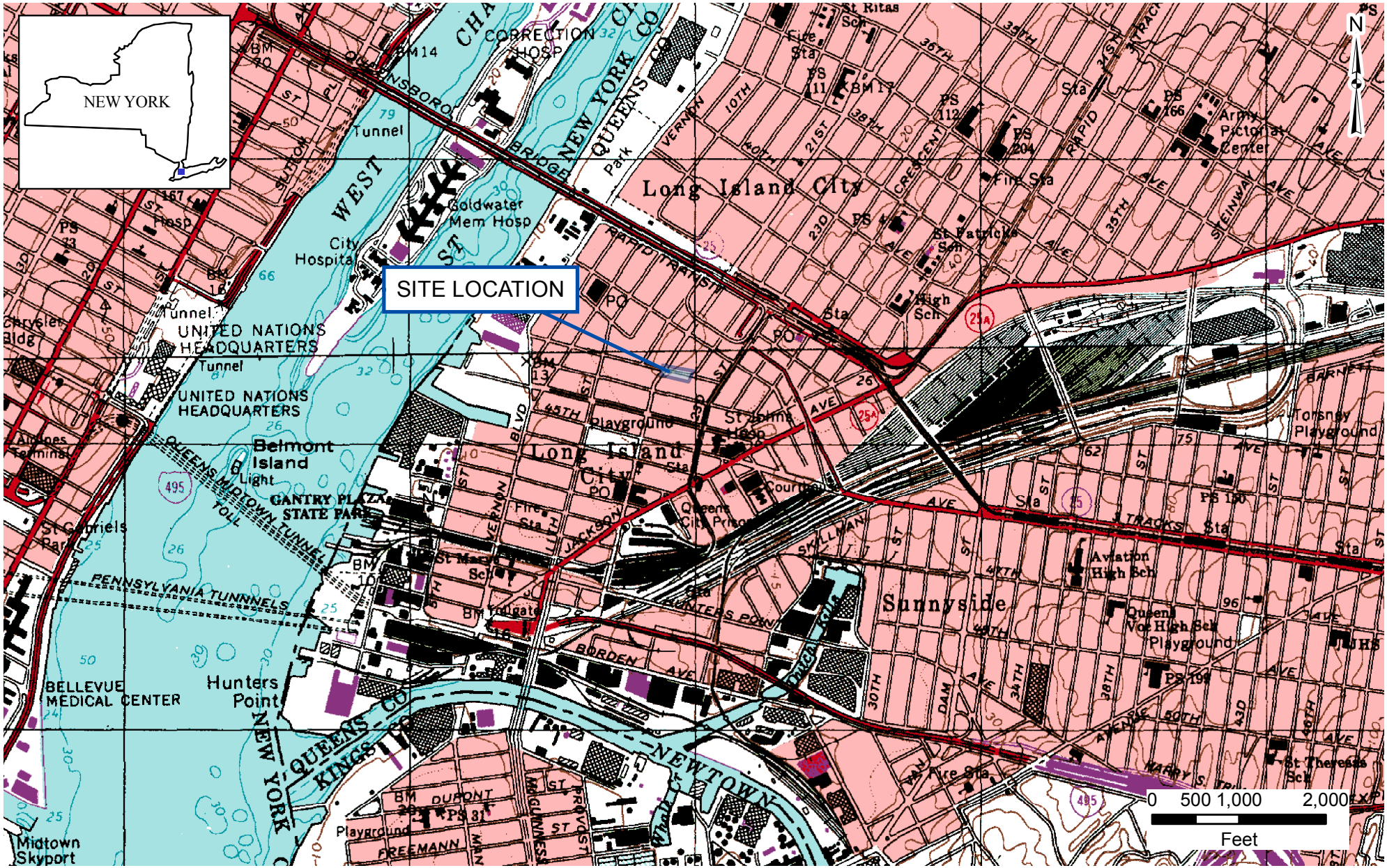
New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Figures



0266383 / ALB

MALCOLM PIRNIE



M:\GISMOD\0266383\Site Location.mxd

MALCOLM PIRNIE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

21-03 44TH AVENUE SITE (#241107)
LONG ISLAND CITY, NEW YORK

SITE LOCATION

MALCOLM PIRNIE, INC.

JUNE 2009

FIGURE 1

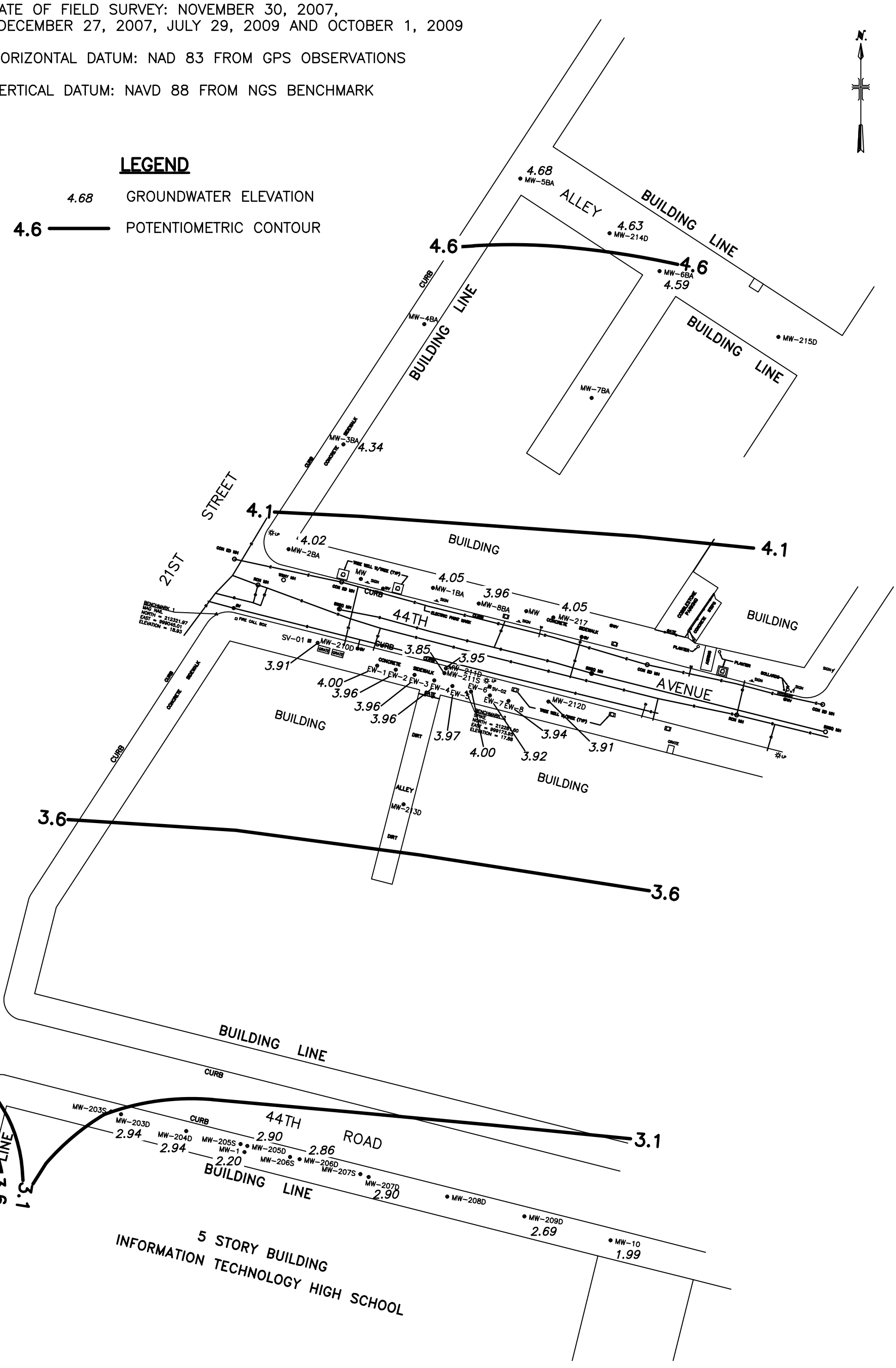
NOTES

1. DATE OF FIELD SURVEY: NOVEMBER 30, 2007, DECEMBER 27, 2007, JULY 29, 2009 AND OCTOBER 1, 2009
2. HORIZONTAL DATUM: NAD 83 FROM GPS OBSERVATIONS
3. VERTICAL DATUM: NAVD 88 FROM NGS BENCHMARK

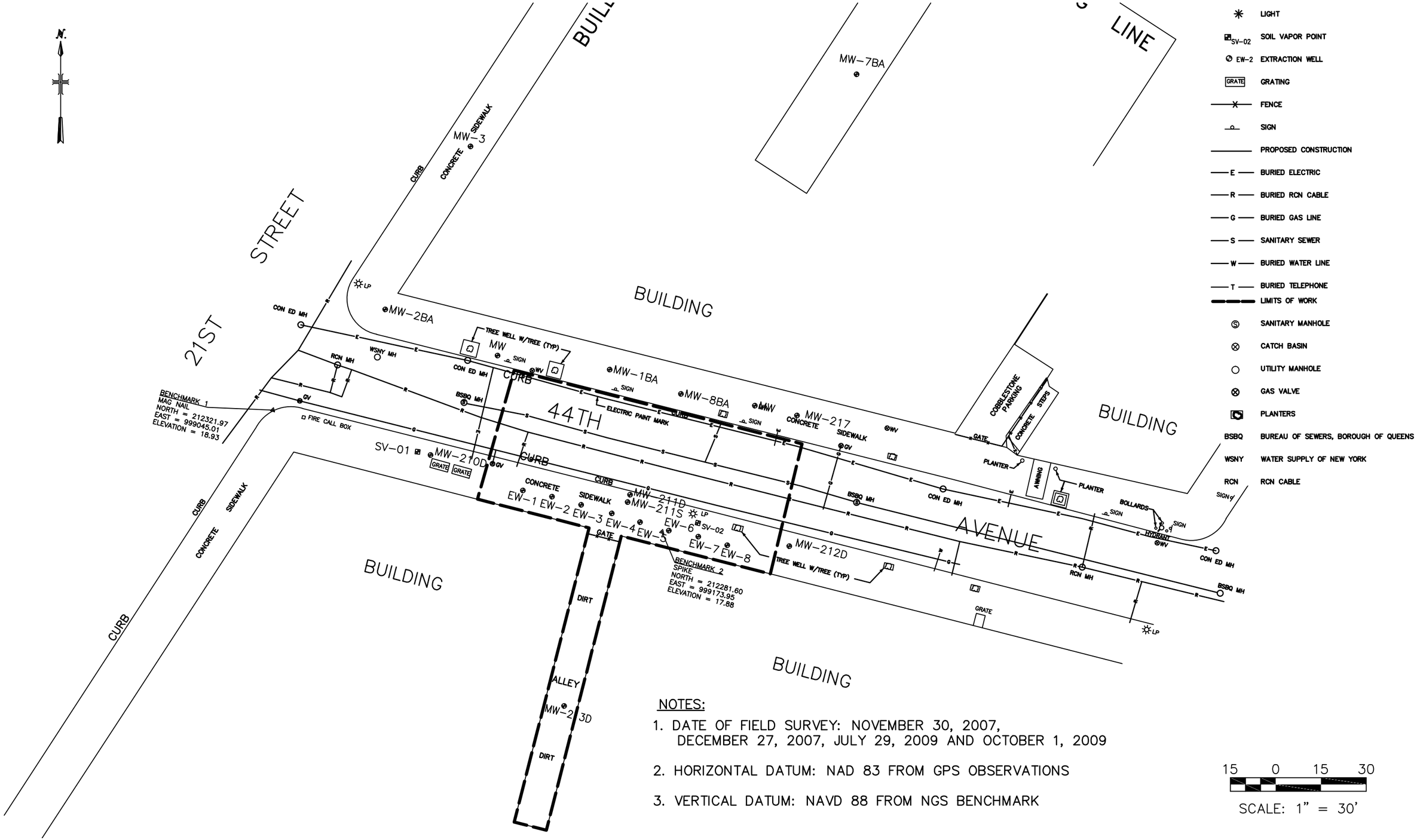
LEGEND

4.68 GROUNDWATER ELEVATION

4.6 POTENTIOMETRIC CONTOUR



MALCOLM PIRNIE	LONG ISLAND CITY, NEW YORK 44th AVENUE SITE	POTENTIOMETRIC CONTOUR MAP (10/1/09) SCALE: 1"=50'	MALCOLM PIRNIE, INC. JUNE 2010 FIGURE 2



LEGEND

- LIGHT
- SV-02 SOIL VAPOR POINT
- EW-2 EXTRACTION WELL
- GRATE GRATING
- FENCE
- SIGN
- PROPOSED CONSTRUCTION
- E BURIED ELECTRIC
- R BURIED RCN CABLE
- G BURIED GAS LINE
- S SANITARY SEWER
- W BURIED WATER LINE
- T BURIED TELEPHONE
- LIMITS OF WORK
- SANITARY MANHOLE
- CATCH BASIN
- UTILITY MANHOLE
- GAS VALVE
- PLANTERS
- BSBQ BUREAU OF SEWERS, BOROUGH OF QUEENS
- WSNY WATER SUPPLY OF NEW YORK
- RCN RCN CABLE

NOTES:

1. DATE OF FIELD SURVEY: NOVEMBER 30, 2007, DECEMBER 27, 2007, JULY 29, 2009 AND OCTOBER 1, 2009
2. HORIZONTAL DATUM: NAD 83 FROM GPS OBSERVATIONS
3. VERTICAL DATUM: NAVD 88 FROM NGS BENCHMARK

15 0 15 30

SCALE: 1" = 30'

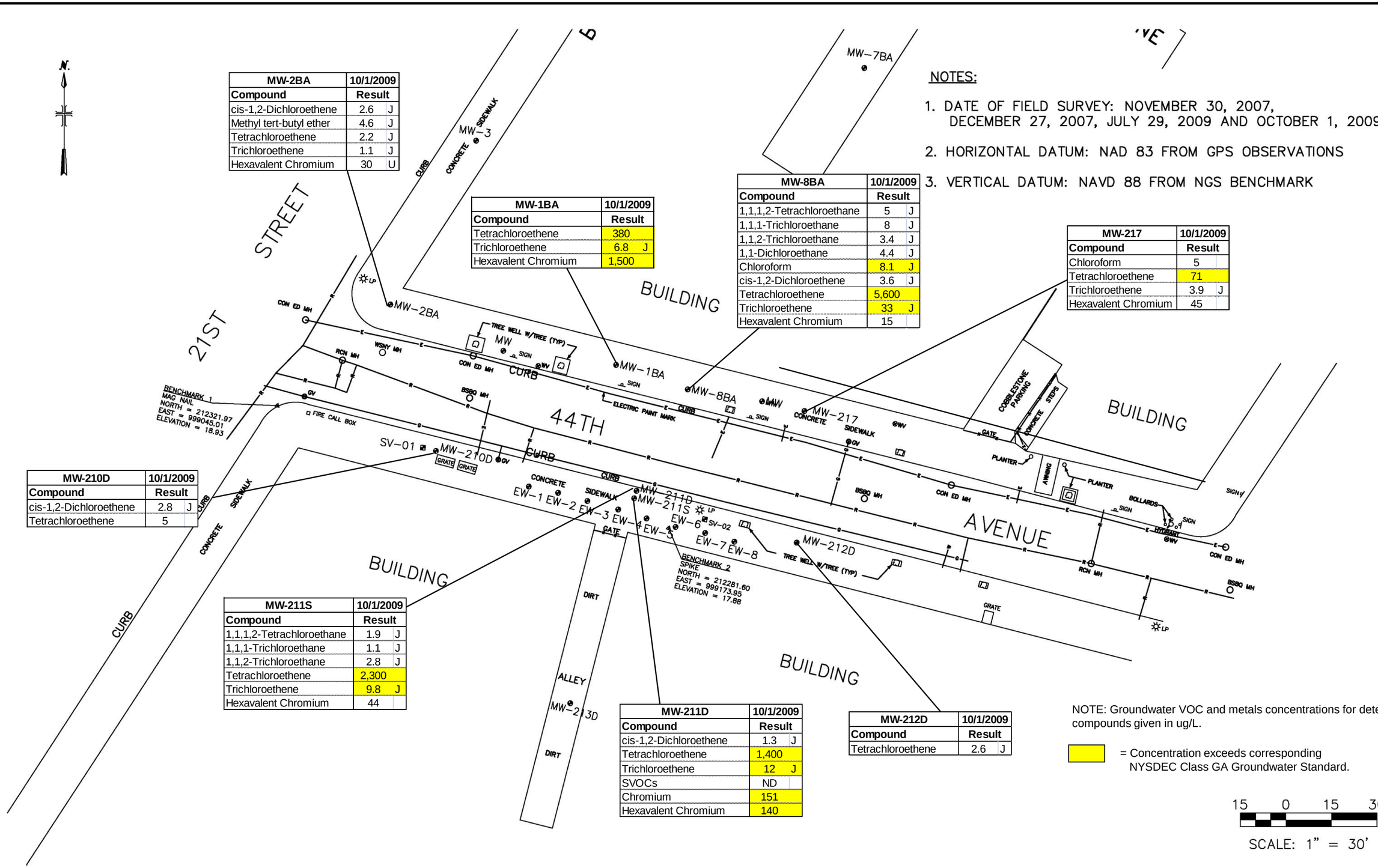
MALCOLM PIRNIE

LONG ISLAND CITY, NEW YORK
44th AVENUE SITE

SAMPLING LOCATIONS

SCALE: 1"=30'

MALCOLM PIRNIE, INC.
DECEMBER 2009
FIGURE 3



MW-2BA	10/1/2009	
Compound	**Result**	
cis-1,2-Dichloroethene	2.6	J
Methyl tert-butyl ether	4.6	J
Tetrachloroethene	2.2	J
Trichloroethene	1.1	J
Hexavalent Chromium	30	U

MW-1BA	10/1/2009	
Compound	**Result**	
Tetrachloroethene	380	
Trichloroethene	6.8	J
Hexavalent Chromium	1,500	

MW-8BA	10/1/2009	
Compound	**Result**	
1,1,1,2-Tetrachloroethane	5	J
1,1,1-Trichloroethane	8	J
1,1,2-Trichloroethane	3.4	J
1,1-Dichloroethane	4.4	J
Chloroform	8.1	J
cis-1,2-Dichloroethene	3.6	J
Tetrachloroethene	5,600	
Trichloroethene	33	J
Hexavalent Chromium	15	

MW-217	10/1/2009	
Compound	**Result**	
Chloroform	5	
Tetrachloroethene	71	
Trichloroethene	3.9	J
Hexavalent Chromium	45	

MW-210D	10/1/2009	
Compound	**Result**	
cis-1,2-Dichloroethene	2.8	J
Tetrachloroethene	5	

MW-211S	10/1/2009	
Compound	**Result**	
1,1,1,2-Tetrachloroethane	1.9	J
1,1,1-Trichloroethane	1.1	J
1,1,2-Trichloroethane	2.8	J
Tetrachloroethene	2,300	
Trichloroethene	9.8	J
Hexavalent Chromium	44	

MW-211D	10/1/2009	
Compound	**Result**	
cis-1,2-Dichloroethene	1.3	J
Tetrachloroethene	1,400	
Trichloroethene	12	J
SVOCs	ND	
Chromium	151	
Hexavalent Chromium	140	

MW-212D	10/1/2009	
Compound	**Result**	
Tetrachloroethene	2.6	J

NOTES:

1. DATE OF FIELD SURVEY: NOVEMBER 30, 2007, DECEMBER 27, 2007, JULY 29, 2009 AND OCTOBER 1, 2009
2. HORIZONTAL DATUM: NAD 83 FROM GPS OBSERVATIONS
3. VERTICAL DATUM: NAVD 88 FROM NGS BENCHMARK

NOTE: Groundwater VOC and metals concentrations for detected compounds given in ug/L.

= Concentration exceeds corresponding NYSDEC Class GA Groundwater Standard.

15 0 15 30

SCALE: 1" = 30'

MALCOLM PIRNIE

LONG ISLAND CITY, NEW YORK
44th AVENUE SITE

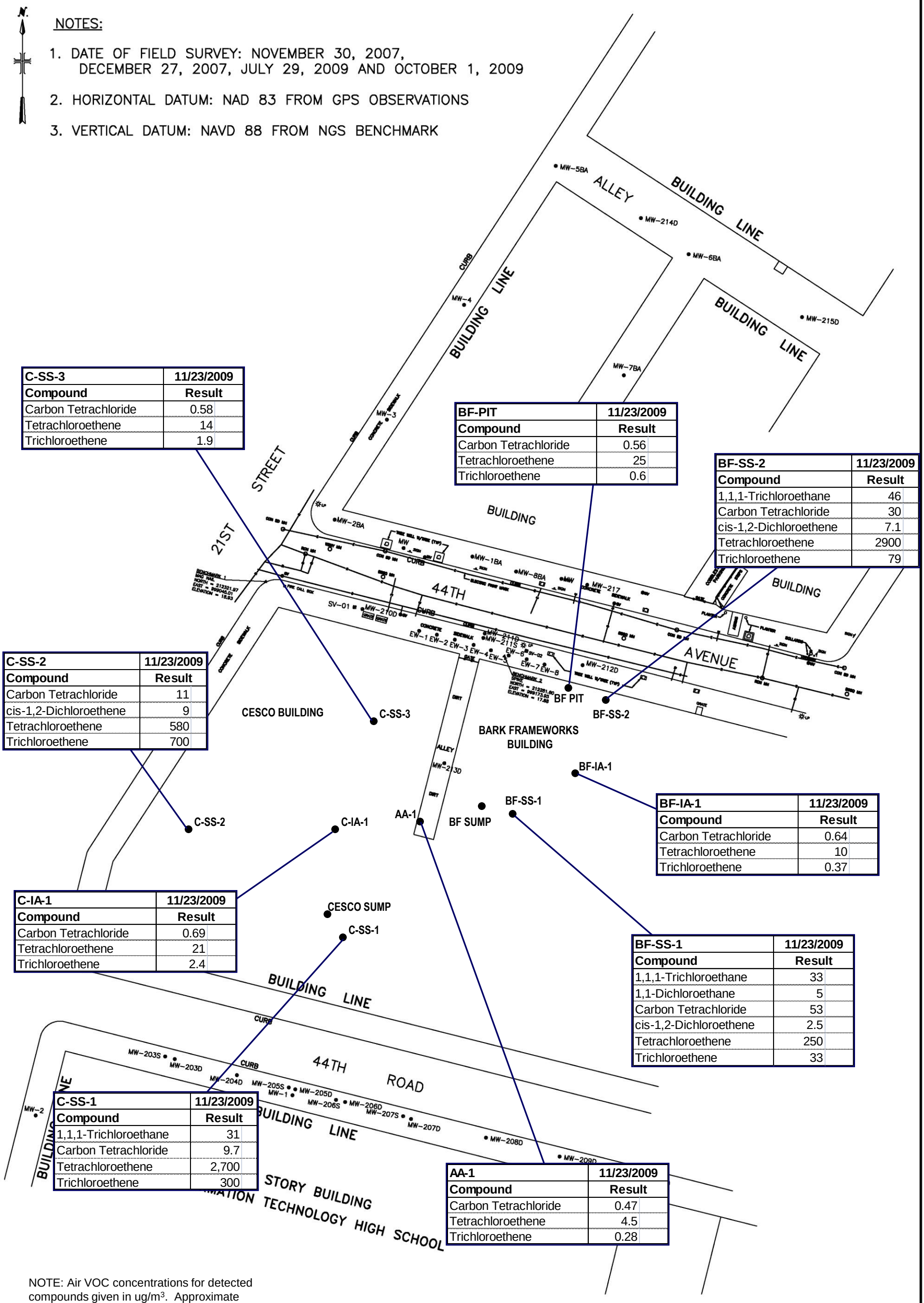
SUMMARY OF GROUNDWATER SAMPLING RESULTS

SCALE: 1"=30'

MALCOLM PIRNIE, INC.
DECEMBER 2009
FIGURE 4

NOTES:

1. DATE OF FIELD SURVEY: NOVEMBER 30, 2007, DECEMBER 27, 2007, JULY 29, 2009 AND OCTOBER 1, 2009
2. HORIZONTAL DATUM: NAD 83 FROM GPS OBSERVATIONS
3. VERTICAL DATUM: NAVD 88 FROM NGS BENCHMARK



C-SS-3	11/23/2009
Compound	**Result**
Carbon Tetrachloride	0.58
Tetrachloroethene	14
Trichloroethene	1.9

BF-PIT	11/23/2009
Compound	**Result**
Carbon Tetrachloride	0.56
Tetrachloroethene	25
Trichloroethene	0.6

BF-SS-2	11/23/2009
Compound	**Result**
1,1,1-Trichloroethane	46
Carbon Tetrachloride	30
cis-1,2-Dichloroethene	7.1
Tetrachloroethene	2900
Trichloroethene	79

C-SS-2	11/23/2009
Compound	**Result**
Carbon Tetrachloride	11
cis-1,2-Dichloroethene	9
Tetrachloroethene	580
Trichloroethene	700

BF-IA-1	11/23/2009
Compound	**Result**
Carbon Tetrachloride	0.64
Tetrachloroethene	10
Trichloroethene	0.37

C-IA-1	11/23/2009
Compound	**Result**
Carbon Tetrachloride	0.69
Tetrachloroethene	21
Trichloroethene	2.4

BF-SS-1	11/23/2009
Compound	**Result**
1,1,1-Trichloroethane	33
1,1-Dichloroethane	5
Carbon Tetrachloride	53
cis-1,2-Dichloroethene	2.5
Tetrachloroethene	250
Trichloroethene	33

C-SS-1	11/23/2009
Compound	**Result**
1,1,1-Trichloroethane	31
Carbon Tetrachloride	9.7
Tetrachloroethene	2,700
Trichloroethene	300

AA-1	11/23/2009
Compound	**Result**
Carbon Tetrachloride	0.47
Tetrachloroethene	4.5
Trichloroethene	0.28

NOTE: Air VOC concentrations for detected compounds given in ug/m^3. Approximate sampling locations shown.

25 0 25 50

SCALE: 1" = 50'

MALCOLM PIRNIE

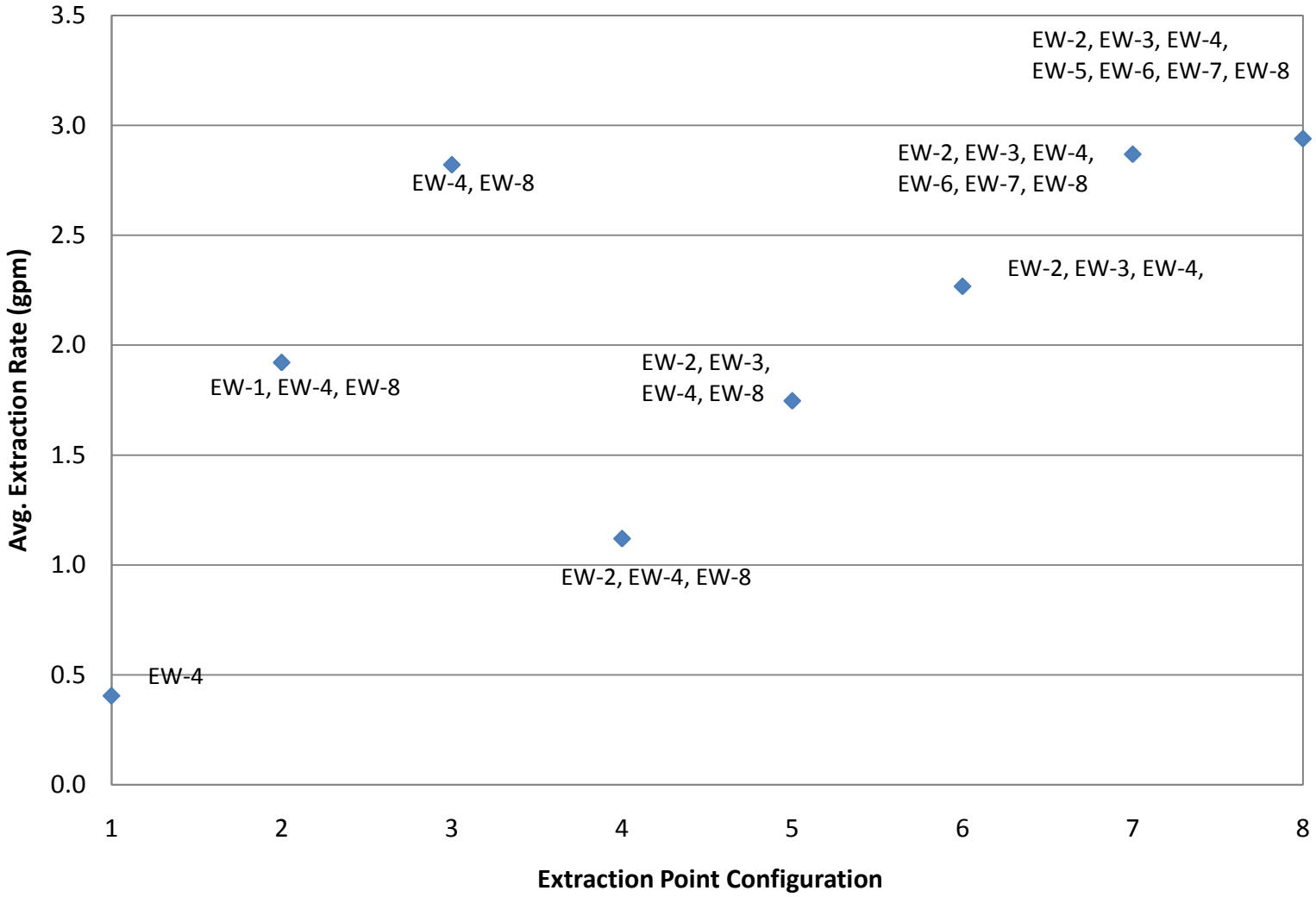
LONG ISLAND CITY, NEW YORK
44th AVENUE SITE

SUMMARY OF AIR SAMPLING RESULTS - CVOCs

SCALE: 1"=50'

MALCOLM PIRNIE, INC.

FIGURE 5



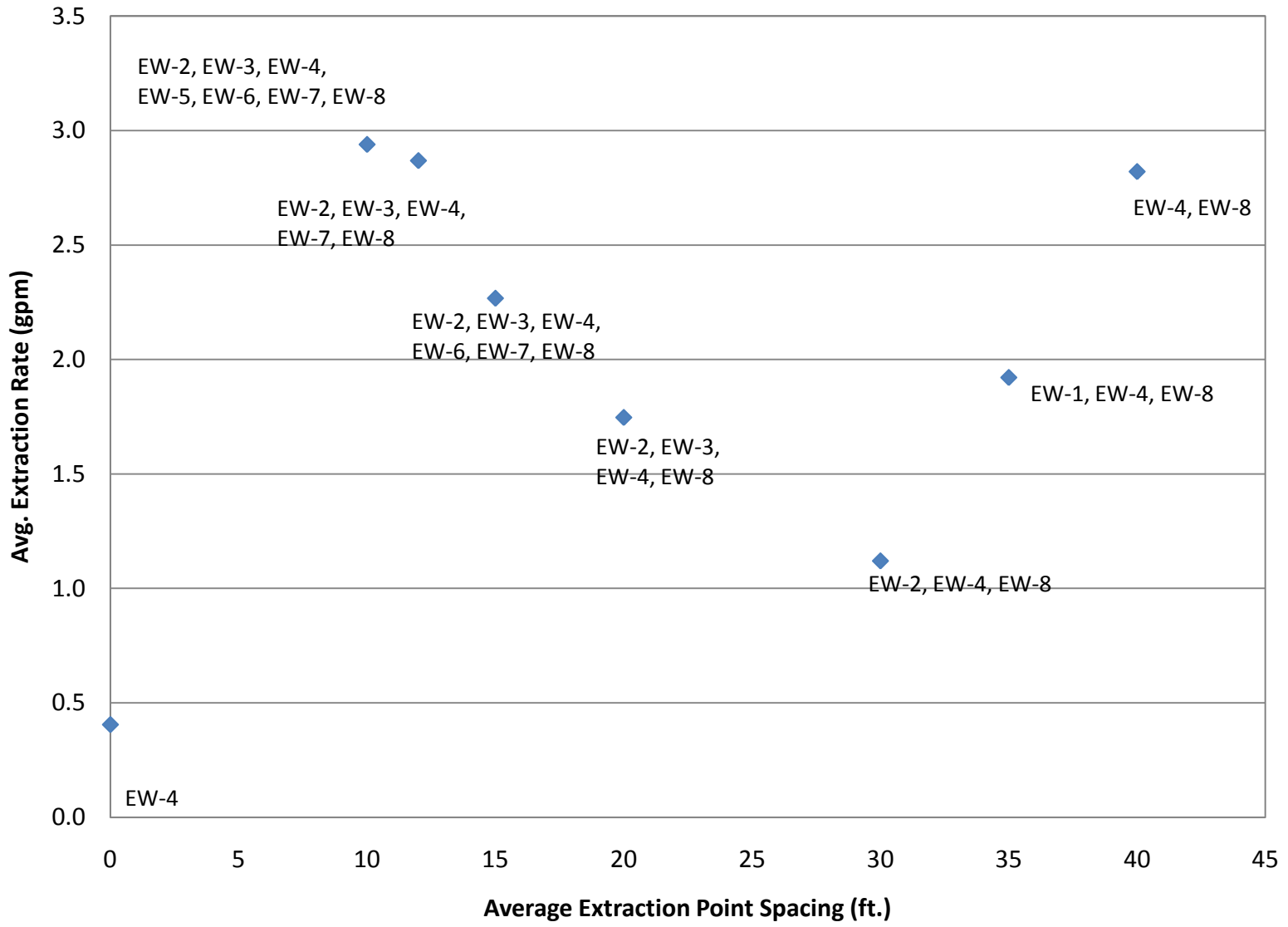
MALCOLM PIRNIE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

21-03 44TH AVENUE SITE (#241107), LONG ISLAND CITY, QUEENS COUNTY, NEW YORK

EXTRACTION POINT CONFIGURATION VS. EXTRACTION RATE

FIGURE 6



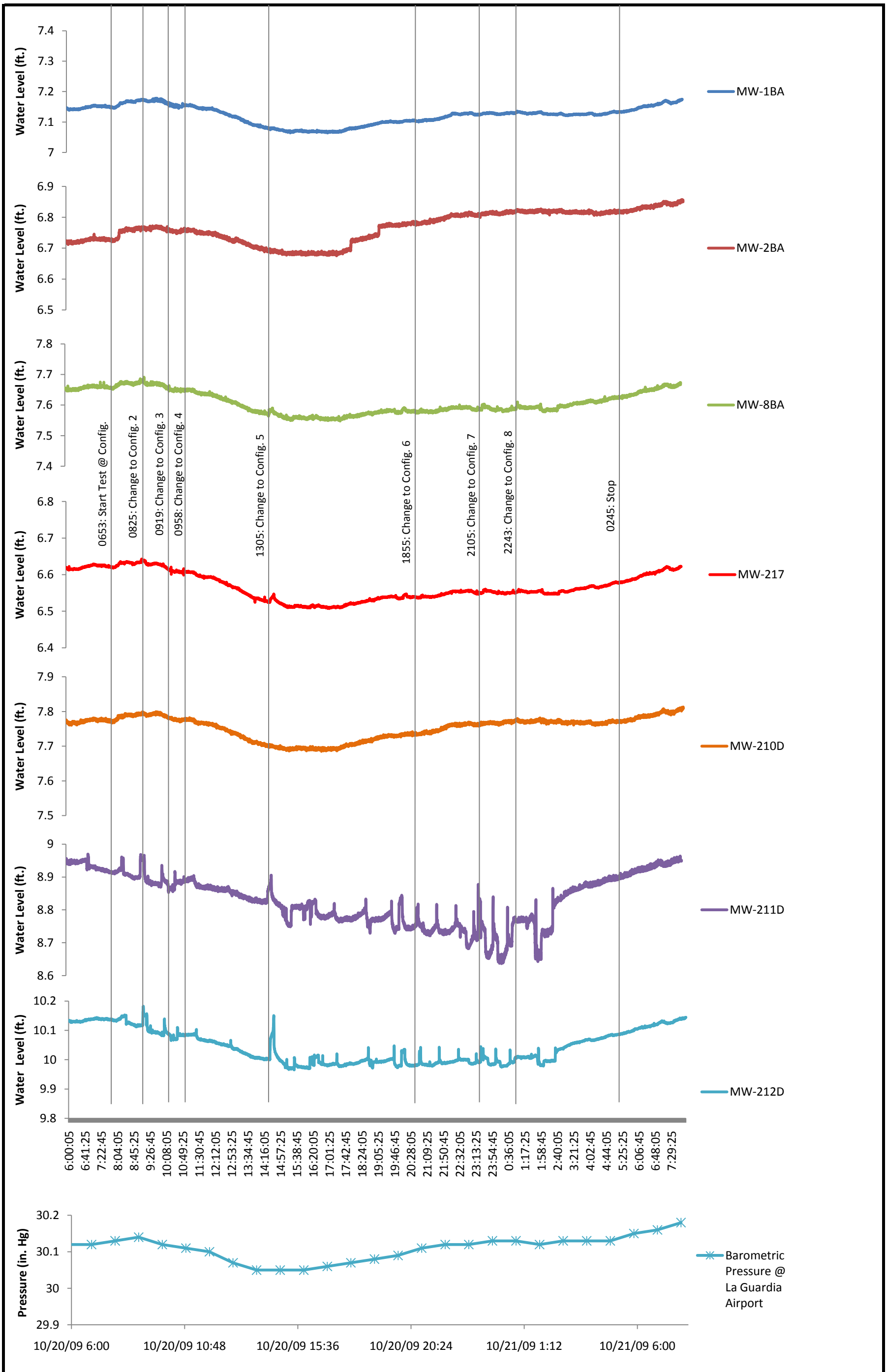
MALCOLM PIRNIE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

21-03 44TH AVENUE SITE (#241107), LONG ISLAND CITY, QUEENS COUNTY, NEW YORK

EXTRACTION POINT SPACING VS. EXTRACTION RATE

FIGURE 7



MALCOLM PIRNIE

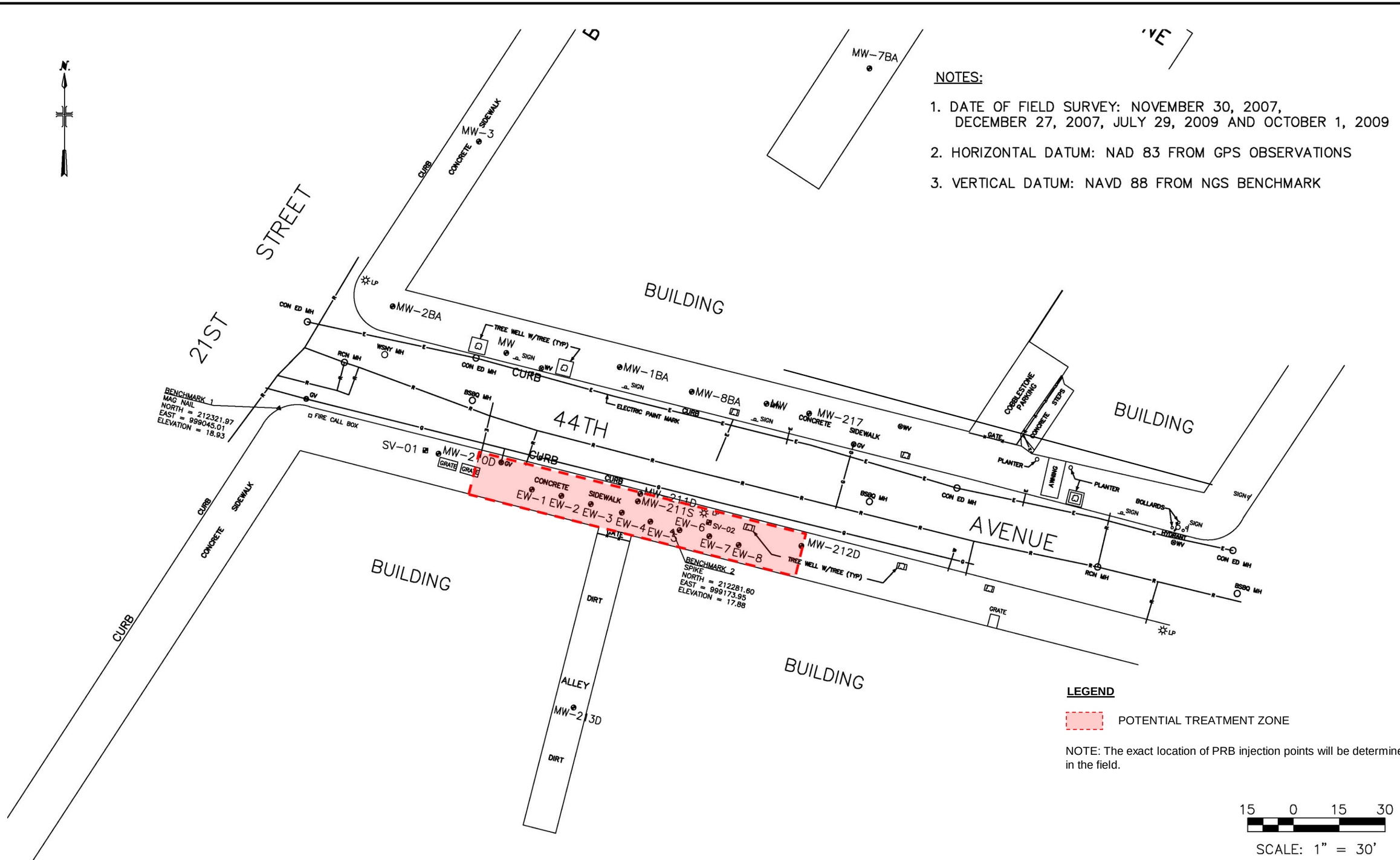
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MONITORING WELL WATER LEVEL DATA - 10/20/09-10/21/09 PILOT TEST

21-03 44TH AVENUE SITE (#241107)

LONG ISLAND CITY, QUEENS COUNTY, NEW YORK

FIGURE 8



NOTES:

1. DATE OF FIELD SURVEY: NOVEMBER 30, 2007, DECEMBER 27, 2007, JULY 29, 2009 AND OCTOBER 1, 2009
2. HORIZONTAL DATUM: NAD 83 FROM GPS OBSERVATIONS
3. VERTICAL DATUM: NAVD 88 FROM NGS BENCHMARK

LEGEND

POTENTIAL TREATMENT ZONE

NOTE: The exact location of PRB injection points will be determined in the field.

15 0 15 30

SCALE: 1" = 30'

MALCOLM PIRNIE

LONG ISLAND CITY, NEW YORK
44th AVENUE SITE

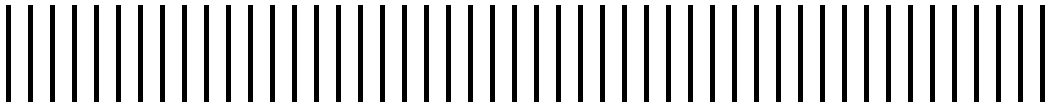
PROPOSED SITE PLAN – OPTION 1: PERMEABLE REACTIVE BARRIER

SCALE: 1"=30'

MALCOLM PIRNIE, INC.
DECEMBER 2009
FIGURE 9

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Tables



0266383 / ALB

MALCOLM PIRNIE

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
21-03 44th AVENUE SITE
LONG ISLAND CITY, NEW YORK

Well	Measuring Point Elevation	Ground Elevation (feet)	10/1/2009			10/19/2009		
			DTW (feet)	DTP (feet)	Elevation (feet)	DTW (feet)	DTP (feet)	Elevation (feet)
MW-1	17.77	17.98	15.57	-	2.20	-	-	-
MW-2	18.64	18.94	14.20	-	4.44	-	-	-
MW-5	20.03	20.32	14.39	-	5.64	-	-	-
MW-10	17.09	17.7	15.1	-	1.99	-	-	-
MW-13			14.50	-	-14.50	-	-	-
MW-1BA	17.77	17.98	13.72	-	4.05	13.82	-	3.95
MW-2BA	18.64	18.94	14.62	-	4.02	14.73	-	3.91
MW-3BA	19.28	19.58	14.94	-	4.34	-	-	-
MW-4BA	19.60	19.98	probe saturated	14.20	-	-		-
MW-5BA	20.03	20.32	15.35	-	4.68	-	-	-
MW-6BA	19.55	19.73	14.96	-	4.59	-	-	-
MW-7BA	19.88	20.33	blocked	-	-	-	-	-
MW-8BA	17.65	17.88	13.69	-	3.96	13.71	-	3.94
MW-203 S	17.83	18.24	dry	-	-	-	-	-
MW-203 D	18.01	18.26	15.07	-	2.94	-	-	-
MW-204 D	18.16	18.43	15.22	-	2.94	-	-	-
MW-205 S	18.21	18.52	dry	-	-	-	-	-
MW-205 D	18.24	18.56	15.34	-	2.90	-	-	-
MW-206 S	18.38	18.64	dry	-	-	-	-	-
MW-206 D	18.37	18.66	15.51	-	2.86	-	-	-
MW-207 S	18.43	18.66	dry	-	-	-	-	-
MW-207 D	18.37	18.66	15.47	-	2.90	-	-	-
MW-208 D	18.13	18.49	could not locate	-	-	-	-	-
MW-209 D	17.93	18.18	15.24	-	2.69	-	-	-
MW-210 D	18.20	18.51	14.29	-	3.91	14.41	-	3.79
MW-211 S	17.53	17.81	13.65	-	3.88	-	-	-
MW-211 D	17.42	17.77	13.47	-	3.95	13.52	-	3.90
MW-212 D	17.15	17.43	13.24	-	3.91	13.32	-	3.83
MW-213 D	17.86	18.38	could not locate	-	-	-	-	-

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
21-03 44th AVENUE SITE
LONG ISLAND CITY, NEW YORK

Well	Measuring Point Elevation	Ground Elevation (feet)	10/1/2009			10/19/2009		
			DTW (feet)	DTP (feet)	Elevation (feet)	DTW (feet)	DTP (feet)	Elevation (feet)
MW-214 D	19.86	20.23	15.23	-	4.63	-	-	-
MW-215 D	18.38	18.85	blocked	-	-	-	-	-
MW-217	17.40	17.71	13.35	-	4.05	14.45	-	2.95
EW-1	17.97	18.22	13.97	-	4.00	-	-	-
EW-2	17.86	18.06	13.90	-	3.96	-	-	-
EW-3	17.67	17.93	13.71	-	3.96	-	-	-
EW-4	17.65	17.92	13.69	-	3.96	-	-	-
EW-5	17.68	17.94	13.71	-	3.97	-	-	-
EW-6	17.59	17.89	13.59	-	4.00	-	-	-
EW-7	17.49	17.80	13.57	-	3.92	-	-	-
EW-8	17.49	17.77	13.55	-	3.94	-	-	-

Elevations based on NAVD 88 datum.

Table 2
Summary of Hydraulic Conductivity Testing Results
44th Avenue Site
Long Island City, New York
NYSDEC Site #241107

Well Parameters					Bouwer and Rice Method		Bouwer and Rice Method	
					Slug In	Slug Out	Slug In	Slug Out
Well	Well Radius Feet	Screen Length Feet	DTW Feet	Total Screen/ Casing Length Feet	K cm/sec	K cm/sec	K ft/day	K ft/day
MW-1BA	0.0833	5*	12.14	17.05	5.25E-03	1.65E-03	14.9	4.7
MW-2BA	0.0833	5*	12.97	18.54	2.65E-03	3.22E-03	7.5	9.1
MW-8BA	0.0833	5*	12.03	18.48	6.12E-03	1.99E-03	17.3	5.6
MW-210D	0.0833	5	12.61	19.15	7.34E-04	9.36E-04	2.1	2.7
MW-211D	0.0833	5	11.90	19.65	2.94E-03	3.85E-03	8.3	10.9
MW-212D	0.0833	5	11.60	20.70	6.16E-03	4.08E-03	17.5	11.6
				Average	*3.98E-03*	*2.62E-03*	*11.3*	*7.4*

Notes:
* - Assumed
Additional Assumptions:
Assumed filter screen and formation sand have similar hydraulic properties.
Assumed well construction using pre-packed well screens.
Slug In (Falling Head) portion of the test generally overestimates aquifer permeability due to drainage through vadose zone.

TABLE 3
SUMMARY OF WATER SAMPLING RESULTS
21-03 44th AVENUE SITE
LONG ISLAND CITY, NEW YORK

Sample ID Sampling Date Matrix Units	NYSDEC Class GA Standard or Guidance Value ug/L	MW-210D 10/1/2009 WATER ug/L	MW-211S 10/1/2009 WATER ug/L	MW-211D 10/1/2009 WATER ug/L	MW-212D 10/1/2009 WATER ug/L	MW-X (MW-212D DUP) 10/1/2009 WATER ug/L	MW-217 10/1/2009 WATER ug/L	MW-1BA 10/1/2009 WATER ug/L	MW-2BA 10/1/2009 WATER ug/L	MW-8BA 10/1/2009 WATER ug/L	DRUM SAMPLE 10/1/2009 WATER ug/L	BF-SUMP 11/23/2009 WATER ug/L	CESCO SUMP 11/24/2009 WATER ug/L
VOCs													
1,1,1,2-Tetrachloroethane		5 U	1.9 J	5 U	5 U	5 U	5 U	5 U	5 U	5 J	5 U	5 U	5 U
1,1,1-Trichloroethane		5 U	1.1 J	5 U	5 U	5 U	5 U	5 U	5 U	8 J	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	2.8 J	5 U	5 U	5 U	5 U	5 U	5 U	3.4 J	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.4 J	5 U	5 U	5 U
1,4-Dichlorobenzene	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (Methyl ethyl ketone)	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	3.4 J	5 UJ
2-Chlorotoluene		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	50*	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Isopropyltoluene		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50*	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	22 J	5 UJ
Benzene	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	7	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	8.1 J	1.2 J	5 U	1.2 J
cis-1,2-Dichloroethene	5	2.8 J	5 U	1.3 J	5 U	5 U	5 U	5 U	2.6 J	3.6 J	5 U	5 U	6.1
Methyl tert-butyl ether	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 J	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5	2,300	1,400	2.6 J	3.1 J	71	380	2.2 J	5,600	510	5 U	5 U
Trichloroethene	5	5 U	9.8 J	12 J	5 U	5 U	3.9 J	6.8 J	1.1 J	33 J	5.1 J	5 U	5 U
Vinyl chloride	2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.2 J	5 U
SVOCs		NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Aluminum		NA	NA	295	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	4.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	3.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	299	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	3	NA	NA	0.15 B	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	0.53 B	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium		NA	NA	130,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	151	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent	50	30 U	44	140	30 U	30 U	45	1,500	30 U	15	NA	NA	NA
Cobalt		NA	NA	6.4 B	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	37.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	300***	NA	NA	130 B	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	35,000*	NA	NA	50,500	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300***	NA	NA	5,780	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	0.056 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	74 E	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	2,840	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	2.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	20,000	NA	NA	413,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.5*	NA	NA	5.7 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium		NA	NA	0.34 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000*	NA	NA	74.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
GEOCHEMICAL PARAMETERS													
Alkalinity, Total (As CaCO3)	-	NA	NA	170,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/Mg (As CaCO3)	-	NA	NA	530,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	-	NA	NA	23,000 B	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	-	NA	NA	71,000 B	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	-	NA	NA	10,000 U	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Highlighted cells exceed NYSDEC Class GA Standards.
* - Guidance Value
** - Sum of these analytes cannot exceed 0.4 ug/L.
***Sum of these compounds can not exceed 300 ug/L.
U - Compound not detected, Reporting Limit provided.
J- Estimated value.
B-Compound/analyte detected in blank.
NA-Not analyzed.
ND-Not detected above reporting limit.

TABLE 4
SUMMARY OF AIR SAMPLING RESULTS
21-03 44TH AVENUE
LONG ISLAND CITY, NEW YORK

Building	NYSDOH	CESCO Building				Bark Frameworks Building					Alley Ambient
Sample ID	**SUB-SLAB**	**C-SS-1**	**C-SS-2**	**C-SS-3**	**C-IA-1**	**BF-SS-1**	**BF-SS-X**	**BF-SS-2**	**BF-PIT**	**BF-IA-1**	**AA-1**
Sample Type	**FINAL GUIDANCE**	Subslab	Subslab	Subslab	Indoor Air	Subslab	Subslab Duplicate	Subslab	Indoor Air	Indoor Air	Ambient Air
Date	**FOR MITIGATION**[(a)]	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009
Dilution Factor		24.8	3.65 (9.12 TCE, CCl4)	3.16	3.42	1.49	1.96	15.8 (13.2 TCE, CCl4)	1.61	1.75	1.61
Units	**ug/m^3**	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
VOCs											
1,1,1-Trichloroethane	1,000	**31**	2 U	1.7 U	1.9 U	**33**	**32**	**46**	0.88 U	0.95 U	0.88 U
1,1-Dichloroethane		10 U	1.5 U	1.3 U	1.4 U	**5**	**4.9**	6.4 U	0.65 U	0.71 U	0.65 U
1,2,4-Trimethylbenzene		**92**	1.8 U	**9.1**	**8.6**	0.73 U	0.96 U	7.8 U	**1.2**	**3.7**	**2.3**
1,3,5-Trimethylbenzene		**43** U	1.8 U	**2.6** U	**2.6** U	0.73 U	0.96 U	**7.8** U	0.79 U	**1.2** U	0.79 U
2,2,4-Trimethylpentane		58 U	8.5 U	**9.5**	**12**	3.5 U	4.6 U	37 U	3.8 U	4.1 U	3.8 U
2-Butanone (Methyl Ethyl Ketone)		**8.2**	**3.3**	**25**	**14**	**1.3**	**1.6**	**4.6** U	**2.7**	**5**	**4.4**
4-Methyl-2-pentanone		10 U	**2.1**	**11**	**25**	0.61 U	**0.84**	6.5 U	0.66 U	**0.9** NJ	**15**
Benzene		7.9 U	1.2 U	**4.2** U	**3.4** U	0.48 U	0.63 U	5 U	**0.86** U	**3.5**	**0.92** U
Carbon Tetrachloride	250	**9.7**	**11**	**0.58**	**0.69**	**53**	**51**	**30**	**0.56**	**0.64**	**0.47**
Chloroform		**14**	**17**	**1.5** U	**1.7** U	**21**	**20**	**22**	**4.2**	**0.85**	**0.79**
Chloromethane		5.1 U	0.75 U	**1.2**	**1**	0.31 U	0.4 U	3.3 U	**0.61**	**1**	**0.83**
cis-1,2-Dichloroethene	1,000	9.8 U	**9**	1.2 U	1.4 U	**2.5**	**2.1**	**7.1**	0.64 U	0.69 U	0.64 U
Cyclohexane		8.5 U	1.2 U	**12**	**10**	**0.86**	0.67 U	5.4 U	0.55 U	**4.5**	0.55 U
Ethanol		23 U	**8.7** U	**110** J	**110** J	**1.7** NJ	**1.8** J	15 U	**4.9** J	**10** J	**50** J
Ethyl Benzene		11 U	1.6 U	**9**	**8.7**	0.65 U	0.85 U	6.9 U	**0.78**	**2.7**	**1.8**
Freon 11		14 U	4.8	1.8 U	1.9 U	**2.3**	**2.3**	8.9 U	**1.2**	**1.3**	**1.2**
Freon 12		12 U	**2.3**	**2.4**	**2.4**	**2.5**	**2.5**	7.8 U	**2.4**	**2.4**	**2.4**
Hexane		8.7 U	1.3 U	**7.6**	**7.5**	0.52 U	0.69 U	5.6 U	**0.61**	**7.4**	**1.1**
m,p-Xylene		11 U	1.6 U	**28**	**27**	0.65 U	**1.1**	6.9 U	**2.3**	**8.8**	**5.6**
Methylene Chloride		17 U	2.5 U	**5.8**	**5.2**	1 U	1.4 U	11 U	**2.2**	**2.4**	**2.2**
o-Xylene		11 U	1.6 U	**8.2**	**8.4**	0.65 U	0.85 U	6.9 U	**0.77**	**3**	**1.7**
Styrene		10 U	1.6 U	**4.9**	**4**	0.63 U	0.83 U	6.7 U	0.68 U	0.74 U	**0.84**
Tetrachloroethene	1,000	**2700**	**580**	**14**	**21**	**250**	**250**	**2900**	**25**	**10**	**4.5**
Toluene		9.3 U	1.4 U	**140**	**260**	0.56 U	**6.5**	6 U	**7.2**	**15**	**110**
Trichloroethene	250	**300**	**700**	**1.9**	**2.4**	**33**	**31**	**79**	**0.6**	**0.37**	**0.28**

Notes:
Highlighted cells exceed NYSDOH subslab guidance value.
U - The compound was not detected at the indicated concentration.
J - Estimated value.
R - Value rejected.
a - Value for mitigation regardless of indoor air concengration.
NJ - Tentative identification with estimated value.

Table 5
Summary of Pilot Test Configuration
21-03 44th Avenue Site
Long Island City, New York

Configuration	Extractiion Wells Utilized	Average Extraction Well Spacing (ft.)	Vacuum (in. Hg)	Start Time	Stop time	Duration (min)	Volume Removed (gal)	Average Extraction Rate (gpm)	Configuration Average Extraction Rate (gpm)
1	4	0	-19	10/20/09 6:53	10/20/09 8:20	87	35.2	0.4	0.4
2	1,4,8	35	-19	10/20/09 8:25	10/20/09 9:08	43	82.6	1.9	1.9
3	4,8	40	-19	10/20/09 9:19	10/20/09 9:58	39	110	2.8	2.8
4	2,4,8	30	-15	10/20/09 9:58	10/20/09 11:20	82	86	1.0	1.1
				10/20/09 11:20	10/20/09 13:05	105	125	1.2	
5	2,3,4,8	20	-15	10/20/09 13:05	10/20/09 14:43	98	89	0.9	1.7
				10/20/09 14:43	10/20/09 15:30	47	90	1.9	
				10/20/09 16:34	10/20/09 17:35	61	138	2.3	
				10/20/09 17:35	10/20/09 18:55	80	152	1.9	
6	2,3,4,7,8	15	-17 to -18	10/20/09 18:55	10/20/09 20:05	70	134	1.9	2.3
				10/20/09 20:15	10/20/09 21:05	50	131	2.6	
7	2,3,4,6,7,8	12	-15 to -17	10/20/09 21:05	10/20/09 21:55	50	141	2.8	2.9
				10/20/09 21:55	10/20/09 22:43	48	140	2.9	
8	2,3,4,5,6,7,8	10	-15 to -17	10/20/09 22:43	10/20/09 23:25	42	145	3.5	2.9
				10/20/09 23:35	10/21/09 0:15	40	136	3.4	
				10/21/09 0:15	10/21/09 0:50	35	140	4.0	
				10/21/09 0:50	10/21/09 2:05	75	157	2.1	
				10/21/09 2:05	10/21/09 2:45	40	70	1.8	

TABLE 7
IRM Option 1: Zero Valent Iron Permeable Reactive Barrier

OPINION OF PROBABLE COST

Site: 21-03 44th Avenues
Location: Long Island City, New York
Phase: Feasibility Study (-30% to +50%)
Base Year: 2010
Date: May 2010

Description: IRM Option 1 consists of the in-situ placement of a zero valent iron permeable reactive barrier using injection methods. The PRB would be 10 feet wide and treat the saturated overburden from approximately 12 to 20 ft. bgs. O&M consists of semi-annual groundwater monitoring. Capital costs are incurred in Year 1. O&M costs are incurred in Years 1-10.

CAPITAL COSTS:

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES:
Structual Evaluation, Work Plans, Permitting	1	lump sum	$50,000	$50,000	
ZVI Injection					
Purchase ZVI	40,000	pound	$2.50	$100,000	
Mobilization	1	lump sum	$25,000	$25,000	Includes mobilization, demobilization, per diems, and site security for staged materials.
ZVI Injection: 21 injection points	10	day	$8,500	$85,000	
Sidewalk restoration	1	lump sum	$10,000	$10,000	
Envirometals Royalty Fee	1	lump sum	$55,000	$55,000	
Additional Groundwater Monitoring Well Installation					
Mobilization	1	lump sum	$2,500	$2,500	
Overburden Well Installation (including drilling, well supplies, protective covering, and development)	4	1	$2,500	$10,000	
Soil Cuttings Disposal	4	drums	$200	$800	
SUBTOTAL				$338,300	
Contingency	10%			$33,830	
SUBTOTAL				$372,130	
Project Management*	6%			$22,328	
TOTAL CAPITAL COST				**$394,500**	

OPERATION, MAINTENANCE, AND MONITORING (OM&M) COSTS

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES:
Site Monitoring					
Groundwater Sampling & Analysis	2	YR	$10,000	$20,000	Semi-annual sampling - 14 wells
Data Evaluation and Reporting	2	YR	$5,000	$10,000	
SUBTOTAL				$30,000	
TOTAL ANNUAL O&M COST				**$30,000**	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR (5%)	PRESENT VALUE	NOTES:
Capital	1	$394,500	$394,500	1.00	$394,500	
Annual OM&M	1-10	$300,000	$30,000	7.72	$231,652	
					$626,152	
TOTAL PRESENT VALUE OF ALTERNATIVE					**$626,000**	

** Per USEPA 540-R-00-002, "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study". July 2000.*

TABLE 8
IRM Option 2: Groundwater Extraction

OPINION OF PROBABLE COST

Site: 21-03 44th Avenues
Location: Long Island City, New York
Phase: Feasibility Study (-30% to +50%)
Base Year: 2010
Date: May 2010

Description: IRM Option 2 consists of the construction and operation of a groundwater extraction system utilizing vacuum extraction techniques. The system would utilize wells placed across the plume to intercept and treat the saturated overburden from approximately 14 to 20 ft. bgs. O&M consists of operation of the extraction system and semi-annual groundwater monitoring. Capital costs are incurred in Year 1. O&M costs are incurred in Years 1-10.

CAPITAL COSTS:

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES:
Hydraulic Conductivity Evaluation	1	lump sum	$15,000	$15,000	
Legal and Administrative Costs	1	lump sum	$10,000	$10,000	Agreements for placement of treatment system
General Conditions	1	lump sum	$75,000	$75,000	Bonds, permits, mobe/demobe, survey, equipment rental, per diems
Groundwater Extraction System Construction					
Concrete Demolision	1	lump sum	$5,000	$5,000	
Extraction Wells	8	each	$3,500	$28,000	
Excavation, backfill, and compaction for piping	200	cubic yard	$21	$4,200	
Extraction Piping (1" PVC, Sch. 40)	1,200	linear foot	$10	$12,000	
1" PVC Sch. 40 Elbows and fittings	40	each	$20	$800	
1" CPVC Valves	8	each	$40	$320	
Outside piping	60	linear foot	$80	$4,800	
Water Piping to Sewer (Excavation, Backfill, Compaction and Asphalt)	800	square foot	$30	$24,000	
Treatment System	1	lump sum	$140,000	$140,000	Includes building, mechanical equipment, controls, granular activated carbon
Concrete Repair	1	lump sum	$3,000	$3,000	
Electrical Installation and Materials	1	lump sum	$50,000	$50,000	
Additional Groundwater Monitoring Well Installation					
Mobilization	1	lump sum	$1,500	$1,500	
Overburden Well Installation (including drilling, well supplies, protective covering, and development)	1	1	$2,500	$2,500	
Soil Cuttings Disposal	1	drums	$200	$200	
SUBTOTAL				$376,320	
Contingency	20%			$75,264	
SUBTOTAL				$451,584	
Project Management*	6%			$27,095	
Final Designs	6%			$27,095	
Construction Management*	8%			$36,127	
TOTAL CAPITAL COST				**$541,900**	

OPERATION, MAINTENANCE, AND MONITORING (OM&M) COSTS

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES:
Operations Costs					
Electrical Power	25,000	kwh	0.25	$6,250	
Carbon Sampling & Profiling	2	lump sum	$500	$1,000	
Air sampling (quarterly)	4	lump sum	$1,500	$6,000	
Water Sampling (quarterly)	4	lump sum	$1,500	$6,000	
Carbon Changeout - Air	1	each	$2,000	$2,000	
Carbon Changeout - Water	1	each	$2,000	$2,000	
Labor	144	hour	$100	$14,400	12 hours per month
Maintenance	10%		$2,325	$2,325	10 percent of operations costs
SUBTOTAL				$39,975	
Site Monitoring					
Groundwater Sampling & Analysis	2	YR	$8,500	$17,000	Semi-annual sampling - 11 wells
Data Evaluation and Reporting	2	YR	$5,000	$10,000	
SUBTOTAL				$27,000	
TOTAL ANNUAL O&M COST				**$66,975**	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR (5%)	PRESENT VALUE	NOTES:
Capital	1	$541,900	$541,900	1.00	$541,900	
Annual OM&M	1-10	$669,750	$66,975	7.72	$517,163	
					$1,059,063	
TOTAL PRESENT VALUE OF ALTERNATIVE					**$1,059,000**	

** Per USEPA 540-R-00-002, "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study". July 2000.*

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix A:
Site Photographs

0266383 / ALB

MALCOLM PIRNIE

PHOTO 1: Southeast view of 44th Avenue. CESCO (with loading dock) and Bark Frameworks Buildings are on the right ,separated by an alley

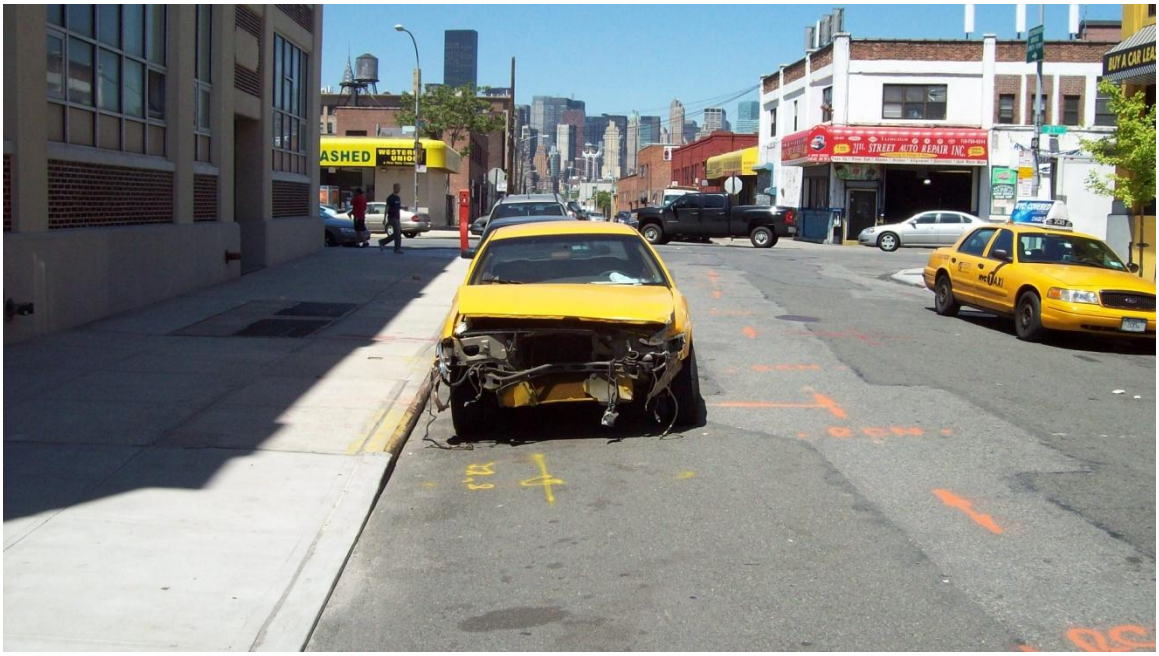


PHOTO 2: Northwest view of 44th Avenue at the intersection with 21st Street from alley entrance.

PHOTO 3: Southeast view of 44th Avenue south sidewalk and extraction points .

PHOTO 4: Southwest view down alley. Bark Frameworks and CESCO Buildings to the left and right, respectively.

PHOTO 5: Southwest view down alley. Bark Frameworks and CESCO Buildings to the left and right, respectively.

PHOTO 6: Northeast view down alley. Bark Frameworks and CESCO Buildings to the right and left, respectively.

PHOTO 7: Northward view of stairway and entrance to CESCO Building basement from 44th Road .

PHOTO 8: Eastward view of CESCO basement. Maintenance office and fuel oil tank to the right, door to boiler room straight ahead.

PHOTO 9: Southward view maintenance office and shelf of cleaning products.

PHOTO 10: Eastward view of 10,000 gallon oil tank and paint/primer storage from maintenance office.

PHOTO 11: Southward view of paint and primer storage shelf in CESCO basement oil tank room.

PHOTO 12: Northeastward view of primer in CESCO basement oil tank room.

PHOTO 13: Northward view of CESCO basement from door to boiler room.

PHOTO 14: Eastward view of CESCO basement. Sub-slab sample C-SS-2 collected from far end of hallway.

PHOTO 15: Northward view of CESCO basement from plastic partition.

PHOTO 16: Northward view of northern-most portion of CESCO basement.

PHOTO 17: Southward view of boiler room in CESCO Basement.

PHOTO 18: Westward view of sump in CESCO boiler room.

PHOTO 19: Northward view of sub-slab sample C-SS-1 in CESCO boiler room.

PHOTO 20: Northward view of sub-slab sample C-SS-2 in western portion of CESCO basement.

PHOTO 21: Northward view of sub-slab sample C-SS-3 in northern portion of CESCO basement.

PHOTO 22: Southward view of indoor air sample C-IA-1 in east-central portion of CESCO basement.

PHOTO 23: Southwestward view of ambient air sample AA-1 in rear of alley between CESCO and Bark Frameworks Buildings.

PHOTO 24: Southward view of Bark Frameworks basement from the bottom of the stairwell.

PHOTO 25: Northward view of electrical room in Bark Frameworks basement.

PHOTO 26: Westward view of electrical room in Bark Frameworks basement .

PHOTO 27: Northward view of Bark Frameworks basement.

PHOTO 28: Westward view of 1,000 gallon fuel oil tank in Bark Frameworks basement from the bottom of the stairwell.

PHOTO 29: Westward view of sump in Bark Frameworks basement.

PHOTO 30: View of sump in Bark Frameworks basement.

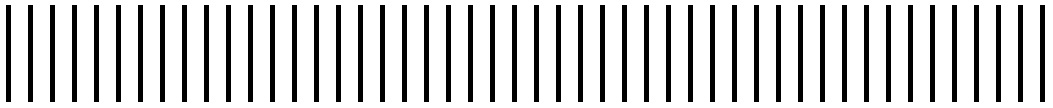
PHOTO 31: Southward view of indoor air sample BF-IA-1 in Bark Frameworks basement.

PHOTO 32: Southwestward view of sub-slab sample BF-SS-1 in southern portion of Bark Frameworks basement.

PHOTO 33: Westward view of sub-slab sample BF-SS-2 in Bark Frameworks basement.

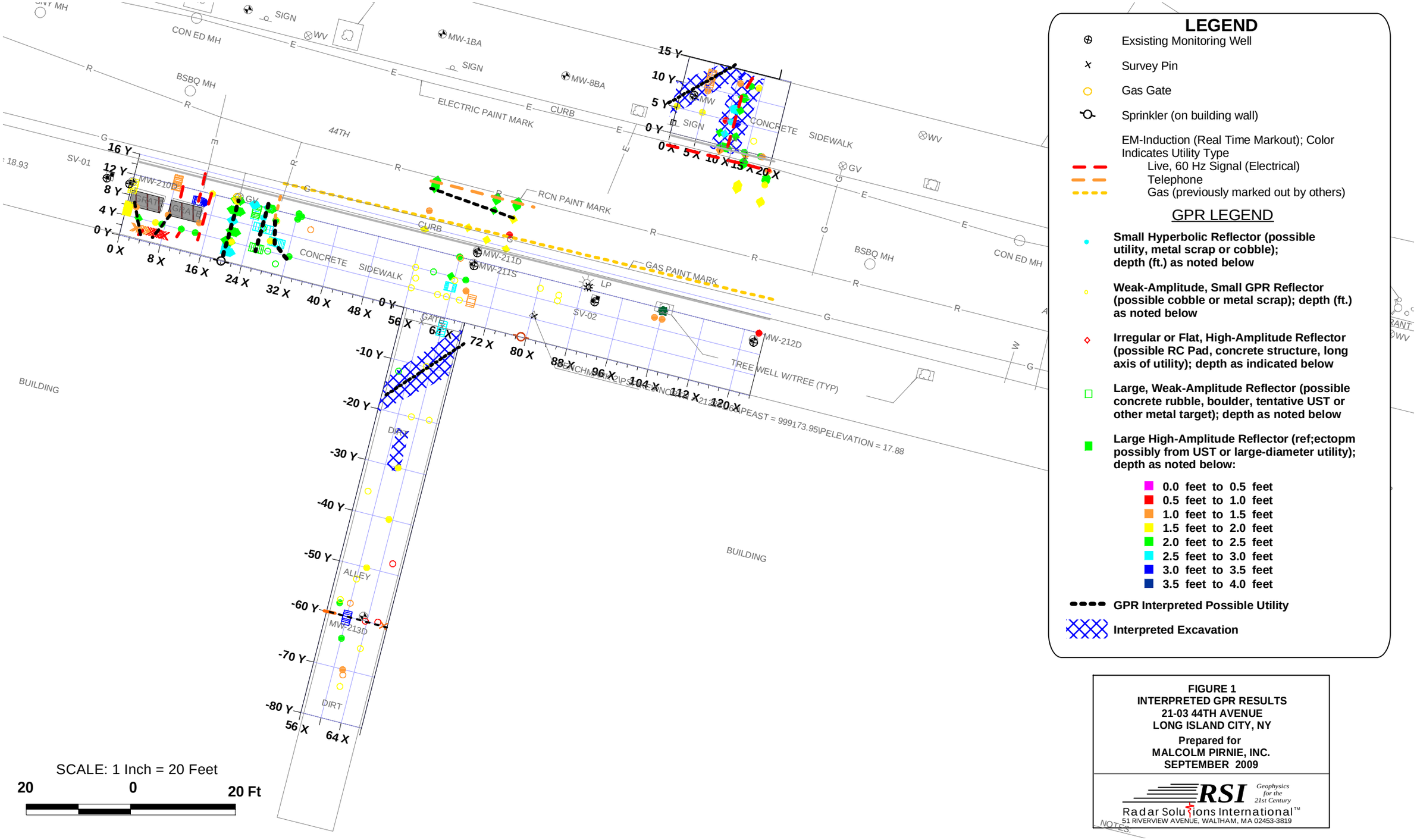
New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix B:
Geophysical Survey



0266383 / ALB

MALCOLM PIRNIE



LEGEND

- Exsisting Monitoring Well
- Survey Pin
- Gas Gate
- Sprinkler (on building wall)
- EM-Induction (Real Time Markout); Color Indicates Utility Type
  - Live, 60 Hz Signal (Electrical)
  - Telephone
  - Gas (previously marked out by others)

GPR LEGEND

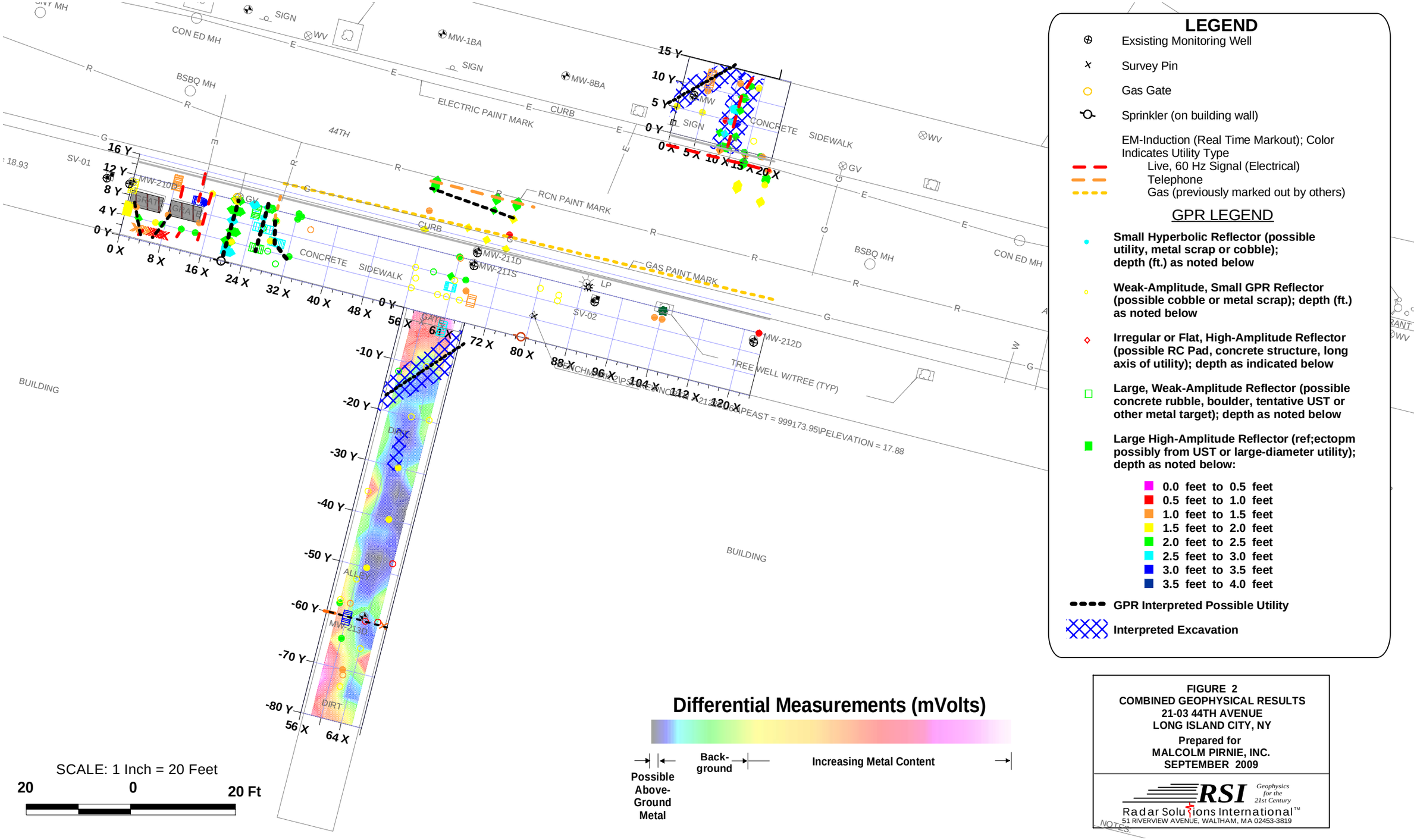
- **Small Hyperbolic Reflector (possible utility, metal scrap or cobble); depth (ft.) as noted below**
- **Weak-Amplitude, Small GPR Reflector (possible cobble or metal scrap); depth (ft.) as noted below**
- **Irregular or Flat, High-Amplitude Reflector (possible RC Pad, concrete structure, long axis of utility); depth as indicated below**
- **Large, Weak-Amplitude Reflector (possible concrete rubble, boulder, tentative UST or other metal target); depth as noted below**
- **Large High-Amplitude Reflector (ref;ectopm possibly from UST or large-diameter utility); depth as noted below:**
  - **0.0 feet to 0.5 feet**
  - **0.5 feet to 1.0 feet**
  - **1.0 feet to 1.5 feet**
  - **1.5 feet to 2.0 feet**
  - **2.0 feet to 2.5 feet**
  - **2.5 feet to 3.0 feet**
  - **3.0 feet to 3.5 feet**
  - **3.5 feet to 4.0 feet**
- **GPR Interpreted Possible Utility**
- **Interpreted Excavation**

FIGURE 1
INTERPRETED GPR RESULTS
21-03 44TH AVENUE
LONG ISLAND CITY, NY

Prepared for
MALCOLM PIRNIE, INC.
SEPTEMBER 2009

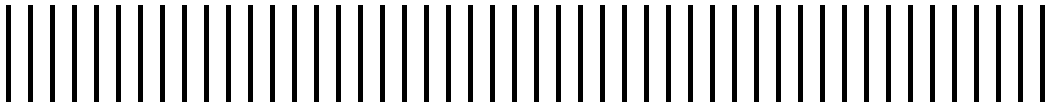
RSI Geophysics for the 21st Century
Radar Solutions International™
51 RIVERVIEW AVENUE, WALTHAM, MA 02453-3819

NOTES:


LEGEND
Exsisting Monitoring Well
Survey Pin
Gas Gate
Sprinkler (on building wall)
EM-Induction (Real Time Markout); Color Indicates Utility Type
Live, 60 Hz Signal (Electrical)
Telephone
Gas (previously marked out by others)
GPR LEGEND
Small Hyperbolic Reflector (possible utility, metal scrap or cobble); depth (ft.) as noted below
Weak-Amplitude, Small GPR Reflector (possible cobble or metal scrap); depth (ft.) as noted below
Irregular or Flat, High-Amplitude Reflector (possible RC Pad, concrete structure, long axis of utility); depth as indicated below
Large, Weak-Amplitude Reflector (possible concrete rubble, boulder, tentative UST or other metal target); depth as noted below
Large High-Amplitude Reflector (ref;ectopm possibly from UST or large-diameter utility); depth as noted below:
0.0 feet to 0.5 feet
0.5 feet to 1.0 feet
1.0 feet to 1.5 feet
1.5 feet to 2.0 feet
2.0 feet to 2.5 feet
2.5 feet to 3.0 feet
3.0 feet to 3.5 feet
3.5 feet to 4.0 feet
GPR Interpreted Possible Utility
Interpreted Excavation
Differential Measurements (mVolts)
Possible Above-Ground Metal
Back-ground
Increasing Metal Content
SCALE: 1 Inch = 20 Feet
20 0 20 Ft
FIGURE 2
COMBINED GEOPHYSICAL RESULTS
21-03 44TH AVENUE
LONG ISLAND CITY, NY
Prepared for
MALCOLM PIRNIE, INC.
SEPTEMBER 2009
RSI Geophysics for the 21st Century
Radar Solutions International™
51 RIVERVIEW AVENUE, WALTHAM, MA 02453-3819
NOTES:
44TH
CURB
CONCRETE SIDEWALK
ELECTRIC PAINT MARK
RCN PAINT MARK
GAS PAINT MARK
BUILDING
MW-210D
MW-211D
MW-211S
MW-212D
MW-213D
SV-01
SV-02
TREE WELL W/TREE (TYP)
CON ED MH
BSBQ MH
SIGN
GV
WV
LP
GATE
DIRT
ALLEY

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix C:
Extraction Point/Well Construction Logs



0266383 / ALB

MALCOLM PIRNIE

MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-1

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/18/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12						13.0		
14						15.0		
16						17.0		

MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-2

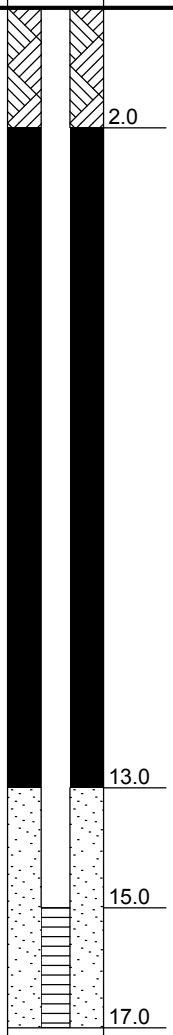
PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/21/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/21/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12								
14						15.0		
16						17.0		
18						19.0		

MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-3

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/18/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

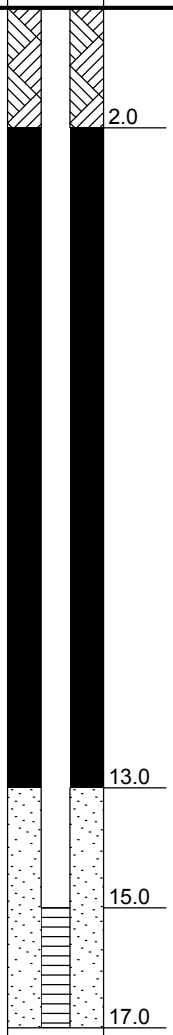
DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12						13.0		
14						15.0		
16						17.0		



MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-4

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/18/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12						13.0		
14						15.0		
16						17.0		



MALCOLM PIRNIE

TEST BORING LOG

BORING No.EW-5

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**	SHEET	**1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**			PROJECT No.	**0266383**
DRILLING CONTRACTOR	**Zebra**			MEAS. PT. ELEV.	
PURPOSE	**Well Installation**			GROUND ELEV.	
WELL MATERIAL	**1" 20-slot PVC**			DATUM	
DRILLING METHOD(S)	**Direct-push**	SAMPLE	CORE / CASING	DATE STARTED	**9/18/09**
DRILL RIG TYPE	**6620**	TYPE		DATE FINISHED	**9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**	DRILLER	**EM**
MEASURING POINT		WEIGHT	**#**	PIRNIE STAFF	**SB**
DATE OF MEASUREMENT		FALL	**"**		

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12								
14						15.0		
16						17.0		
18						19.0		

MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-6

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/18/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12								
14								
16						16.0		
18						18.0		
						20.0		

MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-7

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/18/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6								
8								
10								
12								
14								
16						16.0		
18						18.0		
						20.0		

MALCOLM PIRNIE	TEST BORING LOG	BORING No.EW-8

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 20-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/17/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/18/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2	4				Subbase, Brown fine-medium SAND, dry.		2.0	
4					Brick & Concrete, dry.	3.5		
6	5				Light Brown medium SAND, trace coarse sand & fine gravel, moist.	5.0		
8								
10								
12	5							
14							15.0	
						15.0		
16							17.0	
18							19.0	

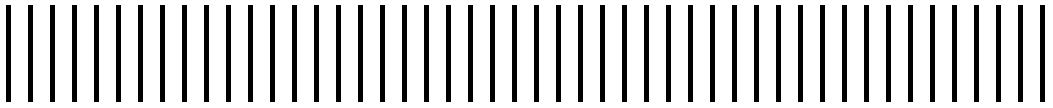
MALCOLM PIRNIE	TEST BORING LOG	BORING No.MW-217

PROJECT	**21-03 44th Avenue**	LOCATION	**Long Island City**			SHEET **1** OF **1**
CLIENT	**New York State Department of Environmental Conservation**					PROJECT No. **0266383**
DRILLING CONTRACTOR	**Zebra**					MEAS. PT. ELEV.
PURPOSE	**Well Installation**					GROUND ELEV.
WELL MATERIAL	**1" 10-slot PVC**					DATUM
DRILLING METHOD(S)	**Direct-push**		SAMPLE	CORE	CASING	DATE STARTED **9/17/09**
DRILL RIG TYPE	**6620**	TYPE				DATE FINISHED **9/17/09**
GROUND WATER DEPTH	**'**	DIA.	**"**			DRILLER **EM**
MEASURING POINT		WEIGHT	**#**			PIRNIE STAFF **SB**
DATE OF MEASUREMENT		FALL	**"**			

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						2.0		
4								
6						6.0		
8						8.0		
10								
12								
14								
16								
18						18.0		

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix D:
Groundwater Purge Logs



0266383 / ALB

MALCOLM PIRNIE

MS/MSD

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-210 D DATE: 10/1/09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: SB

A: Total Casing and Screen Length: 19.10'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 14.29'

D: Volume of Water in Casing: _____

v = 0.0408 (B)^2 x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1345	1350	1400	1405	1410	1415	1420	1425				
Gallons	0							2.5				
Well Volume												
pH	6.45	6.38	6.39	6.39	6.38	6.38	6.37	6.37				
Conductivity (mohm/cm)	3.48	3.34	3.00	2.88	2.80	2.80	2.79	2.79				
Turbidity	220	111	35.5	25.5	12.3	10.1	9.2	8.6				
Dissolved Oxygen	1.81	2.74	2.01	1.61	0.48	0.40	0.39	0.36				
Temperature (°C)	18.83	18.97	19.19	19.24	19.24	19.21	19.23	19.22				
Salinity	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1				
TDS	2.2	2.1	1.9	1.8	1.8	1.8	1.8	1.8				
REDOX (mV)	66	54	45	41	37	35	34	34				

Notes: 1345- BEGIN PURGING w/ PERISTALTIC.
1425- COLLECT SAMPLES FOR VOCs & HEX Cr. + MS/MSD.

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-21S DATE: 10/1/09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: SB

A: Total Casing and Screen Length: 14.55'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 13.65'

D: Volume of Water in Casing: _____

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1230	1330										
Gallons	0											
Well Volume												
pH		7.07										
Conductivity (mohm/cm)		2.98										
Turbidity		616										
Dissolved Oxygen		7.21										
Temperature (°C)		19.06										
Salinity		0.1										
TDS		1.9										
REDOX (mV)		82										

Notes: 1230 - BEGIN PURGING W/ PERISTALTIC

1235 - WELL DRY.

1330 - RETURN TO SAMPLE. VOCs, 4 HCY Cr.

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-211D DATE: 10/1/09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: GB

A: Total Casing and Screen Length: 19.68'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 13.47'

D: Volume of Water in Casing: _____

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1105	1115	1120	1130	1135	1145	1150	1155	1200	1205	1210	1215
Gallons	0							4				
Well Volume												
pH	6.07	6.09	6.15	6.17	6.18	6.18	6.17	6.17	6.18	6.19	6.18	6.19
Conductivity (mohm/cm)	2.00	2.87	3.16	3.15	3.26	3.30	2.90	3.24	3.29	3.29	3.28	3.28
Turbidity	334	81.2	154	146	195	232	182	164	132	63.3	49.2	17.9
Dissolved Oxygen	1.80	1.09	2.33	2.83	2.42	1.92	3.87	1.42	1.28	1.38	1.48	0.25
Temperature (°C)	18.77	18.55	18.62	18.55	18.64	18.66	18.84	18.64	18.57	18.53	18.57	18.49
Salinity	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2
TDS	1.3	1.9	2.0	2.0	2.1	2.1	1.9	2.1	2.1	2.1	2.1	2.1
REDOX (mV)	212	194	147	131	129	123	127	127	125	125	124	124

Notes: 1109- BEGIN PURGING W/ PERISTALTIC,

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-21D DATE: 10/1/09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS:

A: Total Casing and Screen Length: _____

B: Casing Internal Diameter: _____

C: Water Level Below Top of Casing: _____

D: Volume of Water in Casing: _____

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1220												
Gallons	5												
Well Volume													
pH	6.19												
Conductivity (mohm/cm)	3.28												
Turbidity	9.1												
Dissolved Oxygen	0.25												
Temperature (°C)	18.43												
Salinity	0.2												
TDS	2.1												
REDOX (mV)	120												

Notes: 1220 - COLLECT SAMPLES : VOCs, SVOCs, METALS, HEX Cr, GEOCHEM.

(DUP MW-X)

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-212 D DATE: 10/1/09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: SB

A: Total Casing and Screen Length: 20.69'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 13.24'

D: Volume of Water in Casing: _____

v = 0.0408 (B)^2 x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1245	1255	1300	1310	1315	1320	1325					
Gallons	0				2		3					
Well Volume												
pH	6.77	6.92	6.96	7.00	7.00	7.01	7.01					
Conductivity (mohm/cm)	0.97	1.33	1.39	1.45	1.45	1.46	1.46					
Turbidity	33.2	22.4	20.4	16.7	15.4	14.7	15.2					
Dissolved Oxygen	7.34	5.52	4.35	3.81	3.74	3.64	3.67					
Temperature (°C)	18.91	19.05	19.04	19.10	19.10	19.08	19.07					
Salinity	0.0	0.1	0.1	0.1	0.1	0.1	0.1					
TDS	0.6	0.9	0.9	0.9	0.9	0.9	0.9					
REDOX (mV)	110	72	52	63	65	68	68					

Notes: 1245 BEGIN PURGING W/ PERISTALTIC,

1325 COLLECT SAMPLES: VOCs, HEX Cr. + DUPLICATE MW-X

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-217 DATE: 10-01-09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: Jesus Misas

A: Total Casing and Screen Length: 17.12'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 13.35'

D: Volume of Water in Casing: _____

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

v = 0.0408 (B)² x (A-C) = D

v = 0.0408 ( )² x (-) = _____ gal.

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	11:30AM	1140	11:45	11:50	11:55	12:00	12:05	12:10	12:15	12:20	12:25	12:30
Gallons	0.5											3 gal
Well Volume												
pH	10.49	9.80	9.56	9.39	9.32	9.26	9.21	9.17	9.10	9.07	9.02	9.01
(mS/cm) Conductivity (~~mohm/cm~~)	1.02	1.01	1.02	1.01	1.03	1.03	1.03	1.03	1.04	1.05	1.04	1.04
Turbidity	111	46.1	29.5	19.3	15.1	11.3	8.0	5.2	4.2	3.3	1.7	1.0
(mg/L) Dissolved Oxygen (mg/L)	0.93	6.94	8.71	8.03	8.08	8.03	7.58	6.97	7.29	7.00	7.19	7.13
Temperature (°C)	17.96	17.48	17.22	18.74	18.08	17.94	17.91	17.93	17.96	17.98	18.01	18.02
Salinity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TDS (g/L)	0.652	0.646	0.649	0.650	0.657	0.660	0.661	0.662	0.667	0.670	0.666	0.666
REDOX (mV)	-197	-168	-159	-154	-153	-143	-143	-139	-133	-128	-125	-124
DTWATER	13.35	13.35	13.35	13.36	13.36	13.36	13.36	13.37	13.37	13.37	13.37	13.37

Notes: Initiate purge at 11:18. Sample collected at 12:30pm. A total of 3 gallons purged.

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-18A DATE: 10-01-09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: Jesus Matas

A: Total Casing and Screen Length: 16.95'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 13.72

D: Volume of Water in Casing: _____

v = 0.0408 $(B)^2$ x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1450	1500	1505	1510	1515	1520	1525	1530	1535	1540	1545	1550
Gallons	0.5											3
Well Volume												
pH	6.47	6.33	6.33	6.34	6.34	6.34	6.37	6.38	6.37	6.40	6.38	6.36
(mS/cm) Conductivity (~~mohm/cm~~)	1.13	1.25	1.29	1.25	1.22	1.22	1.22	1.24	1.23	1.23	1.23	1.23
Turbidity	66.4	65.2	31.0	13.9	8.5	5.9	3.0	2.3	1.6	1.4	1.1	0.4
(mg/L) Dissolved Oxygen	4.42	6.33	5.36	5.24	4.91	4.61	3.24	2.60	2.43	2.31	2.38	2.38
Temperature (°C)	17.42	17.60	18.12	18.18	19.22	19.35	18.87	18.60	18.50	18.40	18.27	18.76
Salinity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(g/L) TDS	0.752	0.805	0.808	0.791	0.781	0.779	0.785	0.798	0.789	0.789	0.789	0.788
REDOX (mV)	16	25	25	24	24	24	22	22	23	22	23	23
DTW	13.72	13.72	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74

Notes: Initiate purge at 1445

SAMPLE @ 1550, 3 GAL PURGED

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-2 BA DATE: 10/1/09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: SB

A: Total Casing and Screen Length: 18.45'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 14.62'

D: Volume of Water in Casing: _____

v = 0.0408 (B)^2 x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1430	1435	1445	1450	1455	1500	1505	1510	1515	1520	1525	
Gallons	0			1	1.5						2	
Well Volume												
pH	6.73	6.67	6.72	6.73	6.73	6.73	6.73	6.73	6.74	6.73	6.73	
Conductivity (mohm/cm)	4.69	4.67	4.94	5.04	5.09	5.09	5.03	5.03	5.03	5.03	5.03	
Turbidity	105	161	550	228	93	76.7	62.1	49.1	10.4	9.1	11.7	
Dissolved Oxygen	1.15	1.29	1.70	3.25	4.00	4.11	4.15	4.18	4.25	4.26	4.28	
Temperature (°C)	18.83	18.82	18.72	18.61	18.66	18.64	18.71	18.78	18.79	18.80	18.80	
Salinity	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
TDS	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
REDOX (mV)	71	72	77	80	85	88	90	92	92	92	92	

Notes: 1430 - BEGIN PURGING w/ PERISTALTIC.

1445 - WELL NEARLY DRY, DIFFICULT TO PUMP SLOW ENOUGH

1525 - COLLECT SAMPLE VOC, Hex Cr.

MALCOLM PIRNIE

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: MW-8BA DATE: 10-01-09

PROJECT NAME: 21-03 44th Avenue, Long Island City

PROJECT NUMBER: 0266383

SAMPLERS: Jesus Misas

A: Total Casing and Screen Length: 18.45'

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 13.69

D: Volume of Water in Casing: _____

v = 0.0408 (B)² x (A-C) = D

v = 0.0408 ( )² x (-) = _____ gal.

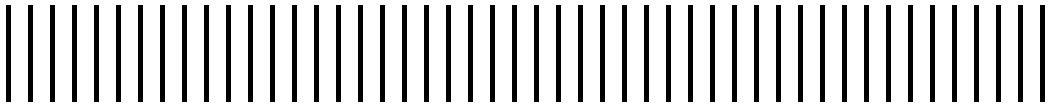
Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED						
Time	1330	1340	1345	1350	1355	1400	1405
Gallons	0.5						
Well Volume							
pH	7.07	6.95	6.96	6.95	6.87	6.85	6.86
Conductivity (mS/cm)	0.627	0.625	0.626	0.626	0.624	0.623	0.623
Turbidity (NTU)	24.7	10.5	9.1	9.0	17.7	17.8	17.8
Dissolved Oxygen (mg/L)	2.17	1.70	2.07	2.06	0.00	0.00	0.00
Temperature (°C)	17.26	17.08	17.18	17.18	17.49	17.45	17.44
Salinity	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TDS (g/L)	0.402	0.400	0.401	0.402	0.398	0.397	0.396
REDOX (mV)	-13	-10	-10	-10	-5	-4	-4
DTWater	13.67	13.67	13.67	13.67	13.67	13.67	13.67

Notes: Initiate purge at 13:20. Sample collected at 1405. A total of 1 gallon was purged.

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix E:
Building Questionnaires/Inventories



0266383 / ALB

MALCOLM PIRNIE

OSR – 3

BARK FRAMEWORKS
21-24 44TH AVE

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

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

Preparer's Name Jesus Misus / STEFAN BAGNATO Date/Time Prepared 11/23/09

Preparer's Affiliation Nova / Malcolm Pirnie Phone No. 516-352-3233 / 516-250-7366

Purpose of Investigation SVI

1. OCCUPANT:

Interviewed: (Y) / N

Last Name: GRANT First Name: ANNE

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant Y)

Interviewed: (Y) / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial/Multi-use)
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) MAILE PICTURE FRAMES

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? _____

Other characteristics:

Number of floors 2 Building age 1920

Is the building insulated? Y / (N) How air tight? Tight / (Average) / Not Tight

CEMENT WALLS

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

NA

Airflow near source

NA

Outdoor air infiltration

NA

Infiltration into air ducts

NA

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

a. Above grade construction:	wood frame	(concrete)	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	(concrete)	dirt	stone	other _____
d. Basement floor:	(uncovered)	covered	covered with _____	
e. Concrete floor:	unsealed	sealed	(sealed with) PAINTED	
f. Foundation walls:	poured	(block)	stone	other _____
g. Foundation walls:	unsealed	sealed	(sealed with) PAINT	
h. The basement is:	wet	(damp)	dry	moldy
i. The basement is:	finished	(unfinished)	partially finished	
j. Sump present?	(Y) / N			
k. Water in sump?	(Y) / N / not applicable	VOC SAMPLE COLLECTED		

10 YEARS IN BUILDING

Basement/Lowest level depth below grade: ~10 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

SUMP, UTILITY LINES

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	(Stream radiation)	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	(Fuel Oil)	Kerosene	1,000 GAL TANK IN BASEMENT
Electric	Propane	Solar	
Wood	Coal		

Domestic hot water tank fueled by: BOTH ELECTRIC & BOILER

Boiler/furnace located in:	(Basement)	Outdoors	Main Floor	Other_____
Air conditioning:	(Central Air)	Window units	Open Windows	None

Are there air distribution ducts present? Y / (N)

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally (Seldom) Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	UTILITY / STORAGE
1st Floor	ADMIN / DESIGN
2nd Floor	PRODUCTION
3rd Floor	
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? (Y) N

b. Does the garage have a separate heating unit? (Y) / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / (N) / NA Please specify_____

d. Has the building ever had a fire? Y / (N) When?_____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where?_____

f. Is there a workshop or hobby/craft area? Y / (N) Where & Type?_____

g. Is there smoking in the building? Y / (N) How frequently?_____

h. Have cleaning products been used recently? Y / (N) When & Type?_____

i. Have cosmetic products been used recently? Y / (N) When & Type?_____

j. Has painting/staining been done in the last 6 months? Y / (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? Y / (N) If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / (N) If yes, where vented? _____

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? (Y) / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? SMALL QUANTITIES - UNKNOWN TYPE

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) (No)
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / (N) Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	(Public Water)	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	(Public Sewer)	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: NA

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

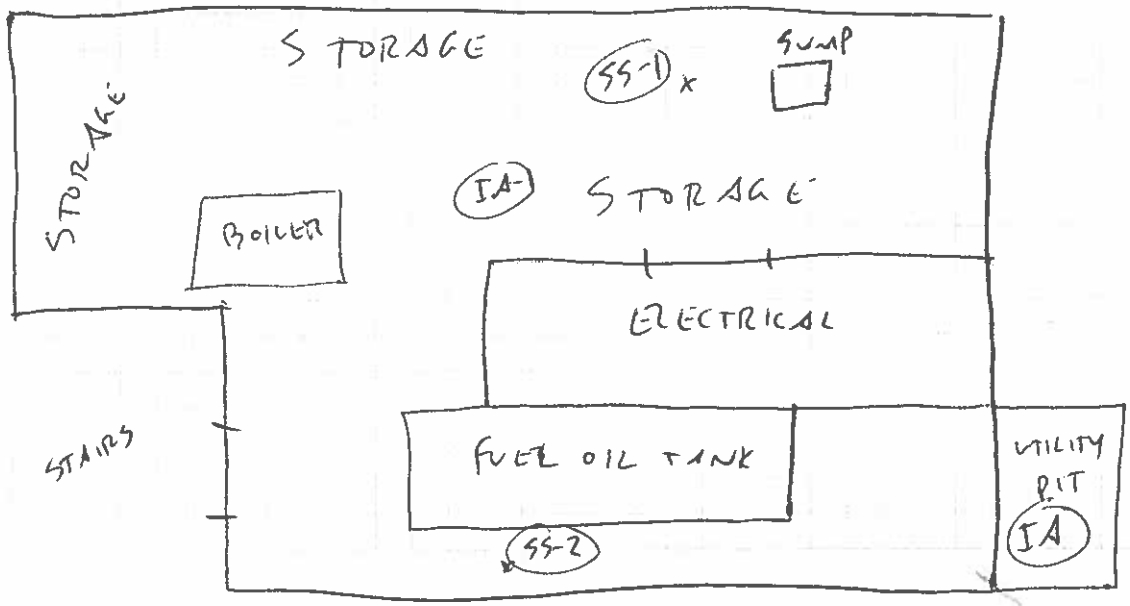
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

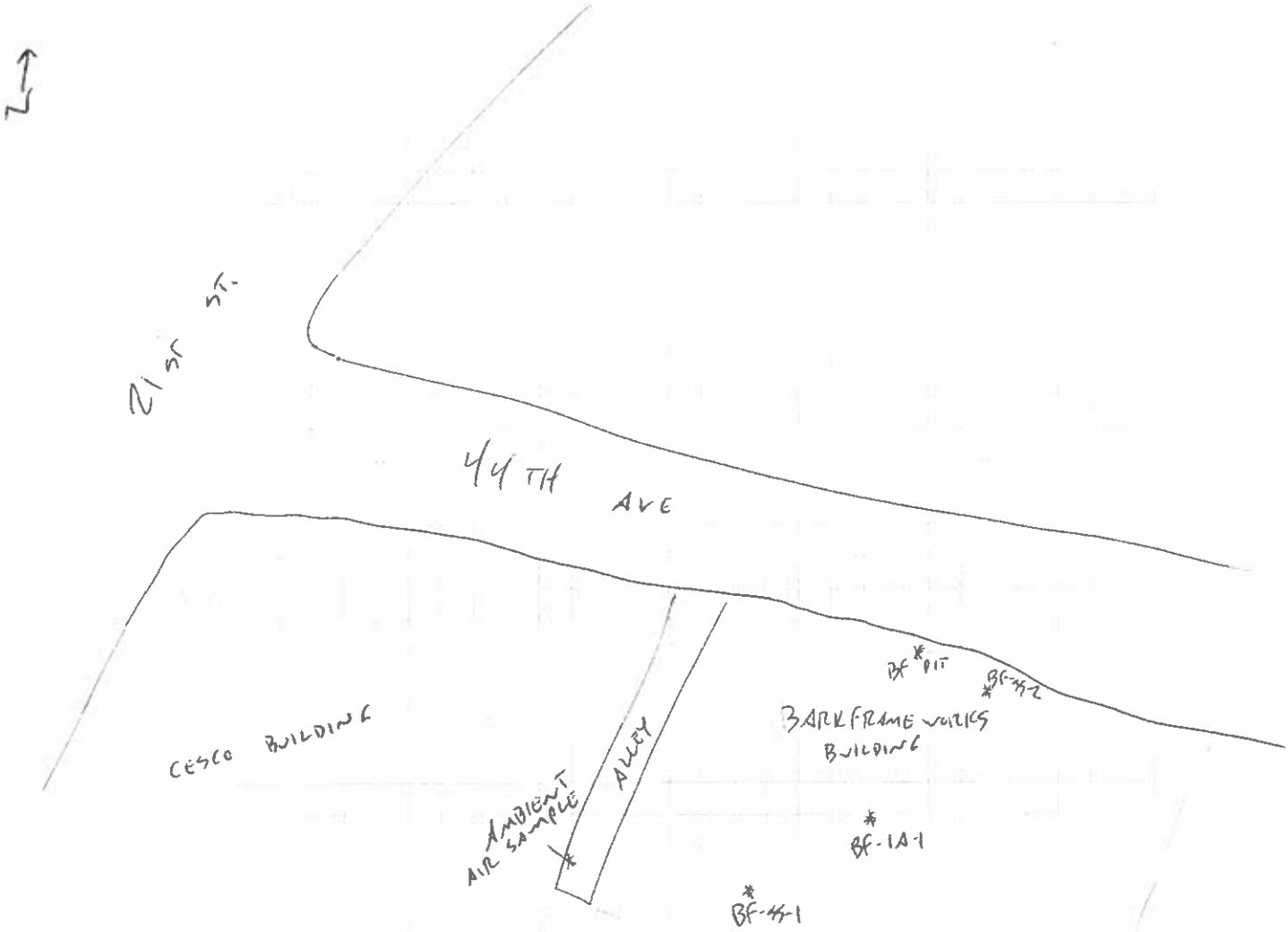


First Floor:

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, 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 topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

SEE PHOTOS

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

CESCO BUILDING
44-01 21ST ST.

OSR – 3

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

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

Preparer's Name STEFAN BAGNATO Date/Time Prepared 11/23/09 0930

Preparer's Affiliation MALCOLM PIRNIE Phone No. 516-250-7300

Purpose of Investigation SVI

1. OCCUPANT:

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial/Multi-use)
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) TV/MOVIE FILM ARCHIVE

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? _____

Other characteristics:

Number of floors 3 Building age_____

Is the building insulated? Y / (N) How air tight? Tight / (Average) / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

NA

Airflow near source

NA

Outdoor air infiltration

NA

Infiltration into air ducts

NA

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	(concrete)	(stone)	(brick)
b. Basement type:	full	crawlspace	(slab)	other _____
c. Basement floor:	(concrete)	dirt	stone	other _____
d. Basement floor:	(uncovered)	covered	covered with _____	
e. Concrete floor:	unsealed	sealed	(sealed with) PAINT ~ 70%	
f. Foundation walls:	poured	(block)	stone	other _____
g. Foundation walls:	unsealed	sealed	(sealed with) PAINT	
h. The basement is:	wet	damp	(dry)	moldy
i. The basement is:	finished	(unfinished)	partially finished	
j. Sump present?	(Y)/~~N~~			
k. Water in sump?	(Y) / N / not applicable	VOC SAMPLE COLLECTED		

Basement/Lowest level depth below grade: ~~8~~ 10' (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

SUMP, UTILITY LINES

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

(Hot air circulation)	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	(Fuel Oil)	Kerosene	10K OIL TANK
Electric	Propane	Solar	
Wood	Coal		

Domestic hot water tank fueled by: _____

Boiler/furnace located in:	(Basement)	Outdoors	Main Floor	Other_____
Air conditioning:	(Central Air)	Window units	Open Windows	None

Are there air distribution ducts present? (Y) N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time (Occasionally) Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	STORAGE
1st Floor	UNKNOWN
2nd Floor	UNKNOWN
3rd Floor	UNKNOWN
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage?	Y /(N)	
b. Does the garage have a separate heating unit?	Y / N / NA	
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)	(Y) / N / NA	Please specify SNOWBLOWER
d. Has the building ever had a fire?	Y / N	When? UNKNOWN
e. Is a kerosene or unvented gas space heater present?	Y /(N)	Where?
f. Is there a workshop or hobby/craft area?	(Y) N	Where & Type? MAINTENANCE
g. Is there smoking in the building?	Y /(N)	How frequently?
h. Have cleaning products been used recently?	Y /(N)	When & Type?
i. Have cosmetic products been used recently?	Y (N)	When & Type?

j. Has painting/staining been done in the last 6 months? Y / (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? Y / (N) If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / (N) If yes, where vented? _____

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N Unknown
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) (Unknown)
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y (N) Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: (Public Water) Drilled Well Driven Well Dug Well Other: _____

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

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: NA

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

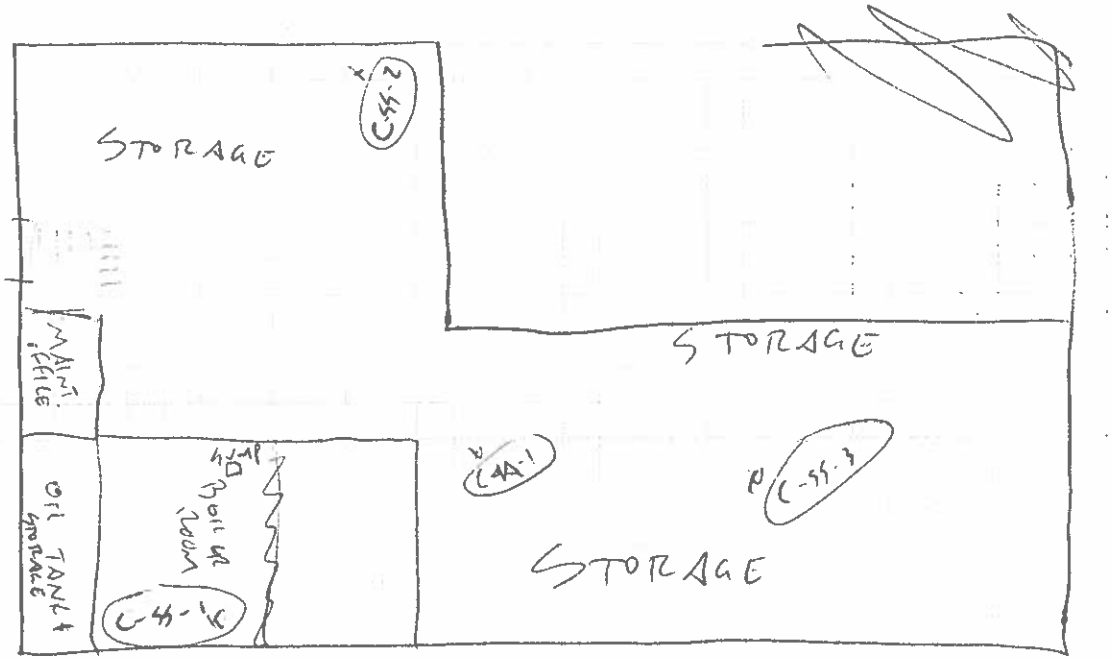
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

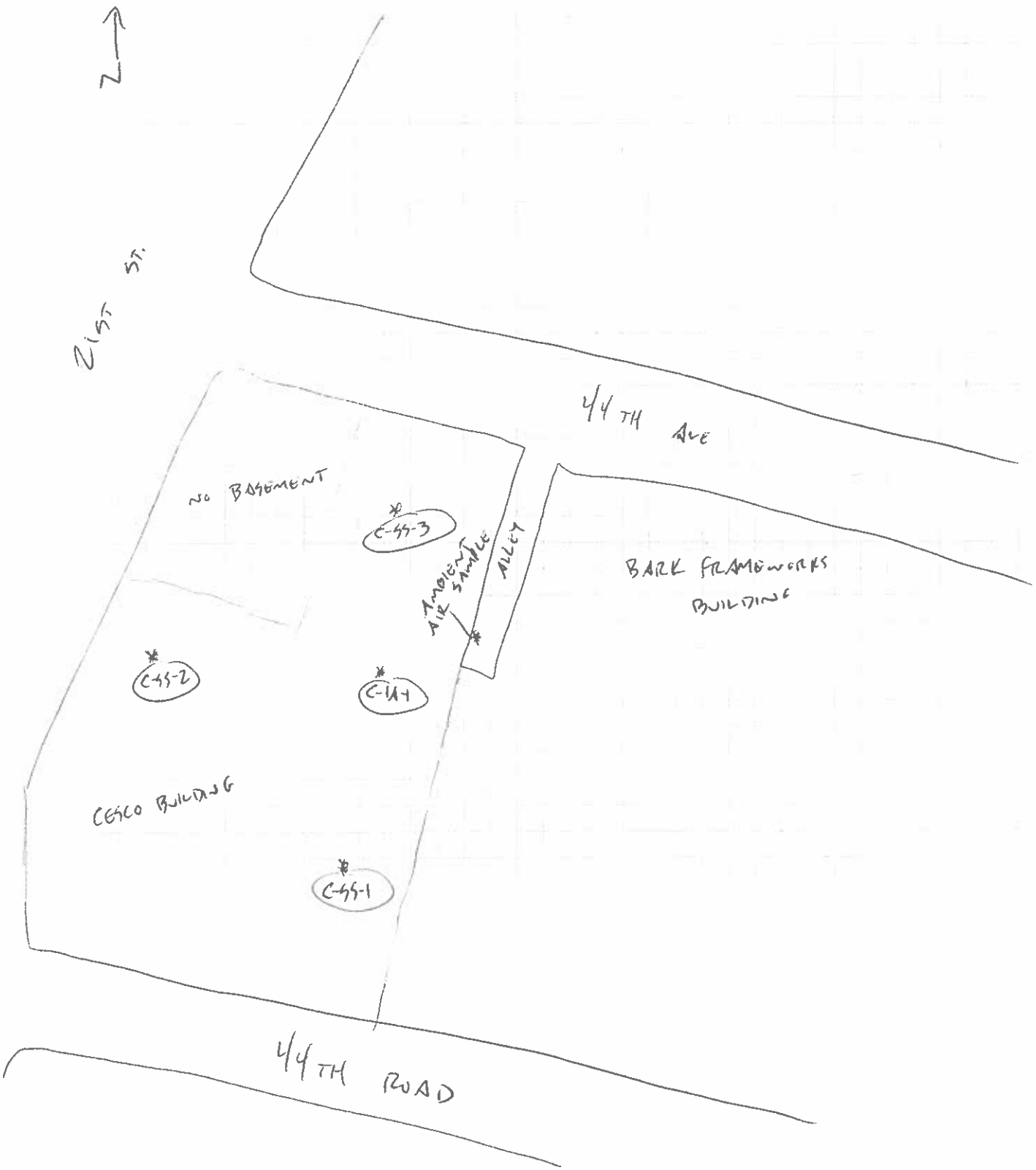


First Floor:

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, 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 topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

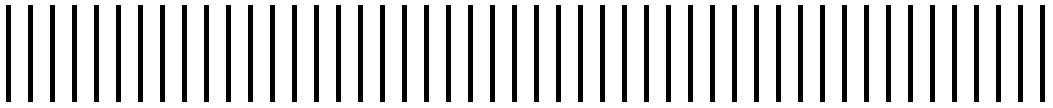
SEE PHOTOS

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix F: Investigation-Derived Waste Disposal Manifests



0266383 / ALB

MALCOLM PIRNIE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NOT REQUIRED	Manifest Document No. 091453	2. Page 1 of 1

3. Generator's Name and Mailing Address
NYSDEC 21-03 44th Ave 441 Site c/o NYSDEC J. Greco
625 Broadway, 12 Flr.
Albany, NY 12333

4. Generator's Phone (845-659-1341

5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID
Maumee Express Inc.	NJD986607380	B. Transporter 1 Phone 287-590-0042
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID
		D. Transporter 2 Phone

9. Designated Facility Name and Site Address	10. US EPA ID Number	E. State Facility's ID
VEXOR Technology, Inc. 955 West Smith Road Medina, OH 44256	OHD077772895	F. Facility's Phone 330-721-9773

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non Regulated Material, (Purgewater), Non RCRA / Non DOT	1	DM	100	P
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above	H. Handling Codes for Wastes Listed Above
1.) VEX1082	

15. Special Handling Instructions and Additional Information

Site Address: NYSDEC 21-03 44th Ave, Block 441 Site
21-03 44th Avenue, Block 441
Long Island City, NY 11101

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
CORY SNYDER	ON BEHALF OF NYSDEC	11 / 05 / 09

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
RAUL GUZMAN		11 / 5 / 09

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)
		/ /

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
		(877) 319-0800	

GENERATOR

5. Generator's Name and Mailing Address
NYSDEC
625 BROADWAY
ALBANY NY 12233
Generator's Phone: 518-402-9694

Generator's Site Address (if different than mailing address)
21-03 44th AVE.
LONG ISLAND CITY NY

6. Transporter 1 Company Name
TERRACE TRANSPORTATION, LLC
U.S. EPA ID Number
NYR000080549

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CLEAN WATER OF NEW YORK, INC.
3249 RICHMOND TERRACE - STATEN ISLAND, NY 10303
Facility's Phone: (718) 981-4600
U.S. EPA ID Number
NY0000968545

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-DOT-NON-RCRA waste oil/water for Recycling	001	TT	2229	GAL	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
TX 504
VAC 6

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: X STEVEN BAGNATO IN B'HF OF NYSDEC
Signature: X
Month 10 Day 21 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Emilio Montanez	Emilio Montanez	10	21	09
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

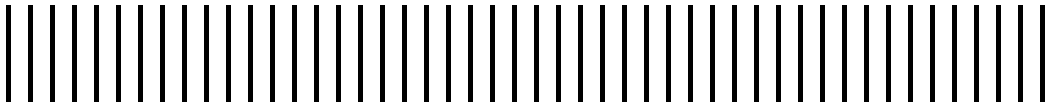
17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name	Signature	Month	Day	Year

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix G:
Data Usability Summary Report



0266383 / ALB

MALCOLM PIRNIE

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
Facsimile 518-251-4428

January 19, 2010

Stefan Bagnato
Malcolm Pirnie, Inc.
855 Rt. 146 Suite 210
Clifton Park, NY 12065

RE: 44thh Avenue site—Air and Aqueous Samples
Data Usability Summary Report (DUSR)
AirToxics SDG No. 0912086; Mitkem SDG Nos. H1928 and H2421

Dear Mr. Bagnato:

Review has been completed for the data packages generated by AirToxic and Mitkem Laboratories that pertains to samples collected 10/19/09 through 11/24/09 at the 44th Avenue site. Nine 6L summa canister samples and a field duplicate were processed for volatiles by USEPA method TO-15. Eleven aqueous samples and a field duplicate were processed for volatiles by method EPA8260B. Nine of the aqueous samples and the field duplicate were also processed for hexavalent chromium by EPA7196. Trip blanks were also analyzed. Review was not performed for other analytical fractions reported within the data packages.

The data package submitted contains full deliverables for validation, but this usability report is primarily generated from review of the summary form information, with full review of sample raw data, and limited review of associated QC raw data. Full validation has not been performed. However, the reported summary forms have been reviewed for application of validation qualifiers, using guidance from the USEPA National Functional Guidelines for Organic Data Review, and USEPA Region 2 validation SOPs HW-6 and HW-31, with consideration of the requirements of the specific methodology. The following items were reviewed:

* Laboratory Narrative Discussion
* Case Narratives
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike/Duplicate Recoveries and Correlations
* Field Duplicate Correlations
* Laboratory Control Samples (LCSs)
* Preparation/Calibration Blanks
* Instrumental Tunes and Performance
* Method Compliance
* Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for this level of review.

In summary, results for the samples are usable as reported, or usable with minor qualification due to sample matrix or to processing outliers. Most detected values in the aqueous samples are qualified as estimated due to laboratory processing.

Copies of the laboratory sample identification summaries and case narratives are attached. Also included with this report are validation qualifier definitions and red-ink qualified client tables or laboratory results forms.

The following text discusses quality issues of concern.

Chain-of-Custody

Samples were held prior to shipment to the laboratories, resulting in delays exceeding the required 2 day timeframe between collection and laboratory receipt. Samples were processed promptly, and technical holding times were met. A memorandum to the file should be made attesting to the condition and custody of the samples during the interim.

Uninitialed strikeovers were observed on the custody associated with the air samples.

The Mitkem custody forms do not provide for the required release date and time.

Field Duplicates

Blind field duplicate correlations were evaluated for volatiles on BF-SS-1, and for volatiles and hexavalent chromium on MW-212D. All correlations are within guidelines.

TCL Volatiles by EPA 8260B

The results for analytes initially flagged as "E" by the laboratory are to be derived from the dilution analyses of the samples.

Seven samples and the field duplicate reported in H1928 (all except MW-210D and MW-217D) show elevated responses for one of the surrogate standards in he undiluted analyses, including the trip blank. All of these samples were analyzed in the same sequence, and they did not show matrix interference in the chromatogram. The outlying response in the trip blank should have alerted the analyst that the instrument performance was unacceptable, since the trip blank has no matrix to cause an effect. Those analyses should have been reanalyzed undiluted. The dilution analyses (performed three days later) did show acceptable responses. As reported, detected results in the undiluted analyses of the samples require qualification as estimated, with a possible high bias.

The detection of 1,4-dichlorobenzene in CESCO Sump has been edited to reflect non-detection due to presence in the associated method blank.

Acetone and 2-butanone exhibit low relative response factors (RRFs) (inherent with the methodology) in all of the project calibration standards. The usability of those data is evidenced by spike recoveries and calibration standard responses, but the reporting limits and detected values for those compounds in the samples are to be qualified as estimated, possibly biased low.

Other calibration standards are acceptable, with the exception of the following, results for which are to be qualified as estimated in the indicated samples:

- dichlorodifluoroethane (46%D) in all samples reported in H1928 except MW-210D and MW217D
- 2,2-dichloropropane (30%D) in MW-210D and MW217D

Matrix spikes of MW-210D show acceptable accuracy and precision for all compounds. The LCS shows acceptable recoveries, with the exception of 2,2-dichloropropane (60%) in the duplicate LCS associated with MW-210D and MW-217D. This compound has been qualified as indicated above.

Internal standard responses are within required limits. Holding times were met.

Volatiles by TO-15

Modifications to the method that are noted by the laboratory have no negative impact on the reported samples results. In order to achieve low detection limits, two of the analytes were processed by simultaneous Selected Ion Monitoring (SIM).

The laboratory duplicate evaluation of BF-SS-X shows acceptable precision.

Due to elevated recoveries (152% to 170%) in the associated LCSs, detected results for ethanol in the samples have been qualified as estimated, with a possible high bias.

Two analytes show outlying linearity due to erratic response in the two midpoints of the eight initial calibration standards. No qualification to the data is made.

The following results are qualified as tentative in identification and estimated in value due to poor mass spectral quality:

- ethanol in BF-SS-1
- 4-methyl-2-pentanone in BF-IA-1

The following results are edited to non-detection, at elevated reporting limits, due to very poor mass spectral quality:

- ethanol in C-SS-2
- 1,3,5-trimethylbenzene in BF-IA-1, C-SS-01, C-IA-1, and C-SS-3
- benzene in C-SS-3, AA-1, BF-PIT, and C-IA-1

Holding times were met. Blanks show no contamination.

Some of the samples were processed at initial dilution due to high analyte concentrations. This resulted in elevated reporting limits for analytes not detected in those samples.

Clean canister certification was provided for two of the canisters.

Hexavalent Chromium Analyses

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to the procedure. All were found to be acceptable unless noted below.

The laboratory duplicate precision determination was performed on MW-210D; the duplicate correlation was within recommended limits.

Holding times were met.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,

Judy Harry

Judy Harry

Att.

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and CASE NARRATIVES

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Identification and Analytical Requirements Summary

Project Name : 44th Avenue

SDG : H1928

Customer Sample ID	Laboratory Sample ID	Analytical Requirements				
		MSVOA Method #	MSSEMI Method #	GC* Method #	ME	Other
TRIP BLANK	H1928-01	SW8260_W				
MW-211D	H1928-02	SW8260_W	SW8270_W		SM2340_W	SEE DATA
MW-211D	H1928-02				SW6010_W	
MW-211D	H1928-02				SW7470	
MW-217	H1928-03	SW8260_W				SEE DATA
MW-X	H1928-04	SW8260_W				SEE DATA
MW-212D	H1928-05	SW8260_W				SEE DATA
MW-211S	H1928-06	SW8260_W				SEE DATA
MW-210D	H1928-07	SW8260_W				SEE DATA
MW-8BA	H1928-08	SW8260_W				SEE DATA
MW-1BA	H1928-09	SW8260_W				SEE DATA
MW-2BA	H1928-10	SW8260_W				SEE DATA
DRUM SAMPLE	H1928-11	SW8260_W				

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Identification and Analytical Requirements Summary

Project Name : 44th Avenue

SDG : H2421

Customer Sample ID	Laboratory Sample ID	Analytical Requirements				
		MSVOA Method #	MSSEMI Method #	GC* Method #	ME	Other
BF-SUMP	H2421-01	SW8260_W				
CESCO SUMP	H2421-02	SW8260_W				
TRIP BLANK	H2421-03	SW8260_W				

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0912086

Work Order Summary

CLIENT:	Mr. Andy Vitolins Malcolm Pirnie 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Ms. Accounts Payable Malcolm Pirnie P.O. Box 1240 White Plains, NY 10602-1240
PHONE:	518-782-2139	**P.O. #**	
FAX:	(518) 250-7300	**PROJECT #**	0266383 44th Ave
DATE RECEIVED:	12/03/2009	**CONTACT:**	Bryanna Langley
DATE COMPLETED:	12/16/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	C-SS-1	Modified TO-15	3.0 "Hg	5 psi
01B	C-SS-1	Modified TO-15	3.0 "Hg	5 psi
02A	C-SS-2	Modified TO-15	2.5 "Hg	5 psi
02B	C-SS-2	Modified TO-15	2.5 "Hg	5 psi
03A	C-SS-3	Modified TO-15	4.5 "Hg	5 psi
03B	C-SS-3	Modified TO-15	4.5 "Hg	5 psi
04A	C-IA-1	Modified TO-15	6.5 "Hg	5 psi
04B	C-IA-1	Modified TO-15	6.5 "Hg	5 psi
05A	BF-SS-1	Modified TO-15	3.0 "Hg	5 psi
05B	BF-SS-1	Modified TO-15	3.0 "Hg	5 psi
06A	BF-SS-2	Modified TO-15	4.5 "Hg	5 psi
06B	BF-SS-2	Modified TO-15	4.5 "Hg	5 psi
07A	BF-SS-X	Modified TO-15	9.5 "Hg	5 psi
07AA	BF-SS-X Lab Duplicate	Modified TO-15	9.5 "Hg	5 psi
07B	BF-SS-X	Modified TO-15	9.5 "Hg	5 psi
08A	BF-PIT	Modified TO-15	5.0 "Hg	5 psi
08B	BF-PIT	Modified TO-15	5.0 "Hg	5 psi

Continued on next page

SDG Narrative

Mitkem Laboratories submit the enclosed data package in response to Malcolm Pirnie's 44th Avenue project. Under this deliverable, analysis results are presented for three aqueous samples that were received on November 27, 2009. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed and reported per NYSDEC ASP (2000 update) requirement for Category B deliverable.

The following observation and/or deviations are observed for the following analyses:

1. Overall observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.
- M6 software did not integrate peak
- M7 partial peak integration

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: surrogate recoveries were within the QC.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: to ensure that all target analytes were determined within the instrument calibration range, the following samples were re-analyzed at dilution: MW-211D (10x), MW-211S (25x), MW-8BA (40x), MW-1BA (2.5x) and DRUM SAMPLE (5x). No other unusual observation was made for the analysis.

All pages in this report have been numbered consecutively, starting with the title page and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Huntley
CLP Project Manager
12/15/09

SDG Narrative

Mitkem Laboratories submit the enclosed data package in response to Malcolm Pirnie's 44th Avenue project. Under this deliverable, analysis results are presented for eleven aqueous samples that were received on October 2, 2009. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed and reported per NYSDEC ASP (2000 update) requirement for Category B deliverable with the exception of hexavalent chromium, hardness, sulfate, alkalinity, chemical oxygen demand and total organic carbon. The analysis results for hexavalent chromium, hardness, sulfate, alkalinity, chemical oxygen demand and total organic carbon are presented in the standard Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.
- M6 software did not integrate peak
- M7 partial peak integration

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: surrogate recoveries were within the QC limits with the exception of high recovery of dibromofluoromethane in samples TRIP BLANK, MW-211D, MW-X, MW-212D, MW-211S, MW-8BA, MW-1BA, MW-2BA and DRUM SAMPLE. Sample MW-8BA was re-analyzed at dilution with similar findings.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of 2,2-dichloropropane and benzene in V2SLCSD. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample MW-210D. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: to ensure that all target analytes were determined within the instrument calibration range, the following samples were re-analyzed at dilution: MW-211D (10x), MW-211S (25x), MW-8BA (40x), MW-1BA (2.5x) and DRUM SAMPLE (5x). No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: surrogate recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of hexachlorocyclopentadiene and 3,3'-dichlorobenzidine and high recovery of chrysene in S1SLCS and its duplicate. Replicate RPDs were within the QC limits with the exception of 4-chloroaniline.

Sample analysis: no other unusual observation was made for the analysis.

4. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: serial dilution was performed on sample MW-211D. Percent differences were within the QC limits with the exception of nickel. Nickel is flagged with an "E" on data report forms. No other unusual observation was made for the analysis.

5. Wet Chemistry Analyses:

Lab control sample: spike recovery was within the QC limits for all analyses.

Matrix spike: matrix spike was performed on sample MW-210D. Spike recovery was within the QC limits.

Duplicate: duplicate analysis was performed on sample MW-210D. Replicate RPD was within the QC limits.

Sample analysis: please note that sulfate was detected in method blank MB-46637 and chemical oxygen demand was detected in method blank MB-46526. The concentration of sulfate and chemical oxygen demand is below the reporting limit, but above the method detection limit (MDL). If sulfate or chemical oxygen demand was detected in the associated sample, the analyte is "B" flagged. No other unusual observation was made for the analysis.

All pages in this report have been numbered consecutively, starting with the title page and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes R Huntley

Agnes Huntley
CLP Project Manager
10/27/09

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0912086

Work Order Summary

CLIENT:	Mr. Andy Vitolins Malcolm Pirnie 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Ms. Accounts Payable Malcolm Pirnie P.O. Box 1240 White Plains, NY 10602-1240
PHONE:	518-782-2139	**P.O. #**	
FAX:	(518) 250-7300	**PROJECT #**	0266383 44th Ave
DATE RECEIVED:	12/03/2009	**CONTACT:**	Bryanna Langley
DATE COMPLETED:	12/16/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
09A	AA-1	Modified TO-15	5.0 "Hg	5 psi
09B	AA-1	Modified TO-15	5.0 "Hg	5 psi
10A	BF-IA-1	Modified TO-15	7.0 "Hg	5 psi
10B	BF-IA-1	Modified TO-15	7.0 "Hg	5 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
11C	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
12B	CCV	Modified TO-15	NA	NA
12C	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13B	LCS	Modified TO-15	NA	NA
13C	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Truman DATE: 12/16/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

Air Toxics LTD.
Laboratory Services Since 1989

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Malcolm Pirnie
Workorder# 0912086

Eight 6 Liter Summa Canister and two 6 Liter Summa Canister (100% Certified) samples were received on December 03, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-15*	*ATL Modifications*
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The Laboratory Control Spike (LCS) analyzed on MSD-E did not meet acceptance criteria for Ethanol. Recoveries for this compound were 170% and 152%. Detected results are reported as estimated.

QUALIFIED SAMPLE RESULTS

TABLE 3
SUMMARY OF AIR SAMPLING RESULTS
21-03 44TH AVENUE
LONG ISLAND CITY, NEW YORK

Building	NYSDOH	CESCO Building				Bark Frameworks Building					Alley Ambient
Sample ID	SUB-SLAB	C-SS-1	C-SS-2	C-SS-3	C-IA-1	BF-SS-1	BF-SS-X	BF-SS-2	BF-PIT	BF-IA-1	AA-1
Sample Type	FINAL GUIDANCE	Subslab	Subslab	Subslab	Indoor Air	Subslab	Subslab Duplicate	Subslab	Indoor Air	Indoor Air	Ambient Air
Date	FOR MITIGATION[a]	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009
Dilution Factor		24.8	3.65 (9.12 TCE, CCl4)	3.16	3.42	1.49	1.96	15.8 (13.2 TCE, CCl4)	1.61	1.75	1.61
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
VOCs											
1,1,1-Trichloroethane	1,000	**31**	2 U	1.7 U	1.9 U	**33**	**32**	**46**	0.88 U	0.95 U	0.88 U
1,1,2,2-Tetrachloroethane		17 U	2.5 U	2.2 U	2.3 U	1 U	1.3 U	11 U	1.1 U	1.2 U	1.1 U
1,1,2-Trichloroethane		14 U	2 U	1.7 U	1.9 U	0.81 U	1.1 U	8.6 U	0.88 U	0.95 U	0.88 U
1,1-Dichloroethane		10 U	1.5 U	1.3 U	1.4 U	**5**	**4.9**	6.4 U	0.65 U	0.71 U	0.65 U
1,1-Dichloroethene	1,000	9.8 U	1.4 U	1.2 U	1.4 U	0.59 U	0.78 U	6.3 U	0.64 U	0.69 U	0.64 U
1,2,4-Trichlorobenzene		92 U	14 U	12 U	13 U	5.5 U	7.3 U	59 U	6 U	6.5 U	6 U
1,2,4-Trimethylbenzene		**92**	1.8 U	**9.1**	**8.6**	0.73 U	0.96 U	7.8 U	**1.2**	**3.7**	**2.3**
1,2-Dibromoethane (EDB)		19 U	2.8 U	2.4 U	2.6 U	1.1 U	1.5 U	12 U	1.2 U	1.3 U	1.2 U
1,2-Dichlorobenzene		15 U	2.2 U	1.9 U	2 U	0.9 U	1.2 U	9.5 U	0.97 U	1 U	0.97 U
1,2-Dichloroethane		10 U	1.5 U	1.3 U	1.4 U	0.6 U	0.79 U	6.4 U	0.65 U	0.71 U	0.65 U
1,2-Dichloropropane		11 U	1.7 U	1.5 U	1.6 U	0.69 U	0.9 U	7.3 U	0.74 U	0.81 U	0.74 U
1,3,5-Trimethylbenzene		**43** U	1.8 U	**2.6** U	**2.6** U	0.73 U	0.96 U	**7.8** U	0.79 U	**1.2** U	0.79 U
1,3-Dichlorobenzene		15 U	2.2 U	1.9 U	3.5 U	0.9 U	1.2 U	9.5 U	0.97 U	1 U	0.97 U
1,4-Dichlorobenzene		15 U	2.2 U	1.9 U	2.3 U	0.9 U	1.2 U	9.5 U	0.97 U	1 U	0.97 U
1,4-Dioxane		8.9 U	1.3 U	1.1 U	1.2 U	0.54 U	0.71 U	5.7 U	0.58 U	0.63 U	0.58 U
2,2,4-Trimethylpentane		58 U	8.5 U	**9.5**	**12**	3.5 U	4.6 U	37 U	3.8 U	4.1 U	3.8 U
2-Butanone (Methyl Ethyl Ketone)		**8.2**	**3.3**	**25**	**14**	**1.3**	**1.6**	**4.6** U	**2.7**	**5**	**4.4**
4-Methyl-2-pentanone		10 U	**2.1**	**11**	**25**	0.61 U	**0.84**	6.5 U	0.66 U	**0.9** NJ	**15**
alpha-Chlorotoluene		13 U	1.9 U	1.6 U	1.8 U	0.77 U	1 U	8.2 U	0.83 U	0.9 U	0.83 U
Benzene		7.9 U	1.2 U	**4.2** U	**3.4** U	0.48 U	0.63 U	5 U	**0.86** U	**3.5**	**0.92** U
Bromodichloromethane		17 U	2.4 U	2.1 U	2.3 U	1 U	1.3 U	10 U	1.1 U	1.2 U	1.1 U
Bromoform		26 U	3.8 U	3.3 U	3.5 U	1.5 U	2 U	16 U	1.7 U	1.8 U	1.7 U
Bromomethane		9.6 U	1.4 U	1.2 U	1.3 U	0.58 U	0.76 U	6.1 U	0.62 U	0.68 U	0.62 U
Carbon Tetrachloride	250	**9.7**	**11**	**0.58**	**0.69**	**53**	**51**	**30**	**0.56**	**0.64**	**0.47**
Chlorobenzene		11 U	1.7 U	1.4 U	1.6 U	0.68 U	0.9 U	7.3 U	0.74 U	0.8 U	0.74 U
Chloroethane		6.5 U	0.96 U	0.83 U	0.9 U	0.39 U	0.52 U	4.2 U	0.42 U	0.46 U	0.42 U
Chloroform		**14**	**17**	**1.5** U	**1.7** U	**21**	**20**	**22**	**4.2**	**0.85**	**0.79**
Chloromethane		5.1 U	0.75 U	**1.2**	**1**	0.31 U	0.4 U	3.3 U	**0.61**	**1**	**0.83**
cis-1,2-Dichloroethene	1,000	9.8 U	**9**	1.2 U	1.4 U	**2.5**	**2.1**	**7.1**	0.64 U	0.69 U	0.64 U
cis-1,3-Dichloropropene		11 U	1.6 U	1.4 U	1.6 U	0.68 U	0.89 U	7.2 U	0.73 U	0.79 U	0.73 U
Cyclohexane		8.5 U	1.2 U	**12**	**10**	**0.86**	0.67 U	5.4 U	0.55 U	**4.5**	0.55 U
Dibromochloromethane		21 U	3.1 U	2.7 U	2.9 U	1.3 U	1.7 U	13 U	1.4 U	1.5 U	1.4 U
Ethanol		23 U	**8.7** J U	**110** J J	**110** J J	**1.7** J NJ	**1.8** J J	15 U	**4.9** J J	**10** J J	**50** J J
Ethyl Benzene		11 U	1.6 U	**9**	**8.7**	0.65 U	0.85 U	6.9 U	**0.78**	**2.7**	**1.8**
Freon 11		14 U	4.8	1.8 U	1.9 U	**2.3**	**2.3**	8.9 U	**1.2**	**1.3**	**1.2**
Freon 113		19 U	2.8 U	2.4 U	2.6 U	1.1 U	1.5 U	12 U	1.2 U	1.3 U	1.2 U
Freon 114		17 U	2.6 U	2.2 U	2.4 U	1 U	1.4 U	11 U	1.1 U	1.2 U	1.1 U
Freon 12		12 U	**2.3**	**2.4**	**2.4**	**2.5**	**2.5**	7.8 U	**2.4**	**2.4**	**2.4**
Hexachlorobutadiene		130 U	19 U	17 U	18 U	7.9 U	10 U	84 U	8.6 U	9.3 U	8.6 U

TABLE 3
SUMMARY OF AIR SAMPLING RESULTS
21-03 44TH AVENUE
LONG ISLAND CITY, NEW YORK

Building	NYSDOH	CESCO Building				Bark Frameworks Building					Alley Ambient
Sample ID	SUB-SLAB	C-SS-1	C-SS-2	C-SS-3	C-IA-1	BF-SS-1	BF-SS-X	BF-SS-2	BF-PIT	BF-IA-1	AA-1
Sample Type	FINAL GUIDANCE	Subslab	Subslab	Subslab	Indoor Air	Subslab	Subslab Duplicate	Subslab	Indoor Air	Indoor Air	Ambient Air
Date	FOR MITIGATION[a]	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009
Dilution Factor		24.8	3.65 (9.12 TCE, CCl4)	3.16	3.42	1.49	1.96	15.8 (13.2 TCE, CCl4)	1.61	1.75	1.61
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
VOCs											
Hexane		8.7 U	1.3 U	**7.6**	**7.5**	0.52 U	0.69 U	5.6 U	**0.61**	**7.4**	**1.1**
m,p-Xylene		11 U	1.6 U	**28**	**27**	0.65 U	**1.1**	6.9 U	**2.3**	**8.8**	**5.6**
Methyl tert-butyl ether		8.9 U	1.3 U	1.1 U	1.2 U	0.54 U	0.71 U	5.7 U	0.58 U	0.63 U	0.58 U
Methylene Chloride		17 U	2.5 U	**5.8**	**5.2**	1 U	1.4 U	11 U	**2.2**	**2.4**	**2.2**
o-Xylene		11 U	1.6 U	**8.2**	**8.4**	0.65 U	0.85 U	6.9 U	**0.77**	**3**	**1.7**
Styrene		10 U	1.6 U	**4.9**	**4**	0.63 U	0.83 U	6.7 U	0.68 U	0.74 U	**0.84**
tert-Butyl alcohol		38 U	5.5 U	4.8 U	5.2 U	2.2 U	3 U	24 U	2.4 U	2.6 U	2.4 U
Tetrachloroethene	1,000	**2700**	**580**	**14**	**21**	**250**	**250**	**2900**	**25**	**10**	**4.5**
Toluene		9.3 U	1.4 U	**140**	**260**	0.56 U	**6.5**	6 U	**7.2**	**15**	**110**
trans-1,2-Dichloroethene		9.8 U	1.4 U	1.2 U	1.4 U	0.59 U	0.78 U	6.3 U	0.64 U	0.69 U	0.64 U
trans-1,3-Dichloropropene		11 U	1.6 U	1.4 U	1.6 U	0.68 U	0.89 U	7.2 U	0.73 U	0.79 U	0.73 U
Trichloroethene	250	**300**	**700**	**1.9**	**2.4**	**33**	**31**	**79**	**0.6**	**0.37**	**0.28**

Notes
Highlighted cells exceed NYSDOH subslab guidance value.
U - The compound was not detected at the indicated concentration.
J - Estimated value.
R - Value rejected.
a - Value for mitigation regardless of indoor air concengration.

TABLE 2
SUMMARY OF GROUNDWATER SAMPLING RESULTS
21-03 44th AVENUE SITE
LONG ISLAND CITY, NEW YORK

Sample ID Sampling Date Matrix Units	NYSDEC Class GA Standard or Guidance Value ug/L	MW-210D 10/1/2009 WATER ug/L	MW-211S 10/1/2009 WATER ug/L	MW-211D 10/1/2009 WATER ug/L	MW-212D 10/1/2009 WATER ug/L	MW-X (MW-212D DUP) WATER ug/L	MW-217 10/1/2009 WATER ug/L	MW-1BA 10/1/2009 WATER ug/L	MW-2BA 10/1/2009 WATER ug/L	MW-8BA 10/1/2009 WATER ug/L	DRUM SAMPLE 10/1/2009 WATER ug/L
VOCs											
1,1,1,2-Tetrachloroethane		5 U	1.9 J	5 U	5 U	5 U	5 U	5 U	5 U	5 J	5 U
1,1,1-Trichloroethane		5 U	1.1 J	5 U	5 U	5 U	5 U	5 U	5 U	8	5 U
1,1,2-Trichloroethane		5 U	2.8 J	5 U	5 U	5 U	5 U	5 U	5 U	3.4 J	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.4 J	5 U
Chloroform	7	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	8.1	1.2 J
cis-1,2-Dichloroethene	5	2.8 J	5 U	1.3 J	5 U	5 U	5 U	5 U	2.6 J	3.6 J	5 U
Methyl tert-butyl ether	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 J	5 U	5 U
Tetrachloroethene	5	5	2300	1,400	2.6 J	3.1 J	71	380	2.2 J	5600	510
Trichloroethene	5	5 U	9.8	12	5 U	5 U	3.9 J	6.8	1.1 J	33	5.1
SVOCs		NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
Metals											
Aluminum		NA	NA	295	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	4.2 U	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	3.1 U	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	299	NA	NA	NA	NA	NA	NA	NA
Beryllium	3	NA	NA	0.15 B	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	0.53 B	NA	NA	NA	NA	NA	NA	NA
Calcium		NA	NA	130,000	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	151	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent	50	30 U	44	140	30 U	30 U	45	1,500	30 U	15	NA
Cobalt		NA	NA	6.4 B	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	37.6	NA	NA	NA	NA	NA	NA	NA
Iron	300***	NA	NA	130 B	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	2.1 U	NA	NA	NA	NA	NA	NA	NA
Magnesium	35,000*	NA	NA	50,500	NA	NA	NA	NA	NA	NA	NA
Manganese	300***	NA	NA	5,780	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	0.056 U	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	74 E	NA	NA	NA	NA	NA	NA	NA
Potassium		NA	NA	2,840	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	10 U	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	2.4 U	NA	NA	NA	NA	NA	NA	NA
Sodium	20,000	NA	NA	413,000	NA	NA	NA	NA	NA	NA	NA
Thallium	0.5*	NA	NA	5.7 U	NA	NA	NA	NA	NA	NA	NA
Vanadium		NA	NA	0.34 U	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000*	NA	NA	74.1	NA	NA	NA	NA	NA	NA	NA
GEOCHEMICAL PARAMETERS											
Alkalinity, Total (As CaCO3)	-	NA	NA	170,000	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/Mg (As CaCO3)	-	NA	NA	530,000	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	-	NA	NA	23,000 B	NA	NA	NA	NA	NA	NA	NA
Sulfate	-	NA	NA	71,000 B	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon	-	NA	NA	10,000 U	NA	NA	NA	NA	NA	NA	NA

Notes
Highlighted cells exceed NYSDEC Class GA Standards
* - Guidance Value
** - Sum of these analytes cannot exceed 0.4 ug/L
***Sum of these compounds can not exceed 300 ug/L
U - Compound not detected, Reporting Limit provided
J- Estimated value
B-Compound/analyte detected in blank
NA-Not analyzed
ND-Not detected above reporting limit

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

CESCO SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9208.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U UJ
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U UJ
156-59-2	cis-1,2-Dichloroethene	6.1	
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	1.2	J
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

CESCO SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9208.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0 ~~1.2~~ ~~BJ~~ U	
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

CESCO SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9208.D

Level: (TRACE or LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF-SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9325.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	1.2	J
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	22	J
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	3.4	J J
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF-SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-C1A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9325.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BF-SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9325.D

Level: (TRACE or LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9321.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U UJ
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	1.1	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U UJ
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM 1 VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9321.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9321.D

Level: (TRACE or LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

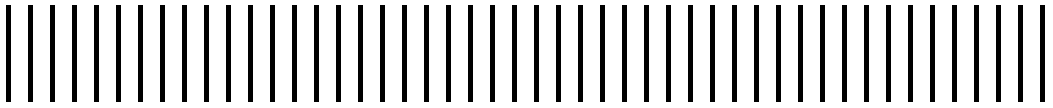
CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E9667961	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix H: Analytical Laboratory Reporting Forms



0266383 / ALB

MALCOLM PIRNIE

MITKEM LABORATORIES

A DIVISION OF SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY

October 27, 2009

Malcolm Pirnie Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065
Attn: Mr. Stefan Bagnato

RE: Client Project: 44th Avenue
Lab Work Order #: H1928

Dear Mr. Bagnato:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Huntley
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755 • 401-732-3400 • Fax 401-732-3499
www.mitkem.com

* Data Summary Pack *

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Identification and Analytical Requirements Summary

Project Name : 44th Avenue **SDG :** H1928

Customer Sample ID	Laboratory Sample ID	Analytical Requirements				
		MSVOA Method #	MSSEMI Method #	GC* Method #	ME	Other
TRIP BLANK	H1928-01	SW8260_W				
MW-211D	H1928-02	SW8260_W	SW8270_W		SM2340_W	SEE DATA
MW-211D	H1928-02				SW6010_W	
MW-211D	H1928-02				SW7470	
MW-217	H1928-03	SW8260_W				SEE DATA
MW-X	H1928-04	SW8260_W				SEE DATA
MW-212D	H1928-05	SW8260_W				SEE DATA
MW-211S	H1928-06	SW8260_W				SEE DATA
MW-210D	H1928-07	SW8260_W				SEE DATA
MW-8BA	H1928-08	SW8260_W				SEE DATA
MW-1BA	H1928-09	SW8260_W				SEE DATA
MW-2BA	H1928-10	SW8260_W				SEE DATA
DRUM SAMPLE	H1928-11	SW8260_W				

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary MSVOA

Project Name : 44th Avenue **SDG :** H1928

Laboratory Sample ID	Matrix	Date Collected	Date Received By Lab	Date Extracted	Date Analyzed
SW8260_W					
H1928-01A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-02A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-02ADL	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-03A	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-04A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-05A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-06A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-06ADL	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-07A	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-07AMS	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-07AMSD	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-08A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-08ADL	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-09A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-09ADL	AQ	10/1/2009	10/2/2009	NA	10/8/2009
H1928-10A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-11A	AQ	10/1/2009	10/2/2009	NA	10/5/2009
H1928-11ADL	AQ	10/1/2009	10/2/2009	NA	10/8/2009

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary MSSEMI

Project Name : 44th Avenue **SDG :** H1928

Laboratory Sample ID	Matrix	Date Collected	Date Received By Lab	Date Extracted	Date Analyzed
SW8270_W					
H1928-02C	AQ	10/1/2009	10/2/2009	10/7/2009	10/9/2009

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary MSVOA

Project Name : 44th Avenue

SDG : H1928

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Low/Medium Level	Dil/Conc Factor
SW8260_W					
H1928-01A	AQ	SW8260_W	NA	LOW	1
H1928-02A	AQ	SW8260_W	NA	LOW	1
H1928-02ADL	AQ	SW8260_W	NA	LOW	10
H1928-03A	AQ	SW8260_W	NA	LOW	1
H1928-04A	AQ	SW8260_W	NA	LOW	1
H1928-05A	AQ	SW8260_W	NA	LOW	1
H1928-06A	AQ	SW8260_W	NA	LOW	1
H1928-06ADL	AQ	SW8260_W	NA	LOW	25
H1928-07A	AQ	SW8260_W	NA	LOW	1
H1928-07AMS	AQ	SW8260_W	NA	LOW	1
H1928-07AMSD	AQ	SW8260_W	NA	LOW	1
H1928-08A	AQ	SW8260_W	NA	LOW	1
H1928-08ADL	AQ	SW8260_W	NA	LOW	40
H1928-09A	AQ	SW8260_W	NA	LOW	1
H1928-09ADL	AQ	SW8260_W	NA	LOW	2.5
H1928-10A	AQ	SW8260_W	NA	LOW	1
H1928-11A	AQ	SW8260_W	NA	LOW	1
H1928-11ADL	AQ	SW8260_W	NA	LOW	5

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary MSSEMI

Project Name : 44th Avenue **SDG :** H1928

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Auxiliary Cleanup	Dil/Conc Factor
SW8270_W					
H1928-02C	AQ	SW8270_W	3520C	NA	1

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary ME

Project Name : 44th Avenue **SDG :** H1928

Laboratory Sample ID	Matrix	Metals Requested	Date Received By Lab	Date Analyzed
SM2340_W				
H1928-02D	AQ	SM2340_W	10/2/2009	10/7/2009
SW6010_W				
H1928-02D	AQ	SW6010_W	10/2/2009	10/8/2009
SW7470				
H1928-02D	AQ	SW7470	10/2/2009	10/7/2009

Analytical Data Package for Malcolm Pirnie Inc.

Client Project No.: 44th Avenue

Mitkem Work Order ID: H1928

October 27, 2009

Prepared For:

Malcolm Pirnie Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065
Attn: Mr. Stefan Bagnato

Prepared By:

Mitkem Laboratories
175 Metro Center Boulevard
Warwick, RI 02886
(401) 732-3400

SDG Narrative

Mitkem Laboratories submit the enclosed data package in response to Malcolm Pirnie's 44th Avenue project. Under this deliverable, analysis results are presented for eleven aqueous samples that were received on October 2, 2009. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed and reported per NYSDEC ASP (2000 update) requirement for Category B deliverable with the exception of hexavalent chromium, hardness, sulfate, alkalinity, chemical oxygen demand and total organic carbon. The analysis results for hexavalent chromium, hardness, sulfate, alkalinity, chemical oxygen demand and total organic carbon are presented in the standard Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.
- M6 software did not integrate peak
- M7 partial peak integration

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: surrogate recoveries were within the QC limits with the exception of high recovery of dibromofluoromethane in samples TRIP BLANK, MW-211D, MW-X, MW-212D, MW-211S, MW-8BA, MW-1BA, MW-2BA and DRUM SAMPLE. Sample MW-8BA was re-analyzed at dilution with similar findings.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of 2,2-dichloropropane and benzene in V2SLCSD. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample MW-210D. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: to ensure that all target analytes were determined within the instrument calibration range, the following samples were re-analyzed at dilution: MW-211D (10x), MW-211S (25x), MW-8BA (40x), MW-1BA (2.5x) and DRUM SAMPLE (5x). No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: surrogate recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of hexachlorocyclopentadiene and 3,3'-dichlorobenzidine and high recovery of chrysene in S1SLCS and its duplicate. Replicate RPDs were within the QC limits with the exception of 4-chloroaniline.

Sample analysis: no other unusual observation was made for the analysis.

4. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: serial dilution was performed on sample MW-211D. Percent differences were within the QC limits with the exception of nickel. Nickel is flagged with an "E" on data report forms. No other unusual observation was made for the analysis.

5. Wet Chemistry Analyses:

Lab control sample: spike recovery was within the QC limits for all analyses.

Matrix spike: matrix spike was performed on sample MW-210D. Spike recovery was within the QC limits.

Duplicate: duplicate analysis was performed on sample MW-210D. Replicate RPD was within the QC limits.

Sample analysis: please note that sulfate was detected in method blank MB-46637 and chemical oxygen demand was detected in method blank MB-46526. The concentration of sulfate and chemical oxygen demand is below the reporting limit, but above the method detection limit (MDL). If sulfate or chemical oxygen demand was detected in the associated sample, the analyte is "B" flagged. No other unusual observation was made for the analysis.

All pages in this report have been numbered consecutively, starting with the title page and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes R Huntley

Agnes Huntley
CLP Project Manager
10/27/09

Mitkem Laboratories — *05/Oct/09 9:32* — WorkOrder: H1928

Client ID: MALCOLM_LATHAM
Project: 44th Avenue
Location:
Comments: N/A

Case:
SDG:
PO: 0266383

HC Due: 10/23/09
Fax Due:

Report Level: ASP-B
EDD: CLF

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Lab Test Comments	HS	HT	MS	SEL	Storage
H1928-01A	TRIP BLANK	10/01/2009 0:00	10/02/2009	Aqueous	SW8260_W				☐	☐	VOA
H1928-02A	MW-211D	10/01/2009 12:20			SW8260_W				☐	☐	VOA
H1928-02B					SM3500_CR+				☐	☐	F4
H1928-02C					SW8270_W				☐	☐	F4
H1928-02D					SW7470	TAL			☐	☐	M2
					SW6010_W	TAL			☐	☑	M2
					SM2340_W				☐	☐	M2
H1928-02E					E300IC_W	SO4 only			☐	☑	F4
					SM2320_W				☐	☐	F4
H1928-02F					SM5220				☐	☐	G2
H1928-02G					SM5310B_TOC_W				☐	☐	G2
H1928-03A	MW-217	10/01/2009 12:30			SW8260_W				☐	☐	VOA
H1928-03B					SM3500_CR+				☐	☐	F4
H1928-04A	MW-X	10/01/2009 12:45			SW8260_W				☐	☐	VOA
H1928-04B					SM3500_CR+				☐	☐	F4
H1928-05A	MW-212D	10/01/2009 13:25			SW8260_W				☐	☐	VOA

HS = Sample logged in but all tests have been placed on hold
HT = Sample/Test logged in but test has been placed on hold

Lab Client Rep: Agnes R Ng

Mitkem Laboratories

05/Oct/09 9:32

WorkOrder: H1928

Client ID: MALCOLM_LATHAM
Project: 44th Avenue
Location:
Comments: N/A

Case:
SDG:
PO: 0266383

HC Due: 10/23/09
Fax Due:

Report Level: ASP-B
EDD: CLF

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Lab Test Comments	HS	HT	MS	SEL	Storage
H1928-05B	MW-212D	10/01/2009 13:25	10/02/2009	Aqueous	SM3500_CR+				☐	☐	F4
H1928-06A	MW-211S	10/01/2009 13:30			SW8260_W				☐	☐	VOA
H1928-06B					SM3500_CR+				☐	☐	F4
H1928-07A	MW-210D	10/01/2009 14:25			SW8260_W				☑	☐	VOA
H1928-07B					SM3500_CR+				☑	☐	F4
H1928-08A	MW-8BA	10/01/2009 14:05			SW8260_W				☐	☐	VOA
H1928-08B					SM3500_CR+				☐	☐	F4
H1928-09A	MW-1BA	10/01/2009 15:50			SW8260_W				☐	☐	VOA
H1928-09B					SM3500_CR+				☐	☐	F4
H1928-10A	MW-2BA	10/01/2009 15:25			SW8260_W				☐	☐	VOA
H1928-10B					SM3500_CR+				☐	☐	F4
H1928-11A	DRUM SAMPLE	10/01/2009 15:40			SW8260_W				☐	☐	VOA

HS = Sample logged in but all tests have been placed on hold
HT = Sample/Test logged in but test has been placed on hold

Lab Client Rep: Agnes R Ng

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-211D
Lab ID: H1928-02

Project: 44th Avenue
Collection Date: 10/01/09 12:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2340 -- HARDNESS by Calculation							**SM2340_W**
Hardness, Ca/Mg (As CaCO3)	530		4.0	mg/L CaCO3	1	10/07/2009 8:43	46592
EPA 300.0 -- Ion Chromotography (LOW)							**E300IC_W**
Sulfate	71	B	5.0	mg/L	1	10/09/2009 10:57	46637
SM 2320 -- ALKALINITY (Total)							**SM2320_W**
Alkalinity, Total (As CaCO3)	170		20	mg/L CaCO3	1	10/09/2009 14:04	46696
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	0.14		0.030	mg/L	1	10/02/2009 12:03	46519
SM 5220D -- COD by Closed Reflux Colorimetric Method							**SM5220**
Chemical Oxygen Demand	23	B	20	mg/L	1	10/03/2009 15:28	46526
SM 5310B TOC -- TOTAL ORGANIC CARBON by Combustion							**SM5310B_TOC_W**
Organic Carbon, Total	ND		10	mg/L	1	10/08/2009 17:22	46668

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-217
Lab ID: H1928-03

Project: 44th Avenue
Collection Date: 10/01/09 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	0.045		0.030	mg/L	1	10/02/2009 12:04	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-X
Lab ID: H1928-04

Project: 44th Avenue
Collection Date: 10/01/09 12:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	ND		0.030	mg/L	1	10/02/2009 12:04	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-212D
Lab ID: H1928-05

Project: 44th Avenue
Collection Date: 10/01/09 13:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	ND		0.030	mg/L	1	10/02/2009 12:05	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-211S
Lab ID: H1928-06

Project: 44th Avenue
Collection Date: *10/01/09 13:30*

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	0.44		0.030	mg/L	1	10/02/2009 12:06	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-210D
Lab ID: H1928-07

Project: 44th Avenue
Collection Date: 10/01/09 14:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	ND		0.030	mg/L	1	10/02/2009 12:06	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-8BA
Lab ID: H1928-08

Project: 44th Avenue
Collection Date: 10/01/09 14:05

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	0.15		0.030	mg/L	1	10/02/2009 12:08	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-1BA
Lab ID: H1928-09

Project: 44th Avenue
Collection Date: 10/01/09 15:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	1.5		0.060	mg/L	2	10/02/2009 12:08	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Laboratories

Date: *16-Oct-09*

Client: Malcolm Pirnie Inc.
Client Sample ID: MW-2BA
Lab ID: H1928-10

Project: 44th Avenue
Collection Date: 10/01/09 15:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500D -- CR VI by Colorimetric Method							**SM3500_CR+**
Chromium, Hexavalent	ND		0.030	mg/L	1	10/02/2009 12:09	46519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: Malcolm Pirnie Inc.
Work Order: H1928
Project: 44th Avenue

ANALYTICAL QC SUMMARY REPORT

E300IC_W

EPA 300.0 -- Ion Chromotography (LOW)

Sample ID: **MB-46637** SampType: **MBLK** TestCode: **E300IC_W** Prep Date: **10/9/2009** Run ID: **IC1_091009A**
Client ID: **MB-46637** Batch ID: **46637** Units: **mg/L** Analysis Date: **10/9/2009** SeqNo: **1132914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.3169	5.0									J

Sample ID: **LCS-46637** SampType: **LCS** TestCode: **E300IC_W** Prep Date: **10/9/2009** Run ID: **IC1_091009A**
Client ID: **LCS-46637** Batch ID: **46637** Units: **mg/L** Analysis Date: **10/9/2009** SeqNo: **1132915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	36.82	5.0	40.00	0	92.1	90	110	0			B

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Malcolm Pirnie Inc.
Work Order: H1928
Project: 44th Avenue

ANALYTICAL QC SUMMARY REPORT

SM2320_W
SM 2320 -- ALKALINITY (Total)

Sample ID: **MB-46696** SampType: **MBLK** TestCode: **SM2320_W** Prep Date: **10/9/2009** Run ID: **SPEC2_091009A**
Client ID: **MB-46696** Batch ID: **46696** Units: **mg/L CaCO3** Analysis Date: **10/9/2009** SeqNo: **1132051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	20									

Sample ID: **LCS-46696** SampType: **LCS** TestCode: **SM2320_W** Prep Date: **10/9/2009** Run ID: **SPEC2_091009A**
Client ID: **LCS-46696** Batch ID: **46696** Units: **mg/L CaCO3** Analysis Date: **10/9/2009** SeqNo: **1132052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	60.00	20	61.10	0	98.2	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Malcolm Pirnie Inc.
Work Order: H1928
Project: 44th Avenue

ANALYTICAL QC SUMMARY REPORT

SM2340_W

SM 2340 -- HARDNESS by Calculation

Sample ID: **MB-46592**	SampType: **MBLK**	TestCode: **SM2340_W**		Prep Date: **10/6/2009**		Run ID: **OPTIMA2_091007B**
Client ID: **MB-46592**	Batch ID: **46592**	Units: **mg/L CaCO3**		Analysis Date: **10/7/2009**		SeqNo: **1132750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hardness, Ca/Mg (As CaCO3)	ND	4.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Malcolm Pirnie Inc.
Work Order: H1928
Project: 44th Avenue

ANALYTICAL QC SUMMARY REPORT

SM3500_CR+

SM 3500D -- CR VI by Colorimetric Method

Sample ID: MB-46519	SampType: MBLK	TestCode: SM3500_CR+	Prep Date: 10/2/2009	Run ID: SPEC2_091002A
Client ID: MB-46519	Batch ID: 46519	Units: mg/L	Analysis Date: 10/2/2009	SeqNo: 1127352

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.030									

Sample ID: LCS-46519	SampType: LCS	TestCode: SM3500_CR+	Prep Date: 10/2/2009	Run ID: SPEC2_091002A
Client ID: LCS-46519	Batch ID: 46519	Units: mg/L	Analysis Date: 10/2/2009	SeqNo: 1127353

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.5810	0.030	0.6000	0	96.8	80	120	0			

Sample ID: H1928-07BDUP	SampType: DUP	TestCode: SM3500_CR+	Prep Date: 10/2/2009	Run ID: SPEC2_091002A
Client ID: MW-210D	Batch ID: 46519	Units: mg/L	Analysis Date: 10/2/2009	SeqNo: 1127361

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.030	0	0	0	0	0	0	0	20	

Sample ID: H1928-07BMS	SampType: MS	TestCode: SM3500_CR+	Prep Date: 10/2/2009	Run ID: SPEC2_091002A
Client ID: MW-210D	Batch ID: 46519	Units: mg/L	Analysis Date: 10/2/2009	SeqNo: 1127362

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.5000	0.030	0.4000	0	125	75	125	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Malcolm Pirnie Inc.
Work Order: H1928
Project: 44th Avenue

ANALYTICAL QC SUMMARY REPORT

SM5220

SM 5220D -- COD by Closed Reflux Colorimetric Method

Sample ID: **MB-46526** SampType: **MBLK** TestCode: **SM5220** Prep Date: **10/3/2009** Run ID: **SPEC2_091003A**
Client ID: **MB-46526** Batch ID: **46526** Units: **mg/L** Analysis Date: **10/3/2009** SeqNo: **1127327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	9.157	20									J

Sample ID: **LCS-46526** SampType: **LCS** TestCode: **SM5220** Prep Date: **10/3/2009** Run ID: **SPEC2_091003A**
Client ID: **LCS-46526** Batch ID: **46526** Units: **mg/L** Analysis Date: **10/3/2009** SeqNo: **1127328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	55.25	20	57.60	0	95.9	80	120	0			B

S626

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

mLIMS-001

CLIENT: Malcolm Pirnie Inc.
Work Order: H1928
Project: 44th Avenue

ANALYTICAL QC SUMMARY REPORT

SM5310B_TOC_W

SM 5310B TOC -- TOTAL ORGANIC CARBON by Combustion

Sample ID: **MB-46668** SampType: **MBLK** TestCode: **SM5310B_TOC_W** Prep Date: **10/8/2009** Run ID: **TOC1_091008A**
Client ID: **MB-46668** Batch ID: **46668** Units: **mg/L** Analysis Date: **10/8/2009** SeqNo: **1131443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	10	0	0	0	0	0	0			

Sample ID: **LCS-46668** SampType: **LCS** TestCode: **SM5310B_TOC_W** Prep Date: **10/8/2009** Run ID: **TOC1_091008A**
Client ID: **LCS-46668** Batch ID: **46668** Units: **mg/L** Analysis Date: **10/8/2009** SeqNo: **1131444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	20.96	10	22.80	0	92.0	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

mLIMS-001

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2847.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2847.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2847.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2849.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	1.3	J
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	12	
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2849.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	1100	E
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-211D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2849.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211DDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2952.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	50	U
74-87-3	Chloromethane	50	U
75-01-4	Vinyl chloride	50	U
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
75-69-4	Trichlorofluoromethane	50	U
75-35-4	1,1-Dichloroethene	50	U
67-64-1	Acetone	50	U
74-88-4	Iodomethane	50	U
75-15-0	Carbon disulfide	50	U
75-09-2	Methylene chloride	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
1634-04-4	Methyl tert-butyl ether	50	U
75-34-3	1,1-Dichloroethane	50	U
108-05-4	Vinyl acetate	50	U
78-93-3	2-Butanone	50	U
156-59-2	cis-1,2-Dichloroethene	50	U
594-20-7	2,2-Dichloropropane	50	U
74-97-5	Bromochloromethane	50	U
67-66-3	Chloroform	50	U
71-55-6	1,1,1-Trichloroethane	50	U
563-58-6	1,1-Dichloropropene	50	U
56-23-5	Carbon tetrachloride	50	U
107-06-2	1,2-Dichloroethane	50	U
71-43-2	Benzene	50	U
79-01-6	Trichloroethene	11	DJ
78-87-5	1,2-Dichloropropane	50	U
74-95-3	Dibromomethane	50	U
75-27-4	Bromodichloromethane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
142-28-9	1,3-Dichloropropane	50	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211DDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2952.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	1400	D
591-78-6	2-Hexanone	50	U
124-48-1	Dibromochloromethane	50	U
106-93-4	1,2-Dibromoethane	50	U
108-90-7	Chlorobenzene	50	U
630-20-6	1,1,1,2-Tetrachloroethane	50	U
100-41-4	Ethylbenzene	50	U
1330-20-7	m,p-Xylene	50	U
95-47-6	o-Xylene	50	U
1330-20-7	Xylene (Total)	50	U
100-42-5	Styrene	50	U
75-25-2	Bromoform	50	U
98-82-8	Isopropylbenzene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-86-1	Bromobenzene	50	U
96-18-4	1,2,3-Trichloropropane	50	U
103-65-1	n-Propylbenzene	50	U
95-49-8	2-Chlorotoluene	50	U
108-67-8	1,3,5-Trimethylbenzene	50	U
106-43-4	4-Chlorotoluene	50	U
98-06-6	tert-Butylbenzene	50	U
95-63-6	1,2,4-Trimethylbenzene	50	U
135-98-8	sec-Butylbenzene	50	U
99-87-6	4-Isopropyltoluene	50	U
541-73-1	1,3-Dichlorobenzene	50	U
106-46-7	1,4-Dichlorobenzene	50	U
104-51-8	n-Butylbenzene	50	U
95-50-1	1,2-Dichlorobenzene	50	U
96-12-8	1,2-Dibromo-3-chloropropane	50	U
120-82-1	1,2,4-Trichlorobenzene	50	U
87-68-3	Hexachlorobutadiene	50	U
87-61-6	1,2,3-Trichlorobenzene	50	U
91-20-3	Naphthalene	50	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-211DDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2952.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679E[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-217

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2950.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	6.2	
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	3.9	J
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-217

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2950.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	71	
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-217

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2950.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-X

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2851.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-X

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2851.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	3.1	J
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-X

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-04A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2851.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-212D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2852.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-212D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2852.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	2.6	J
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-212D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-05A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2852.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2853.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	1.1	J
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	9.8	
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	2.8	J
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2853.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	1800	E
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.9	J
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-211S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-06A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2853.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211SDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2955.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 25.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	130	U
74-87-3	Chloromethane	130	U
75-01-4	Vinyl chloride	130	U
74-83-9	Bromomethane	130	U
75-00-3	Chloroethane	130	U
75-69-4	Trichlorofluoromethane	130	U
75-35-4	1,1-Dichloroethene	130	U
67-64-1	Acetone	130	U
74-88-4	Iodomethane	130	U
75-15-0	Carbon disulfide	130	U
75-09-2	Methylene chloride	130	U
156-60-5	trans-1,2-Dichloroethene	130	U
1634-04-4	Methyl tert-butyl ether	130	U
75-34-3	1,1-Dichloroethane	130	U
108-05-4	Vinyl acetate	130	U
78-93-3	2-Butanone	130	U
156-59-2	cis-1,2-Dichloroethene	130	U
594-20-7	2,2-Dichloropropane	130	U
74-97-5	Bromochloromethane	130	U
67-66-3	Chloroform	130	U
71-55-6	1,1,1-Trichloroethane	130	U
563-58-6	1,1-Dichloropropene	130	U
56-23-5	Carbon tetrachloride	130	U
107-06-2	1,2-Dichloroethane	130	U
71-43-2	Benzene	130	U
79-01-6	Trichloroethene	130	U
78-87-5	1,2-Dichloropropane	130	U
74-95-3	Dibromomethane	130	U
75-27-4	Bromodichloromethane	130	U
10061-01-5	cis-1,3-Dichloropropene	130	U
108-10-1	4-Methyl-2-pentanone	130	U
108-88-3	Toluene	130	U
10061-02-6	trans-1,3-Dichloropropene	130	U
79-00-5	1,1,2-Trichloroethane	130	U
142-28-9	1,3-Dichloropropane	130	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-211SDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2955.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 25.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	2300	D
591-78-6	2-Hexanone	130	U
124-48-1	Dibromochloromethane	130	U
106-93-4	1,2-Dibromoethane	130	U
108-90-7	Chlorobenzene	130	U
630-20-6	1,1,1,2-Tetrachloroethane	130	U
100-41-4	Ethylbenzene	130	U
1330-20-7	m,p-Xylene	130	U
95-47-6	o-Xylene	130	U
1330-20-7	Xylene (Total)	130	U
100-42-5	Styrene	130	U
75-25-2	Bromoform	130	U
98-82-8	Isopropylbenzene	130	U
79-34-5	1,1,2,2-Tetrachloroethane	130	U
108-86-1	Bromobenzene	130	U
96-18-4	1,2,3-Trichloropropane	130	U
103-65-1	n-Propylbenzene	130	U
95-49-8	2-Chlorotoluene	130	U
108-67-8	1,3,5-Trimethylbenzene	130	U
106-43-4	4-Chlorotoluene	130	U
98-06-6	tert-Butylbenzene	130	U
95-63-6	1,2,4-Trimethylbenzene	130	U
135-98-8	sec-Butylbenzene	130	U
99-87-6	4-Isopropyltoluene	130	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	130	U
104-51-8	n-Butylbenzene	130	U
95-50-1	1,2-Dichlorobenzene	130	U
96-12-8	1,2-Dibromo-3-chloropropane	130	U
120-82-1	1,2,4-Trichlorobenzene	130	U
87-68-3	Hexachlorobutadiene	130	U
87-61-6	1,2,3-Trichlorobenzene	130	U
91-20-3	Naphthalene	130	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-211SDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-06ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2955.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 25.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-210D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2951.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	2.8	J
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-210D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2951.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	7.8	
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-210D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2951.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-210DMS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07AMS

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2959.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	61	
74-87-3	Chloromethane	49	
75-01-4	Vinyl chloride	47	
74-83-9	Bromomethane	52	
75-00-3	Chloroethane	48	
75-69-4	Trichlorofluoromethane	57	
75-35-4	1,1-Dichloroethene	46	
67-64-1	Acetone	35	
74-88-4	Iodomethane	47	
75-15-0	Carbon disulfide	40	
75-09-2	Methylene chloride	45	
156-60-5	trans-1,2-Dichloroethene	45	
1634-04-4	Methyl tert-butyl ether	54	
75-34-3	1,1-Dichloroethane	51	
108-05-4	Vinyl acetate	50	
78-93-3	2-Butanone	47	
156-59-2	cis-1,2-Dichloroethene	49	
594-20-7	2,2-Dichloropropane	59	
74-97-5	Bromochloromethane	47	
67-66-3	Chloroform	55	
71-55-6	1,1,1-Trichloroethane	62	
563-58-6	1,1-Dichloropropene	48	
56-23-5	Carbon tetrachloride	63	
107-06-2	1,2-Dichloroethane	62	
71-43-2	Benzene	46	
79-01-6	Trichloroethene	50	
78-87-5	1,2-Dichloropropane	48	
74-95-3	Dibromomethane	55	
75-27-4	Bromodichloromethane	60	
10061-01-5	cis-1,3-Dichloropropene	51	
108-10-1	4-Methyl-2-pentanone	49	
108-88-3	Toluene	49	
10061-02-6	trans-1,3-Dichloropropene	56	
79-00-5	1,1,2-Trichloroethane	50	
142-28-9	1,3-Dichloropropane	50	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-210DMS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07AMS

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2959.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	57	
591-78-6	2-Hexanone	46	
124-48-1	Dibromochloromethane	53	
106-93-4	1,2-Dibromoethane	50	
108-90-7	Chlorobenzene	49	
630-20-6	1,1,1,2-Tetrachloroethane	55	
100-41-4	Ethylbenzene	49	
1330-20-7	m,p-Xylene	98	
95-47-6	o-Xylene	48	
1330-20-7	Xylene (Total)	150	
100-42-5	Styrene	48	
75-25-2	Bromoform	52	
98-82-8	Isopropylbenzene	54	
79-34-5	1,1,2,2-Tetrachloroethane	43	
108-86-1	Bromobenzene	45	
96-18-4	1,2,3-Trichloropropane	45	
103-65-1	n-Propylbenzene	45	
95-49-8	2-Chlorotoluene	46	
108-67-8	1,3,5-Trimethylbenzene	49	
106-43-4	4-Chlorotoluene	46	
98-06-6	tert-Butylbenzene	49	
95-63-6	1,2,4-Trimethylbenzene	49	
135-98-8	sec-Butylbenzene	50	
99-87-6	4-Isopropyltoluene	51	
541-73-1	1,3-Dichlorobenzene	48	
106-46-7	1,4-Dichlorobenzene	48	
104-51-8	n-Butylbenzene	51	
95-50-1	1,2-Dichlorobenzene	49	
96-12-8	1,2-Dibromo-3-chloropropane	56	
120-82-1	1,2,4-Trichlorobenzene	51	
87-68-3	Hexachlorobutadiene	53	
87-61-6	1,2,3-Trichlorobenzene	50	
91-20-3	Naphthalene	49	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-210DMSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07AMSD

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2960.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	54	
74-87-3	Chloromethane	50	
75-01-4	Vinyl chloride	51	
74-83-9	Bromomethane	50	
75-00-3	Chloroethane	50	
75-69-4	Trichlorofluoromethane	53	
75-35-4	1,1-Dichloroethene	48	
67-64-1	Acetone	40	
74-88-4	Iodomethane	48	
75-15-0	Carbon disulfide	44	
75-09-2	Methylene chloride	47	
156-60-5	trans-1,2-Dichloroethene	48	
1634-04-4	Methyl tert-butyl ether	54	
75-34-3	1,1-Dichloroethane	51	
108-05-4	Vinyl acetate	50	
78-93-3	2-Butanone	48	
156-59-2	cis-1,2-Dichloroethene	51	
594-20-7	2,2-Dichloropropane	53	
74-97-5	Bromochloromethane	48	
67-66-3	Chloroform	52	
71-55-6	1,1,1-Trichloroethane	55	
563-58-6	1,1-Dichloropropene	50	
56-23-5	Carbon tetrachloride	55	
107-06-2	1,2-Dichloroethane	55	
71-43-2	Benzene	47	
79-01-6	Trichloroethene	51	
78-87-5	1,2-Dichloropropane	50	
74-95-3	Dibromomethane	52	
75-27-4	Bromodichloromethane	55	
10061-01-5	cis-1,3-Dichloropropene	50	
108-10-1	4-Methyl-2-pentanone	52	
108-88-3	Toluene	50	
10061-02-6	trans-1,3-Dichloropropene	53	
79-00-5	1,1,2-Trichloroethane	51	
142-28-9	1,3-Dichloropropane	50	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-210DMSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-07AMSD

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2960.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	59	
591-78-6	2-Hexanone	49	
124-48-1	Dibromochloromethane	52	
106-93-4	1,2-Dibromoethane	52	
108-90-7	Chlorobenzene	49	
630-20-6	1,1,1,2-Tetrachloroethane	51	
100-41-4	Ethylbenzene	48	
1330-20-7	m,p-Xylene	97	
95-47-6	o-Xylene	49	
1330-20-7	Xylene (Total)	150	
100-42-5	Styrene	48	
75-25-2	Bromoform	50	
98-82-8	Isopropylbenzene	51	
79-34-5	1,1,2,2-Tetrachloroethane	48	
108-86-1	Bromobenzene	48	
96-18-4	1,2,3-Trichloropropane	47	
103-65-1	n-Propylbenzene	48	
95-49-8	2-Chlorotoluene	48	
108-67-8	1,3,5-Trimethylbenzene	50	
106-43-4	4-Chlorotoluene	48	
98-06-6	tert-Butylbenzene	50	
95-63-6	1,2,4-Trimethylbenzene	49	
135-98-8	sec-Butylbenzene	52	
99-87-6	4-Isopropyltoluene	52	
541-73-1	1,3-Dichlorobenzene	49	
106-46-7	1,4-Dichlorobenzene	49	
104-51-8	n-Butylbenzene	52	
95-50-1	1,2-Dichlorobenzene	49	
96-12-8	1,2-Dibromo-3-chloropropane	59	
120-82-1	1,2,4-Trichlorobenzene	51	
87-68-3	Hexachlorobutadiene	54	
87-61-6	1,2,3-Trichlorobenzene	52	
91-20-3	Naphthalene	52	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2855.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	4.4	J
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	3.6	J
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	8.1	
71-55-6	1,1,1-Trichloroethane	8.0	
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	33	
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	3.4	J
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2855.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	3500	E
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	4.6	J
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-8BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-08A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2855.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8BADL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-08ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2956.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 40.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	200	U
74-87-3	Chloromethane	200	U
75-01-4	Vinyl chloride	200	U
74-83-9	Bromomethane	200	U
75-00-3	Chloroethane	200	U
75-69-4	Trichlorofluoromethane	200	U
75-35-4	1,1-Dichloroethene	200	U
67-64-1	Acetone	200	U
74-88-4	Iodomethane	200	U
75-15-0	Carbon disulfide	200	U
75-09-2	Methylene chloride	200	U
156-60-5	trans-1,2-Dichloroethene	200	U
1634-04-4	Methyl tert-butyl ether	200	U
75-34-3	1,1-Dichloroethane	200	U
108-05-4	Vinyl acetate	200	U
78-93-3	2-Butanone	200	U
156-59-2	cis-1,2-Dichloroethene	200	U
594-20-7	2,2-Dichloropropane	200	U
74-97-5	Bromochloromethane	200	U
67-66-3	Chloroform	200	U
71-55-6	1,1,1-Trichloroethane	200	U
563-58-6	1,1-Dichloropropene	200	U
56-23-5	Carbon tetrachloride	200	U
107-06-2	1,2-Dichloroethane	200	U
71-43-2	Benzene	200	U
79-01-6	Trichloroethene	200	U
78-87-5	1,2-Dichloropropane	200	U
74-95-3	Dibromomethane	200	U
75-27-4	Bromodichloromethane	200	U
10061-01-5	cis-1,3-Dichloropropene	200	U
108-10-1	4-Methyl-2-pentanone	200	U
108-88-3	Toluene	200	U
10061-02-6	trans-1,3-Dichloropropene	200	U
79-00-5	1,1,2-Trichloroethane	200	U
142-28-9	1,3-Dichloropropane	200	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8BADL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-08ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2956.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 40.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5600	D
591-78-6	2-Hexanone	200	U
124-48-1	Dibromochloromethane	200	U
106-93-4	1,2-Dibromoethane	200	U
108-90-7	Chlorobenzene	200	U
630-20-6	1,1,1,2-Tetrachloroethane	200	U
100-41-4	Ethylbenzene	200	U
1330-20-7	m,p-Xylene	200	U
95-47-6	o-Xylene	200	U
1330-20-7	Xylene (Total)	200	U
100-42-5	Styrene	200	U
75-25-2	Bromoform	200	U
98-82-8	Isopropylbenzene	200	U
79-34-5	1,1,2,2-Tetrachloroethane	200	U
108-86-1	Bromobenzene	200	U
96-18-4	1,2,3-Trichloropropane	200	U
103-65-1	n-Propylbenzene	200	U
95-49-8	2-Chlorotoluene	200	U
108-67-8	1,3,5-Trimethylbenzene	200	U
106-43-4	4-Chlorotoluene	200	U
98-06-6	tert-Butylbenzene	200	U
95-63-6	1,2,4-Trimethylbenzene	200	U
135-98-8	sec-Butylbenzene	200	U
99-87-6	4-Isopropyltoluene	200	U
541-73-1	1,3-Dichlorobenzene	200	U
106-46-7	1,4-Dichlorobenzene	200	U
104-51-8	n-Butylbenzene	200	U
95-50-1	1,2-Dichlorobenzene	200	U
96-12-8	1,2-Dibromo-3-chloropropane	200	U
120-82-1	1,2,4-Trichlorobenzene	200	U
87-68-3	Hexachlorobutadiene	200	U
87-61-6	1,2,3-Trichlorobenzene	200	U
91-20-3	Naphthalene	200	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-8BADL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-08ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2956.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 40.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2856.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	6.8	
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2856.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	390	E
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-1BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-09A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2856.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1BADL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-09ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2954.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.5

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	13	U
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
67-64-1	Acetone	13	U
74-88-4	Iodomethane	13	U
75-15-0	Carbon disulfide	13	U
75-09-2	Methylene chloride	13	U
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
108-05-4	Vinyl acetate	13	U
78-93-3	2-Butanone	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
594-20-7	2,2-Dichloropropane	13	U
74-97-5	Bromochloromethane	13	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
563-58-6	1,1-Dichloropropene	13	U
56-23-5	Carbon tetrachloride	13	U
107-06-2	1,2-Dichloroethane	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	6.0	DJ
78-87-5	1,2-Dichloropropane	13	U
74-95-3	Dibromomethane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
142-28-9	1,3-Dichloropropane	13	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1BADL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-09ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2954.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.5

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	380	D
591-78-6	2-Hexanone	13	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U
108-90-7	Chlorobenzene	13	U
630-20-6	1,1,1,2-Tetrachloroethane	13	U
100-41-4	Ethylbenzene	13	U
1330-20-7	m,p-Xylene	13	U
95-47-6	o-Xylene	13	U
1330-20-7	Xylene (Total)	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropylbenzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-86-1	Bromobenzene	13	U
96-18-4	1,2,3-Trichloropropane	13	U
103-65-1	n-Propylbenzene	13	U
95-49-8	2-Chlorotoluene	13	U
108-67-8	1,3,5-Trimethylbenzene	13	U
106-43-4	4-Chlorotoluene	13	U
98-06-6	tert-Butylbenzene	13	U
95-63-6	1,2,4-Trimethylbenzene	13	U
135-98-8	sec-Butylbenzene	13	U
99-87-6	4-Isopropyltoluene	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
104-51-8	n-Butylbenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
87-68-3	Hexachlorobutadiene	13	U
87-61-6	1,2,3-Trichlorobenzene	13	U
91-20-3	Naphthalene	13	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-1BADL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-09ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2954.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.5

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-10A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2857.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	4.6	J
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	2.6	J
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	1.1	J
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-10A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2857.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	2.2	J
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-2BA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-10A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2857.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DRUM SAMPLE

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2858.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	1.2	J
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.1	
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DRUM SAMPLE

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2858.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	600	E
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DRUM SAMPLE

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-11A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2858.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DRUM SAMPLEDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-11ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2953.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	25	U
74-87-3	Chloromethane	25	U
75-01-4	Vinyl chloride	25	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	25	U
75-69-4	Trichlorofluoromethane	25	U
75-35-4	1,1-Dichloroethene	25	U
67-64-1	Acetone	25	U
74-88-4	Iodomethane	25	U
75-15-0	Carbon disulfide	25	U
75-09-2	Methylene chloride	25	U
156-60-5	trans-1,2-Dichloroethene	25	U
1634-04-4	Methyl tert-butyl ether	25	U
75-34-3	1,1-Dichloroethane	25	U
108-05-4	Vinyl acetate	25	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	25	U
594-20-7	2,2-Dichloropropane	25	U
74-97-5	Bromochloromethane	25	U
67-66-3	Chloroform	25	U
71-55-6	1,1,1-Trichloroethane	25	U
563-58-6	1,1-Dichloropropene	25	U
56-23-5	Carbon tetrachloride	25	U
107-06-2	1,2-Dichloroethane	25	U
71-43-2	Benzene	25	U
79-01-6	Trichloroethene	25	U
78-87-5	1,2-Dichloropropane	25	U
74-95-3	Dibromomethane	25	U
75-27-4	Bromodichloromethane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
108-10-1	4-Methyl-2-pentanone	25	U
108-88-3	Toluene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
142-28-9	1,3-Dichloropropane	25	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DRUM SAMPLEDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-11ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2953.D

Level: (TRACE/LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	510	D
591-78-6	2-Hexanone	25	U
124-48-1	Dibromochloromethane	25	U
106-93-4	1,2-Dibromoethane	25	U
108-90-7	Chlorobenzene	25	U
630-20-6	1,1,1,2-Tetrachloroethane	25	U
100-41-4	Ethylbenzene	25	U
1330-20-7	m,p-Xylene	25	U
95-47-6	o-Xylene	25	U
1330-20-7	Xylene (Total)	25	U
100-42-5	Styrene	25	U
75-25-2	Bromoform	25	U
98-82-8	Isopropylbenzene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-86-1	Bromobenzene	25	U
96-18-4	1,2,3-Trichloropropane	25	U
103-65-1	n-Propylbenzene	25	U
95-49-8	2-Chlorotoluene	25	U
108-67-8	1,3,5-Trimethylbenzene	25	U
106-43-4	4-Chlorotoluene	25	U
98-06-6	tert-Butylbenzene	25	U
95-63-6	1,2,4-Trimethylbenzene	25	U
135-98-8	sec-Butylbenzene	25	U
99-87-6	4-Isopropyltoluene	25	U
541-73-1	1,3-Dichlorobenzene	25	U
106-46-7	1,4-Dichlorobenzene	25	U
104-51-8	n-Butylbenzene	25	U
95-50-1	1,2-Dichlorobenzene	25	U
96-12-8	1,2-Dibromo-3-chloropropane	25	U
120-82-1	1,2,4-Trichlorobenzene	25	U
87-68-3	Hexachlorobutadiene	25	U
87-61-6	1,2,3-Trichlorobenzene	25	U
91-20-3	Naphthalene	25	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DRUM SAMPLEDL

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-11ADL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2953.D

Level: (TRACE or LOW/MED) LOW Date Received: 10/02/2009

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2OLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-46556

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2838.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	28	
74-87-3	Chloromethane	44	
75-01-4	Vinyl chloride	44	
74-83-9	Bromomethane	49	
75-00-3	Chloroethane	48	
75-69-4	Trichlorofluoromethane	54	
75-35-4	1,1-Dichloroethene	51	
67-64-1	Acetone	52	
74-88-4	Iodomethane	51	
75-15-0	Carbon disulfide	47	
75-09-2	Methylene chloride	49	
156-60-5	trans-1,2-Dichloroethene	52	
1634-04-4	Methyl tert-butyl ether	52	
75-34-3	1,1-Dichloroethane	53	
108-05-4	Vinyl acetate	51	
78-93-3	2-Butanone	49	
156-59-2	cis-1,2-Dichloroethene	51	
594-20-7	2,2-Dichloropropane	56	
74-97-5	Bromochloromethane	52	
67-66-3	Chloroform	58	
71-55-6	1,1,1-Trichloroethane	58	
563-58-6	1,1-Dichloropropene	50	
56-23-5	Carbon tetrachloride	58	
107-06-2	1,2-Dichloroethane	59	
71-43-2	Benzene	50	
79-01-6	Trichloroethene	53	
78-87-5	1,2-Dichloropropane	51	
74-95-3	Dibromomethane	55	
75-27-4	Bromodichloromethane	56	
10061-01-5	cis-1,3-Dichloropropene	54	
108-10-1	4-Methyl-2-pentanone	51	
108-88-3	Toluene	52	
10061-02-6	trans-1,3-Dichloropropene	57	
79-00-5	1,1,2-Trichloroethane	51	
142-28-9	1,3-Dichloropropane	51	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2OLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-46556

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2838.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	52	
591-78-6	2-Hexanone	48	
124-48-1	Dibromochloromethane	54	
106-93-4	1,2-Dibromoethane	51	
108-90-7	Chlorobenzene	51	
630-20-6	1,1,1,2-Tetrachloroethane	54	
100-41-4	Ethylbenzene	51	
1330-20-7	m,p-Xylene	100	
95-47-6	o-Xylene	51	
1330-20-7	Xylene (Total)	150	
100-42-5	Styrene	52	
75-25-2	Bromoform	53	
98-82-8	Isopropylbenzene	53	
79-34-5	1,1,2,2-Tetrachloroethane	50	
108-86-1	Bromobenzene	52	
96-18-4	1,2,3-Trichloropropane	48	
103-65-1	n-Propylbenzene	53	
95-49-8	2-Chlorotoluene	52	
108-67-8	1,3,5-Trimethylbenzene	55	
106-43-4	4-Chlorotoluene	52	
98-06-6	tert-Butylbenzene	54	
95-63-6	1,2,4-Trimethylbenzene	54	
135-98-8	sec-Butylbenzene	54	
99-87-6	4-Isopropyltoluene	55	
541-73-1	1,3-Dichlorobenzene	52	
106-46-7	1,4-Dichlorobenzene	52	
104-51-8	n-Butylbenzene	54	
95-50-1	1,2-Dichlorobenzene	53	
96-12-8	1,2-Dibromo-3-chloropropane	56	
120-82-1	1,2,4-Trichlorobenzene	58	
87-68-3	Hexachlorobutadiene	58	
87-61-6	1,2,3-Trichlorobenzene	56	
91-20-3	Naphthalene	54	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2943.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	42	
74-87-3	Chloromethane	44	
75-01-4	Vinyl chloride	45	
74-83-9	Bromomethane	47	
75-00-3	Chloroethane	45	
75-69-4	Trichlorofluoromethane	47	
75-35-4	1,1-Dichloroethene	44	
67-64-1	Acetone	36	
74-88-4	Iodomethane	44	
75-15-0	Carbon disulfide	41	
75-09-2	Methylene chloride	42	
156-60-5	trans-1,2-Dichloroethene	43	
1634-04-4	Methyl tert-butyl ether	49	
75-34-3	1,1-Dichloroethane	47	
108-05-4	Vinyl acetate	46	
78-93-3	2-Butanone	39	
156-59-2	cis-1,2-Dichloroethene	42	
594-20-7	2,2-Dichloropropane	35	
74-97-5	Bromochloromethane	45	
67-66-3	Chloroform	51	
71-55-6	1,1,1-Trichloroethane	55	
563-58-6	1,1-Dichloropropene	44	
56-23-5	Carbon tetrachloride	55	
107-06-2	1,2-Dichloroethane	54	
71-43-2	Benzene	42	
79-01-6	Trichloroethene	47	
78-87-5	1,2-Dichloropropane	45	
74-95-3	Dibromomethane	48	
75-27-4	Bromodichloromethane	52	
10061-01-5	cis-1,3-Dichloropropene	44	
108-10-1	4-Methyl-2-pentanone	46	
108-88-3	Toluene	46	
10061-02-6	trans-1,3-Dichloropropene	48	
79-00-5	1,1,2-Trichloroethane	46	
142-28-9	1,3-Dichloropropane	44	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2943.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	45	
591-78-6	2-Hexanone	46	
124-48-1	Dibromochloromethane	48	
106-93-4	1,2-Dibromoethane	46	
108-90-7	Chlorobenzene	45	
630-20-6	1,1,1,2-Tetrachloroethane	49	
100-41-4	Ethylbenzene	44	
1330-20-7	m,p-Xylene	90	
95-47-6	o-Xylene	45	
1330-20-7	Xylene (Total)	130	
100-42-5	Styrene	45	
75-25-2	Bromoform	47	
98-82-8	Isopropylbenzene	48	
79-34-5	1,1,2,2-Tetrachloroethane	42	
108-86-1	Bromobenzene	44	
96-18-4	1,2,3-Trichloropropane	41	
103-65-1	n-Propylbenzene	43	
95-49-8	2-Chlorotoluene	44	
108-67-8	1,3,5-Trimethylbenzene	47	
106-43-4	4-Chlorotoluene	45	
98-06-6	tert-Butylbenzene	46	
95-63-6	1,2,4-Trimethylbenzene	46	
135-98-8	sec-Butylbenzene	47	
99-87-6	4-Isopropyltoluene	48	
541-73-1	1,3-Dichlorobenzene	45	
106-46-7	1,4-Dichlorobenzene	45	
104-51-8	n-Butylbenzene	48	
95-50-1	1,2-Dichlorobenzene	46	
96-12-8	1,2-Dibromo-3-chloropropane	50	
120-82-1	1,2,4-Trichlorobenzene	47	
87-68-3	Hexachlorobutadiene	50	
87-61-6	1,2,3-Trichlorobenzene	47	
91-20-3	Naphthalene	45	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCSD-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2944.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	42	
74-87-3	Chloromethane	44	
75-01-4	Vinyl chloride	45	
74-83-9	Bromomethane	44	
75-00-3	Chloroethane	44	
75-69-4	Trichlorofluoromethane	45	
75-35-4	1,1-Dichloroethene	42	
67-64-1	Acetone	33	
74-88-4	Iodomethane	42	
75-15-0	Carbon disulfide	40	
75-09-2	Methylene chloride	41	
156-60-5	trans-1,2-Dichloroethene	42	
1634-04-4	Methyl tert-butyl ether	45	
75-34-3	1,1-Dichloroethane	44	
108-05-4	Vinyl acetate	42	
78-93-3	2-Butanone	38	
156-59-2	cis-1,2-Dichloroethene	41	
594-20-7	2,2-Dichloropropane	30	
74-97-5	Bromochloromethane	43	
67-66-3	Chloroform	45	
71-55-6	1,1,1-Trichloroethane	49	
563-58-6	1,1-Dichloropropene	43	
56-23-5	Carbon tetrachloride	48	
107-06-2	1,2-Dichloroethane	46	
71-43-2	Benzene	40	
79-01-6	Trichloroethene	42	
78-87-5	1,2-Dichloropropane	43	
74-95-3	Dibromomethane	43	
75-27-4	Bromodichloromethane	47	
10061-01-5	cis-1,3-Dichloropropene	41	
108-10-1	4-Methyl-2-pentanone	43	
108-88-3	Toluene	43	
10061-02-6	trans-1,3-Dichloropropene	42	
79-00-5	1,1,2-Trichloroethane	42	
142-28-9	1,3-Dichloropropane	43	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

V2SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCSD-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2944.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	43	
591-78-6	2-Hexanone	39	
124-48-1	Dibromochloromethane	45	
106-93-4	1,2-Dibromoethane	45	
108-90-7	Chlorobenzene	43	
630-20-6	1,1,1,2-Tetrachloroethane	46	
100-41-4	Ethylbenzene	44	
1330-20-7	m,p-Xylene	87	
95-47-6	o-Xylene	44	
1330-20-7	Xylene (Total)	130	
100-42-5	Styrene	44	
75-25-2	Bromoform	44	
98-82-8	Isopropylbenzene	45	
79-34-5	1,1,2,2-Tetrachloroethane	41	
108-86-1	Bromobenzene	42	
96-18-4	1,2,3-Trichloropropane	39	
103-65-1	n-Propylbenzene	43	
95-49-8	2-Chlorotoluene	42	
108-67-8	1,3,5-Trimethylbenzene	45	
106-43-4	4-Chlorotoluene	44	
98-06-6	tert-Butylbenzene	45	
95-63-6	1,2,4-Trimethylbenzene	45	
135-98-8	sec-Butylbenzene	45	
99-87-6	4-Isopropyltoluene	46	
541-73-1	1,3-Dichlorobenzene	43	
106-46-7	1,4-Dichlorobenzene	44	
104-51-8	n-Butylbenzene	45	
95-50-1	1,2-Dichlorobenzene	44	
96-12-8	1,2-Dibromo-3-chloropropane	48	
120-82-1	1,2,4-Trichlorobenzene	45	
87-68-3	Hexachlorobutadiene	47	
87-61-6	1,2,3-Trichlorobenzene	46	
91-20-3	Naphthalene	44	

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-211D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0111.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 10/02/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	Bis(2-chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2´-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	Bis(2-chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-211D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0111.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 10/02/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3´-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW-211D

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1928-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0111.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 10/02/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	4.982	5.1	J
	E96679[2]	Total Alkanes	N/A		

[2] EPA-designated Registry Number.

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

S1SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0106.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	35	
111-44-4	Bis(2-chloroethyl)ether	35	
95-57-8	2-Chlorophenol	42	
541-73-1	1,3-Dichlorobenzene	38	
106-46-7	1,4-Dichlorobenzene	39	
95-50-1	1,2-Dichlorobenzene	42	
95-48-7	2-Methylphenol	40	
108-60-1	2,2´-oxybis(1-Chloropropane)	36	
106-44-5	4-Methylphenol	37	
621-64-7	N-Nitroso-di-n-propylamine	35	
67-72-1	Hexachloroethane	37	
98-95-3	Nitrobenzene	42	
78-59-1	Isophorone	39	
88-75-5	2-Nitrophenol	48	
105-67-9	2,4-Dimethylphenol	44	
120-83-2	2,4-Dichlorophenol	46	
120-82-1	1,2,4-Trichlorobenzene	46	
91-20-3	Naphthalene	44	
106-47-8	4-Chloroaniline	36	
111-91-1	Bis(2-chloroethoxy)methane	40	
87-68-3	Hexachlorobutadiene	49	
59-50-7	4-Chloro-3-methylphenol	47	
91-57-6	2-Methylnaphthalene	49	
77-47-4	Hexachlorocyclopentadiene	7.5	J
88-06-2	2,4,6-Trichlorophenol	47	
95-95-4	2,4,5-Trichlorophenol	47	
91-58-7	2-Chloronaphthalene	45	
88-74-4	2-Nitroaniline	41	
131-11-3	Dimethylphthalate	49	
208-96-8	Acenaphthylene	43	
606-20-2	2,6-Dinitrotoluene	48	
99-09-2	3-Nitroaniline	45	
83-32-9	Acenaphthene	47	
51-28-5	2,4-Dinitrophenol	46	
100-02-7	4-Nitrophenol	47	
132-64-9	Dibenzofuran	49	
121-14-2	2,4-Dinitrotoluene	49	

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

S1SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0106.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	52	
7005-72-3	4-Chlorophenyl-phenylether	46	
86-73-7	Fluorene	49	
100-01-6	4-Nitroaniline	37	
534-52-1	4,6-Dinitro-2-methylphenol	47	
86-30-6	N-Nitrosodiphenylamine	38	
101-55-3	4-Bromophenyl-phenylether	46	
118-74-1	Hexachlorobenzene	47	
87-86-5	Pentachlorophenol	41	
85-01-8	Phenanthrene	49	
120-12-7	Anthracene	45	
86-74-8	Carbazole	46	
84-74-2	Di-n-butylphthalate	45	
206-44-0	Fluoranthene	44	
129-00-0	Pyrene	49	
85-68-7	Butylbenzylphthalate	52	
91-94-1	3,3'-Dichlorobenzidine	5.5	J
56-55-3	Benzo(a)anthracene	49	
218-01-9	Chrysene	61	
117-81-7	Bis(2-ethylhexyl)phthalate	55	
117-84-0	Di-n-octylphthalate	50	
205-99-2	Benzo(b)fluoranthene	50	
207-08-9	Benzo(k)fluoranthene	41	
50-32-8	Benzo(a)pyrene	42	
193-39-5	Indeno(1,2,3-cd)pyrene	43	
53-70-3	Dibenzo(a,h)anthracene	45	
191-24-2	Benzo(g,h,i)perylene	44	

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

S1SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCSD-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0107.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup:(Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	35	
111-44-4	Bis(2-chloroethyl)ether	36	
95-57-8	2-Chlorophenol	41	
541-73-1	1,3-Dichlorobenzene	38	
106-46-7	1,4-Dichlorobenzene	38	
95-50-1	1,2-Dichlorobenzene	41	
95-48-7	2-Methylphenol	40	
108-60-1	2,2´-oxybis(1-Chloropropane)	37	
106-44-5	4-Methylphenol	39	
621-64-7	N-Nitroso-di-n-propylamine	37	
67-72-1	Hexachloroethane	36	
98-95-3	Nitrobenzene	41	
78-59-1	Isophorone	40	
88-75-5	2-Nitrophenol	48	
105-67-9	2,4-Dimethylphenol	46	
120-83-2	2,4-Dichlorophenol	48	
120-82-1	1,2,4-Trichlorobenzene	44	
91-20-3	Naphthalene	41	
106-47-8	4-Chloroaniline	20	
111-91-1	Bis(2-chloroethoxy)methane	38	
87-68-3	Hexachlorobutadiene	45	
59-50-7	4-Chloro-3-methylphenol	43	
91-57-6	2-Methylnaphthalene	45	
77-47-4	Hexachlorocyclopentadiene	7.9	J
88-06-2	2,4,6-Trichlorophenol	44	
95-95-4	2,4,5-Trichlorophenol	40	
91-58-7	2-Chloronaphthalene	43	
88-74-4	2-Nitroaniline	40	
131-11-3	Dimethylphthalate	47	
208-96-8	Acenaphthylene	40	
606-20-2	2,6-Dinitrotoluene	46	
99-09-2	3-Nitroaniline	36	
83-32-9	Acenaphthene	44	
51-28-5	2,4-Dinitrophenol	49	
100-02-7	4-Nitrophenol	43	
132-64-9	Dibenzofuran	45	
121-14-2	2,4-Dinitrotoluene	45	

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

S1SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCSD-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0107.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	49	
7005-72-3	4-Chlorophenyl-phenylether	44	
86-73-7	Fluorene	46	
100-01-6	4-Nitroaniline	38	
534-52-1	4,6-Dinitro-2-methylphenol	51	
86-30-6	N-Nitrosodiphenylamine	35	
101-55-3	4-Bromophenyl-phenylether	49	
118-74-1	Hexachlorobenzene	47	
87-86-5	Pentachlorophenol	44	
85-01-8	Phenanthrene	47	
120-12-7	Anthracene	44	
86-74-8	Carbazole	49	
84-74-2	Di-n-butylphthalate	47	
206-44-0	Fluoranthene	43	
129-00-0	Pyrene	44	
85-68-7	Butylbenzylphthalate	48	
91-94-1	3,3´-Dichlorobenzidine	3.9	J
56-55-3	Benzo(a)anthracene	43	
218-01-9	Chrysene	60	
117-81-7	Bis(2-ethylhexyl)phthalate	54	
117-84-0	Di-n-octylphthalate	53	
205-99-2	Benzo(b)fluoranthene	49	
207-08-9	Benzo(k)fluoranthene	46	
50-32-8	Benzo(a)pyrene	43	
193-39-5	Indeno(1,2,3-cd)pyrene	45	
53-70-3	Dibenzo(a,h)anthracene	46	
191-24-2	Benzo(g,h,i)perylene	45	

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW-211D

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Matrix (soil/water): WATER Lab Sample ID: H1928-02

Level (low/med): MED Date Received: 10/02/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	295			P
7440-36-0	Antimony	4.2	U		P
7440-38-2	Arsenic	3.1	U		P
7440-39-3	Barium	299			P
7440-41-7	Beryllium	0.15	B		P
7440-43-9	Cadmium	0.53	B		P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	151			P
7440-48-4	Cobalt	6.4	B		P
7440-50-8	Copper	37.6			P
7439-89-6	Iron	130	B		P
7439-92-1	Lead	2.1	U		P
7439-95-4	Magnesium	50500			P
7439-96-5	Manganese	5780			P
7439-97-6	Mercury	0.056	U		CV
7440-02-0	Nickel	74.0		E	P
7440-09-7	Potassium	2840			P
7782-49-2	Selenium	10.0	U		P
7440-22-4	Silver	2.4	U		P
7440-23-5	Sodium	413000			P
7440-28-0	Thallium	5.7	U		P
7440-62-2	Vanadium	0.34	U		P
7440-66-6	Zinc	74.1			P

Comments:

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Solid LCS Source: LCS(D) ID:

Aqueous LCS Source: LCS-46589

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.52	98.3						

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Solid LCS Source: LCS(D) ID:

Aqueous LCS Source: LCS-46592

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	9100.0	9020.75	99.1						
Antimony	455.0	465.54	102.3						
Arsenic	455.0	455.86	100.2						
Barium	9100.0	9299.40	102.2						
Beryllium	227.0	225.91	99.5						
Cadmium	227.0	226.78	99.9						
Calcium	22700.0	22039.26	97.1						
Chromium	910.0	898.77	98.8						
Cobalt	2270.0	2340.00	103.1						
Copper	1130.0	1154.75	102.2						
Iron	4550.0	4646.16	102.1						
Lead	455.0	454.82	100.0						
Magnesium	22700.0	22905.25	100.9						
Manganese	2270.0	2326.11	102.5						
Nickel	2270.0	2322.20	102.3						
Potassium	22700.0	23275.61	102.5						
Selenium	455.0	448.29	98.5						
Silver	1130.0	1203.42	106.5						
Sodium	22700.0	23676.39	104.3						
Thallium	455.0	439.18	96.5						
Vanadium	2270.0	2300.07	101.3						
Zinc	2270.0	2289.80	100.9						

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Solid LCS Source: LCS(D) ID:

Aqueous LCS Source: LCSD-46589

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Mercury	4.6	4.47	97.2						

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Solid LCS Source:

Aqueous LCS Source:

LCS(D) ID:
LCSD-46592

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/Kg) True	Found	C	Limits		%R
Aluminum	9100.0	9260.56	101.8						
Antimony	455.0	477.25	104.9						
Arsenic	455.0	463.56	101.9						
Barium	9100.0	9391.60	103.2						
Beryllium	227.0	227.98	100.4						
Cadmium	227.0	232.13	102.3						
Calcium	22700.0	22370.72	98.5						
Chromium	910.0	919.30	101.0						
Cobalt	2270.0	2395.09	105.5						
Copper	1130.0	1186.81	105.0						
Iron	4550.0	4756.18	104.5						
Lead	455.0	464.19	102.0						
Magnesium	22700.0	23428.50	103.2						
Manganese	2270.0	2351.43	103.6						
Nickel	2270.0	2375.87	104.7						
Potassium	22700.0	23465.49	103.4						
Selenium	455.0	462.83	101.7						
Silver	1130.0	1212.31	107.3						
Sodium	22700.0	23793.35	104.8						
Thallium	455.0	445.64	97.9						
Vanadium	2270.0	2354.10	103.7						
Zinc	2270.0	2333.66	102.8						

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Level: (TRACE or LOW) LOW

	EPA SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	VBLK20	106	104	97	99				0
02	V2OLCS	110	98	98	102				0
03	TRIP BLANK	123 *	98	98	109				1
04	MW-211D	119 *	96	96	108				1
05	MW-X	125 *	100	97	111				1
06	MW-212D	128 *	99	96	107				1
07	MW-211S	126 *	99	98	110				1
08	MW-8BA	126 *	101	95	107				1
09	MW-1BA	131 *	95	97	111				1
10	MW-2BA	129 *	101	97	111				1
11	DRUM SAMPLE	131 *	102	97	112				1
12	VBLK2S	110	95	97	105				0
13	V2SLCS	109	91	96	107				0
14	V2SLCSD	102	94	99	103				0
15	MW-217	109	94	97	102				0
16	MW-210D	110	93	96	103				0
17	MW-211DDL	111	95	97	104				0
18	DRUM SAMPLEDL	114	100	95	104				0
19	MW-1BADL	113	94	98	103				0
20	MW-211SDL	114	94	97	103				0
21	MW-8BADL	115 *	105	95	102				1
22	MW-210DMS	112	97	97	111				0
23	MW-210DMSD	107	101	98	102				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) =1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) =Toluene-d8	(85-120)
VDMC4	(BFB) =Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

SOM_002

SW846

2H - FORM II SV-2

WATER SEMIVOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

	CLIENT SAMPLE NO.	SDMC1 (NBZ) #	SDMC2 (FBP) #	SDMC3 (TPH) #	SDMC4 (PHL) #	SDMC5 (2FP) #	SDMC6 (TBP) #			TOT OUT
01	SBLK1S	81	89	96	79	74	88			0
02	S1SLCS	80	85	95	75	72	95			0
03	S1SLCSD	80	80	83	77	73	105			0
04	MW-211D	56	66	80	58	54	76			0

			QC LIMITS
SDMC1	(NBZ)	= Nitrobenzene-d5	(40-110)
SDMC2	(FBP)	= 2-Fluorobiphenyl	(50-110)
SDMC3	(TPH)	= Terphenyl-d14	(50-135)
SDMC4	(PHL)	= Phenol-d5	(10-115)
SDMC5	(2FP)	= 2-Fluorophenol	(20-110)
SDMC6	(TBP)	= 2,4,6-Tribromophenol	(40-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

SOM_002

SW846

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix Spike - EPA Sample No.: MW-210D

Instrument ID: V2 GC Column : DB-624 ID: 0.25 (mm)

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	MS CONCENTRATION (µg/L)	MS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	60.6154	121		30-155
Chloromethane	50.0000	0.0000	48.7917	98		40-125
Vinyl chloride	50.0000	0.0000	47.2564	95		50-145
Bromomethane	50.0000	0.0000	51.8846	104		30-145
Chloroethane	50.0000	0.0000	47.8476	96		60-135
Trichlorofluoromethane	50.0000	0.0000	56.5262	113		60-145
1,1-Dichloroethene	50.0000	0.0000	46.3409	93		70-130
Acetone	50.0000	0.0000	34.6014	69		40-140
Iodomethane	50.0000	0.0000	47.1222	94		72-121
Carbon disulfide	50.0000	0.0000	40.3187	81		35-160
Methylene chloride	50.0000	0.0000	44.8175	90		55-140
trans-1,2-Dichloroethene	50.0000	0.0000	45.0448	90		60-140
Methyl tert-butyl ether	50.0000	0.0000	53.7321	107		65-125
1,1-Dichloroethane	50.0000	0.0000	51.3729	103		70-135
Vinyl acetate	50.0000	0.0000	50.4798	101		38-163
2-Butanone	50.0000	0.0000	46.6038	93		30-150
cis-1,2-Dichloroethene	50.0000	2.8023	48.7726	92		70-125
2,2-Dichloropropane	50.0000	0.0000	59.4294	119		70-135
Bromochloromethane	50.0000	0.0000	47.2108	94		65-130
Chloroform	50.0000	0.0000	55.1398	110		65-135
1,1,1-Trichloroethane	50.0000	0.0000	61.8856	124		65-130
1,1-Dichloropropene	50.0000	0.0000	48.0525	96		75-130
Carbon tetrachloride	50.0000	0.0000	63.3100	127		65-140
1,2-Dichloroethane	50.0000	0.0000	61.6254	123		70-130
Benzene	50.0000	0.0000	45.8360	92		80-120
Trichloroethene	50.0000	0.0000	50.4876	101		70-125
1,2-Dichloropropane	50.0000	0.0000	48.3494	97		75-125
Dibromomethane	50.0000	0.0000	55.1013	110		75-125
Bromodichloromethane	50.0000	0.0000	59.7608	120		75-120
cis-1,3-Dichloropropene	50.0000	0.0000	51.1176	102		70-130
4-Methyl-2-pentanone	50.0000	0.0000	48.8773	98		60-135
Toluene	50.0000	0.0000	48.9926	98		75-120
trans-1,3-Dichloropropene	50.0000	0.0000	55.5411	111		55-140
1,1,2-Trichloroethane	50.0000	0.0000	49.9462	100		75-125
1,3-Dichloropropane	50.0000	0.0000	50.3487	101		75-125
Tetrachloroethene	50.0000	7.7571	56.6961	98		45-150
2-Hexanone	50.0000	0.0000	45.5735	91		55-130
Dibromochloromethane	50.0000	0.0000	53.2009	106		60-135
1,2-Dibromoethane	50.0000	0.0000	49.8337	100		80-120
Chlorobenzene	50.0000	0.0000	48.6834	97		80-120
1,1,1,2-Tetrachloroethane	50.0000	0.0000	54.6462	109		80-130
Ethylbenzene	50.0000	0.0000	48.8084	98		75-125
m,p-Xylene	100.0000	0.0000	98.3172	98		75-130
o-Xylene	50.0000	0.0000	48.4334	97		80-120

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix Spike - EPA Sample No.: MW-210D

Instrument ID: V2 GC Column : DB-624 ID: 0.25 (mm)

Xylene (Total)	150.0000	0.0000	146.7506	98		81-121
Styrene	50.0000	0.0000	47.8141	96		65-135
Bromoform	50.0000	0.0000	51.5033	103		70-130
Isopropylbenzene	50.0000	0.0000	54.2259	108		75-125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	43.4762	87		65-130
Bromobenzene	50.0000	0.0000	44.9470	90		75-125
1,2,3-Trichloropropane	50.0000	0.0000	45.2063	90		75-125
n-Propylbenzene	50.0000	0.0000	45.2207	90		70-130
2-Chlorotoluene	50.0000	0.0000	46.1581	92		75-125
1,3,5-Trimethylbenzene	50.0000	0.0000	49.2158	98		75-130
4-Chlorotoluene	50.0000	0.0000	46.1853	92		75-130
tert-Butylbenzene	50.0000	0.0000	48.6987	97		70-130
1,2,4-Trimethylbenzene	50.0000	0.0000	48.7088	97		75-130
sec-Butylbenzene	50.0000	0.0000	50.4901	101		70-125
4-Isopropyltoluene	50.0000	0.0000	50.7428	101		75-130
1,3-Dichlorobenzene	50.0000	0.0000	47.9891	96		75-125
1,4-Dichlorobenzene	50.0000	0.0000	48.3936	97		75-125
n-Butylbenzene	50.0000	0.0000	51.0830	102		70-135
1,2-Dichlorobenzene	50.0000	0.0000	48.9297	98		70-120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	56.0243	112		50-130
1,2,4-Trichlorobenzene	50.0000	0.0000	50.9450	102		65-135
Hexachlorobutadiene	50.0000	0.0000	53.4587	107		50-140
1,2,3-Trichlorobenzene	50.0000	0.0000	50.4755	101		55-140
Naphthalene	50.0000	0.0000	49.1259	98		55-140

COMPOUND	SPIKE ADDED (µg/L)	MSD CONCENTRATION (µg/L)	MSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	54.1106	108		11		0-40	30-155
Chloromethane	50.0000	49.8152	100		2		0-40	40-125
Vinyl chloride	50.0000	51.1015	102		8		0-40	50-145
Bromomethane	50.0000	50.2203	100		3		0-40	30-145
Chloroethane	50.0000	49.7295	99		4		0-40	60-135
Trichlorofluoromethane	50.0000	53.4002	107		6		0-40	60-145
1,1-Dichloroethene	50.0000	48.0109	96		4		0-40	70-130
Acetone	50.0000	40.4022	81		15		0-40	40-140
Iodomethane	50.0000	47.7673	96		1		0-40	72-121
Carbon disulfide	50.0000	43.8800	88		8		0-40	35-160
Methylene chloride	50.0000	46.5644	93		4		0-40	55-140
trans-1,2-Dichloroethene	50.0000	48.2866	97		7		0-40	60-140
Methyl tert-butyl ether	50.0000	54.4897	109		1		0-40	65-125
1,1-Dichloroethane	50.0000	50.9501	102		1		0-40	70-135
Vinyl acetate	50.0000	50.2554	101		0		0-40	38-163
2-Butanone	50.0000	48.0991	96		3		0-40	30-150
cis-1,2-Dichloroethene	50.0000	51.3772	97		6		0-40	70-125
2,2-Dichloropropane	50.0000	53.4458	107		11		0-40	70-135
Bromochloromethane	50.0000	47.8390	96		1		0-40	65-130

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix Spike - EPA Sample No.: MW-210D

Instrument ID: V2 GC Column : DB-624 ID: 0.25 (mm)

Chloroform	50.0000	52.2432	104	5	0-40	65-135
1,1,1-Trichloroethane	50.0000	55.1089	110	12	0-40	65-130
1,1-Dichloropropene	50.0000	50.3410	101	5	0-40	75-130
Carbon tetrachloride	50.0000	54.9232	110	14	0-40	65-140
1,2-Dichloroethane	50.0000	54.5239	109	12	0-40	70-130
Benzene	50.0000	47.1274	94	3	0-40	80-120
Trichloroethene	50.0000	50.8519	102	1	0-40	70-125
1,2-Dichloropropane	50.0000	49.7312	99	3	0-40	75-125
Dibromomethane	50.0000	51.5600	103	7	0-40	75-125
Bromodichloromethane	50.0000	54.6686	109	9	0-40	75-120
cis-1,3-Dichloropropene	50.0000	50.3974	101	1	0-40	70-130
4-Methyl-2-pentanone	50.0000	52.0782	104	6	0-40	60-135
Toluene	50.0000	49.5671	99	1	0-40	75-120
trans-1,3-Dichloropropene	50.0000	52.7813	106	5	0-40	55-140
1,1,2-Trichloroethane	50.0000	50.9621	102	2	0-40	75-125
1,3-Dichloropropane	50.0000	50.1658	100	0	0-40	75-125
Tetrachloroethene	50.0000	59.1166	103	5	0-40	45-150
2-Hexanone	50.0000	48.5237	97	6	0-40	55-130
Dibromochloromethane	50.0000	52.1429	104	2	0-40	60-135
1,2-Dibromoethane	50.0000	51.6348	103	4	0-40	80-120
Chlorobenzene	50.0000	49.2503	99	1	0-40	80-120
1,1,1,2-Tetrachloroethane	50.0000	51.4649	103	6	0-40	80-130
Ethylbenzene	50.0000	48.4555	97	1	0-40	75-125
m,p-Xylene	100.0000	97.0237	97	1	0-40	75-130
o-Xylene	50.0000	49.1674	98	2	0-40	80-120
Xylene (Total)	150.0000	146.1911	97	0	0-40	81-121
Styrene	50.0000	48.2109	96	1	0-40	65-135
Bromoform	50.0000	49.6498	99	4	0-40	70-130
Isopropylbenzene	50.0000	51.1702	102	6	0-40	75-125
1,1,2,2-Tetrachloroethane	50.0000	47.8306	96	10	0-40	65-130
Bromobenzene	50.0000	47.9198	96	6	0-40	75-125
1,2,3-Trichloropropane	50.0000	46.5454	93	3	0-40	75-125
n-Propylbenzene	50.0000	47.8837	96	6	0-40	70-130
2-Chlorotoluene	50.0000	48.0835	96	4	0-40	75-125
1,3,5-Trimethylbenzene	50.0000	50.3358	101	2	0-40	75-130
4-Chlorotoluene	50.0000	48.0161	96	4	0-40	75-130
tert-Butylbenzene	50.0000	49.8698	100	2	0-40	70-130
1,2,4-Trimethylbenzene	50.0000	48.7450	97	0	0-40	75-130
sec-Butylbenzene	50.0000	51.5278	103	2	0-40	70-125
4-Isopropyltoluene	50.0000	51.5115	103	2	0-40	75-130
1,3-Dichlorobenzene	50.0000	48.8916	98	2	0-40	75-125
1,4-Dichlorobenzene	50.0000	48.8603	98	1	0-40	75-125
n-Butylbenzene	50.0000	52.4251	105	3	0-40	70-135
1,2-Dichlorobenzene	50.0000	49.2251	98	1	0-40	70-120
1,2-Dibromo-3-chloropropan	50.0000	58.6988	117	5	0-40	50-130
1,2,4-Trichlorobenzene	50.0000	51.2064	102	1	0-40	65-135
Hexachlorobutadiene	50.0000	53.9111	108	1	0-40	50-140

3A - FORM III VOA-1

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix Spike - EPA Sample No.: MW-210D

Instrument ID: V2 GC Column : DB-624 ID: 0.25 (mm)

1,2,3-Trichlorobenzene	50.0000	51.6408	103		2		0-40	55-140
Naphthalene	50.0000	51.7691	104		5		0-40	55-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 68 outside limits

Spike Recovery: 0 out of 136 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

V2OLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCS-46556 LCS Lot No.:

Date Extracted: 10/05/2009 Date Analyzed (1): 10/05/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	27.5326	55		30 - 155
Chloromethane	50.0000	0.0000	43.5001	87		40 - 125
Vinyl chloride	50.0000	0.0000	43.7983	88		50 - 145
Bromomethane	50.0000	0.0000	48.9385	98		30 - 145
Chloroethane	50.0000	0.0000	47.9019	96		60 - 135
Trichlorofluoromethane	50.0000	0.0000	54.1484	108		60 - 145
1,1-Dichloroethene	50.0000	0.0000	50.5287	101		70 - 130
Acetone	50.0000	0.0000	51.9109	104		40 - 140
Iodomethane	50.0000	0.0000	50.8093	102		72 - 121
Carbon disulfide	50.0000	0.0000	46.9148	94		35 - 160
Methylene chloride	50.0000	0.0000	49.1405	98		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	51.5848	103		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	52.1042	104		65 - 125
1,1-Dichloroethane	50.0000	0.0000	52.7874	106		70 - 135
Vinyl acetate	50.0000	0.0000	50.5224	101		38 - 163
2-Butanone	50.0000	0.0000	49.3881	99		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	50.8106	102		70 - 125
2,2-Dichloropropane	50.0000	0.0000	55.8809	112		70 - 135
Bromochloromethane	50.0000	0.0000	51.5215	103		65 - 130
Chloroform	50.0000	0.0000	57.7426	115		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	58.1568	116		65 - 130
1,1-Dichloropropene	50.0000	0.0000	50.1778	100		75 - 130
Carbon tetrachloride	50.0000	0.0000	58.2846	117		65 - 140
1,2-Dichloroethane	50.0000	0.0000	59.4298	119		70 - 130
Benzene	50.0000	0.0000	50.4796	101		80 - 120
Trichloroethene	50.0000	0.0000	53.4205	107		70 - 125
1,2-Dichloropropane	50.0000	0.0000	51.0365	102		75 - 125
Dibromomethane	50.0000	0.0000	54.8310	110		75 - 125
Bromodichloromethane	50.0000	0.0000	56.4985	113		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	53.7306	107		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	51.3676	103		60 - 135
Toluene	50.0000	0.0000	52.3734	105		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	56.5401	113		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	51.0692	102		75 - 125
1,3-Dichloropropane	50.0000	0.0000	50.7386	101		75 - 125
Tetrachloroethene	50.0000	0.0000	52.3429	105		45 - 150
2-Hexanone	50.0000	0.0000	48.1692	96		55 - 130
Dibromochloromethane	50.0000	0.0000	53.5607	107		60 - 135
1,2-Dibromoethane	50.0000	0.0000	50.7443	101		80 - 120
Chlorobenzene	50.0000	0.0000	50.9053	102		80 - 120
1,1,1,2-Tetrachloroethane	50.0000	0.0000	53.7864	108		80 - 130
Ethylbenzene	50.0000	0.0000	51.3767	103		75 - 125
m,p-Xylene	100.0000	0.0000	103.8319	104		75 - 130
o-Xylene	50.0000	0.0000	50.9043	102		80 - 120

3 - FORM III

WATER LABORATORY CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

V2OLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCS-46556 LCS Lot No.:

Date Extracted: 10/05/2009 Date Analyzed (1): 10/05/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Xylene (Total)	150.0000	0.0000	154.7362	103		81 - 121
Styrene	50.0000	0.0000	51.5941	103		65 - 135
Bromoform	50.0000	0.0000	53.1420	106		70 - 130
Isopropylbenzene	50.0000	0.0000	52.8238	106		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	49.7877	100		65 - 130
Bromobenzene	50.0000	0.0000	51.6216	103		75 - 125
1,2,3-Trichloropropane	50.0000	0.0000	48.1390	96		75 - 125
n-Propylbenzene	50.0000	0.0000	52.6672	105		70 - 130
2-Chlorotoluene	50.0000	0.0000	51.8578	104		75 - 125
1,3,5-Trimethylbenzene	50.0000	0.0000	55.3965	111		75 - 130
4-Chlorotoluene	50.0000	0.0000	51.5425	103		75 - 130
tert-Butylbenzene	50.0000	0.0000	54.1150	108		70 - 130
1,2,4-Trimethylbenzene	50.0000	0.0000	54.4263	109		75 - 130
sec-Butylbenzene	50.0000	0.0000	54.1658	108		70 - 125
4-Isopropyltoluene	50.0000	0.0000	54.6932	109		75 - 130
1,3-Dichlorobenzene	50.0000	0.0000	52.1094	104		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	52.1445	104		75 - 125
n-Butylbenzene	50.0000	0.0000	53.9832	108		70 - 135
1,2-Dichlorobenzene	50.0000	0.0000	53.3047	107		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	56.1476	112		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	58.1403	116		65 - 135
Hexachlorobutadiene	50.0000	0.0000	58.1407	116		50 - 140
1,2,3-Trichlorobenzene	50.0000	0.0000	56.3422	113		55 - 140
Naphthalene	50.0000	0.0000	53.7587	108		55 - 140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 68 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

V2SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCS-46616 LCS Lot No.:

Date Extracted: 10/07/2009 Date Analyzed (1): 10/08/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	42.4019	85		30 - 155
Chloromethane	50.0000	0.0000	43.6245	87		40 - 125
Vinyl chloride	50.0000	0.0000	44.8292	90		50 - 145
Bromomethane	50.0000	0.0000	47.0686	94		30 - 145
Chloroethane	50.0000	0.0000	44.5360	89		60 - 135
Trichlorofluoromethane	50.0000	0.0000	47.2030	94		60 - 145
1,1-Dichloroethene	50.0000	0.0000	43.8729	88		70 - 130
Acetone	50.0000	0.0000	36.2933	73		40 - 140
Iodomethane	50.0000	0.0000	43.8083	88		72 - 121
Carbon disulfide	50.0000	0.0000	40.7653	82		35 - 160
Methylene chloride	50.0000	0.0000	42.1418	84		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	43.4939	87		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	48.9223	98		65 - 125
1,1-Dichloroethane	50.0000	0.0000	46.7214	93		70 - 135
Vinyl acetate	50.0000	0.0000	46.1187	92		38 - 163
2-Butanone	50.0000	0.0000	39.2730	79		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	42.3228	85		70 - 125
2,2-Dichloropropane	50.0000	0.0000	35.0573	70		70 - 135
Bromochloromethane	50.0000	0.0000	44.9536	90		65 - 130
Chloroform	50.0000	0.0000	50.6498	101		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	55.2081	110		65 - 130
1,1-Dichloropropene	50.0000	0.0000	43.5236	87		75 - 130
Carbon tetrachloride	50.0000	0.0000	55.2075	110		65 - 140
1,2-Dichloroethane	50.0000	0.0000	54.4776	109		70 - 130
Benzene	50.0000	0.0000	42.3510	85		80 - 120
Trichloroethene	50.0000	0.0000	46.6700	93		70 - 125
1,2-Dichloropropane	50.0000	0.0000	44.7152	89		75 - 125
Dibromomethane	50.0000	0.0000	48.1743	96		75 - 125
Bromodichloromethane	50.0000	0.0000	52.4265	105		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	44.4755	89		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	46.0385	92		60 - 135
Toluene	50.0000	0.0000	45.5428	91		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	47.5905	95		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	46.3014	93		75 - 125
1,3-Dichloropropane	50.0000	0.0000	44.0576	88		75 - 125
Tetrachloroethene	50.0000	0.0000	44.5674	89		45 - 150
2-Hexanone	50.0000	0.0000	45.7370	91		55 - 130
Dibromochloromethane	50.0000	0.0000	48.0476	96		60 - 135
1,2-Dibromoethane	50.0000	0.0000	45.6056	91		80 - 120
Chlorobenzene	50.0000	0.0000	44.8672	90		80 - 120
1,1,1,2-Tetrachloroethane	50.0000	0.0000	48.7129	97		80 - 130
Ethylbenzene	50.0000	0.0000	44.0545	88		75 - 125
m,p-Xylene	100.0000	0.0000	89.9036	90		75 - 130
o-Xylene	50.0000	0.0000	44.7319	89		80 - 120

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

EPA SAMPLE NO.

V2SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCS-46616 LCS Lot No.:

Date Extracted: 10/07/2009 Date Analyzed (1): 10/08/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Xylene (Total)	150.0000	0.0000	134.6354	90		81 - 121
Styrene	50.0000	0.0000	44.9974	90		65 - 135
Bromoform	50.0000	0.0000	47.2159	94		70 - 130
Isopropylbenzene	50.0000	0.0000	47.6236	95		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	42.2978	85		65 - 130
Bromobenzene	50.0000	0.0000	43.5264	87		75 - 125
1,2,3-Trichloropropane	50.0000	0.0000	41.1760	82		75 - 125
n-Propylbenzene	50.0000	0.0000	43.0972	86		70 - 130
2-Chlorotoluene	50.0000	0.0000	43.9655	88		75 - 125
1,3,5-Trimethylbenzene	50.0000	0.0000	47.2305	94		75 - 130
4-Chlorotoluene	50.0000	0.0000	44.9797	90		75 - 130
tert-Butylbenzene	50.0000	0.0000	46.4281	93		70 - 130
1,2,4-Trimethylbenzene	50.0000	0.0000	46.2507	93		75 - 130
sec-Butylbenzene	50.0000	0.0000	47.0541	94		70 - 125
4-Isopropyltoluene	50.0000	0.0000	47.5097	95		75 - 130
1,3-Dichlorobenzene	50.0000	0.0000	45.0704	90		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	45.4541	91		75 - 125
n-Butylbenzene	50.0000	0.0000	47.7021	95		70 - 135
1,2-Dichlorobenzene	50.0000	0.0000	45.6716	91		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	50.2108	100		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	47.4506	95		65 - 135
Hexachlorobutadiene	50.0000	0.0000	50.3297	101		50 - 140
1,2,3-Trichlorobenzene	50.0000	0.0000	46.5128	93		55 - 140
Naphthalene	50.0000	0.0000	44.6562	89		55 - 140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 68 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

V2SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCSD-46616 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50.0000	41.8357	84		1		40	30 - 155
Chloromethane	50.0000	43.7774	88		1		40	40 - 125
Vinyl chloride	50.0000	45.0229	90		0		40	50 - 145
Bromomethane	50.0000	43.9361	88		7		40	30 - 145
Chloroethane	50.0000	43.9977	88		1		40	60 - 135
Trichlorofluoromethane	50.0000	45.2026	90		4		40	60 - 145
1,1-Dichloroethene	50.0000	41.7430	83		6		40	70 - 130
Acetone	50.0000	33.1034	66		10		40	40 - 140
Iodomethane	50.0000	41.8495	84		5		40	72 - 121
Carbon disulfide	50.0000	40.0465	80		2		40	35 - 160
Methylene chloride	50.0000	40.8780	82		2		40	55 - 140
trans-1,2-Dichloroethene	50.0000	41.9505	84		4		40	60 - 140
Methyl tert-butyl ether	50.0000	45.0021	90		9		40	65 - 125
1,1-Dichloroethane	50.0000	44.4531	89		4		40	70 - 135
Vinyl acetate	50.0000	41.9439	84		9		40	38 - 163
2-Butanone	50.0000	38.2297	76		4		40	30 - 150
cis-1,2-Dichloroethene	50.0000	41.0760	82		4		40	70 - 125
2,2-Dichloropropane	50.0000	29.7696	60	*	15		40	70 - 135
Bromochloromethane	50.0000	42.5468	85		6		40	65 - 130
Chloroform	50.0000	45.4839	91		10		40	65 - 135
1,1,1-Trichloroethane	50.0000	48.5669	97		13		40	65 - 130
1,1-Dichloropropene	50.0000	43.3385	87		0		40	75 - 130
Carbon tetrachloride	50.0000	48.3855	97		13		40	65 - 140
1,2-Dichloroethane	50.0000	46.1193	92		17		40	70 - 130
Benzene	50.0000	39.7676	80	*	6		40	80 - 120
Trichloroethene	50.0000	42.4925	85		9		40	70 - 125
1,2-Dichloropropane	50.0000	43.1944	86		3		40	75 - 125
Dibromomethane	50.0000	42.9980	86		11		40	75 - 125
Bromodichloromethane	50.0000	46.7715	94		11		40	75 - 120
cis-1,3-Dichloropropene	50.0000	41.1053	82		8		40	70 - 130
4-Methyl-2-pentanone	50.0000	42.7107	85		8		40	60 - 135
Toluene	50.0000	42.9044	86		6		40	75 - 120
trans-1,3-Dichloropropene	50.0000	41.8453	84		12		40	55 - 140
1,1,2-Trichloroethane	50.0000	42.2850	85		9		40	75 - 125
1,3-Dichloropropane	50.0000	43.4510	87		1		40	75 - 125
Tetrachloroethene	50.0000	43.3960	87		2		40	45 - 150
2-Hexanone	50.0000	38.8872	78		15		40	55 - 130
Dibromochloromethane	50.0000	44.8974	90		6		40	60 - 135
1,2-Dibromoethane	50.0000	45.4968	91		0		40	80 - 120
Chlorobenzene	50.0000	43.4330	87		3		40	80 - 120
1,1,1,2-Tetrachloroethane	50.0000	45.7071	91		6		40	80 - 130
Ethylbenzene	50.0000	43.6587	87		1		40	75 - 125
m,p-Xylene	100.0000	86.6122	87		3		40	75 - 130
o-Xylene	50.0000	43.6644	87		2		40	80 - 120
Xylene (Total)	150.0000	130.2765	87		3		40	81 - 121
Styrene	50.0000	43.5651	87		3		40	65 - 135

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

V2SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCSD-46616 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Bromoform	50.0000	44.1466	88		7		40	70 - 130
Isopropylbenzene	50.0000	45.1969	90		5		40	75 - 125
1,1,2,2-Tetrachloroethane	50.0000	40.9299	82		4		40	65 - 130
Bromobenzene	50.0000	42.4286	85		2		40	75 - 125
1,2,3-Trichloropropane	50.0000	38.8998	78		5		40	75 - 125
n-Propylbenzene	50.0000	42.5317	85		1		40	70 - 130
2-Chlorotoluene	50.0000	42.1527	84		5		40	75 - 125
1,3,5-Trimethylbenzene	50.0000	45.1315	90		4		40	75 - 130
4-Chlorotoluene	50.0000	44.0983	88		2		40	75 - 130
tert-Butylbenzene	50.0000	44.6709	89		4		40	70 - 130
1,2,4-Trimethylbenzene	50.0000	45.1609	90		3		40	75 - 130
sec-Butylbenzene	50.0000	45.4293	91		3		40	70 - 125
4-Isopropyltoluene	50.0000	45.7082	91		4		40	75 - 130
1,3-Dichlorobenzene	50.0000	43.4503	87		3		40	75 - 125
1,4-Dichlorobenzene	50.0000	44.1303	88		3		40	75 - 125
n-Butylbenzene	50.0000	44.7228	89		7		40	70 - 135
1,2-Dichlorobenzene	50.0000	44.1915	88		3		40	70 - 120
1,2-Dibromo-3-chloropropan	50.0000	47.8766	96		4		40	50 - 130
1,2,4-Trichlorobenzene	50.0000	44.6080	89		7		40	65 - 135
Hexachlorobutadiene	50.0000	47.2378	94		7		40	50 - 140
1,2,3-Trichlorobenzene	50.0000	45.6240	91		2		40	55 - 140
Naphthalene	50.0000	43.7069	87		2		40	55 - 140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 68 outside limits

Spike Recovery: 2 out of 68 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

CLIENT SAMPLE NO.

S1SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCS-46609 LCS Lot No.:

Date Extracted: 10/07/2009 Date Analyzed (1): 10/09/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Phenol	50.0000	0.0000	35.1829	70		0 - 125
Bis(2-chloroethyl)ether	50.0000	0.0000	35.3995	71		35 - 110
2-Chlorophenol	50.0000	0.0000	41.5980	83		35 - 105
1,3-Dichlorobenzene	50.0000	0.0000	37.9566	76		30 - 100
1,4-Dichlorobenzene	50.0000	0.0000	39.4603	79		30 - 100
1,2-Dichlorobenzene	50.0000	0.0000	42.0070	84		35 - 100
2-Methylphenol	50.0000	0.0000	40.1081	80		40 - 110
2,2´-oxybis(1-Chloropropan	50.0000	0.0000	36.3372	73		30 - 123
4-Methylphenol	50.0000	0.0000	37.3210	75		30 - 110
N-Nitroso-di-n-propylamine	50.0000	0.0000	35.0478	70		35 - 130
Hexachloroethane	50.0000	0.0000	36.6065	73		30 - 95
Nitrobenzene	50.0000	0.0000	41.8623	84		45 - 110
Isophorone	50.0000	0.0000	39.3328	79		50 - 110
2-Nitrophenol	50.0000	0.0000	47.6920	95		40 - 115
2,4-Dimethylphenol	50.0000	0.0000	43.8203	88		30 - 110
2,4-Dichlorophenol	50.0000	0.0000	46.1541	92		50 - 105
1,2,4-Trichlorobenzene	50.0000	0.0000	45.8123	92		35 - 105
Naphthalene	50.0000	0.0000	43.5162	87		40 - 100
4-Chloroaniline	50.0000	0.0000	35.6059	71		15 - 110
Bis(2-chloroethoxy)methane	50.0000	0.0000	40.1394	80		45 - 105
Hexachlorobutadiene	50.0000	0.0000	48.5283	97		25 - 105
4-Chloro-3-methylphenol	50.0000	0.0000	46.9840	94		45 - 110
2-Methylnaphthalene	50.0000	0.0000	48.8557	98		45 - 105
Hexachlorocyclopentadiene	50.0000	0.0000	7.5273	15	*	27 - 147
2,4,6-Trichlorophenol	50.0000	0.0000	47.3334	95		50 - 115
2,4,5-Trichlorophenol	50.0000	0.0000	46.9042	94		50 - 110
2-Chloronaphthalene	50.0000	0.0000	45.2531	91		50 - 105
2-Nitroaniline	50.0000	0.0000	40.9650	82		50 - 115
Dimethylphthalate	50.0000	0.0000	49.2430	98		25 - 125
Acenaphthylene	50.0000	0.0000	42.6230	85		50 - 105
2,6-Dinitrotoluene	50.0000	0.0000	47.7322	95		50 - 115
3-Nitroaniline	50.0000	0.0000	45.2750	91		20 - 125
Acenaphthene	50.0000	0.0000	47.0207	94		45 - 110
2,4-Dinitrophenol	50.0000	0.0000	46.3961	93		15 - 140
4-Nitrophenol	50.0000	0.0000	46.5021	93		0 - 125
Dibenzofuran	50.0000	0.0000	48.5835	97		55 - 105
2,4-Dinitrotoluene	50.0000	0.0000	48.5572	97		50 - 120
Diethylphthalate	50.0000	0.0000	52.4175	105		40 - 120
4-Chlorophenyl-phenylether	50.0000	0.0000	46.2479	92		50 - 110
Fluorene	50.0000	0.0000	48.7586	98		50 - 110
4-Nitroaniline	50.0000	0.0000	37.2316	74		35 - 120
4,6-Dinitro-2-methylphenol	50.0000	0.0000	47.2633	95		40 - 130
N-Nitrosodiphenylamine	50.0000	0.0000	38.0354	76		50 - 110
4-Bromophenyl-phenylether	50.0000	0.0000	45.9811	92		50 - 115

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

CLIENT SAMPLE NO.

S1SLCS

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCS-46609 LCS Lot No.:

Date Extracted: 10/07/2009 Date Analyzed (1): 10/09/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Hexachlorobenzene	50.0000	0.0000	46.5136	93		50 - 110
Pentachlorophenol	50.0000	0.0000	41.1836	82		40 - 115
Phenanthrene	50.0000	0.0000	49.2498	98		50 - 115
Anthracene	50.0000	0.0000	45.4686	91		55 - 110
Carbazole	50.0000	0.0000	45.7148	91		50 - 115
Di-n-butylphthalate	50.0000	0.0000	44.9365	90		55 - 115
Fluoranthene	50.0000	0.0000	43.5602	87		55 - 115
Pyrene	50.0000	0.0000	49.4105	99		50 - 130
Butylbenzylphthalate	50.0000	0.0000	51.7850	104		45 - 115
3,3´-Dichlorobenzidine	50.0000	0.0000	5.5052	11	*	20 - 110
Benzo(a)anthracene	50.0000	0.0000	48.8316	98		55 - 110
Chrysene	50.0000	0.0000	60.6698	121	*	55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	0.0000	55.2929	111		40 - 125
Di-n-octylphthalate	50.0000	0.0000	50.0054	100		35 - 135
Benzo(b)fluoranthene	50.0000	0.0000	49.5141	99		45 - 120
Benzo(k)fluoranthene	50.0000	0.0000	40.8935	82		45 - 125
Benzo(a)pyrene	50.0000	0.0000	42.0369	84		55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	0.0000	43.3533	87		45 - 125
Dibenzo(a,h)anthracene	50.0000	0.0000	44.5858	89		40 - 125
Benzo(g,h,i)perylene	50.0000	0.0000	43.9555	88		40 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 3 out of 64 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

S1SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCSD-46609 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	50.0000	34.9764	70		0		40	0 - 125
Bis(2-chloroethyl)ether	50.0000	35.6841	71		0		40	35 - 110
2-Chlorophenol	50.0000	41.2281	82		1		40	35 - 105
1,3-Dichlorobenzene	50.0000	38.1982	76		0		40	30 - 100
1,4-Dichlorobenzene	50.0000	38.1158	76		4		40	30 - 100
1,2-Dichlorobenzene	50.0000	41.3695	83		1		40	35 - 100
2-Methylphenol	50.0000	40.2697	81		1		40	40 - 110
2,2´-oxybis(1-Chloropropan	50.0000	36.8099	74		1		40	30 - 123
4-Methylphenol	50.0000	38.5321	77		3		40	30 - 110
N-Nitroso-di-n-propylamine	50.0000	36.5786	73		4		40	35 - 130
Hexachloroethane	50.0000	36.0305	72		1		40	30 - 95
Nitrobenzene	50.0000	40.5760	81		4		40	45 - 110
Isophorone	50.0000	39.9838	80		1		40	50 - 110
2-Nitrophenol	50.0000	47.8999	96		1		40	40 - 115
2,4-Dimethylphenol	50.0000	45.6354	91		3		40	30 - 110
2,4-Dichlorophenol	50.0000	48.0823	96		4		40	50 - 105
1,2,4-Trichlorobenzene	50.0000	44.3413	89		3		40	35 - 105
Naphthalene	50.0000	41.4359	83		5		40	40 - 100
4-Chloroaniline	50.0000	19.8683	40		56	*	40	15 - 110
Bis(2-chloroethoxy)methane	50.0000	37.5226	75		6		40	45 - 105
Hexachlorobutadiene	50.0000	45.4777	91		6		40	25 - 105
4-Chloro-3-methylphenol	50.0000	43.0139	86		9		40	45 - 110
2-Methylnaphthalene	50.0000	44.6258	89		10		40	45 - 105
Hexachlorocyclopentadiene	50.0000	7.9099	16	*	6		40	27 - 147
2,4,6-Trichlorophenol	50.0000	44.0644	88		8		40	50 - 115
2,4,5-Trichlorophenol	50.0000	40.2850	81		15		40	50 - 110
2-Chloronaphthalene	50.0000	43.4459	87		4		40	50 - 105
2-Nitroaniline	50.0000	40.1796	80		2		40	50 - 115
Dimethylphthalate	50.0000	46.6430	93		5		40	25 - 125
Acenaphthylene	50.0000	40.1749	80		6		40	50 - 105
2,6-Dinitrotoluene	50.0000	46.2208	92		3		40	50 - 115
3-Nitroaniline	50.0000	36.3295	73		22		40	20 - 125
Acenaphthene	50.0000	44.0309	88		7		40	45 - 110
2,4-Dinitrophenol	50.0000	48.8894	98		5		40	15 - 140
4-Nitrophenol	50.0000	42.5497	85		9		40	0 - 125
Dibenzofuran	50.0000	44.5343	89		9		40	55 - 105
2,4-Dinitrotoluene	50.0000	45.3975	91		6		40	50 - 120
Diethylphthalate	50.0000	48.8485	98		7		40	40 - 120
4-Chlorophenyl-phenylether	50.0000	44.0648	88		4		40	50 - 110
Fluorene	50.0000	45.9587	92		6		40	50 - 110
4-Nitroaniline	50.0000	37.6547	75		1		40	35 - 120
4,6-Dinitro-2-methylphenol	50.0000	51.1445	102		7		40	40 - 130
N-Nitrosodiphenylamine	50.0000	34.7348	69		10		40	50 - 110
4-Bromophenyl-phenylether	50.0000	49.3178	99		7		40	50 - 115
Hexachlorobenzene	50.0000	47.1418	94		1		40	50 - 110
Pentachlorophenol	50.0000	44.3419	89		8		40	40 - 115

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE DUPLICATE RECOVERY

EPA SAMPLE NO.

S1SLCSD

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab Sample ID: LCSD-46609 LCS Lot No.:

COMPOUND	SPIKE ADDED	LCSD CONCENTRATION	LCSD %REC	#	%RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenanthrene	50.0000	46.6895	93		5		40	50 - 115
Anthracene	50.0000	44.2205	88		3		40	55 - 110
Carbazole	50.0000	48.6305	97		6		40	50 - 115
Di-n-butylphthalate	50.0000	47.0900	94		4		40	55 - 115
Fluoranthene	50.0000	43.3079	87		0		40	55 - 115
Pyrene	50.0000	44.4497	89		11		40	50 - 130
Butylbenzylphthalate	50.0000	47.9728	96		8		40	45 - 115
3,3´-Dichlorobenzidine	50.0000	3.9346	8	*	32		40	20 - 110
Benzo(a)anthracene	50.0000	43.2864	87		12		40	55 - 110
Chrysene	50.0000	59.5376	119	*	2		40	55 - 110
Bis(2-ethylhexyl)phthalate	50.0000	54.0682	108		3		40	40 - 125
Di-n-octylphthalate	50.0000	52.9274	106		6		40	35 - 135
Benzo(b)fluoranthene	50.0000	48.7224	97		2		40	45 - 120
Benzo(k)fluoranthene	50.0000	45.6317	91		10		40	45 - 125
Benzo(a)pyrene	50.0000	42.8642	86		2		40	55 - 110
Indeno(1,2,3-cd)pyrene	50.0000	44.9696	90		3		40	45 - 125
Dibenzo(a,h)anthracene	50.0000	46.0759	92		3		40	40 - 125
Benzo(g,h,i)perylene	50.0000	44.9510	90		2		40	40 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 64 outside limits

Spike Recovery: 3 out of 64 outside limits

COMMENTS:

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2O

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab File ID: V2L2837.D Lab Sample ID: MB-46556

Instrument ID: V2

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/05/2009

Level: (TRACE or LOW/MED) LOW Time Analyzed: 10:56

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V2OLCS	LCS-46556	V2L2838.D	11:21
02	TRIP BLANK	H1928-01A	V2L2847.D	15:25
03	MW-211D	H1928-02A	V2L2849.D	16:16
04	MW-X	H1928-04A	V2L2851.D	17:06
05	MW-212D	H1928-05A	V2L2852.D	17:31
06	MW-211S	H1928-06A	V2L2853.D	17:56
07	MW-8BA	H1928-08A	V2L2855.D	18:46
08	MW-1BA	H1928-09A	V2L2856.D	19:11
09	MW-2BA	H1928-10A	V2L2857.D	19:36
10	DRUM SAMPLE	H1928-11A	V2L2858.D	20:02

COMMENTS:

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK20

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46556

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2837.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK20

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46556

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2837.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK20

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46556

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2837.D

Level: (TRACE or LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/05/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab File ID: V2L2942.D Lab Sample ID: MB-46616

Instrument ID: V2

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/08/2009

Level: (TRACE or LOW/MED) LOW Time Analyzed: 3:14

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V2SLCS	LCS-46616	V2L2943.D	3:39
02	V2SLCSD	LCSD-46616	V2L2944.D	4:04
03	MW-217	H1928-03A	V2L2950.D	9:02
04	MW-210D	H1928-07A	V2L2951.D	9:27
05	MW-211DDL	H1928-02ADL	V2L2952.D	9:53
06	DRUM SAMPLEDL	H1928-11ADL	V2L2953.D	10:18
07	MW-1BADL	H1928-09ADL	V2L2954.D	10:43
08	MW-211SDL	H1928-06ADL	V2L2955.D	11:08
09	MW-8BADL	H1928-08ADL	V2L2956.D	11:34
10	MW-210DMS	H1928-07AMS	V2L2959.D	12:49
11	MW-210DMSD	H1928-07AMSD	V2L2960.D	13:15

COMMENTS:

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2942.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2942.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46616

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2942.D

Level: (TRACE or LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 10/08/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E9667961	Total Alkanes	N/A		

[1]EPA-designated Registry Number.

4C - FORM IV SV

SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

SBLK1S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Lab File ID: S1G0105.D Lab Sample ID: MB-46609

Instrument ID: S1 Date Extracted: 10/07/2009

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 10/09/2009

Level: (LOW/MED) LOW Time Analyzed: 17:20

Extraction: (Type) CONT GPC Cleanup: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	S1SLCS	LCS-46609	S1G0106.D	10/09/2009
02	S1SLCSD	LCSD-46609	S1G0107.D	10/09/2009
03	MW-211D	H1928-02C	S1G0111.D	10/09/2009

COMMENTS:

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0105.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	Bis(2-chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2´-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	Bis(2-chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0105.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1K - FORM I SV-TIC

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLK1S

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-46609

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1G0105.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received:

Concentrated Extract Volume: 1000 (uL) Date Extracted: 10/07/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 10/09/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679[2]	Total Alkanes	N/A		

[2] EPA-designated Registry Number.

U.S. EPA - CLP

3

BLANKS

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: MB-46589

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

FIMS1_091007A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury	0.056	U	0.056	U	0.056	U	0.056	U	0.056	U	CV

U.S. EPA - CLP

3

BLANKS

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

FIMS1_091007A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			0.056	U	0.056	U	0.056	U			CV

U.S. EPA - CLP

3

BLANKS

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

FIMS1_091007A

	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		
Analyte		C	1	C	2	C	3	C		C	M
Mercury			0.056	U							CV

U.S. EPA - CLP

3

BLANKS

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Preparation Blank Matrix (soil/water): WATER Method Blank ID: MB-46592

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

OPTIMA2_091007A

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	12.0	U	12.0	U	41.9	B	35.7	B	12.000	U	P
Antimony	4.2	U	4.2	U	4.2	U	4.2	U	4.200	U	P
Arsenic	3.1	U	3.1	U	3.3	B	3.1	U	3.100	U	P
Barium	4.1	B	4.0	B	3.9	B	2.9	U	2.900	U	P
Beryllium	0.1	B	0.1	B	0.1	B	0.1	B	0.037	U	P
Cadmium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Calcium	87.0	U	87.0	U	87.0	U	87.0	U	87.000	U	P
Chromium	0.5	U	0.5	U	0.5	U	0.5	U	-0.622	B	P
Cobalt	1.5	B	1.5	B	1.8	B	1.3	B	0.670	U	P
Copper	4.7	U	4.7	U	4.7	U	4.7	U	4.700	U	P
Iron	47.0	U	47.0	U	47.0	U	47.0	U	47.000	U	P
Lead	2.1	U	2.1	U	2.1	U	2.1	U	2.100	U	P
Magnesium	62.0	U	62.0	U	62.0	U	62.0	U	62.000	U	P
Manganese	3.5	U	3.5	U	3.5	U	3.5	U	3.500	U	P
Nickel	1.3	B	1.4	B	1.5	B	1.1	B	0.640	U	P
Selenium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Silver	13.8	B	2.4	U	2.4	U	2.4	U	2.400	U	P
Thallium	5.7	U	5.7	U	5.7	U	5.7	U	5.700	U	P
Vanadium	1.1	B	1.2	B	1.3	B	0.9	B	0.340	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P

U.S. EPA - CLP

3

BLANKS

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Preparation Blank Matrix (soil/water): WATER

Method Blank ID: MB-46592

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

OPTIMA3_091008B

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Potassium	59.0	U	96.1	B	87.7	B	134.3	B	60.650	B	P
Sodium	41.4	B	282.2	B	320.8	B	331.9	B	123.615	B	P

U.S. EPA - CLP

3

BLANKS

Lab Name: Mitkem Laboratories Contract: 0266383

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1928

Preparation Blank Matrix (soil/water): Method Blank ID:

Preparation Blank Concentration Units (ug/L or mg/kg):

OPTIMA3_091008B

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Potassium			100.4	B	77.2	B					P
Sodium			253.9	B	215.2	B	134.4	B			P

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 09/21/2009 09/21/2009

EPA Sample No.(VSTD#####): VSTD0502O Date Analyzed: 10/05/2009

Lab File ID (Standard): V2L2835.D Time Analyzed: 9:55

Instrument ID: V2 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	268018		6.847		212938		10.574		137508		13.412	
	UPPER LIMIT	536036		7.347		425876		11.074		275016		13.912	
	LOWER LIMIT	134009		6.347		106469		10.074		68754		12.912	
	EPA SAMPLE NO.												
01	VBLK2O	311248		6.846		242668		10.574		148521		13.400	
02	V2OLCS	259642		6.846		204976		10.574		127015		13.401	
03	TRIP BLANK	218271		6.857		172707		10.574		107723		13.411	
04	MW-211D	215505		6.857		167734		10.574		105722		13.411	
05	MW-X	206799		6.856		165327		10.573		105853		13.410	
06	MW-212D	207977		6.857		171399		10.574		105834		13.411	
07	MW-211S	194551		6.848		156135		10.575		95938		13.412	
08	MW-8BA	195650		6.847		159780		10.574		98052		13.411	
09	MW-1BA	197901		6.846		157172		10.573		98518		13.411	
10	MW-2BA	192652		6.846		155910		10.574		98144		13.411	
11	DRUM SAMPLE	175805		6.847		143780		10.574		91137		13.411	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 10/07/2009 10/07/2009

EPA Sample No.(VSTD#####): VSTD0502S Date Analyzed: 10/08/2009

Lab File ID (Standard): V2L2940.D Time Analyzed: 2:24

Instrument ID: V2 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	266471		6.858		209734		10.585		136225		13.422	
	UPPER LIMIT	532942		7.358		419468		11.085		272450		13.922	
	LOWER LIMIT	133236		6.358		104867		10.085		68113		12.922	
	EPA SAMPLE NO.												
01	VBLK2S	271989		6.858		208828		10.585		129140		13.422	
02	V2SLCS	244723		6.857		198819		10.585		131866		13.422	
03	V2SLCSD	292150		6.858		222981		10.585		142955		13.422	
04	MW-217	235491		6.850		181613		10.578		111365		13.415	
05	MW-210D	262876		6.847		204116		10.574		125313		13.401	
06	MW-211DDL	231546		6.846		180284		10.574		111496		13.400	
07	DRUM SAMPLEDL	268251		6.846		210229		10.574		129908		13.401	
08	MW-1BADL	224448		6.847		173461		10.564		106966		13.401	
09	MW-211SDL	264104		6.847		206548		10.564		126604		13.402	
10	MW-8BADL	246172		6.846		196305		10.563		119131		13.400	
11	MW-210DMS	202903		6.847		163883		10.564		115825		13.401	
12	MW-210DMSD	231695		6.846		181557		10.563		116173		13.400	

IS1 () = Fluorobenzene

IS2 () = Chlorobenzene-d5

IS3 () = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area

AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area

RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT

RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

8C - FORM VIII SV-1

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

GC Column: Rxi-5sil MS ID: .25 (mm) Init. Calib. Date(s): 09/19/2009 09/19/2009

EPA Sample No.(SSTD020##): SSTD0501M Date Analyzed: 10/09/2009

Lab File ID (Standard): S1G0101A.D Time Analyzed: 14:22

Instrument ID: S1

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	278953		5.319		935237		7.166		457428		9.91	
	UPPER LIMIT	557906		5.819		1870474		7.666		914856		10.41	
	LOWER LIMIT	139477		4.819		467619		6.666		228714		9.41	
	SAMPLE NO.												
01	SBLK1S	330807		5.316		1164459		7.153		557307		9.908	
02	S1SLCS	297616		5.316		977268		7.163		481464		9.918	
03	S1SLCSD	385335		5.316		1290423		7.163		665047		9.918	
04	MW-211D	302865		5.317		1074707		7.164		506465		9.908	

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

8D - FORM VIII SV-2

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1928 Mod. Ref No.: SDG No.: SH1928

EPA Sample No.(SSTD020##): SSTD0501M Date Analyzed: 10/09/2009

Lab File ID (Standard): S1G0101A.D Time Analyzed: 14:22

Instrument ID: S1 GC Column: Rxi-5sil MS ID: .25 (mm)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	680134		11.887		574238		14.685		468076		16.133	
	UPPER LIMIT	1360268		12.387		1148476		15.185		936152		16.633	
	LOWER LIMIT	340067		11.387		287119		14.185		234038		15.633	
	SAMPLE NO.												
01	SBLK1S	913135		11.885		801802		14.683		669818		16.142	
02	S1SLCS	718414		11.884		601024		14.693		494305		16.141	
03	S1SLCSD	930514		11.884		873181		14.693		634225		16.141	
04	MW-211D	814702		11.885		686112		14.683		543890		16.142	

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

MITKEM LABORATORIES

A DIVISION OF SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY

December 15, 2009

Malcolm Pirnie Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065
Attn: Mr. Stefan Bagnato

RE: Client Project: 44th Avenue
Lab Work Order #: H2421

Dear Mr. Bagnato:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

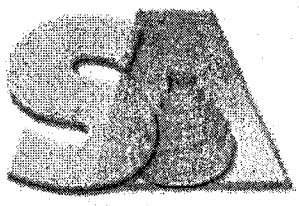
We appreciate your business.

Sincerely,

Agnes R. Huntley
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755 • 401-732-3400 • Fax 401-732-3499.
www.mitkem.com

MITKEM
LABORATORIES



* Data Summary Pack *

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Identification and Analytical Requirements Summary

Project Name : 44th Avenue **SDG :** H2421

Customer Sample ID	Laboratory Sample ID	Analytical Requirements				
		MSVOA Method #	MSSEMI Method #	GC* Method #	ME	Other
BF-SUMP	H2421-01	SW8260_W				
CESCO SUMP	H2421-02	SW8260_W				
TRIP BLANK	H2421-03	SW8260_W				

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary MSVOA

Project Name : 44th Avenue **SDG :** H2421

Laboratory Sample ID	Matrix	Date Collected	Date Received By Lab	Date Extracted	Date Analyzed
SW8260_W					
H2421-01A	AQ	11/23/2009	11/27/2009	NA	12/3/2009
H2421-02A	AQ	11/24/2009	11/27/2009	NA	11/30/2009
H2421-03A	AQ	11/24/2009	11/27/2009	NA	12/3/2009

Mitkem Laboratories

New York State Department of Environmental Conservation
Sample Preparation and Analysis Summary MSVOA

Project Name : 44th Avenue **SDG :** H2421

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Low/Medium Level	Dil/Conc Factor
SW8260_W					
H2421-01A	AQ	SW8260_W	NA	LOW	1
H2421-02A	AQ	SW8260_W	NA	LOW	1
H2421-03A	AQ	SW8260_W	NA	LOW	1

Analytical Data Package for Malcolm Pirnie Inc.

Client Project No.: 44th Avenue

Mitkem Work Order ID: H2421

December 15, 2009

Prepared For:

Malcolm Pirnie Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065
Attn: Mr. Stefan Bagnato

Prepared By:

Mitkem Laboratories
175 Metro Center Boulevard
Warwick, RI 02886
(401) 732-3400

SDG Narrative

Mitkem Laboratories submit the enclosed data package in response to Malcolm Pirnie's 44th Avenue project. Under this deliverable, analysis results are presented for three aqueous samples that were received on November 27, 2009. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed and reported per NYSDEC ASP (2000 update) requirement for Category B deliverable.

The following observation and/or deviations are observed for the following analyses:

1. Overall observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.
- M6 software did not integrate peak
- M7 partial peak integration

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: surrogate recoveries were within the QC.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: to ensure that all target analytes were determined within the instrument calibration range, the following samples were re-analyzed at dilution: MW-211D (10x), MW-211S (25x), MW-8BA (40x), MW-1BA (2.5x) and DRUM SAMPLE (5x). No other unusual observation was made for the analysis.

All pages in this report have been numbered consecutively, starting with the title page and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Huntley
CLP Project Manager
12/15/09

WorkOrder: H2421

12/02/2009 08:19

Mitkem Laboratories

Client ID: MALCOLM_LATHAM
Project: 44th Avenue
WO Name: 44th Avenue
Location: 44TH_AVE,
Comments: N/A

Case:
SDG:
PO: 0266383

HC Due: 12/18/09 **Report Level:** ASP-B
Fax Due: **EDD:** CLF
Fax Report: ☐

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
H2421-01A	BF-SUMP	11/23/2009 16:00	11/27/2009	Aqueous	SW8260_W	/					VOA
H2421-02A	CESCO SUMP	11/24/2009 11:00	11/27/2009	Aqueous	SW8260_W	/					VOA
H2421-03A	TRIP BLANK	11/24/2009 00:00	11/27/2009	Aqueous	SW8260_W	/					VOA

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

Lab Client Rep: Agnes R Ng

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF-SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9325.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	1.2	J
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	22	
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	3.4	J
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BF-SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9325.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BF-SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-01A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9325.D

Level: (TRACE or LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E966796[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

CESCO SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9208.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	6.1	
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	1.2	J
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

CESCO SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9208.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	1.2	BJ
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

CESCO SUMP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9208.D

Level: (TRACE or LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9321.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	1.1	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9321.D

Level: (TRACE/LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TRIP BLANK

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H2421-03A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9321.D

Level: (TRACE or LOW/MED) LOW Date Received: 11/27/2009

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

LCS-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-47683

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9203.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	49	
74-87-3	Chloromethane	51	
75-01-4	Vinyl chloride	51	
74-83-9	Bromomethane	51	
75-00-3	Chloroethane	52	
75-69-4	Trichlorofluoromethane	53	
75-35-4	1,1-Dichloroethene	49	
67-64-1	Acetone	45	
74-88-4	Iodomethane	50	
75-15-0	Carbon disulfide	50	
75-09-2	Methylene chloride	48	
156-60-5	trans-1,2-Dichloroethene	49	
1634-04-4	Methyl tert-butyl ether	50	
75-34-3	1,1-Dichloroethane	51	
108-05-4	Vinyl acetate	50	
78-93-3	2-Butanone	53	
156-59-2	cis-1,2-Dichloroethene	49	
594-20-7	2,2-Dichloropropane	46	
74-97-5	Bromochloromethane	49	
67-66-3	Chloroform	50	
71-55-6	1,1,1-Trichloroethane	50	
563-58-6	1,1-Dichloropropene	50	
56-23-5	Carbon tetrachloride	51	
107-06-2	1,2-Dichloroethane	50	
71-43-2	Benzene	50	
79-01-6	Trichloroethene	50	
78-87-5	1,2-Dichloropropane	50	
74-95-3	Dibromomethane	51	
75-27-4	Bromodichloromethane	51	
10061-01-5	cis-1,3-Dichloropropene	50	
108-10-1	4-Methyl-2-pentanone	51	
108-88-3	Toluene	50	
10061-02-6	trans-1,3-Dichloropropene	51	
79-00-5	1,1,2-Trichloroethane	50	
142-28-9	1,3-Dichloropropane	51	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

LCS-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-47683

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9203.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	50	
591-78-6	2-Hexanone	52	
124-48-1	Dibromochloromethane	52	
106-93-4	1,2-Dibromoethane	50	
108-90-7	Chlorobenzene	45	B
630-20-6	1,1,1,2-Tetrachloroethane	51	
100-41-4	Ethylbenzene	52	
1330-20-7	m,p-Xylene	100	
95-47-6	o-Xylene	51	
1330-20-7	Xylene (Total)	160	
100-42-5	Styrene	51	
75-25-2	Bromoform	50	
98-82-8	Isopropylbenzene	53	
79-34-5	1,1,2,2-Tetrachloroethane	52	
108-86-1	Bromobenzene	50	
96-18-4	1,2,3-Trichloropropane	51	
103-65-1	n-Propylbenzene	51	
95-49-8	2-Chlorotoluene	51	
108-67-8	1,3,5-Trimethylbenzene	52	
106-43-4	4-Chlorotoluene	52	
98-06-6	tert-Butylbenzene	52	
95-63-6	1,2,4-Trimethylbenzene	51	
135-98-8	sec-Butylbenzene	52	
99-87-6	4-Isopropyltoluene	52	
541-73-1	1,3-Dichlorobenzene	50	
106-46-7	1,4-Dichlorobenzene	45	B
104-51-8	n-Butylbenzene	52	
95-50-1	1,2-Dichlorobenzene	45	
96-12-8	1,2-Dibromo-3-chloropropane	51	
120-82-1	1,2,4-Trichlorobenzene	48	
87-68-3	Hexachlorobutadiene	50	
87-61-6	1,2,3-Trichlorobenzene	49	
91-20-3	Naphthalene	52	

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

LCS-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-47766

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9314.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	50	
74-87-3	Chloromethane	50	
75-01-4	Vinyl chloride	49	
74-83-9	Bromomethane	53	
75-00-3	Chloroethane	52	
75-69-4	Trichlorofluoromethane	42	
75-35-4	1,1-Dichloroethene	50	
67-64-1	Acetone	58	
74-88-4	Iodomethane	51	
75-15-0	Carbon disulfide	48	
75-09-2	Methylene chloride	48	
156-60-5	trans-1,2-Dichloroethene	50	
1634-04-4	Methyl tert-butyl ether	48	
75-34-3	1,1-Dichloroethane	50	
108-05-4	Vinyl acetate	50	
78-93-3	2-Butanone	53	
156-59-2	cis-1,2-Dichloroethene	51	
594-20-7	2,2-Dichloropropane	55	
74-97-5	Bromochloromethane	50	
67-66-3	Chloroform	49	
71-55-6	1,1,1-Trichloroethane	50	
563-58-6	1,1-Dichloropropene	52	
56-23-5	Carbon tetrachloride	51	
107-06-2	1,2-Dichloroethane	48	
71-43-2	Benzene	49	
79-01-6	Trichloroethene	50	
78-87-5	1,2-Dichloropropane	49	
74-95-3	Dibromomethane	50	
75-27-4	Bromodichloromethane	50	
10061-01-5	cis-1,3-Dichloropropene	49	
108-10-1	4-Methyl-2-pentanone	46	
108-88-3	Toluene	50	
10061-02-6	trans-1,3-Dichloropropene	49	
79-00-5	1,1,2-Trichloroethane	51	
142-28-9	1,3-Dichloropropane	48	

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

LCS-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: LCS-47766

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9314.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	52	
591-78-6	2-Hexanone	45	
124-48-1	Dibromochloromethane	52	
106-93-4	1,2-Dibromoethane	49	
108-90-7	Chlorobenzene	44	
630-20-6	1,1,1,2-Tetrachloroethane	49	
100-41-4	Ethylbenzene	51	
1330-20-7	m,p-Xylene	100	
95-47-6	o-Xylene	51	
1330-20-7	Xylene (Total)	160	
100-42-5	Styrene	51	
75-25-2	Bromoform	46	
98-82-8	Isopropylbenzene	52	
79-34-5	1,1,2,2-Tetrachloroethane	46	
108-86-1	Bromobenzene	50	
96-18-4	1,2,3-Trichloropropane	42	
103-65-1	n-Propylbenzene	52	
95-49-8	2-Chlorotoluene	52	
108-67-8	1,3,5-Trimethylbenzene	51	
106-43-4	4-Chlorotoluene	53	
98-06-6	tert-Butylbenzene	53	
95-63-6	1,2,4-Trimethylbenzene	51	
135-98-8	sec-Butylbenzene	52	
99-87-6	4-Isopropyltoluene	53	
541-73-1	1,3-Dichlorobenzene	50	
106-46-7	1,4-Dichlorobenzene	44	
104-51-8	n-Butylbenzene	51	
95-50-1	1,2-Dichlorobenzene	44	
96-12-8	1,2-Dibromo-3-chloropropane	42	
120-82-1	1,2,4-Trichlorobenzene	47	
87-68-3	Hexachlorobutadiene	53	
87-61-6	1,2,3-Trichlorobenzene	46	
91-20-3	Naphthalene	46	

2B - FORM II VOA-2

WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Level: (TRACE or LOW) LOW

	CLIENT SAMPLE NO.	VDMC1 (DBFM) #	VDMC2 (DCE) #	VDMC3 (TOL) #	VDMC4 (BFB) #				TOT OUT
01	LCS-47683	100	102	102	100				0
02	MB-47683	96	103	100	93				0
03	CESCO SUMP	104	102	96	92				0
04	LCS-47766	101	95	97	96				0
05	MB-47766	102	100	98	94				0
06	TRIP BLANK	103	102	97	90				0
07	BF-SUMP	103	103	96	91				0

		QC LIMITS
VDMC1	(DBFM) Dibromofluoromethane	(85-115)
VDMC2	(DCE) = 1,2-Dichloroethane-d4	(70-120)
VDMC3	(TOL) = Toluene-d8	(85-120)
VDMC4	(BFB) = Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

SOM_002

SW846

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Lab Sample ID: LCS-47683 LCS Lot No.:

Date Extracted: 11/30/2009 Date Analyzed (1): 11/30/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	49.2271	98		30 - 155
Chloromethane	50.0000	0.0000	50.6647	101		40 - 125
Vinyl chloride	50.0000	0.0000	50.8451	102		50 - 145
Bromomethane	50.0000	0.0000	51.0056	102		30 - 145
Chloroethane	50.0000	0.0000	52.1545	104		60 - 135
Trichlorofluoromethane	50.0000	0.0000	53.3902	107		60 - 145
1,1-Dichloroethene	50.0000	0.0000	49.3921	99		70 - 130
Acetone	50.0000	0.0000	44.5447	89		40 - 140
Iodomethane	50.0000	0.0000	50.1731	100		72 - 121
Carbon disulfide	50.0000	0.0000	49.5340	99		35 - 160
Methylene chloride	50.0000	0.0000	48.1128	96		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	49.3430	99		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	50.1865	100		65 - 125
1,1-Dichloroethane	50.0000	0.0000	50.7016	101		70 - 135
Vinyl acetate	50.0000	0.0000	50.2884	101		38 - 163
2-Butanone	50.0000	0.0000	53.4006	107		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	49.3048	99		70 - 125
2,2-Dichloropropane	50.0000	0.0000	46.2581	93		70 - 135
Bromochloromethane	50.0000	0.0000	49.4138	99		65 - 130
Chloroform	50.0000	0.0000	50.1011	100		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	50.2635	101		65 - 130
1,1-Dichloropropene	50.0000	0.0000	49.9186	100		75 - 130
Carbon tetrachloride	50.0000	0.0000	50.9049	102		65 - 140
1,2-Dichloroethane	50.0000	0.0000	50.4244	101		70 - 130
Benzene	50.0000	0.0000	49.7131	99		80 - 120
Trichloroethene	50.0000	0.0000	50.0695	100		70 - 125
1,2-Dichloropropane	50.0000	0.0000	50.0562	100		75 - 125
Dibromomethane	50.0000	0.0000	50.5539	101		75 - 125
Bromodichloromethane	50.0000	0.0000	51.4974	103		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	50.2816	101		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	50.9863	102		60 - 135
Toluene	50.0000	0.0000	50.1899	100		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	51.4707	103		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	50.4571	101		75 - 125
1,3-Dichloropropane	50.0000	0.0000	51.1135	102		75 - 125
Tetrachloroethene	50.0000	0.0000	50.0532	100		45 - 150
2-Hexanone	50.0000	0.0000	51.9791	104		55 - 130
Dibromochloromethane	50.0000	0.0000	51.5284	103		60 - 135
1,2-Dibromoethane	50.0000	0.0000	50.3346	101		80 - 120
Chlorobenzene	50.0000	0.0000	45.1611	90		80 - 120
1,1,1,2-Tetrachloroethane	50.0000	0.0000	50.9267	102		80 - 130
Ethylbenzene	50.0000	0.0000	51.5394	103		75 - 125
m,p-Xylene	100.0000	0.0000	104.9151	105		75 - 130
o-Xylene	50.0000	0.0000	51.1521	102		80 - 120

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Lab Sample ID: LCS-47683 LCS Lot No.:

Date Extracted: 11/30/2009 Date Analyzed (1): 11/30/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Xylene (Total)	150.0000	0.0000	156.0672	104		81 - 121
Styrene	50.0000	0.0000	51.2260	102		65 - 135
Bromoform	50.0000	0.0000	49.6903	99		70 - 130
Isopropylbenzene	50.0000	0.0000	52.7295	105		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	51.6093	103		65 - 130
Bromobenzene	50.0000	0.0000	49.5567	99		75 - 125
1,2,3-Trichloropropane	50.0000	0.0000	51.1612	102		75 - 125
n-Propylbenzene	50.0000	0.0000	50.6297	101		70 - 130
2-Chlorotoluene	50.0000	0.0000	51.1272	102		75 - 125
1,3,5-Trimethylbenzene	50.0000	0.0000	51.9826	104		75 - 130
4-Chlorotoluene	50.0000	0.0000	52.2471	104		75 - 130
tert-Butylbenzene	50.0000	0.0000	52.0554	104		70 - 130
1,2,4-Trimethylbenzene	50.0000	0.0000	50.9652	102		75 - 130
sec-Butylbenzene	50.0000	0.0000	51.9053	104		70 - 125
4-Isopropyltoluene	50.0000	0.0000	52.0554	104		75 - 130
1,3-Dichlorobenzene	50.0000	0.0000	49.5944	99		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	45.0400	90		75 - 125
n-Butylbenzene	50.0000	0.0000	51.6131	103		70 - 135
1,2-Dichlorobenzene	50.0000	0.0000	45.0400	90		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	51.3832	103		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	47.9732	96		65 - 135
Hexachlorobutadiene	50.0000	0.0000	49.5418	99		50 - 140
1,2,3-Trichlorobenzene	50.0000	0.0000	49.1317	98		55 - 140
Naphthalene	50.0000	0.0000	52.3733	105		55 - 140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 68 outside limits

COMMENTS:

3 - FORM III

WATER LABORATORY CONTROL

SAMPLE RECOVERY

CLIENT SAMPLE NO.

LCS-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Lab Sample ID: LCS-47766 LCS Lot No.:

Date Extracted: 12/03/2009 Date Analyzed (1): 12/03/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Dichlorodifluoromethane	50.0000	0.0000	49.7413	99		30 - 155
Chloromethane	50.0000	0.0000	49.9517	100		40 - 125
Vinyl chloride	50.0000	0.0000	49.3905	99		50 - 145
Bromomethane	50.0000	0.0000	53.4559	107		30 - 145
Chloroethane	50.0000	0.0000	52.0117	104		60 - 135
Trichlorofluoromethane	50.0000	0.0000	42.1245	84		60 - 145
1,1-Dichloroethene	50.0000	0.0000	50.3216	101		70 - 130
Acetone	50.0000	0.0000	57.7615	116		40 - 140
Iodomethane	50.0000	0.0000	50.8594	102		72 - 121
Carbon disulfide	50.0000	0.0000	48.2595	97		35 - 160
Methylene chloride	50.0000	0.0000	48.4366	97		55 - 140
trans-1,2-Dichloroethene	50.0000	0.0000	50.1003	100		60 - 140
Methyl tert-butyl ether	50.0000	0.0000	48.0100	96		65 - 125
1,1-Dichloroethane	50.0000	0.0000	49.9000	100		70 - 135
Vinyl acetate	50.0000	0.0000	49.7614	100		38 - 163
2-Butanone	50.0000	0.0000	52.6770	105		30 - 150
cis-1,2-Dichloroethene	50.0000	0.0000	50.8582	102		70 - 125
2,2-Dichloropropane	50.0000	0.0000	54.5933	109		70 - 135
Bromochloromethane	50.0000	0.0000	49.9274	100		65 - 130
Chloroform	50.0000	0.0000	49.1105	98		65 - 135
1,1,1-Trichloroethane	50.0000	0.0000	50.3447	101		65 - 130
1,1-Dichloropropene	50.0000	0.0000	52.3195	105		75 - 130
Carbon tetrachloride	50.0000	0.0000	51.2815	103		65 - 140
1,2-Dichloroethane	50.0000	0.0000	47.6794	95		70 - 130
Benzene	50.0000	0.0000	48.6017	97		80 - 120
Trichloroethene	50.0000	0.0000	50.3729	101		70 - 125
1,2-Dichloropropane	50.0000	0.0000	49.2438	98		75 - 125
Dibromomethane	50.0000	0.0000	49.9368	100		75 - 125
Bromodichloromethane	50.0000	0.0000	50.4656	101		75 - 120
cis-1,3-Dichloropropene	50.0000	0.0000	49.2948	99		70 - 130
4-Methyl-2-pentanone	50.0000	0.0000	45.5865	91		60 - 135
Toluene	50.0000	0.0000	50.4257	101		75 - 120
trans-1,3-Dichloropropene	50.0000	0.0000	49.3312	99		55 - 140
1,1,2-Trichloroethane	50.0000	0.0000	51.4134	103		75 - 125
1,3-Dichloropropane	50.0000	0.0000	47.6342	95		75 - 125
Tetrachloroethene	50.0000	0.0000	52.2844	105		45 - 150
2-Hexanone	50.0000	0.0000	45.3947	91		55 - 130
Dibromochloromethane	50.0000	0.0000	52.2088	104		60 - 135
1,2-Dibromoethane	50.0000	0.0000	48.9694	98		80 - 120
Chlorobenzene	50.0000	0.0000	44.3291	89		80 - 120
1,1,1,2-Tetrachloroethane	50.0000	0.0000	49.0845	98		80 - 130
Ethylbenzene	50.0000	0.0000	50.5138	101		75 - 125
m,p-Xylene	100.0000	0.0000	104.2350	104		75 - 130
o-Xylene	50.0000	0.0000	51.4991	103		80 - 120

3 - FORM III
WATER LABORATORY CONTROL
SAMPLE RECOVERY

CLIENT SAMPLE NO.
LCS-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Lab Sample ID: LCS-47766 LCS Lot No.:

Date Extracted: 12/03/2009 Date Analyzed (1): 12/03/2009

COMPOUND	SPIKE ADDED	SAMPLE CONCENTRATION	LCS CONCENTRATION	LCS %REC	#	QC. LIMITS REC.
Xylene (Total)	150.0000	0.0000	155.7341	104		81 - 121
Styrene	50.0000	0.0000	50.5784	101		65 - 135
Bromoform	50.0000	0.0000	46.3879	93		70 - 130
Isopropylbenzene	50.0000	0.0000	51.8723	104		75 - 125
1,1,2,2-Tetrachloroethane	50.0000	0.0000	46.4993	93		65 - 130
Bromobenzene	50.0000	0.0000	50.0258	100		75 - 125
1,2,3-Trichloropropane	50.0000	0.0000	42.2666	85		75 - 125
n-Propylbenzene	50.0000	0.0000	51.6279	103		70 - 130
2-Chlorotoluene	50.0000	0.0000	51.7701	104		75 - 125
1,3,5-Trimethylbenzene	50.0000	0.0000	51.2919	103		75 - 130
4-Chlorotoluene	50.0000	0.0000	52.5918	105		75 - 130
tert-Butylbenzene	50.0000	0.0000	52.8264	106		70 - 130
1,2,4-Trimethylbenzene	50.0000	0.0000	51.2824	103		75 - 130
sec-Butylbenzene	50.0000	0.0000	51.9400	104		70 - 125
4-Isopropyltoluene	50.0000	0.0000	52.8264	106		75 - 130
1,3-Dichlorobenzene	50.0000	0.0000	49.7021	99		75 - 125
1,4-Dichlorobenzene	50.0000	0.0000	43.8286	88		75 - 125
n-Butylbenzene	50.0000	0.0000	51.2922	103		70 - 135
1,2-Dichlorobenzene	50.0000	0.0000	43.8286	88		70 - 120
1,2-Dibromo-3-chloropropan	50.0000	0.0000	42.1647	84		50 - 130
1,2,4-Trichlorobenzene	50.0000	0.0000	46.7212	93		65 - 135
Hexachlorobutadiene	50.0000	0.0000	53.4365	107		50 - 140
1,2,3-Trichlorobenzene	50.0000	0.0000	45.9170	92		55 - 140
Naphthalene	50.0000	0.0000	45.8734	92		55 - 140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 68 outside limits

COMMENTS:

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Lab File ID: V1K9206.D Lab Sample ID: MB-47683

Instrument ID: V1

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 11/30/2009

Level: (TRACE or LOW/MED) LOW Time Analyzed: 20:59

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-47683	LCS-47683	V1K9203.D	19:37
02	CESCO SUMP	H2421-02A	V1K9208.D	21:53

COMMENTS:

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-47683

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9206.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-47683

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9206.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	1.0	J
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	1.4	J
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MB-47683

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-47683

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9206.D

Level: (TRACE or LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 11/30/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679€[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

4A - FORM IV VOA

VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MB-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Lab File ID: V1K9317.D Lab Sample ID: MB-47766

Instrument ID: V1

Matrix: (SOIL/SED/WATER) WATER Date Analyzed: 12/03/2009

Level: (TRACE or LOW/MED) LOW Time Analyzed: 13:34

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS-47766	LCS-47766	V1K9314.D	12:12
02	TRIP BLANK	H2421-03A	V1K9321.D	15:25
03	BF-SUMP	H2421-01A	V1K9325.D	17:18

COMMENTS:

SOM_002

SW846

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-47766

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9317.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
74-88-4	Iodomethane	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
594-20-7	2,2-Dichloropropane	5.0	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
563-58-6	1,1-Dichloropropene	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
74-95-3	Dibromomethane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
142-28-9	1,3-Dichloropropane	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MB-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-47766

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9317.D

Level: (TRACE/LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
108-86-1	Bromobenzene	5.0	U
96-18-4	1,2,3-Trichloropropane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
95-49-8	2-Chlorotoluene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
106-43-4	4-Chlorotoluene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U

1J - FORM I VOA-TIC

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MB-47766

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: MB-47766

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V1K9317.D

Level: (TRACE or LOW/MED) LOW Date Received:

% Moisture: not dec. Date Analyzed: 12/03/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 5.0 (mL)

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
E96679[1]	Total Alkanes	N/A		

[1] EPA-designated Registry Number.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 11/30/2009 11/30/2009

EPA Sample No.(VSTD#####): VSTD0501C Date Analyzed: 11/30/2009

Lab File ID (Standard): V1K9196.D Time Analyzed: 16:27

Instrument ID: V1 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	1690935		6.395		1268305		10.097		561550		12.982	
	UPPER LIMIT	3381870		6.895		2536610		10.597		1123100		13.482	
	LOWER LIMIT	845468		5.895		634153		9.597		280775		12.482	
	SAMPLE NO.												
01	LCS-47683	1655554		6.391		1215934		10.103		537276		12.988	
02	MB-47683	1626018		6.384		1209426		10.086		491712		12.981	
03	CESCO SUMP	1569484		6.389		1196309		10.091		486878		12.986	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

8A - FORM VIII VOA

VOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H2421 Mod. Ref No.: SDG No.: SH2421

GC Column: DB-624 ID: 0.25 (mm) Init. Calib. Date(s): 11/30/2009 11/30/2009

EPA Sample No.(VSTD#####): VSTD0501H Date Analyzed: 12/03/2009

Lab File ID (Standard): V1K9312.D Time Analyzed: 11:08

Instrument ID: V1 Heated Purge: (Y/N) N

		IS1 (S1) AREA	#	RT	#	IS2 (S2) AREA	#	RT	#	IS3 (S3) AREA	#	RT	#
	12 HOUR STD	1300326		6.414		998138		10.116		444600		13.001	
	UPPER LIMIT	2600652		6.914		1996276		10.616		889200		13.501	
	LOWER LIMIT	650163		5.914		499069		9.616		222300		12.501	
	SAMPLE NO.												
01	LCS-47766	1368972		6.423		1031747		10.126		459453		13.001	
02	MB-47766	1457581		6.420		1094501		10.122		438264		13.007	
03	TRIP BLANK	1510339		6.424		1149980		10.116		465963		13.001	
04	BF-SUMP	1416653		6.403		1074548		10.106		454008		12.991	

IS1 () = Fluorobenzene
IS2 () = Chlorobenzene-d5
IS3 () = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% (Low-Medium Volatiles) and 140% (Trace Volatiles) of internal standard area
AREA LOWER LIMIT = 50% (Low-Medium Volatiles) and 60% (Trace Volatiles) of internal standard area
RT UPPER LIMIT = +0.50 (Low-Medium Volatiles) and +0.33 (Trace Volatiles) minutes of internal standard RT
RT LOWER LIMIT = -0.50 (Low-Medium Volatiles) and -0.33 (Trace Volatiles) minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

Air Toxics LTD.
Laboratory Services Since 1989

12/16/2009
Mr. Andy Vitolins
Malcolm Pirnie
855 Route 146
Suite 210
Clifton Park NY 12065

Project Name: 44th Ave
Project #: 0266383
Workorder #: 0912086

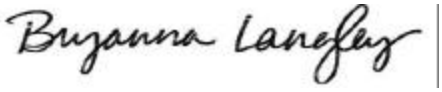
Dear Mr. Andy Vitolins

The following report includes the data for the above referenced project for sample(s) received on 12/3/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Bryanna Langley at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Bryanna Langley
Project Manager

WORK ORDER #: 0912086

Work Order Summary

CLIENT: Mr. Andy Vitolins
Malcolm Pirnie
855 Route 146
Suite 210
Clifton Park, NY 12065

PHONE: 518-782-2139

FAX: (518) 250-7300

DATE RECEIVED: 12/03/2009

DATE COMPLETED: 12/16/2009

BILL TO: Ms. Accounts Payable
Malcolm Pirnie
P.O. Box 1240
White Plains, NY 10602-1240

P.O. #

PROJECT # 0266383 44th Ave

CONTACT: Bryanna Langley

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	C-SS-1	Modified TO-15	3.0 "Hg	5 psi
01B	C-SS-1	Modified TO-15	3.0 "Hg	5 psi
02A	C-SS-2	Modified TO-15	2.5 "Hg	5 psi
02B	C-SS-2	Modified TO-15	2.5 "Hg	5 psi
03A	C-SS-3	Modified TO-15	4.5 "Hg	5 psi
03B	C-SS-3	Modified TO-15	4.5 "Hg	5 psi
04A	C-IA-1	Modified TO-15	6.5 "Hg	5 psi
04B	C-IA-1	Modified TO-15	6.5 "Hg	5 psi
05A	BF-SS-1	Modified TO-15	3.0 "Hg	5 psi
05B	BF-SS-1	Modified TO-15	3.0 "Hg	5 psi
06A	BF-SS-2	Modified TO-15	4.5 "Hg	5 psi
06B	BF-SS-2	Modified TO-15	4.5 "Hg	5 psi
07A	BF-SS-X	Modified TO-15	9.5 "Hg	5 psi
07AA	BF-SS-X Lab Duplicate	Modified TO-15	9.5 "Hg	5 psi
07B	BF-SS-X	Modified TO-15	9.5 "Hg	5 psi
08A	BF-PIT	Modified TO-15	5.0 "Hg	5 psi
08B	BF-PIT	Modified TO-15	5.0 "Hg	5 psi

Continued on next page

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0912086

Work Order Summary

CLIENT:	Mr. Andy Vitolins Malcolm Pirnie 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Ms. Accounts Payable Malcolm Pirnie P.O. Box 1240 White Plains, NY 10602-1240
PHONE:	518-782-2139	**P.O. #**	
FAX:	(518) 250-7300	**PROJECT #**	0266383 44th Ave
DATE RECEIVED:	12/03/2009	**CONTACT:**	Bryanna Langley
DATE COMPLETED:	12/16/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
09A	AA-1	Modified TO-15	5.0 "Hg	5 psi
09B	AA-1	Modified TO-15	5.0 "Hg	5 psi
10A	BF-IA-1	Modified TO-15	7.0 "Hg	5 psi
10B	BF-IA-1	Modified TO-15	7.0 "Hg	5 psi
11A	Lab Blank	Modified TO-15	NA	NA
11B	Lab Blank	Modified TO-15	NA	NA
11C	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
12B	CCV	Modified TO-15	NA	NA
12C	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13B	LCS	Modified TO-15	NA	NA
13C	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Fruman DATE: 12/16/09

Laboratory Director

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Malcolm Pirnie
Workorder# 0912086

Eight 6 Liter Summa Canister and two 6 Liter Summa Canister (100% Certified) samples were received on December 03, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The Laboratory Control Spike (LCS) analyzed on MSD-E did not meet acceptance criteria for Ethanol. Recoveries for this compound were 170% and 152%. Detected results are reported as estimated.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: C-SS-1

Lab ID#: 0912086-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Butanone (Methyl Ethyl Ketone)	2.5	2.8	7.3	8.2
Chloroform	2.5	2.9	12	14
1,1,1-Trichloroethane	2.5	5.7	14	31
Tetrachloroethene	2.5	400	17	2700
1,3,5-Trimethylbenzene	2.5	8.8	12	43
1,2,4-Trimethylbenzene	2.5	19	12	92

Client Sample ID: C-SS-1

Lab ID#: 0912086-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.50	57	2.7	300
Carbon Tetrachloride	0.50	1.5	3.1	9.7

Client Sample ID: C-SS-2

Lab ID#: 0912086-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.36	0.47	1.8	2.3
Freon 11	0.36	0.86	2.0	4.8
Ethanol	1.8	4.6 J	3.4	8.7 J
2-Butanone (Methyl Ethyl Ketone)	0.36	1.1	1.1	3.3
cis-1,2-Dichloroethene	0.36	2.3	1.4	9.0
Chloroform	0.36	3.4	1.8	17
4-Methyl-2-pentanone	0.36	0.50	1.5	2.1
Tetrachloroethene	0.36	86	2.5	580

Client Sample ID: C-SS-2

Lab ID#: 0912086-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.18	130	0.98	700
Carbon Tetrachloride	0.18	1.7	1.1	11

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: C-SS-3

Lab ID#: 0912086-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.32	0.49	1.6	2.4
Chloromethane	0.32	0.61	0.65	1.2
Ethanol	1.6	58 J	3.0	110 J
Methylene Chloride	0.63	1.7	2.2	5.8
Hexane	0.32	2.2	1.1	7.6
2-Butanone (Methyl Ethyl Ketone)	0.32	8.4	0.93	25
Cyclohexane	0.32	3.6	1.1	12
Benzene	0.32	1.3	1.0	4.2
4-Methyl-2-pentanone	0.32	2.7	1.3	11
Toluene	0.32	36	1.2	140
Tetrachloroethene	0.32	2.1	2.1	14
Ethyl Benzene	0.32	2.1	1.4	9.0
m,p-Xylene	0.32	6.4	1.4	28
o-Xylene	0.32	1.9	1.4	8.2
Styrene	0.32	1.2	1.3	4.9
1,3,5-Trimethylbenzene	0.32	0.52	1.6	2.6
1,2,4-Trimethylbenzene	0.32	1.8	1.6	9.1
2,2,4-Trimethylpentane	1.6	2.0	7.4	9.5

Client Sample ID: C-SS-3

Lab ID#: 0912086-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.063	0.36	0.34	1.9
Carbon Tetrachloride	0.063	0.092	0.40	0.58

Client Sample ID: C-IA-1

Lab ID#: 0912086-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.34	0.49	1.7	2.4
Chloromethane	0.34	0.50	0.71	1.0
Ethanol	1.7	56 J	3.2	110 J
Methylene Chloride	0.68	1.5	2.4	5.2
Hexane	0.34	2.1	1.2	7.5

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: C-IA-1

Lab ID#: 0912086-04A

2-Butanone (Methyl Ethyl Ketone)	0.34	4.8	1.0	14
Cyclohexane	0.34	2.9	1.2	10
Benzene	0.34	1.1	1.1	3.4
4-Methyl-2-pentanone	0.34	6.2	1.4	25
Toluene	0.34	69	1.3	260
Tetrachloroethene	0.34	3.0	2.3	21
Ethyl Benzene	0.34	2.0	1.5	8.7
m,p-Xylene	0.34	6.2	1.5	27
o-Xylene	0.34	1.9	1.5	8.4
Styrene	0.34	0.94	1.4	4.0
1,3,5-Trimethylbenzene	0.34	0.54	1.7	2.6
1,2,4-Trimethylbenzene	0.34	1.8	1.7	8.6
2,2,4-Trimethylpentane	1.7	2.5	8.0	12

Client Sample ID: C-IA-1

Lab ID#: 0912086-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.068	0.44	0.37	2.4
Carbon Tetrachloride	0.068	0.11	0.43	0.69

Client Sample ID: BF-SS-1

Lab ID#: 0912086-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.15	0.51	0.74	2.5
Freon 11	0.15	0.41	0.84	2.3
Ethanol	0.74	0.91 J	1.4	1.7 J
1,1-Dichloroethane	0.15	1.2	0.60	5.0
2-Butanone (Methyl Ethyl Ketone)	0.15	0.44	0.44	1.3
cis-1,2-Dichloroethene	0.15	0.62	0.59	2.5
Chloroform	0.15	4.3	0.73	21
1,1,1-Trichloroethane	0.15	6.0	0.81	33
Cyclohexane	0.15	0.25	0.51	0.86
Tetrachloroethene	0.15	38	1.0	250

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BF-SS-1

Lab ID#: 0912086-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.030	6.1	0.16	33
Carbon Tetrachloride	0.030	8.5	0.19	53

Client Sample ID: BF-SS-2

Lab ID#: 0912086-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	1.6	1.8	6.3	7.1
Chloroform	1.6	4.4	7.7	22
1,1,1-Trichloroethane	1.6	8.4	8.6	46
Tetrachloroethene	1.6	430	11	2900

Client Sample ID: BF-SS-2

Lab ID#: 0912086-06B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.26	15	1.4	79
Carbon Tetrachloride	0.26	4.7	1.7	30

Client Sample ID: BF-SS-X

Lab ID#: 0912086-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.20	0.50	0.97	2.5
Freon 11	0.20	0.40	1.1	2.3
Ethanol	0.98	0.98 J	1.8	1.8 J
1,1-Dichloroethane	0.20	1.2	0.79	4.9
2-Butanone (Methyl Ethyl Ketone)	0.20	0.53	0.58	1.6
cis-1,2-Dichloroethene	0.20	0.54	0.78	2.1
Chloroform	0.20	4.2	0.96	20
1,1,1-Trichloroethane	0.20	5.9	1.1	32
4-Methyl-2-pentanone	0.20	0.20	0.80	0.84
Toluene	0.20	1.7	0.74	6.5
Tetrachloroethene	0.20	37	1.3	250
m,p-Xylene	0.20	0.25	0.85	1.1

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BF-SS-X Lab Duplicate

Lab ID#: 0912086-07AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	0.49	1.2	2.0	4.8
cis-1,2-Dichloroethene	0.49	0.54	1.9	2.2
Chloroform	0.49	4.2	2.4	21
1,1,1-Trichloroethane	0.49	5.9	2.7	32
Toluene	0.49	1.8	1.8	6.8
Tetrachloroethene	0.49	37	3.3	250

Client Sample ID: BF-SS-X

Lab ID#: 0912086-07B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.039	5.8	0.21	31
Carbon Tetrachloride	0.039	8.1	0.25	51

Client Sample ID: BF-PIT

Lab ID#: 0912086-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.48	0.80	2.4
Chloromethane	0.16	0.30	0.33	0.61
Freon 11	0.16	0.22	0.90	1.2
Ethanol	0.80	2.6 J	1.5	4.9 J
Methylene Chloride	0.32	0.63	1.1	2.2
Hexane	0.16	0.17	0.57	0.61
2-Butanone (Methyl Ethyl Ketone)	0.16	0.92	0.47	2.7
Chloroform	0.16	0.86	0.79	4.2
Benzene	0.16	0.27	0.51	0.86
Toluene	0.16	1.9	0.61	7.2
Tetrachloroethene	0.16	3.7	1.1	25
Ethyl Benzene	0.16	0.18	0.70	0.78
m,p-Xylene	0.16	0.52	0.70	2.3
o-Xylene	0.16	0.18	0.70	0.77
1,2,4-Trimethylbenzene	0.16	0.25	0.79	1.2

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BF-PIT

Lab ID#: 0912086-08B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.032	0.11	0.17	0.60
Carbon Tetrachloride	0.032	0.090	0.20	0.56

Client Sample ID: AA-1

Lab ID#: 0912086-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.80	2.4
Chloromethane	0.16	0.40	0.33	0.83
Freon 11	0.16	0.22	0.90	1.2
Ethanol	0.80	26 J	1.5	50 J
Methylene Chloride	0.32	0.64	1.1	2.2
Hexane	0.16	0.30	0.57	1.1
2-Butanone (Methyl Ethyl Ketone)	0.16	1.5	0.47	4.4
Benzene	0.16	0.29	0.51	0.92
4-Methyl-2-pentanone	0.16	3.8	0.66	15
Toluene	0.16	30	0.61	110
Tetrachloroethene	0.16	0.67	1.1	4.5
Ethyl Benzene	0.16	0.42	0.70	1.8
m,p-Xylene	0.16	1.3	0.70	5.6
o-Xylene	0.16	0.39	0.70	1.7
Styrene	0.16	0.20	0.68	0.84
1,2,4-Trimethylbenzene	0.16	0.46	0.79	2.3

Client Sample ID: AA-1

Lab ID#: 0912086-09B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.032	0.052	0.17	0.28
Carbon Tetrachloride	0.032	0.074	0.20	0.47

Client Sample ID: BF-IA-1

Lab ID#: 0912086-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: BF-IA-1

Lab ID#: 0912086-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.49	0.86	2.4
Chloromethane	0.18	0.50	0.36	1.0
Freon 11	0.18	0.23	0.98	1.3
Ethanol	0.88	5.4 J	1.6	10 J
Methylene Chloride	0.35	0.70	1.2	2.4
Hexane	0.18	2.1	0.62	7.4
2-Butanone (Methyl Ethyl Ketone)	0.18	1.7	0.52	5.0
Cyclohexane	0.18	1.3	0.60	4.5
Benzene	0.18	1.1	0.56	3.5
4-Methyl-2-pentanone	0.18	0.22	0.72	0.90
Toluene	0.18	3.9	0.66	15
Tetrachloroethene	0.18	1.5	1.2	10
Ethyl Benzene	0.18	0.62	0.76	2.7
m,p-Xylene	0.18	2.0	0.76	8.8
o-Xylene	0.18	0.69	0.76	3.0
1,3,5-Trimethylbenzene	0.18	0.26	0.86	1.2
1,2,4-Trimethylbenzene	0.18	0.76	0.86	3.7

Client Sample ID: BF-IA-1

Lab ID#: 0912086-10B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.035	0.069	0.19	0.37
Carbon Tetrachloride	0.035	0.10	0.22	0.64

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-1

Lab ID#: 0912086-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121112**	**Date of Collection:**	**11/23/09 10:25:00 AM**
Dil. Factor:	**24.8**	**Date of Analysis:**	**12/12/09 07:47 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.5	Not Detected	12	Not Detected
Freon 114	2.5	Not Detected	17	Not Detected
Chloromethane	2.5	Not Detected	5.1	Not Detected
Vinyl Chloride	2.5	Not Detected	6.3	Not Detected
Bromomethane	2.5	Not Detected	9.6	Not Detected
Chloroethane	2.5	Not Detected	6.5	Not Detected
Freon 11	2.5	Not Detected	14	Not Detected
Ethanol	12	Not Detected	23	Not Detected
Freon 113	2.5	Not Detected	19	Not Detected
1,1-Dichloroethene	2.5	Not Detected	9.8	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.5	Not Detected	8.9	Not Detected
trans-1,2-Dichloroethene	2.5	Not Detected	9.8	Not Detected
Hexane	2.5	Not Detected	8.7	Not Detected
1,1-Dichloroethane	2.5	Not Detected	10	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.5	2.8	7.3	8.2
cis-1,2-Dichloroethene	2.5	Not Detected	9.8	Not Detected
Chloroform	2.5	2.9	12	14
1,1,1-Trichloroethane	2.5	5.7	14	31
Cyclohexane	2.5	Not Detected	8.5	Not Detected
Benzene	2.5	Not Detected	7.9	Not Detected
1,2-Dichloroethane	2.5	Not Detected	10	Not Detected
1,2-Dichloropropane	2.5	Not Detected	11	Not Detected
1,4-Dioxane	2.5	Not Detected	8.9	Not Detected
Bromodichloromethane	2.5	Not Detected	17	Not Detected
cis-1,3-Dichloropropene	2.5	Not Detected	11	Not Detected
4-Methyl-2-pentanone	2.5	Not Detected	10	Not Detected
Toluene	2.5	Not Detected	9.3	Not Detected
trans-1,3-Dichloropropene	2.5	Not Detected	11	Not Detected
1,1,2-Trichloroethane	2.5	Not Detected	14	Not Detected
Tetrachloroethene	2.5	400	17	2700
Dibromochloromethane	2.5	Not Detected	21	Not Detected
1,2-Dibromoethane (EDB)	2.5	Not Detected	19	Not Detected
Chlorobenzene	2.5	Not Detected	11	Not Detected
Ethyl Benzene	2.5	Not Detected	11	Not Detected
m,p-Xylene	2.5	Not Detected	11	Not Detected
o-Xylene	2.5	Not Detected	11	Not Detected
Styrene	2.5	Not Detected	10	Not Detected
Bromoform	2.5	Not Detected	26	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-1

Lab ID#: 0912086-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121112**	**Date of Collection: 11/23/09 10:25:00 AM**	
Dil. Factor:	**24.8**	**Date of Analysis: 12/12/09 07:47 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	2.5	Not Detected	17	Not Detected
1,3,5-Trimethylbenzene	2.5	8.8	12	43
1,2,4-Trimethylbenzene	2.5	19	12	92
1,3-Dichlorobenzene	2.5	Not Detected	15	Not Detected
1,4-Dichlorobenzene	2.5	Not Detected	15	Not Detected
alpha-Chlorotoluene	2.5	Not Detected	13	Not Detected
1,2-Dichlorobenzene	2.5	Not Detected	15	Not Detected
1,2,4-Trichlorobenzene	12	Not Detected	92	Not Detected
Hexachlorobutadiene	12	Not Detected	130	Not Detected
2,2,4-Trimethylpentane	12	Not Detected	58	Not Detected
tert-Butyl alcohol	12	Not Detected	38	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-1

Lab ID#: 0912086-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121519sim**	**Date of Collection: 11/23/09 10:25:00 AM**	
Dil. Factor:	**24.8**	**Date of Analysis: 12/16/09 03:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.50	57	2.7	300
Carbon Tetrachloride	0.50	1.5	3.1	9.7

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	114	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-2

Lab ID#: 0912086-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121206**	**Date of Collection:**	**11/23/09 10:50:00 AM**
Dil. Factor:	**3.65**	**Date of Analysis:**	**12/12/09 06:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.36	0.47	1.8	2.3
Freon 114	0.36	Not Detected	2.6	Not Detected
Chloromethane	0.36	Not Detected	0.75	Not Detected
Vinyl Chloride	0.36	Not Detected	0.93	Not Detected
Bromomethane	0.36	Not Detected	1.4	Not Detected
Chloroethane	0.36	Not Detected	0.96	Not Detected
Freon 11	0.36	0.86	2.0	4.8
Ethanol	1.8	4.6 J	3.4	8.7 J
Freon 113	0.36	Not Detected	2.8	Not Detected
1,1-Dichloroethene	0.36	Not Detected	1.4	Not Detected
Methylene Chloride	0.73	Not Detected	2.5	Not Detected
Methyl tert-butyl ether	0.36	Not Detected	1.3	Not Detected
trans-1,2-Dichloroethene	0.36	Not Detected	1.4	Not Detected
Hexane	0.36	Not Detected	1.3	Not Detected
1,1-Dichloroethane	0.36	Not Detected	1.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.36	1.1	1.1	3.3
cis-1,2-Dichloroethene	0.36	2.3	1.4	9.0
Chloroform	0.36	3.4	1.8	17
1,1,1-Trichloroethane	0.36	Not Detected	2.0	Not Detected
Cyclohexane	0.36	Not Detected	1.2	Not Detected
Benzene	0.36	Not Detected	1.2	Not Detected
1,2-Dichloroethane	0.36	Not Detected	1.5	Not Detected
1,2-Dichloropropane	0.36	Not Detected	1.7	Not Detected
1,4-Dioxane	0.36	Not Detected	1.3	Not Detected
Bromodichloromethane	0.36	Not Detected	2.4	Not Detected
cis-1,3-Dichloropropene	0.36	Not Detected	1.6	Not Detected
4-Methyl-2-pentanone	0.36	0.50	1.5	2.1
Toluene	0.36	Not Detected	1.4	Not Detected
trans-1,3-Dichloropropene	0.36	Not Detected	1.6	Not Detected
1,1,2-Trichloroethane	0.36	Not Detected	2.0	Not Detected
Tetrachloroethene	0.36	86	2.5	580
Dibromochloromethane	0.36	Not Detected	3.1	Not Detected
1,2-Dibromoethane (EDB)	0.36	Not Detected	2.8	Not Detected
Chlorobenzene	0.36	Not Detected	1.7	Not Detected
Ethyl Benzene	0.36	Not Detected	1.6	Not Detected
m,p-Xylene	0.36	Not Detected	1.6	Not Detected
o-Xylene	0.36	Not Detected	1.6	Not Detected
Styrene	0.36	Not Detected	1.6	Not Detected
Bromoform	0.36	Not Detected	3.8	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-2

Lab ID#: 0912086-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121206**	**Date of Collection: 11/23/09 10:50:00 AM**	
Dil. Factor:	**3.65**	**Date of Analysis: 12/12/09 06:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.36	Not Detected	2.5	Not Detected
1,3,5-Trimethylbenzene	0.36	Not Detected	1.8	Not Detected
1,2,4-Trimethylbenzene	0.36	Not Detected	1.8	Not Detected
1,3-Dichlorobenzene	0.36	Not Detected	2.2	Not Detected
1,4-Dichlorobenzene	0.36	Not Detected	2.2	Not Detected
alpha-Chlorotoluene	0.36	Not Detected	1.9	Not Detected
1,2-Dichlorobenzene	0.36	Not Detected	2.2	Not Detected
1,2,4-Trichlorobenzene	1.8	Not Detected	14	Not Detected
Hexachlorobutadiene	1.8	Not Detected	19	Not Detected
2,2,4-Trimethylpentane	1.8	Not Detected	8.5	Not Detected
tert-Butyl alcohol	1.8	Not Detected	5.5	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	113	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-2

Lab ID#: 0912086-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121518sim**	**Date of Collection: 11/23/09 10:50:00 AM**	
Dil. Factor:	**9.12**	**Date of Analysis: 12/16/09 03:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.18	130	0.98	700
Carbon Tetrachloride	0.18	1.7	1.1	11

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	123	70-130
Toluene-d8	120	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-3

Lab ID#: 0912086-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121110**	**Date of Collection:**	**11/23/09 12:10:00 PM**
Dil. Factor:	**3.16**	**Date of Analysis:**	**12/11/09 10:42 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.32	0.49	1.6	2.4
Freon 114	0.32	Not Detected	2.2	Not Detected
Chloromethane	0.32	0.61	0.65	1.2
Vinyl Chloride	0.32	Not Detected	0.81	Not Detected
Bromomethane	0.32	Not Detected	1.2	Not Detected
Chloroethane	0.32	Not Detected	0.83	Not Detected
Freon 11	0.32	Not Detected	1.8	Not Detected
Ethanol	1.6	58 J	3.0	110 J
Freon 113	0.32	Not Detected	2.4	Not Detected
1,1-Dichloroethene	0.32	Not Detected	1.2	Not Detected
Methylene Chloride	0.63	1.7	2.2	5.8
Methyl tert-butyl ether	0.32	Not Detected	1.1	Not Detected
trans-1,2-Dichloroethene	0.32	Not Detected	1.2	Not Detected
Hexane	0.32	2.2	1.1	7.6
1,1-Dichloroethane	0.32	Not Detected	1.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.32	8.4	0.93	25
cis-1,2-Dichloroethene	0.32	Not Detected	1.2	Not Detected
Chloroform	0.32	Not Detected	1.5	Not Detected
1,1,1-Trichloroethane	0.32	Not Detected	1.7	Not Detected
Cyclohexane	0.32	3.6	1.1	12
Benzene	0.32	1.3	1.0	4.2
1,2-Dichloroethane	0.32	Not Detected	1.3	Not Detected
1,2-Dichloropropane	0.32	Not Detected	1.5	Not Detected
1,4-Dioxane	0.32	Not Detected	1.1	Not Detected
Bromodichloromethane	0.32	Not Detected	2.1	Not Detected
cis-1,3-Dichloropropene	0.32	Not Detected	1.4	Not Detected
4-Methyl-2-pentanone	0.32	2.7	1.3	11
Toluene	0.32	36	1.2	140
trans-1,3-Dichloropropene	0.32	Not Detected	1.4	Not Detected
1,1,2-Trichloroethane	0.32	Not Detected	1.7	Not Detected
Tetrachloroethene	0.32	2.1	2.1	14
Dibromochloromethane	0.32	Not Detected	2.7	Not Detected
1,2-Dibromoethane (EDB)	0.32	Not Detected	2.4	Not Detected
Chlorobenzene	0.32	Not Detected	1.4	Not Detected
Ethyl Benzene	0.32	2.1	1.4	9.0
m,p-Xylene	0.32	6.4	1.4	28
o-Xylene	0.32	1.9	1.4	8.2
Styrene	0.32	1.2	1.3	4.9
Bromoform	0.32	Not Detected	3.3	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-3

Lab ID#: 0912086-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121110**	**Date of Collection: 11/23/09 12:10:00 PM**	
Dil. Factor:	**3.16**	**Date of Analysis: 12/11/09 10:42 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.32	Not Detected	2.2	Not Detected
1,3,5-Trimethylbenzene	0.32	0.52	1.6	2.6
1,2,4-Trimethylbenzene	0.32	1.8	1.6	9.1
1,3-Dichlorobenzene	0.32	Not Detected	1.9	Not Detected
1,4-Dichlorobenzene	0.32	Not Detected	1.9	Not Detected
alpha-Chlorotoluene	0.32	Not Detected	1.6	Not Detected
1,2-Dichlorobenzene	0.32	Not Detected	1.9	Not Detected
1,2,4-Trichlorobenzene	1.6	Not Detected	12	Not Detected
Hexachlorobutadiene	1.6	Not Detected	17	Not Detected
2,2,4-Trimethylpentane	1.6	2.0	7.4	9.5
tert-Butyl alcohol	1.6	Not Detected	4.8	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-SS-3

Lab ID#: 0912086-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121515sim**	**Date of Collection: 11/23/09 12:10:00 PM**	
Dil. Factor:	**3.16**	**Date of Analysis: 12/16/09 12:43 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.063	0.36	0.34	1.9
Carbon Tetrachloride	0.063	0.092	0.40	0.58

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	125	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-IA-1

Lab ID#: 0912086-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121111**	**Date of Collection:**	**11/23/09 11:30:00 AM**
Dil. Factor:	**3.42**	**Date of Analysis:**	**12/11/09 11:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.34	0.49	1.7	2.4
Freon 114	0.34	Not Detected	2.4	Not Detected
Chloromethane	0.34	0.50	0.71	1.0
Vinyl Chloride	0.34	Not Detected	0.87	Not Detected
Bromomethane	0.34	Not Detected	1.3	Not Detected
Chloroethane	0.34	Not Detected	0.90	Not Detected
Freon 11	0.34	Not Detected	1.9	Not Detected
Ethanol	1.7	56 J	3.2	110 J
Freon 113	0.34	Not Detected	2.6	Not Detected
1,1-Dichloroethene	0.34	Not Detected	1.4	Not Detected
Methylene Chloride	0.68	1.5	2.4	5.2
Methyl tert-butyl ether	0.34	Not Detected	1.2	Not Detected
trans-1,2-Dichloroethene	0.34	Not Detected	1.4	Not Detected
Hexane	0.34	2.1	1.2	7.5
1,1-Dichloroethane	0.34	Not Detected	1.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.34	4.8	1.0	14
cis-1,2-Dichloroethene	0.34	Not Detected	1.4	Not Detected
Chloroform	0.34	Not Detected	1.7	Not Detected
1,1,1-Trichloroethane	0.34	Not Detected	1.9	Not Detected
Cyclohexane	0.34	2.9	1.2	10
Benzene	0.34	1.1	1.1	3.4
1,2-Dichloroethane	0.34	Not Detected	1.4	Not Detected
1,2-Dichloropropane	0.34	Not Detected	1.6	Not Detected
1,4-Dioxane	0.34	Not Detected	1.2	Not Detected
Bromodichloromethane	0.34	Not Detected	2.3	Not Detected
cis-1,3-Dichloropropene	0.34	Not Detected	1.6	Not Detected
4-Methyl-2-pentanone	0.34	6.2	1.4	25
Toluene	0.34	69	1.3	260
trans-1,3-Dichloropropene	0.34	Not Detected	1.6	Not Detected
1,1,2-Trichloroethane	0.34	Not Detected	1.9	Not Detected
Tetrachloroethene	0.34	3.0	2.3	21
Dibromochloromethane	0.34	Not Detected	2.9	Not Detected
1,2-Dibromoethane (EDB)	0.34	Not Detected	2.6	Not Detected
Chlorobenzene	0.34	Not Detected	1.6	Not Detected
Ethyl Benzene	0.34	2.0	1.5	8.7
m,p-Xylene	0.34	6.2	1.5	27
o-Xylene	0.34	1.9	1.5	8.4
Styrene	0.34	0.94	1.4	4.0
Bromoform	0.34	Not Detected	3.5	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-IA-1

Lab ID#: 0912086-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121111**	**Date of Collection: 11/23/09 11:30:00 AM**	
Dil. Factor:	**3.42**	**Date of Analysis: 12/11/09 11:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.34	Not Detected	2.3	Not Detected
1,3,5-Trimethylbenzene	0.34	0.54	1.7	2.6
1,2,4-Trimethylbenzene	0.34	1.8	1.7	8.6
1,3-Dichlorobenzene	0.34	Not Detected	2.0	Not Detected
1,4-Dichlorobenzene	0.34	Not Detected	2.0	Not Detected
alpha-Chlorotoluene	0.34	Not Detected	1.8	Not Detected
1,2-Dichlorobenzene	0.34	Not Detected	2.0	Not Detected
1,2,4-Trichlorobenzene	1.7	Not Detected	13	Not Detected
Hexachlorobutadiene	1.7	Not Detected	18	Not Detected
2,2,4-Trimethylpentane	1.7	2.5	8.0	12
tert-Butyl alcohol	1.7	Not Detected	5.2	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: C-IA-1

Lab ID#: 0912086-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121514sim**	**Date of Collection: 11/23/09 11:30:00 AM**	
Dil. Factor:	**3.42**	**Date of Analysis: 12/16/09 12:13 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.068	0.44	0.37	2.4
Carbon Tetrachloride	0.068	0.11	0.43	0.69

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	126	70-130
Toluene-d8	118	70-130
4-Bromofluorobenzene	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-1

Lab ID#: 0912086-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121207**	**Date of Collection: 11/23/09 2:40:00 PM**	
Dil. Factor:	**1.49**	**Date of Analysis: 12/12/09 07:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.15	0.51	0.74	2.5
Freon 114	0.15	Not Detected	1.0	Not Detected
Chloromethane	0.15	Not Detected	0.31	Not Detected
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
Bromomethane	0.15	Not Detected	0.58	Not Detected
Chloroethane	0.15	Not Detected	0.39	Not Detected
Freon 11	0.15	0.41	0.84	2.3
Ethanol	0.74	0.91 J	1.4	1.7 J
Freon 113	0.15	Not Detected	1.1	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.59	Not Detected
Methylene Chloride	0.30	Not Detected	1.0	Not Detected
Methyl tert-butyl ether	0.15	Not Detected	0.54	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
Hexane	0.15	Not Detected	0.52	Not Detected
1,1-Dichloroethane	0.15	1.2	0.60	5.0
2-Butanone (Methyl Ethyl Ketone)	0.15	0.44	0.44	1.3
cis-1,2-Dichloroethene	0.15	0.62	0.59	2.5
Chloroform	0.15	4.3	0.73	21
1,1,1-Trichloroethane	0.15	6.0	0.81	33
Cyclohexane	0.15	0.25	0.51	0.86
Benzene	0.15	Not Detected	0.48	Not Detected
1,2-Dichloroethane	0.15	Not Detected	0.60	Not Detected
1,2-Dichloropropane	0.15	Not Detected	0.69	Not Detected
1,4-Dioxane	0.15	Not Detected	0.54	Not Detected
Bromodichloromethane	0.15	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
4-Methyl-2-pentanone	0.15	Not Detected	0.61	Not Detected
Toluene	0.15	Not Detected	0.56	Not Detected
trans-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
1,1,2-Trichloroethane	0.15	Not Detected	0.81	Not Detected
Tetrachloroethene	0.15	38	1.0	250
Dibromochloromethane	0.15	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.15	Not Detected	1.1	Not Detected
Chlorobenzene	0.15	Not Detected	0.68	Not Detected
Ethyl Benzene	0.15	Not Detected	0.65	Not Detected
m,p-Xylene	0.15	Not Detected	0.65	Not Detected
o-Xylene	0.15	Not Detected	0.65	Not Detected
Styrene	0.15	Not Detected	0.63	Not Detected
Bromoform	0.15	Not Detected	1.5	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-1

Lab ID#: 0912086-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121207**	**Date of Collection: 11/23/09 2:40:00 PM**	
Dil. Factor:	**1.49**	**Date of Analysis: 12/12/09 07:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.15	Not Detected	1.0	Not Detected
1,3,5-Trimethylbenzene	0.15	Not Detected	0.73	Not Detected
1,2,4-Trimethylbenzene	0.15	Not Detected	0.73	Not Detected
1,3-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
1,4-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
alpha-Chlorotoluene	0.15	Not Detected	0.77	Not Detected
1,2-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
1,2,4-Trichlorobenzene	0.74	Not Detected	5.5	Not Detected
Hexachlorobutadiene	0.74	Not Detected	7.9	Not Detected
2,2,4-Trimethylpentane	0.74	Not Detected	3.5	Not Detected
tert-Butyl alcohol	0.74	Not Detected	2.2	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	112	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-1

Lab ID#: 0912086-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121513sim**	**Date of Collection: 11/23/09 2:40:00 PM**	
Dil. Factor:	**1.49**	**Date of Analysis: 12/16/09 11:42 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.030	6.1	0.16	33
Carbon Tetrachloride	0.030	8.5	0.19	53

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	123	70-130
Toluene-d8	113	70-130
4-Bromofluorobenzene	93	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-2

Lab ID#: 0912086-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121215**	**Date of Collection: 11/23/09 3:00:00 PM**	
Dil. Factor:	**15.8**	**Date of Analysis: 12/13/09 09:58 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.6	Not Detected	7.8	Not Detected
Freon 114	1.6	Not Detected	11	Not Detected
Chloromethane	1.6	Not Detected	3.3	Not Detected
Vinyl Chloride	1.6	Not Detected	4.0	Not Detected
Bromomethane	1.6	Not Detected	6.1	Not Detected
Chloroethane	1.6	Not Detected	4.2	Not Detected
Freon 11	1.6	Not Detected	8.9	Not Detected
Ethanol	7.9	Not Detected	15	Not Detected
Freon 113	1.6	Not Detected	12	Not Detected
1,1-Dichloroethene	1.6	Not Detected	6.3	Not Detected
Methylene Chloride	3.2	Not Detected	11	Not Detected
Methyl tert-butyl ether	1.6	Not Detected	5.7	Not Detected
trans-1,2-Dichloroethene	1.6	Not Detected	6.3	Not Detected
Hexane	1.6	Not Detected	5.6	Not Detected
1,1-Dichloroethane	1.6	Not Detected	6.4	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.6	Not Detected	4.6	Not Detected
cis-1,2-Dichloroethene	1.6	1.8	6.3	7.1
Chloroform	1.6	4.4	7.7	22
1,1,1-Trichloroethane	1.6	8.4	8.6	46
Cyclohexane	1.6	Not Detected	5.4	Not Detected
Benzene	1.6	Not Detected	5.0	Not Detected
1,2-Dichloroethane	1.6	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.6	Not Detected	7.3	Not Detected
1,4-Dioxane	1.6	Not Detected	5.7	Not Detected
Bromodichloromethane	1.6	Not Detected	10	Not Detected
cis-1,3-Dichloropropene	1.6	Not Detected	7.2	Not Detected
4-Methyl-2-pentanone	1.6	Not Detected	6.5	Not Detected
Toluene	1.6	Not Detected	6.0	Not Detected
trans-1,3-Dichloropropene	1.6	Not Detected	7.2	Not Detected
1,1,2-Trichloroethane	1.6	Not Detected	8.6	Not Detected
Tetrachloroethene	1.6	430	11	2900
Dibromochloromethane	1.6	Not Detected	13	Not Detected
1,2-Dibromoethane (EDB)	1.6	Not Detected	12	Not Detected
Chlorobenzene	1.6	Not Detected	7.3	Not Detected
Ethyl Benzene	1.6	Not Detected	6.9	Not Detected
m,p-Xylene	1.6	Not Detected	6.9	Not Detected
o-Xylene	1.6	Not Detected	6.9	Not Detected
Styrene	1.6	Not Detected	6.7	Not Detected
Bromoform	1.6	Not Detected	16	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-2

Lab ID#: 0912086-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121215**	**Date of Collection: 11/23/09 3:00:00 PM**	
Dil. Factor:	**15.8**	**Date of Analysis: 12/13/09 09:58 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	1.6	Not Detected	11	Not Detected
1,3,5-Trimethylbenzene	1.6	Not Detected	7.8	Not Detected
1,2,4-Trimethylbenzene	1.6	Not Detected	7.8	Not Detected
1,3-Dichlorobenzene	1.6	Not Detected	9.5	Not Detected
1,4-Dichlorobenzene	1.6	Not Detected	9.5	Not Detected
alpha-Chlorotoluene	1.6	Not Detected	8.2	Not Detected
1,2-Dichlorobenzene	1.6	Not Detected	9.5	Not Detected
1,2,4-Trichlorobenzene	7.9	Not Detected	59	Not Detected
Hexachlorobutadiene	7.9	Not Detected	84	Not Detected
2,2,4-Trimethylpentane	7.9	Not Detected	37	Not Detected
tert-Butyl alcohol	7.9	Not Detected	24	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	114	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-2

Lab ID#: 0912086-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121512sim**	**Date of Collection: 11/23/09 3:00:00 PM**	
Dil. Factor:	**13.2**	**Date of Analysis: 12/16/09 10:53 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.26	15	1.4	79
Carbon Tetrachloride	0.26	4.7	1.7	30

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	123	70-130
Toluene-d8	115	70-130
4-Bromofluorobenzene	89	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-X

Lab ID#: 0912086-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121211**	**Date of Collection:**	**11/23/09 12:00:00 PM**
Dil. Factor:	**1.96**	**Date of Analysis:**	**12/12/09 09:59 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.20	0.50	0.97	2.5
Freon 114	0.20	Not Detected	1.4	Not Detected
Chloromethane	0.20	Not Detected	0.40	Not Detected
Vinyl Chloride	0.20	Not Detected	0.50	Not Detected
Bromomethane	0.20	Not Detected	0.76	Not Detected
Chloroethane	0.20	Not Detected	0.52	Not Detected
Freon 11	0.20	0.40	1.1	2.3
Ethanol	0.98	0.98 J	1.8	1.8 J
Freon 113	0.20	Not Detected	1.5	Not Detected
1,1-Dichloroethene	0.20	Not Detected	0.78	Not Detected
Methylene Chloride	0.39	Not Detected	1.4	Not Detected
Methyl tert-butyl ether	0.20	Not Detected	0.71	Not Detected
trans-1,2-Dichloroethene	0.20	Not Detected	0.78	Not Detected
Hexane	0.20	Not Detected	0.69	Not Detected
1,1-Dichloroethane	0.20	1.2	0.79	4.9
2-Butanone (Methyl Ethyl Ketone)	0.20	0.53	0.58	1.6
cis-1,2-Dichloroethene	0.20	0.54	0.78	2.1
Chloroform	0.20	4.2	0.96	20
1,1,1-Trichloroethane	0.20	5.9	1.1	32
Cyclohexane	0.20	Not Detected	0.67	Not Detected
Benzene	0.20	Not Detected	0.63	Not Detected
1,2-Dichloroethane	0.20	Not Detected	0.79	Not Detected
1,2-Dichloropropane	0.20	Not Detected	0.90	Not Detected
1,4-Dioxane	0.20	Not Detected	0.71	Not Detected
Bromodichloromethane	0.20	Not Detected	1.3	Not Detected
cis-1,3-Dichloropropene	0.20	Not Detected	0.89	Not Detected
4-Methyl-2-pentanone	0.20	0.20	0.80	0.84
Toluene	0.20	1.7	0.74	6.5
trans-1,3-Dichloropropene	0.20	Not Detected	0.89	Not Detected
1,1,2-Trichloroethane	0.20	Not Detected	1.1	Not Detected
Tetrachloroethene	0.20	37	1.3	250
Dibromochloromethane	0.20	Not Detected	1.7	Not Detected
1,2-Dibromoethane (EDB)	0.20	Not Detected	1.5	Not Detected
Chlorobenzene	0.20	Not Detected	0.90	Not Detected
Ethyl Benzene	0.20	Not Detected	0.85	Not Detected
m,p-Xylene	0.20	0.25	0.85	1.1
o-Xylene	0.20	Not Detected	0.85	Not Detected
Styrene	0.20	Not Detected	0.83	Not Detected
Bromoform	0.20	Not Detected	2.0	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-X

Lab ID#: 0912086-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121211**	**Date of Collection: 11/23/09 12:00:00 PM**	
Dil. Factor:	**1.96**	**Date of Analysis: 12/12/09 09:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.20	Not Detected	1.3	Not Detected
1,3,5-Trimethylbenzene	0.20	Not Detected	0.96	Not Detected
1,2,4-Trimethylbenzene	0.20	Not Detected	0.96	Not Detected
1,3-Dichlorobenzene	0.20	Not Detected	1.2	Not Detected
1,4-Dichlorobenzene	0.20	Not Detected	1.2	Not Detected
alpha-Chlorotoluene	0.20	Not Detected	1.0	Not Detected
1,2-Dichlorobenzene	0.20	Not Detected	1.2	Not Detected
1,2,4-Trichlorobenzene	0.98	Not Detected	7.3	Not Detected
Hexachlorobutadiene	0.98	Not Detected	10	Not Detected
2,2,4-Trimethylpentane	0.98	Not Detected	4.6	Not Detected
tert-Butyl alcohol	0.98	Not Detected	3.0	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	114	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-X Lab Duplicate

Lab ID#: 0912086-07AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121210**	**Date of Collection: 11/23/09 12:00:00 PM**	
Dil. Factor:	**4.90**	**Date of Analysis: 12/12/09 09:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.49	Not Detected	2.4	Not Detected
Freon 114	0.49	Not Detected	3.4	Not Detected
Chloromethane	0.49	Not Detected	1.0	Not Detected
Vinyl Chloride	0.49	Not Detected	1.2	Not Detected
Bromomethane	0.49	Not Detected	1.9	Not Detected
Chloroethane	0.49	Not Detected	1.3	Not Detected
Freon 11	0.49	Not Detected	2.8	Not Detected
Ethanol	2.4	Not Detected	4.6	Not Detected
Freon 113	0.49	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.49	Not Detected	1.9	Not Detected
Methylene Chloride	0.98	Not Detected	3.4	Not Detected
Methyl tert-butyl ether	0.49	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.49	Not Detected	1.9	Not Detected
Hexane	0.49	Not Detected	1.7	Not Detected
1,1-Dichloroethane	0.49	1.2	2.0	4.8
2-Butanone (Methyl Ethyl Ketone)	0.49	Not Detected	1.4	Not Detected
cis-1,2-Dichloroethene	0.49	0.54	1.9	2.2
Chloroform	0.49	4.2	2.4	21
1,1,1-Trichloroethane	0.49	5.9	2.7	32
Cyclohexane	0.49	Not Detected	1.7	Not Detected
Benzene	0.49	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.49	Not Detected	2.0	Not Detected
1,2-Dichloropropane	0.49	Not Detected	2.3	Not Detected
1,4-Dioxane	0.49	Not Detected	1.8	Not Detected
Bromodichloromethane	0.49	Not Detected	3.3	Not Detected
cis-1,3-Dichloropropene	0.49	Not Detected	2.2	Not Detected
4-Methyl-2-pentanone	0.49	Not Detected	2.0	Not Detected
Toluene	0.49	1.8	1.8	6.8
trans-1,3-Dichloropropene	0.49	Not Detected	2.2	Not Detected
1,1,2-Trichloroethane	0.49	Not Detected	2.7	Not Detected
Tetrachloroethene	0.49	37	3.3	250
Dibromochloromethane	0.49	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.49	Not Detected	3.8	Not Detected
Chlorobenzene	0.49	Not Detected	2.2	Not Detected
Ethyl Benzene	0.49	Not Detected	2.1	Not Detected
m,p-Xylene	0.49	Not Detected	2.1	Not Detected
o-Xylene	0.49	Not Detected	2.1	Not Detected
Styrene	0.49	Not Detected	2.1	Not Detected
Bromoform	0.49	Not Detected	5.1	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-X Lab Duplicate

Lab ID#: 0912086-07AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121210**	**Date of Collection: 11/23/09 12:00:00 PM**	
Dil. Factor:	**4.90**	**Date of Analysis: 12/12/09 09:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.49	Not Detected	3.4	Not Detected
1,3,5-Trimethylbenzene	0.49	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.49	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.49	Not Detected	2.9	Not Detected
1,4-Dichlorobenzene	0.49	Not Detected	2.9	Not Detected
alpha-Chlorotoluene	0.49	Not Detected	2.5	Not Detected
1,2-Dichlorobenzene	0.49	Not Detected	2.9	Not Detected
1,2,4-Trichlorobenzene	2.4	Not Detected	18	Not Detected
Hexachlorobutadiene	2.4	Not Detected	26	Not Detected
2,2,4-Trimethylpentane	2.4	Not Detected	11	Not Detected
tert-Butyl alcohol	2.4	Not Detected	7.4	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	110	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-SS-X

Lab ID#: 0912086-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121511sim**	**Date of Collection: 11/23/09 12:00:00 PM**	
Dil. Factor:	**1.96**	**Date of Analysis: 12/16/09 09:48 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.039	5.8	0.21	31
Carbon Tetrachloride	0.039	8.1	0.25	51

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	122	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	93	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-PIT

Lab ID#: 0912086-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121212**	**Date of Collection: 11/23/09 1:45:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 12/13/09 07:45 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.48	0.80	2.4
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.16	0.30	0.33	0.61
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
Bromomethane	0.16	Not Detected	0.62	Not Detected
Chloroethane	0.16	Not Detected	0.42	Not Detected
Freon 11	0.16	0.22	0.90	1.2
Ethanol	0.80	2.6 J	1.5	4.9 J
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Methylene Chloride	0.32	0.63	1.1	2.2
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Hexane	0.16	0.17	0.57	0.61
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.16	0.92	0.47	2.7
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Chloroform	0.16	0.86	0.79	4.2
1,1,1-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Cyclohexane	0.16	Not Detected	0.55	Not Detected
Benzene	0.16	0.27	0.51	0.86
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.74	Not Detected
1,4-Dioxane	0.16	Not Detected	0.58	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.66	Not Detected
Toluene	0.16	1.9	0.61	7.2
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Tetrachloroethene	0.16	3.7	1.1	25
Dibromochloromethane	0.16	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.74	Not Detected
Ethyl Benzene	0.16	0.18	0.70	0.78
m,p-Xylene	0.16	0.52	0.70	2.3
o-Xylene	0.16	0.18	0.70	0.77
Styrene	0.16	Not Detected	0.68	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-PIT

Lab ID#: 0912086-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121212**	**Date of Collection: 11/23/09 1:45:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 12/13/09 07:45 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,2,4-Trimethylbenzene	0.16	0.25	0.79	1.2
1,3-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.80	Not Detected	8.6	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.8	Not Detected
tert-Butyl alcohol	0.80	Not Detected	2.4	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	112	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-PIT

Lab ID#: 0912086-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121509sim**	**Date of Collection: 11/23/09 1:45:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 12/15/09 10:49 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.032	0.11	0.17	0.60
Carbon Tetrachloride	0.032	0.090	0.20	0.56

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	123	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: AA-1

Lab ID#: 0912086-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121213**	**Date of Collection: 11/23/09 12:25:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 12/13/09 08:32 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.80	2.4
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.16	0.40	0.33	0.83
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
Bromomethane	0.16	Not Detected	0.62	Not Detected
Chloroethane	0.16	Not Detected	0.42	Not Detected
Freon 11	0.16	0.22	0.90	1.2
Ethanol	0.80	26 J	1.5	50 J
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Methylene Chloride	0.32	0.64	1.1	2.2
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Hexane	0.16	0.30	0.57	1.1
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.16	1.5	0.47	4.4
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Chloroform	0.16	Not Detected	0.79	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Cyclohexane	0.16	Not Detected	0.55	Not Detected
Benzene	0.16	0.29	0.51	0.92
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.74	Not Detected
1,4-Dioxane	0.16	Not Detected	0.58	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
4-Methyl-2-pentanone	0.16	3.8	0.66	15
Toluene	0.16	30	0.61	110
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Tetrachloroethene	0.16	0.67	1.1	4.5
Dibromochloromethane	0.16	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.74	Not Detected
Ethyl Benzene	0.16	0.42	0.70	1.8
m,p-Xylene	0.16	1.3	0.70	5.6
o-Xylene	0.16	0.39	0.70	1.7
Styrene	0.16	0.20	0.68	0.84
Bromoform	0.16	Not Detected	1.7	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: AA-1

Lab ID#: 0912086-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121213**	**Date of Collection: 11/23/09 12:25:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 12/13/09 08:32 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,2,4-Trimethylbenzene	0.16	0.46	0.79	2.3
1,3-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.80	Not Detected	8.6	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.8	Not Detected
tert-Butyl alcohol	0.80	Not Detected	2.4	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	115	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: AA-1

Lab ID#: 0912086-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121510sim**	**Date of Collection: 11/23/09 12:25:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 12/16/09 09:14 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.032	0.052	0.17	0.28
Carbon Tetrachloride	0.032	0.074	0.20	0.47

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	128	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-IA-1

Lab ID#: 0912086-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121214**	**Date of Collection:**	**11/23/09 2:10:00 PM**
Dil. Factor:	**1.75**	**Date of Analysis:**	**12/13/09 09:20 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.49	0.86	2.4
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.18	0.50	0.36	1.0
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
Bromomethane	0.18	Not Detected	0.68	Not Detected
Chloroethane	0.18	Not Detected	0.46	Not Detected
Freon 11	0.18	0.23	0.98	1.3
Ethanol	0.88	5.4 J	1.6	10 J
Freon 113	0.18	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Methylene Chloride	0.35	0.70	1.2	2.4
Methyl tert-butyl ether	0.18	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Hexane	0.18	2.1	0.62	7.4
1,1-Dichloroethane	0.18	Not Detected	0.71	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.18	1.7	0.52	5.0
cis-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Chloroform	0.18	Not Detected	0.85	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.95	Not Detected
Cyclohexane	0.18	1.3	0.60	4.5
Benzene	0.18	1.1	0.56	3.5
1,2-Dichloroethane	0.18	Not Detected	0.71	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.81	Not Detected
1,4-Dioxane	0.18	Not Detected	0.63	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.79	Not Detected
4-Methyl-2-pentanone	0.18	0.22	0.72	0.90
Toluene	0.18	3.9	0.66	15
trans-1,3-Dichloropropene	0.18	Not Detected	0.79	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.95	Not Detected
Tetrachloroethene	0.18	1.5	1.2	10
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.3	Not Detected
Chlorobenzene	0.18	Not Detected	0.80	Not Detected
Ethyl Benzene	0.18	0.62	0.76	2.7
m,p-Xylene	0.18	2.0	0.76	8.8
o-Xylene	0.18	0.69	0.76	3.0
Styrene	0.18	Not Detected	0.74	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-IA-1

Lab ID#: 0912086-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121214**	**Date of Collection: 11/23/09 2:10:00 PM**	
Dil. Factor:	**1.75**	**Date of Analysis: 12/13/09 09:20 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
1,3,5-Trimethylbenzene	0.18	0.26	0.86	1.2
1,2,4-Trimethylbenzene	0.18	0.76	0.86	3.7
1,3-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.90	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.88	Not Detected	6.5	Not Detected
Hexachlorobutadiene	0.88	Not Detected	9.3	Not Detected
2,2,4-Trimethylpentane	0.88	Not Detected	4.1	Not Detected
tert-Butyl alcohol	0.88	Not Detected	2.6	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	113	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BF-IA-1

Lab ID#: 0912086-10B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121507sim**	**Date of Collection: 11/23/09 2:10:00 PM**	
Dil. Factor:	**1.75**	**Date of Analysis: 12/15/09 09:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.035	0.069	0.19	0.37
Carbon Tetrachloride	0.035	0.10	0.22	0.64

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0912086-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/09 06:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.10	Not Detected	0.21	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
Bromomethane	0.10	Not Detected	0.39	Not Detected
Chloroethane	0.10	Not Detected	0.26	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	Not Detected	0.29	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0912086-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/09 06:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
tert-Butyl alcohol	0.50	Not Detected	1.5	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0912086-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121205**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 05:43 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.10	Not Detected	0.21	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
Bromomethane	0.10	Not Detected	0.39	Not Detected
Chloroethane	0.10	Not Detected	0.26	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	Not Detected	0.29	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0912086-11B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121205**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 05:43 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
tert-Butyl alcohol	0.50	Not Detected	1.5	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	113	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0912086-11C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121506sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/15/09 08:15 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	95	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0912086-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/09 03:03 PM**	

Compound	%Recovery
Freon 12	90
Freon 114	88
Chloromethane	73
Vinyl Chloride	84
Bromomethane	92
Chloroethane	79
Freon 11	91
Ethanol	73
Freon 113	85
1,1-Dichloroethene	80
Methylene Chloride	79
Methyl tert-butyl ether	84
trans-1,2-Dichloroethene	80
Hexane	77
1,1-Dichloroethane	83
2-Butanone (Methyl Ethyl Ketone)	80
cis-1,2-Dichloroethene	81
Chloroform	84
1,1,1-Trichloroethane	87
Cyclohexane	80
Benzene	78
1,2-Dichloroethane	90
1,2-Dichloropropane	80
1,4-Dioxane	80
Bromodichloromethane	99
cis-1,3-Dichloropropene	84
4-Methyl-2-pentanone	79
Toluene	78
trans-1,3-Dichloropropene	90
1,1,2-Trichloroethane	81
Tetrachloroethene	82
Dibromochloromethane	93
1,2-Dibromoethane (EDB)	83
Chlorobenzene	83
Ethyl Benzene	82
m,p-Xylene	81
o-Xylene	82
Styrene	79
Bromoform	94

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0912086-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/09 03:03 PM**	

Compound	%Recovery
1,1,2,2-Tetrachloroethane	83
1,3,5-Trimethylbenzene	88
1,2,4-Trimethylbenzene	88
1,3-Dichlorobenzene	77
1,4-Dichlorobenzene	77
alpha-Chlorotoluene	93
1,2-Dichlorobenzene	78
1,2,4-Trichlorobenzene	115
Hexachlorobutadiene	91
2,2,4-Trimethylpentane	75
tert-Butyl alcohol	83

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0912086-12B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 03:00 PM**	

Compound	%Recovery
Freon 12	86
Freon 114	88
Chloromethane	70
Vinyl Chloride	80
Bromomethane	89
Chloroethane	76
Freon 11	86
Ethanol	70
Freon 113	87
1,1-Dichloroethene	78
Methylene Chloride	76
Methyl tert-butyl ether	80
trans-1,2-Dichloroethene	78
Hexane	74
1,1-Dichloroethane	78
2-Butanone (Methyl Ethyl Ketone)	78
cis-1,2-Dichloroethene	78
Chloroform	79
1,1,1-Trichloroethane	84
Cyclohexane	78
Benzene	77
1,2-Dichloroethane	87
1,2-Dichloropropane	76
1,4-Dioxane	80
Bromodichloromethane	95
cis-1,3-Dichloropropene	81
4-Methyl-2-pentanone	76
Toluene	79
trans-1,3-Dichloropropene	84
1,1,2-Trichloroethane	78
Tetrachloroethene	85
Dibromochloromethane	93
1,2-Dibromoethane (EDB)	81
Chlorobenzene	81
Ethyl Benzene	83
m,p-Xylene	85
o-Xylene	87
Styrene	84
Bromoform	99

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0912086-12B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 03:00 PM**	

Compound	%Recovery
1,1,2,2-Tetrachloroethane	80
1,3,5-Trimethylbenzene	95
1,2,4-Trimethylbenzene	96
1,3-Dichlorobenzene	85
1,4-Dichlorobenzene	84
alpha-Chlorotoluene	94
1,2-Dichlorobenzene	84
1,2,4-Trichlorobenzene	123
Hexachlorobutadiene	105
2,2,4-Trimethylpentane	73
tert-Butyl alcohol	80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	112	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0912086-12C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121502sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/15/09 04:51 PM**	

Compound	**%Recovery**
Trichloroethene	100
Carbon Tetrachloride	128

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	120	70-130
Toluene-d8	118	70-130
4-Bromofluorobenzene	92	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0912086-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/09 03:48 PM**	

Compound	%Recovery
Freon 12	125
Freon 114	121
Chloromethane	104
Vinyl Chloride	118
Bromomethane	117
Chloroethane	111
Freon 11	126
Ethanol	170 Q
Freon 113	106
1,1-Dichloroethene	102
Methylene Chloride	102
Methyl tert-butyl ether	116
trans-1,2-Dichloroethene	110
Hexane	107
1,1-Dichloroethane	110
2-Butanone (Methyl Ethyl Ketone)	111
cis-1,2-Dichloroethene	110
Chloroform	114
1,1,1-Trichloroethane	120
Cyclohexane	109
Benzene	109
1,2-Dichloroethane	123
1,2-Dichloropropane	112
1,4-Dioxane	114
Bromodichloromethane	140
cis-1,3-Dichloropropene	120
4-Methyl-2-pentanone	115
Toluene	106
trans-1,3-Dichloropropene	128
1,1,2-Trichloroethane	117
Tetrachloroethene	115
Dibromochloromethane	134
1,2-Dibromoethane (EDB)	124
Chlorobenzene	118
Ethyl Benzene	116
m,p-Xylene	115
o-Xylene	118
Styrene	112
Bromoform	139

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0912086-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/11/09 03:48 PM**	

Compound	%Recovery
1,1,2,2-Tetrachloroethane	118
1,3,5-Trimethylbenzene	121
1,2,4-Trimethylbenzene	125
1,3-Dichlorobenzene	108
1,4-Dichlorobenzene	110
alpha-Chlorotoluene	133 Q
1,2-Dichlorobenzene	111
1,2,4-Trichlorobenzene	162 Q
Hexachlorobutadiene	138 Q
2,2,4-Trimethylpentane	103
tert-Butyl alcohol	115

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0912086-13B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 03:35 PM**	

Compound	%Recovery
Freon 12	111
Freon 114	113
Chloromethane	92
Vinyl Chloride	108
Bromomethane	111
Chloroethane	100
Freon 11	112
Ethanol	152 Q
Freon 113	102
1,1-Dichloroethene	91
Methylene Chloride	94
Methyl tert-butyl ether	104
trans-1,2-Dichloroethene	102
Hexane	96
1,1-Dichloroethane	99
2-Butanone (Methyl Ethyl Ketone)	103
cis-1,2-Dichloroethene	100
Chloroform	101
1,1,1-Trichloroethane	108
Cyclohexane	102
Benzene	101
1,2-Dichloroethane	112
1,2-Dichloropropane	104
1,4-Dioxane	109
Bromodichloromethane	128
cis-1,3-Dichloropropene	109
4-Methyl-2-pentanone	104
Toluene	99
trans-1,3-Dichloropropene	116
1,1,2-Trichloroethane	108
Tetrachloroethene	114
Dibromochloromethane	128
1,2-Dibromoethane (EDB)	115
Chlorobenzene	110
Ethyl Benzene	115
m,p-Xylene	115
o-Xylene	115
Styrene	112
Bromoform	141 Q

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0912086-13B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e121203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 03:35 PM**	

Compound	%Recovery
1,1,2,2-Tetrachloroethane	113
1,3,5-Trimethylbenzene	119
1,2,4-Trimethylbenzene	121
1,3-Dichlorobenzene	110
1,4-Dichlorobenzene	113
alpha-Chlorotoluene	123
1,2-Dichlorobenzene	112
1,2,4-Trichlorobenzene	155 Q
Hexachlorobutadiene	148 Q
2,2,4-Trimethylpentane	95
tert-Butyl alcohol	102

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	114	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0912086-13C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**z121503sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/15/09 05:35 PM**	

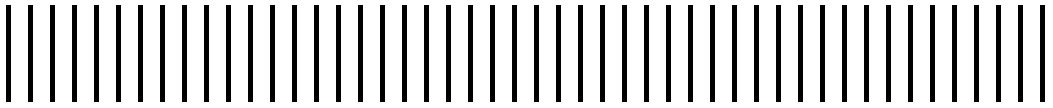
Compound	**%Recovery**
Trichloroethene	100
Carbon Tetrachloride	129

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	120	70-130
Toluene-d8	117	70-130
4-Bromofluorobenzene	95	70-130

New York State Department of Environmental Conservation
21-03 44th Avenue Site Pre-Design Investigation & IRM Design

Appendix I:
Remedial System Design Drawings and Details



0266383 / ALB

MALCOLM PIRNIE

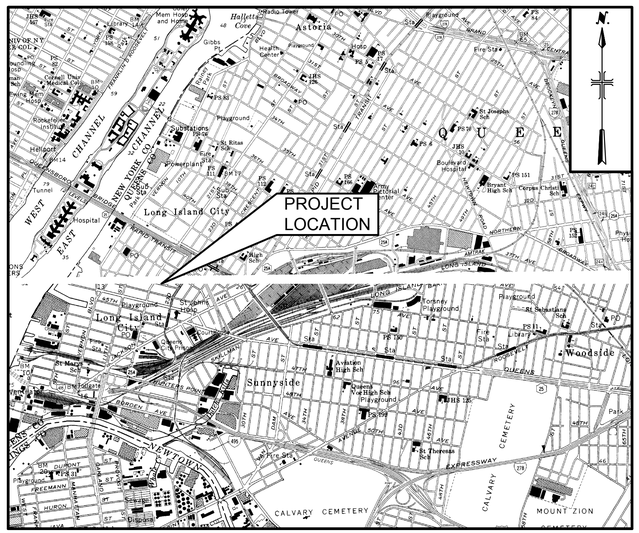
INTERIM REMEDIAL MEASURES WORK PLAN
44TH AVENUE SITE

LONG ISLAND CITY

QUEENS COUNTY, NEW YORK

NYSDEC SITE #241107

JUNE 2010

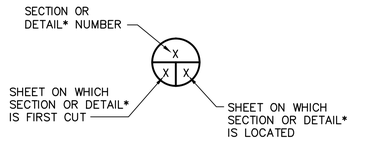


LOCATION PLAN

APPROXIMATE SCALE: 1"=2000'

CONSULTING ENGINEERS

MALCOLM PIRNIE, INC.
855 ST. RT 146
SUITE 210
CLIFTON PARK, NEW YORK 12065

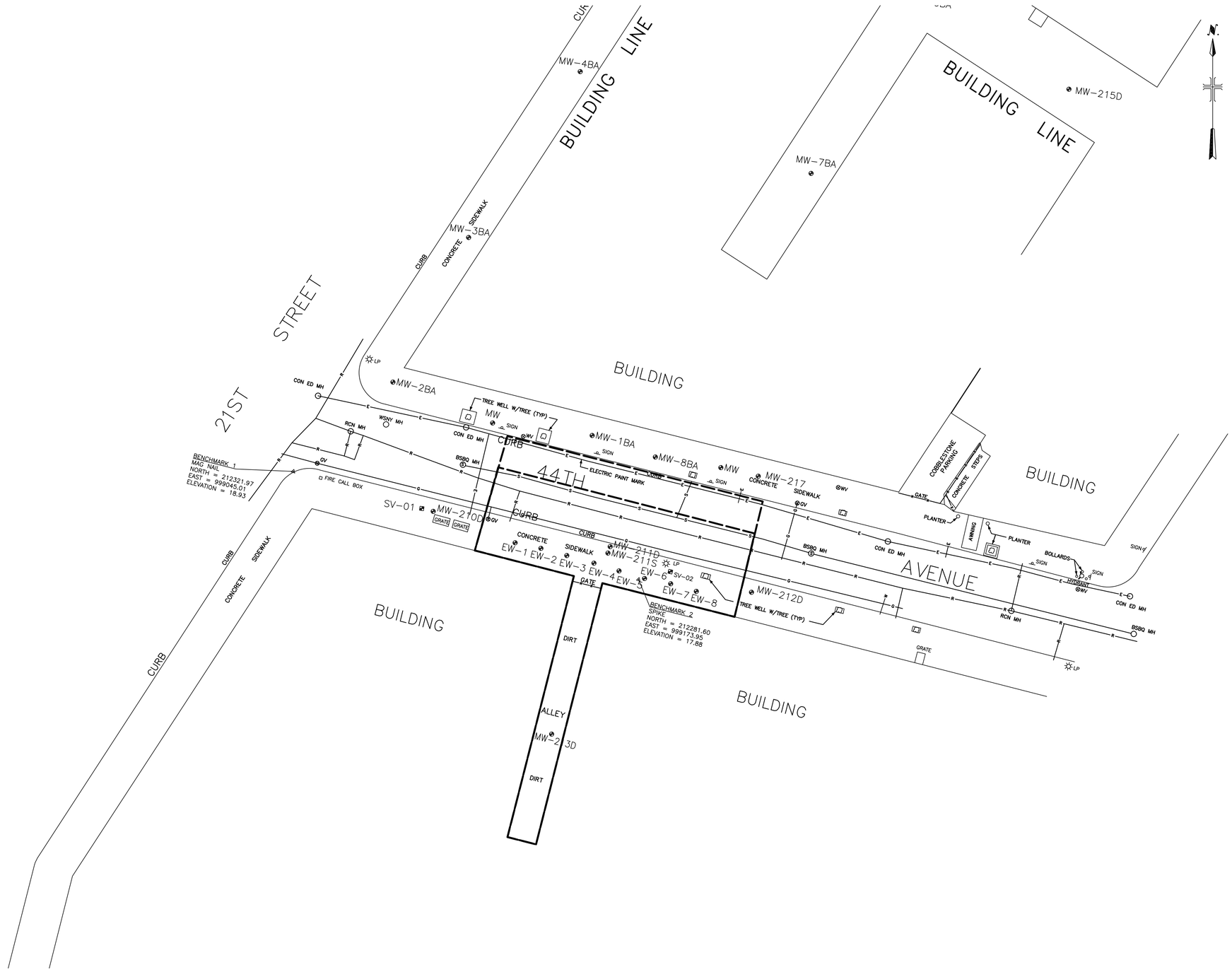


* WHEN PERTAINING TO DETAILS, CIRCLE IS REPLACED WITH A SQUARE

SECTION AND DETAIL KEY

INDEX TO DRAWINGS

NOT FOR CONSTRUCTION



LEGEND

- LIGHT
- SV-02 SOIL VAPOR POINT
- MW2 MONITORING WELL
- GRATE GRATING
- FENCE
- SIGN
- E BURIED ELECTRIC
- R BURIED RCN CABLE
- G BURIED GAS LINE
- S BURIED SANITARY SEWER
- W BURIED WATER LINE
- LIMITS OF WORK
- SANITARY MANHOLE
- CATCH BASIN
- UTILITY MANHOLE
- GAS VALVE
- PLANTERS

NOTES:

1. ORIGIN OF SURVEY BASEMAP IS WEC, INC. AS OF OCTOBER 2009.
2. SCALES SHOWN HEREIN ARE FOR FULL SIZE PLOTS ON 22x34 INCH SHEETS. THE CONTRACTOR IS RESPONSIBLE FOR CONVERTING SCALES ON REDUCED OR ENLARGED PLOTS.

10 0 10 20
SCALE: 1" = 20'

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES MRJ
DWN MRJ
CKD ARV

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LONG ISLAND CITY, NEW YORK

44TH AVENUE SITE (#241107)

NOT FOR CONSTRUCTION

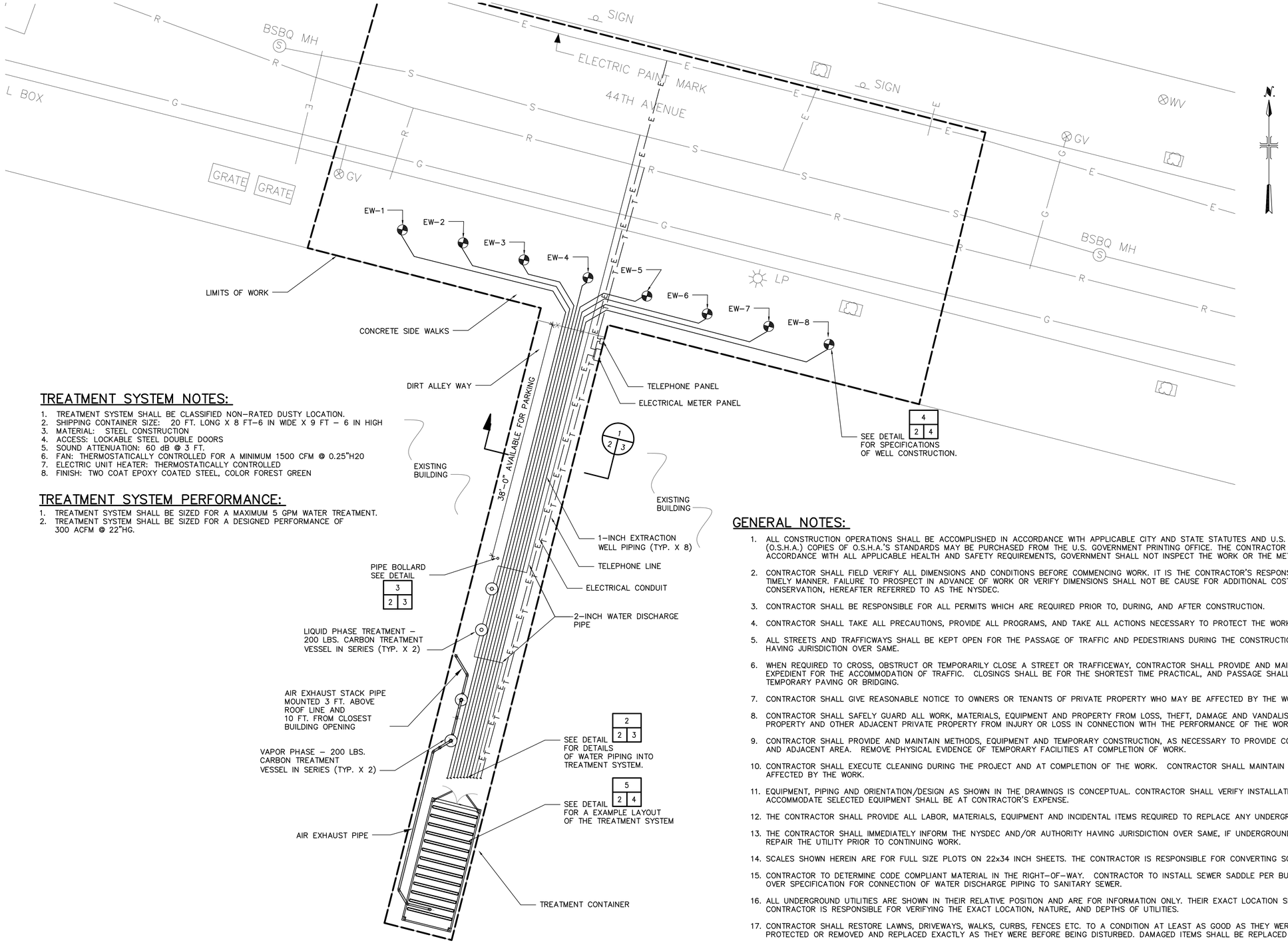
EXISTING SITE PLAN

SCALE: 1"=20'

DATE JUNE 2010

SHEET 1 OF 5

CAD REF. NO. 0266383-01



LEGEND

- LIGHT
- EW-2 EXTRACTION WELL
- GRATE GRATING
- FENCE
- SIGN
- PROPOSED CONSTRUCTION
- E BURIED ELECTRIC
- R BURIED RCN CABLE
- G BURIED GAS LINE
- S BURIED SANITARY SEWER
- W BURIED WATER LINE
- T BURIED TELEPHONE
- LIMITS OF WORK
- SANITARY MANHOLE
- CATCH BASIN
- UTILITY MANHOLE
- GAS VALVE
- PLANTERS

TREATMENT SYSTEM NOTES:

1. TREATMENT SYSTEM SHALL BE CLASSIFIED NON–RATED DUSTY LOCATION.
2. SHIPPING CONTAINER SIZE: 20 FT. LONG X 8 FT–6 IN WIDE X 9 FT – 6 IN HIGH
3. MATERIAL: STEEL CONSTRUCTION
4. ACCESS: LOCKABLE STEEL DOUBLE DOORS
5. SOUND ATTENUATION: 60 dB @ 3 FT.
6. FAN: THERMOSTATICALLY CONTROLLED FOR A MINIMUM 1500 CFM @ 0.25"H20
7. ELECTRIC UNIT HEATER: THERMOSTATICALLY CONTROLLED
8. FINISH: TWO COAT EPOXY COATED STEEL, COLOR FOREST GREEN

TREATMENT SYSTEM PERFORMANCE:

1. TREATMENT SYSTEM SHALL BE SIZED FOR A MAXIMUM 5 GPM WATER TREATMENT.
2. TREATMENT SYSTEM SHALL BE SIZED FOR A DESIGNED PERFORMANCE OF 300 ACFM @ 22"HG.

GENERAL NOTES:

1. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE CITY AND STATE STATUTES AND U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (O.S.H.A.) COPIES OF O.S.H.A.'S STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. THE CONTRACTOR ALONE WILL BE RESPONSIBLE FOR THE EXECUTION OF THE WORK IN ACCORDANCE WITH ALL APPLICABLE HEALTH AND SAFETY REQUIREMENTS, GOVERNMENT SHALL NOT INSPECT THE WORK OR THE METHODS OF CONSTRUCTION FOR COMPLIANCE WITH THESE REQUIREMENTS.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE COMMENCING WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT ANY DISCREPANCIES TO CONTRACTING OFFICER IN A TIMELY MANNER. FAILURE TO PROSPECT IN ADVANCE OF WORK OR VERIFY DIMENSIONS SHALL NOT BE CAUSE FOR ADDITIONAL COSTS TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, HEREAFTER REFERRED TO AS THE NYSDEC.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS WHICH ARE REQUIRED PRIOR TO, DURING, AND AFTER CONSTRUCTION.
4. CONTRACTOR SHALL TAKE ALL PRECAUTIONS, PROVIDE ALL PROGRAMS, AND TAKE ALL ACTIONS NECESSARY TO PROTECT THE WORK AND ALL PUBLIC AND PRIVATE PROPERTY AND FACILITIES FROM DAMAGE.
5. ALL STREETS AND TRAFFICWAYS SHALL BE KEPT OPEN FOR THE PASSAGE OF TRAFFIC AND PEDESTRIANS DURING THE CONSTRUCTION PERIOD UNLESS OTHERWISE APPROVED BY THE NYSDEC OR AUTHORITY HAVING JURISDICTION OVER SAME.
6. WHEN REQUIRED TO CROSS, OBSTRUCT OR TEMPORARILY CLOSE A STREET OR TRAFFICEWAY, CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE BRIDGES, DETOURS OR OTHER APPROVED TEMPORARY EXPEDIENT FOR THE ACCOMMODATION OF TRAFFIC. CLOSINGS SHALL BE FOR THE SHORTEST TIME PRACTICAL, AND PASSAGE SHALL BE RESTORED IMMEDIATELY AFTER COMPLETION OF BACKFILL AND TEMPORARY PAVING OR BRIDGING.
7. CONTRACTOR SHALL GIVE REASONABLE NOTICE TO OWNERS OR TENANTS OF PRIVATE PROPERTY WHO MAY BE AFFECTED BY THE WORK.
8. CONTRACTOR SHALL SAFELY GUARD ALL WORK, MATERIALS, EQUIPMENT AND PROPERTY FROM LOSS, THEFT, DAMAGE AND VANDALISM. CONTRACTOR'S DUTY TO SAFELY GUARD PROPERTY SHALL INCLUDE THE PROPERTY AND OTHER ADJACENT PRIVATE PROPERTY FROM INJURY OR LOSS IN CONNECTION WITH THE PERFORMANCE OF THE WORK.
9. CONTRACTOR SHALL PROVIDE AND MAINTAIN METHODS, EQUIPMENT AND TEMPORARY CONSTRUCTION, AS NECESSARY TO PROVIDE CONTROLS OVER ENVIRONMENTAL CONDITIONS AT THE CONSTRUCTION SITE AND ADJACENT AREA. REMOVE PHYSICAL EVIDENCE OF TEMPORARY FACILITIES AT COMPLETION OF WORK.
10. CONTRACTOR SHALL EXECUTE CLEANING DURING THE PROJECT AND AT COMPLETION OF THE WORK. CONTRACTOR SHALL MAINTAIN IN A CLEAN MANNER THE SITE, THE WORK, AND AREAS ADJACENT TO OR AFFECTED BY THE WORK.
11. EQUIPMENT, PIPING AND ORIENTATION/DESIGN AS SHOWN IN THE DRAWINGS IS CONCEPTUAL. CONTRACTOR SHALL VERIFY INSTALLATION BASED ON SELECTED EQUIPMENT. MODIFICATIONS TO THE DESIGN TO ACCOMMODATE SELECTED EQUIPMENT SHALL BE AT CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL ITEMS REQUIRED TO REPLACE ANY UNDERGROUND UTILITIES DISTURBED DURING THE CONSTRUCTION.
13. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE NYSDEC AND/OR AUTHORITY HAVING JURISDICTION OVER SAME, IF UNDERGROUND UTILITIES ARE DISTURBED AND THE CONTRACTOR SHALL IMMEDIATELY REPAIR THE UTILITY PRIOR TO CONTINUING WORK.
14. SCALES SHOWN HEREIN ARE FOR FULL SIZE PLOTS ON 22x34 INCH SHEETS. THE CONTRACTOR IS RESPONSIBLE FOR CONVERTING SCALES ON REDUCED OR ENLARGED PLOTS.
15. CONTRACTOR TO DETERMINE CODE COMPLIANT MATERIAL IN THE RIGHT–OF–WAY. CONTRACTOR TO INSTALL SEWER SADDLE PER BUREAU OF SEWER, BOROUGH OF QUEENS OR AUTHORITY HAVING JURISDICTION OVER SPECIFICATION FOR CONNECTION OF WATER DISCHARGE PIPING TO SANITARY SEWER.
16. ALL UNDERGROUND UTILITIES ARE SHOWN IN THEIR RELATIVE POSITION AND ARE FOR INFORMATION ONLY. THEIR EXACT LOCATION SHALL BE VERIFIED AT THE SITE BEFORE CONSTRUCTION BEGINS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION, NATURE, AND DEPTHS OF UTILITIES.
17. CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, WALKS, CURBS, FENCES ETC. TO A CONDITION AT LEAST AS GOOD AS THEY WERE BEFORE BEING DISTURBED. MAILBOXES, POSTS, ETC., SHALL BE PROTECTED OR REMOVED AND REPLACED EXACTLY AS THEY WERE BEFORE BEING DISTURBED. DAMAGED ITEMS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

4 0 4 8
SCALE: 1/8" = 1'–0"

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES MRJ
DWN MRJ
CKD ARV

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LONG ISLAND CITY, NEW YORK

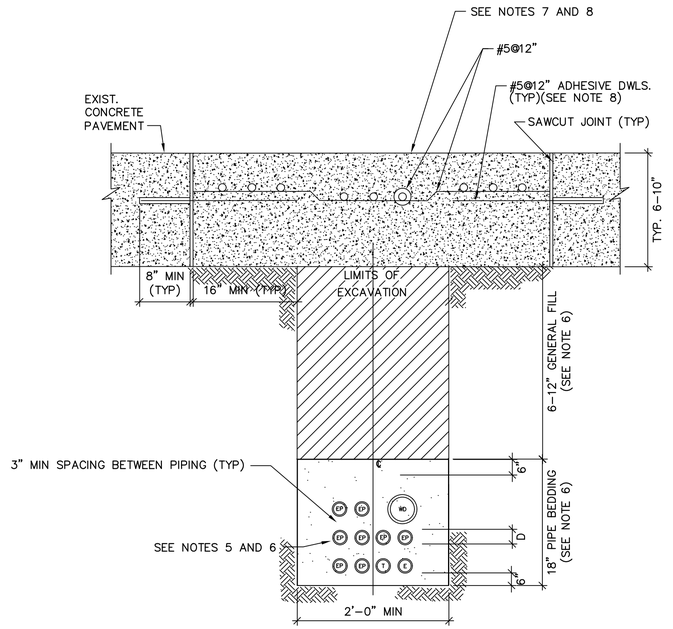
44TH AVENUE SITE (#241107)

NOT FOR CONSTRUCTION

PROPOSED SITE PLAN

SCALE: 1/8"=1'–0"

DATE JUNE 2010
SHEET 2 OF 5
CAD REF. NO. 0266383–02



TRENCH AND CONCRETE PAVEMENT REPAIR DETAIL

NOT TO SCALE

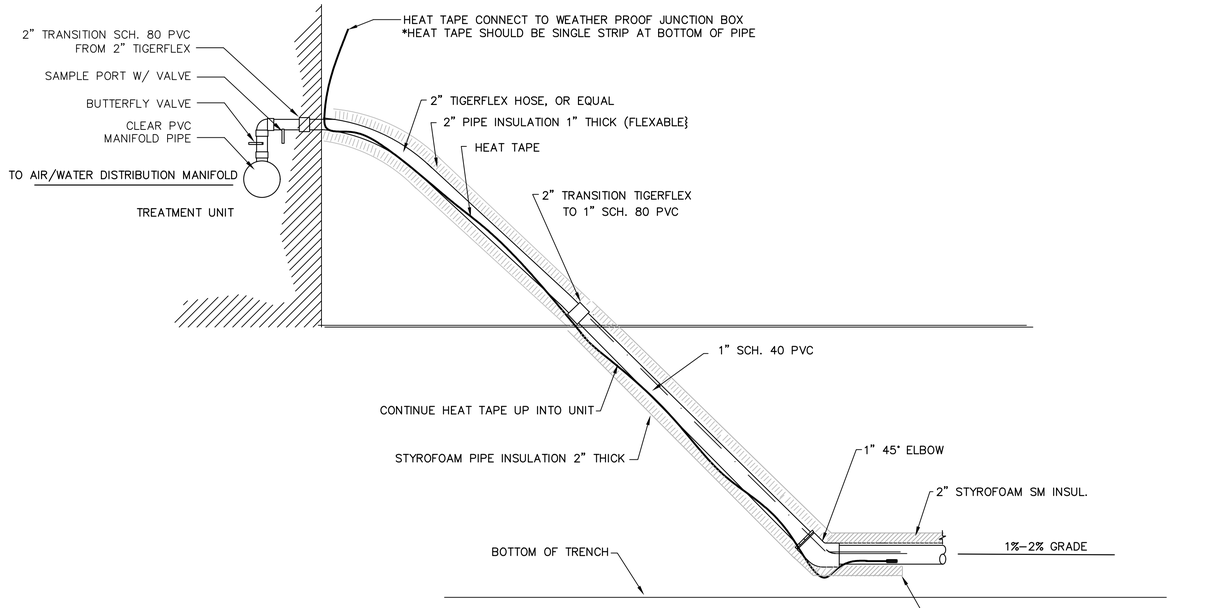
1 | 2 | 3

NOTES FOR TRENCH DETAIL:

1. D=PIPE DIAMETER
2. THIS DETAIL APPLICABLE TO CONCRETE SURFACE AREAS.
3. PROVIDE 6" MIN CLEARANCE BETWEEN PARALLEL PIPING RUNS.
4. CONTRACTOR TO PERFORM PRESSURE TESTING OF ALL LINES PRIOR TO BACKFILL.
5. CONTRACTOR SHALL BACKFILL TRENCH AND PLACE THE CONCRETE COURSE AS SOON AS POSSIBLE AFTER INSTALLATION.
6. PIPE BEDDING MATERIAL SHALL BE FINELY GRADED BANK RUN SAND CONTAINING LESS THAN 10% FINES. EXCAVATED MATERIAL SHALL BE USED AS GENERAL FILL BUT MUST BE FREE OF ROOTS, DEBRIS, AND ORGANIC MATTER. PIPE BEDDING MATERIAL AND GENERAL FILL SHALL BE PLACED IN COMPACTED LAYERS IN 6 INCH LIFTS. COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR.
7. PROVIDE CONCRETE PAVEMENT THICKNESS TO MATCH EXISTING. CONCRETE STRENGTH SHALL MEET MINIMUM STRENGTH OF 3000 PSI IN 48 HOURS.
8. PROVIDE 60 KSI ADHESIVE DOWELS WITH MINIMUM EMBEDMENT AND PROJECTION AS SHOWN. USE HIT HY150 ADHESIVE MATERIAL BY HILTI OR EQUAL. COMPLY WITH THE INSTALLATION REQUIREMENT OF THE ADHESIVE MATERIAL MANUFACTURER.
9. SAWCUT CONTROL JOINTS IN CONCRETE TO MATCH EXISTING JOINTS, BUT SHALL NOT EXCEED A MAXIMUM SPACING OF 12'-0".

PIPE LEGEND:

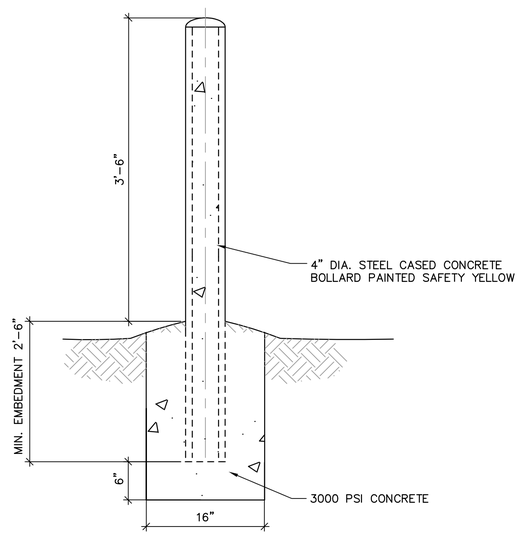
- (EP) 1" EXTRACTION WELL PIPE (TYP. x8)
- (WD) 2" WATER DISCHARGE PIPE
- (E) ELECTRIC CONDUIT
- (T) TELEPHONE CONDUIT



EXTRACTION WELL PROCESS PIPE INTO TREATMENT SYSTEM

NOT TO SCALE

2 | 2 | 3



BOLLARD DETAIL

NOT TO SCALE

3 | 2 | 3

REVISIONS			
NO.	BY	DATE	REMARKS

DES MRJ
DWN MRJ
CKD ARV

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LONG ISLAND CITY, NEW YORK

44TH AVENUE SITE (#241107)

NOT FOR CONSTRUCTION

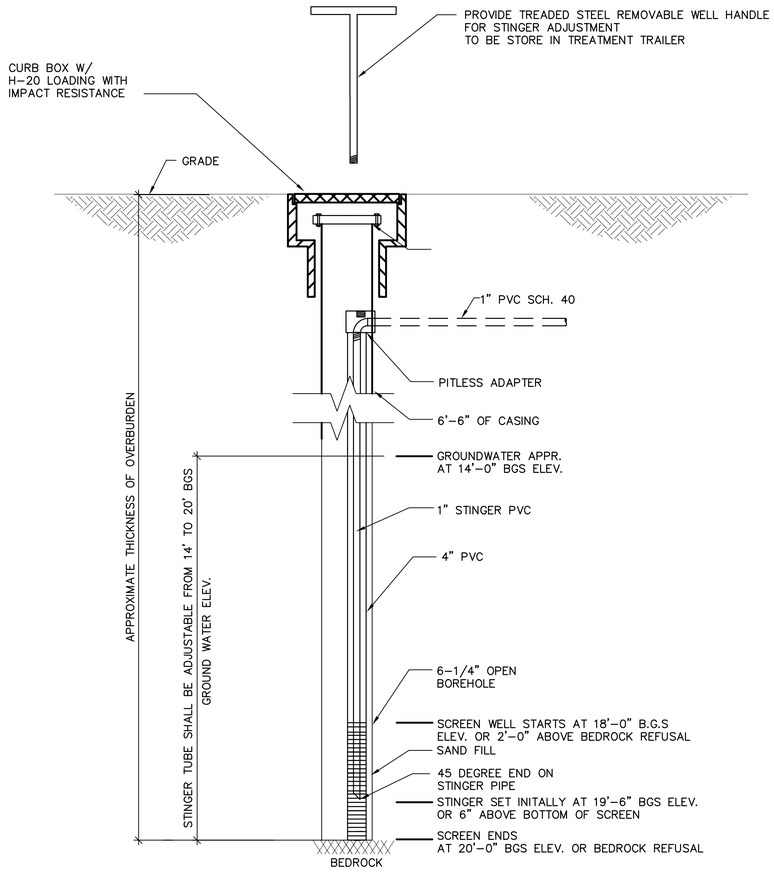
SECTIONS AND DETAILS I

NOT TO SCALE

DATE JUNE 2010

SHEET 3 OF 5

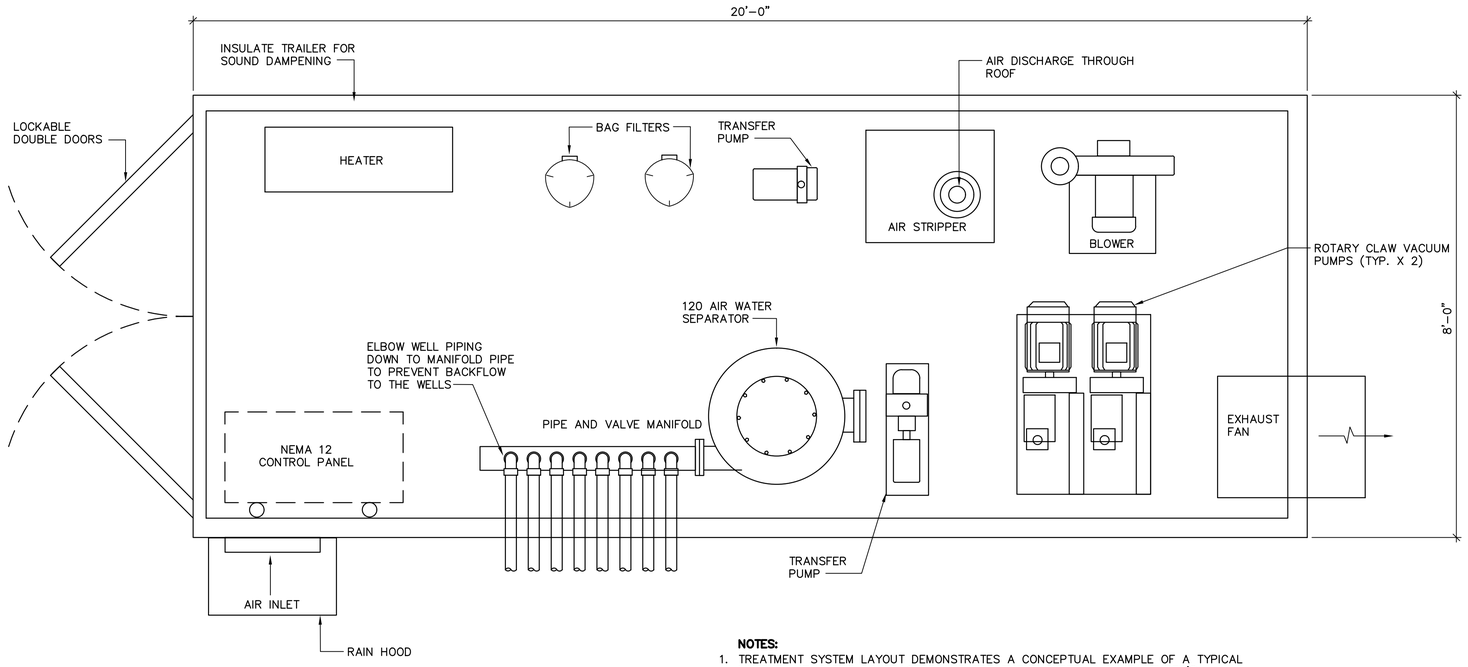
CAD REF. NO. 0266383-03



TYPICAL EXTRACTION WELL ELEVATION DETAIL

NOT TO SCALE

4 | 2 | 4



NOTES:

1. TREATMENT SYSTEM LAYOUT DEMONSTRATES A CONCEPTUAL EXAMPLE OF A TYPICAL LAYOUT. IT IS THE CONTRACTOR AND TREATMENT SYSTEM MANUFACTURER'S OVERALL RESPONSIBILITY TO COORDINATE SIZING AND LOCATION OF COMPONENTS AND PROVIDE A COMPLETE AND OPERATIONAL TREATMENT SYSTEM.
2. LIQUID PHASE CARBON IS SHOWN LOCATED OUTSIDE THE TREATMENT TRAILER ON SHEET 2 AND 5. HOWEVER, IF SUFFICIENT SPACE IS AVAILABLE INSIDE THE 20' X 8' TREATMENT TRAILER FOR THE TWO 200 LBS. LIQUID PHASE CARBON VESSELS THEN THIS IS THE PREFERRED LOCATION.

CONCEPTUAL TREATMENT TRAILER LAYOUT

NOT TO SCALE

5 | 2 | 4

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES MRJ
DWN MRJ
CKD ARV

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LONG ISLAND CITY, NEW YORK

44TH AVENUE SITE (#241107)

SECTIONS AND DETAILS II

NOT TO SCALE

DATE JUNE 2010

SHEET 4 OF 5

CAD REF. NO. 0266383-04

DILUTION AIR FILTER

INLET FILTER

TEE OFF THE SIDE OF THE TREATMENT TRAILER TO PREVENT CONDENSATION FROM FREEZING ON ROOF. HEAT TRACE AND INSULATE TO PREVENT FORMATION OF ICE BUILDUP IN PIPE.

DISCHARGE SILENCER

LIGHT

PARTICULATE FILTER

SCH. 80 PVC

CLAW VACUUM PUMP 7.5 HP TEFC 150 ACFM @22 HG

BLACK IRON PIPE

SCH. 80 PVC

SCH. 80 PVC

VAPOR/LIQUID KNOCKOUT TANK 120 GALLONS

SIGHT GLASS

6" CLEANOUT PORT

TRANSFER PUMP 1 HP TEFC 5 GPM UNDER A SUSTAINED VACUUM OF 22" HG & A DISCHARGE PRESSURE OF 10 PSI

CLEAR PVC

INSULATE AND HEAT TRACE (TYP. X 8)

FROM EXTRACTION WELLS (TYP. X 8)

AIR STRIPPER BLOWER 3 HP TEFC 140 CFM AT 24" WC

AIR STRIPPER 5 GPM

TRANSFER PUMP 1.5 HP TEFC 5 GPM AT 80' TDH

TYPE K HOSE

VAPOR PHASE CARBON

VAPOR PHASE CARBON

TO ATMOSPHERE

NOTE:

1. CONTRACTOR TO COORDINATE AVAILABLE POWER AVAILABLE AT THE ROAD WITH THE TREATMENT SYSTEM POWER.
2. CONTROL PANEL SHALL BE ENVIRONMENTAL CONTROL FOR HEATING AND COOLING TO PREVENT CONDENSATION AND EXTREME TEMPERATURE. CONTRACTOR SHALL COORDINATE WITH SYSTEM MANUFACTURER AND COMPONENTS.

OUTSIDE TREATMENT TRAILER

INSIDE TREATMENT TRAILER

TELEMETRY PLC

CONTROL PANEL

FAN

LIGHT

VENT

VENT

SCH. 80 PVC

DRAIN

BAG FILTER

DRAIN

BAG FILTER

SCH. 80 PVC

TYPE K HOSE

INSULATE AND HEAT TRACE

LIQUID PHASE CARBON 200 POUNDS MIN.

LIQUID PHASE CARBON 200 POUNDS MIN.

TO SANITARY SEWER DISCHARGE

LEGEND

DPI	DIFFERENTIAL PRESSURE INDICATOR
EOS	TELEMETRY UNIT
ETM	ELAPSED TIME METER
FIT	FLOW INDICATING TRANSMITTER
FM	FLOW METER
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH HIGH
LSL	LEVEL SWITCH LOW
M	MOTOR
MCP	MASTER CONTROL PANEL
PI	PRESSURE INDICATOR
PSL	PRESSURE SWITCH LOW
PT	PRESSURE TRANSMITTER
SP	SAMPLE PORT
SVL	SOLENOID VALVE
TI	TEMPERATURE INDICATOR
TSH	TEMPERATURE SWITCH HIGH
TT	TEMPERATURE TRANSMITTER
TV	THERMOSTATIC VALVE
VI	VACUUM INDICATOR
VFD	VARIABLE FREQUENCY DRIVE

BALL VALVE

BUTTERFLY VALVE

GATE VALVE

CAMLOCK FITTINGS

CHECK VALVE

RELIEF VALVE

WYE STRAINER

ALARM LIGHT

EMERGENCY STOP LIGHT

RUN LIGHT

AIR LINE

CONTROL LINE

WATER LINE

INTRINSICALLY SAFE LINE

INTRINSICALLY SAFE ANALOG LINE

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES MRJ

DWN MRJ

CKD ARV

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
LONG ISLAND CITY, NEW YORK

44TH AVENUE SITE (#241107)

NOT FOR CONSTRUCTION

INSTRUMENTATION AND CONTROLS

NOT TO SCALE

DATE JUNE 2010

SHEET 5 OF 5

CAD REF. NO. 0266383-05