SITE MANAGEMENT PLAN

40 Marbledale Road Tuckahoe, Westchester County, NY NYSDEC VCP Site #V00237-3

Prepared for:

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JANUARY 5, 2011

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ADDITIONAL ATTACHMENTS ON CD (Listed Alphabetically on CD)

- Voluntary Cleanup Agreement, May 9, 2000
- Summary of Investigative Findings, LB&G, June 2000
- Select Well Logs, August 2000-September 2007
- Results of Additional Soil Sampling Activities, Geovation, March 30, 2001
- Installation of 3 Additional Ground Water Monitoring Wells, Geovation, May 2001
- Additional Site Investigation Activities, Geovation, Feb 2002
- Preliminary Regional GW Characterization, Geovation, May 2002
- Revised On-Site RAWP, ARCADIS, July 2002
- Additional Silt Layer Sampling and Silt Layer Summary Report, Geovation, July 2002
- Revised On-Site RAWP Addendum, ARCADIS, Dec 2002 (Includes October 15, 2002 NYSDEC RAWP Approval)
- September 2004 Additional Off-Site Investigation (GW), Geovation
- September 2004 Off-Site Soil-Gas Report, EML
- Indoor Air Sampling & Analysis Report (On-Site), EML, October 2004
- On-Site Sub-Slab Soil Sampling and Analysis Investigation Report, EML-Geovation, November 2004
- Sub-Slab Soil Sampling Report, Geovation, April 2005
- Sub-Slab and Direct Push Soil Sampling Report, Geovation, May 2005
- Sub-Slab and Split-Spoon Soil Sampling Report, Geovation, Aug 2005
- Off-Site Investigation Work Plan Conditional Approval Letter, NYSDEC, 2/13/06 (Final_workplan approv_021006)
- Off-Site Investigation Work Plan, December 2005, as approved with DEC changes of February 13, 2006
- February 2006 GW Elevation Report, Geovation
- SVI Evaluation Report, 10 Marble Place and 15 Marbledale Road, July 18, 2006
- Off-Site SSD OM&M Plan (Shiloh Baptist Church), 8-17-06
- Off-Site SSD OM&M Plan (Residences) 8-17-06
- Soil Vapor Intrusion (SVI) Evaluation Report for 15 Marbledale Road (Tuckahoe DPW), September 2007
- OM&M/Site Management Plan for the On-Site SSD System, May 16, 2008 (approved by NYSDEC on August 6, 2008)
- Comprehensive On-Site SSD Construction and Operation Report, May 2008
- Comprehensive Final SSD Construction and Operation Report for 41 Marbledale Road, May 2008
- Comprehensive Final SSD Construction and Operation Report for 43 Marbledale Road, May 2008
- Comprehensive Final SSD Construction and Operation Report for 10 Marble Place, May 2008
- Comprehensive Final SSD Construction and Operation Report for 15 Marble Place (Shiloh Baptist Church), May 2008
- Soil Vapor Intrusion (SVI) Evaluation Report for 15 Marbledale Road (Tuckahoe DPW), May 2008
- GW Contour Maps, Geovation, May 2008

- Site Sampling Location Map, Geovation, May 2008
- Final Engineering Report Re: Groundwater On-Site Remedial Action Work Plan, ARCADIS, February 11, 2009 (electronic version separately submitted due to size)
- Final Engineering Report Re: Subsurface Soil, Geovation, June 2009
- Final Engineering Report Re: Soil Vapor, Geovation, June 2009
- Soil Vapor Intrusion (SVI) Evaluation Report for 15 Marbledale Road (Tuckahoe DPW), June 2009
- Post Remedial Annual Report and Project Evaluation for Year 1, ARCADIS, October 30, 2009
- NYSDEC FER Approval, November 22, 2010
- Final Post Remedial Annual Report and Evaluation for On-Site Groundwater, ARCADIS, November 30, 2010

SITE MANAGEMENT PLAN FOR 40 MARBLEDALE ROAD TUCKAHOE, WESTCHESTER COUNTY, NEW YORK NYSDEC Site #V00237-3

1. <u>INTRODUCTION</u>

1.1 GENERAL

This document is required as an element of the remedial program at 40 Marbledale Road, Tuckahoe, Westchester County, New York (hereinafter referred to as the "Site" or "Property") under the New York State (NYS) Voluntary Cleanup Program (VCP) administered by the New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with Voluntary Cleanup Agreement # W3-0855-99-07, Site # V00237-3, which was executed on May 9, 2000 (the VCA).

Pursuant to the VCA, Kings Electronics Co., Inc., now Weissman Holdings, Inc. (Kings) agreed to investigate and remediate contamination resulting from former metal parts degreasing operations conducted at the Site. Site investigation done prior to the VCA revealed that groundwater within the shallow, unconfined water table aquifer in the vicinity of Kings' former manufacturing/degreasing operations area had been impacted by chlorinated volatile organic compounds (CVOCS), primarily trichloroethene (TCE). The source of this contamination, soil impacted by the former degreasing operations, was excavated and removed from the Site by Kings in April of 1999, prior to entering the VCP.

During the course of the voluntary cleanup, the Site was conveyed (with NYSDEC's approval) to Marbledale Road LLC (Marbledale) by deed dated January 20, 2006, and has been converted to a self-storage facility operated by Storage Deluxe.

1.2 GROUNDWATER

To address the impacted groundwater a Revised On-Site Remedial Action Work Plan (RAWP) was approved by NYSDEC on October 15, 2002. As described in the RAWP, an Enhanced Reductive Dechlorination (ERD) process was selected as the cleanup remedy. Under this process, routine injections of molasses solutions were used to produce subsurface conditions promoting the breakdown of CVOC contaminants into innocuous compounds. The ERD remedial system began operation in January 2003. The Site specific cleanup goals for groundwater (i.e., below NYSDEC's Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 for select CVOCs) (SSCGs) were achieved in January 2008. All molasses injections ended in August 2008, beginning the post-remediation groundwater monitoring period. As set forth in the ARCADIS *Final Post-Remedial Annual Report and Project Evaluation*, dated November 30, 2010 and

approved by NYSDEC on January 5, 2011 (the *Final Post-Remedial Annual Report*), eight quarters of post-remedial groundwater monitoring ended in July 2010 with no post-remedial rebound of the site constituents.

1.3 SOIL

Although impacted soil was removed prior to the VCA (and the area was back-filled with compacted gravel and topped with concrete), additional soil sampling occurred after the VCA was executed. Some residual soil contamination (below the 6 NYCRR Part 375 Restricted Use Commercial Soil Cleanup Objectives for the Protection of Public Health) was discovered. All such soil was located beneath building foundations and/or asphalt/concrete cover. This residual contamination will be addressed in the Engineering and Institutional Control Plan provisions (EC/IC Plan) of Section 6 herein.

1.4 SOIL VAPOR

1.4.1 On-Site Soil Vapor

To address possible on-site soil vapor intrusion (SVI), Kings agreed to install a sub-slab depressurization (SSD) system in the Site's current storage facility, in lieu of conducting a full scale SVI investigation. The SSD system installation began in 2007 and continued during the construction of the current storage facility, becoming fully operational in March of 2008. The on-site SSD system has been maintained pursuant to a May 16, 2008 SSD OM&M Plan approved by NYSDEC and the New York State Department of Health (NYSDOH) (together, the State) on August 6, 2008 and is addressed in the EC/IC Plan of Section 6 herein.

1.4.2 Off-Site Soil Vapor

In lieu of continued SVI monitoring, in July and August of 2006, Kings installed SSD systems at three private residences, 41 Marbledale Road, 43 Marbledale Road and 10 Marble Place and in Shiloh Baptist Church, 15 Marble Place. (Only 10 Marble Place had results that could have triggered mitigation). These systems have been maintained pursuant to SSD OM&M Plans approved by the State on September 14, 2006 and are addressed in the EC/IC Plan of Section 6 herein.

2.0 <u>PURPOSE OF THIS SITE MANAGEMENT PLAN</u>

This Site Management Plan (SMP):

- Provides a history of the Site and the VCA investigation and remedial actions;
- Sets forth a Site Monitoring Plan for Post-Closure Groundwater Sampling; and
- Contains an Engineering and Institutional Control Plan for the Site.

Any revision to this SMP must be approved in writing by NYSDEC (all references to NYSDEC herein shall include any successor regulatory agency).

3.0 SITE DESCRIPTION

The Site consists of storage buildings, three paved ingress/egress parking areas, an alleyway, and paved loading/unloading dock areas. The property occupies approximately 1.8 acres and is located in a mixed use area consisting of light industrial, commercial, and residential uses. The Site location is presented in Figure 1. A Site Plan is presented in Figure 2.

3.1 HISTORY

Prior to the development of the former Kings facility, the area operated as a marble quarry until the 1900's. Following cessation of quarrying operations, the quarried areas were backfilled with non-native material (e.g., soil, bricks, marble fragments) to the existing elevation.

The northern portion of the Site was developed and operated as an icehouse in the mid 1900's. Wood planks and cork that served as floor insulation have been found in some areas beneath the existing concrete floor of the original building. The remainder of the property was developed prior to 1900 by T.D. Wadelton & Sons (woodwork and manufacturer). Sometime between 1931 and 1952, a portion of the Site was redeveloped by the O.D. Chemical Corporation.

The former Kings facility became active after 1951, and manufacturing operations included wastewater pretreatment, electroplating, degreasing, machining, assembly and other production processes. Manufacturing operations ceased in 1998 and related process equipment, materials, and wastes were dismantled and/or removed that year.

As discussed above, in 2006, Kings sold the Site to Marbledale, which redeveloped the former Kings facility to the self-storage facility operated by Storage Deluxe today.

3.2 HYDROGEOLOGY

Groundwater beneath the Site occurs in both the unconsolidated sand and silt, and bedrock. Depth to groundwater in the unconsolidated unit is between 9 and 12 feet bgs. Groundwater flow in the unconsolidated unit is generally to the south, southwest and follows topography, which slopes gently to the south. Hydraulic conductivity values in the unconsolidated unit average approximately 10 feet per day (ft/day). Horizontal seepage velocities for groundwater present in the unconsolidated sediments average approximately 0.8 ft/day.

An artesian bedrock production well (no longer in use) exists on the Site and has demonstrated an upward gradient in the bedrock groundwater. The total depth of this well is reportedly 550 feet below grade. Based on a downhole television inspection of the open borehole (66' to 550' below grade), the bedrock formation is believed to be either Manhattan Schist or Fordham Gneiss.

Groundwater beneath the Site and the surrounding area is not used as a potable drinking water source.

Well logs from August 2000 to September 2007 are included as a CD attachment.

3.3 PRE-REMEDIAL GROUNDWATER CONDITIONS

On-site groundwater was impacted with CVOCs. TCE was determined to be the diagnostic COC at the Site. The highest concentrations of total CVOCs in groundwater were detected in the upper unconsolidated unit (10 to 20 feet bgs). Concentrations of TCE in groundwater ranged from not detected to 28,000 parts per billion (ppb). Concentrations of CVOCs historically detected in the lower unconsolidated unit generally decreased by two to three orders of magnitude, demonstrating that the downward migration of CVOCs was limited, possibly attributable to decreased hydraulic conductivity at depth associated with the fining downward sequence observed for the unconsolidated unit.

4.0 <u>SITE INVESTIGATION AND REMEDIAL ACTION</u>

Groundwater, soil and soil vapor investigation and remedial activities were conducted at the Site as described below.

4.1 DESCRIPTION OF GROUNDWATER ACTIVITIES

ERD was selected as the remedial action for CVOCs in on-site groundwater. Following completion of a pilot test, the full-scale ERD remediation system was initiated in January 2003. The February 11, 2009 ARCADIS *Final Engineering Report RE: Groundwater On-Site Remedial Action Work Plan*, approved by NYSDEC on November 22, 2010 (the FER) and the RAWP provide a full description of the groundwater remedial action. This section presents a summary of the remedial action for CVOC impacted groundwater and includes: (1) the ERD process; (2) the injection well network; (3) the monitoring well network; (4) baseline monitoring and history of carbohydrate injections; (5) history of onsite and off-site groundwater monitoring; (6) meeting the goals of the groundwater remedial action; and (7) the post-remedial monitoring and evaluation.

4.1.1 ERD Process Description

The in-situ biodegradation of CVOCs is a well-documented process. In order to enhance the natural degradation process at the Site, a carbohydrate substrate (i.e., in the form of a food grade molasses and water solution) was injected into the subsurface to provide an organic carbon source for microbes already present in the aquifer. This created an in-situ reactive zone (IRZ), which is the zone within the aquifer where enhancement of degradation occurs.

4.1.2 Injection Well Network

A series of injection wells were installed at the Site for the delivery of the substrate solution used to create an IRZ. Injection wells were spaced across the width of the plume to form injection lines. The shallow overburden groundwater system (10 to 20 feet bgs) was targeted for remediation.

Injection well spacing was approximately 30 feet within each injection line. Spacing was based on an estimated radius of influence (ROI) of 15 feet determined during the pilot test. Each injection line consisted of approximately three to five injection wells. The distance between each injection line was approximately 90 feet apart extending across the length of the on-site plume. Because the injection lines were acting as reactive zones, by treating water as it flowed across them, it was not necessary to saturate the whole footprint of the plume with a substrate solution. In total, there were 23 injection wells that formed six injection lines (the Injection System).

The locations of all injection wells and lines are presented in the *As-Built Remedial System Layout Plan*, attached in Appendix A.

4.1.3 Groundwater Monitoring Well Network

A system of monitoring wells was installed both on-site and off-site. The locations of all on-site and off-site monitoring wells are presented on Figure 2. Six on-site monitoring wells were downgradient of the former source area (MW-9S, MW-9D, PTW-2, GP-104R, GP-103R and MW-13R); each one was downgradient of an injection line. During the remediation, these monitoring wells were used to evaluate the IRZ development and document the effectiveness of the system. One additional on-site monitoring well (MW-6S) was located upgradient of the former source area at the northern property line and was utilized to document upgradient groundwater conditions. Five off-site monitoring wells, OS-MW-3, MW-HP-2S, MW-HP-2D, OS-MW-2 and OS-MW-1 (the Off-Site Monitoring Wells), located at sidegradient and downgradient locations, were used to monitor groundwater quality off-site during the remediation.

4.1.4 Baseline Monitoring and Carbohydrate Injections

Prior to start of the remediation system, Kings conducted a baseline monitoring event, which was followed by a total of 40 molasses injection events from January 2003 through August 2008. At the end of remediation system operation in August 2008, approximately 241,000 gallons of molasses solution were injected into the subsurface at the Site. Details of the baseline monitoring and carbohydrate injections are set forth in the ARCADIS FER (Groundwater).

4.1.5 On-Site and Off-Site Remedial Groundwater Monitoring

On-site and off-site groundwater monitoring was performed on a quarterly and/or monthly basis after the remediation system was initiated in January 2003. Locations of the monitoring and injection wells which were sampled during quarterly monitoring and monthly events can be found on Figure 2. Groundwater samples from on-site monitoring wells were analyzed for VOCs, TOC, field parameters, dissolved gases, and biogeochemical parameters. Groundwater samples from off-site monitoring wells were analyzed for VOCs, TOC and field parameters. Groundwater samples from selected injection wells were analyzed for TOC and field parameters.

Historical groundwater monitoring results are summarized in Table 1.

4.1.6 Meeting the Groundwater Remedial Action Goals

The groundwater remedial action goals for the Site were to achieve groundwater quality standards meeting TOGS 1.1.1. These SSCGs were reached in January 2008 (see Table 1). All ERD injections ended in August 2008, beginning the post-remedial monitoring period.

4.1.7 Post-Remedial Monitoring and Evaluation

Quarterly post-remedial groundwater monitoring began in October 2008 and a *Post-Remedial Annual Report and Project Evaluation for Year 1* (4 quarters ending July 2009) (on CD) was submitted to NYSDEC on October 30, 2009. This report and evaluation concluded that a post-remedial rebound of the site constituents for groundwater had not occurred.

Quarterly post-remedial groundwater monitoring continued for four additional quarters: October 2009, January 2010, April 2010 and July 2010. The ARCADIS *Final Post-Remedial Annual Report*, approved by NYSDEC on January 5, 2011, concluded that there was no rebound of the source area during the post-remedial monitoring period (8 quarters-October 2008 through July 2010).

Results of the post-remedial monitoring period are summarized in Tables 2 and 3.

A plan for post-closure groundwater sampling is set forth in Section 5 below.

4.2 DESCRIPTION OF SOIL ACTIVITIES

Prior to entering the VCP, Kings voluntarily excavated the former degreaser area to remove the Site's source contamination. After acceptance into the VCP, additional soil investigation activities were conducted by Geovation Engineering, P.C. (Geovation) as follows:

- In January 2001, soil samples were collected from a "Test Pit" just north of the degreaser soil removal site. See "Results of Additional Soil Sampling Activities," Geovation, March 30, 2001 (on CD).
- In March 2001, additional soil samples were collected during the boring for installation of groundwater monitoring wells MW-10/11/12 south of the former degreaser location. See "Installation of 3 Additional Ground Water Monitoring Wells," Geovation, May 2001 (on CD).

- In November 2001, soil samples were collected from locations within the sidewalls of the excavation at the degreaser soil removal site. See "Additional Site Investigation Activities," Geovation, February 2002 (on CD).
- In April 2002, samples of silt layer soil were collected from within the sidewalls of the excavation at the degreaser soil removal site. See "Additional Silt Layer Sampling and Silt Layer Summary Report," Geovation, July 2002 (on CD).
- In August 2004, below slab soil samples were collected to identify future locations for possible soil vapor sampling. See "On-Site Sub-Slab Soil Sampling and Analysis Investigation Report," EML-Geovation, November 2004 (on CD).
- From March to July 2005 a series of soil investigations were conducted below and adjacent to the basement of the southern building (Storage Deluxe Building #7). See April, May and August 2005 Geovation Sub-Slab Soil Sampling Reports (on CD).

Figure 3 identifies the locations of remaining residual contamination (above the 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives) discovered during the above soil sampling activities. All of this remaining residual soil contamination is below the Part 375 Restricted Use Commercial Soil Cleanup Objectives for the Protection of Public Health (as noted, the Site's use is restricted commercial) and is located beneath either a building foundation or asphalt/concrete cover. (See Geovation's June 2009 *Final Engineering Report Re: Subsurface Soil*, approved by NYSDEC on November 22, 2010). This soil will be addressed in the EC/IC Plan provisions of Section 6 herein.

4.3 DESCRIPTION OF SOIL VAPOR ACTIVITIES

4.3.1 On-Site Soil Vapor Activities

In September 2004, at NYSDOH's request, an investigation into possible on-site soil vapor intrusion began. Preliminary sub-slab soil vapor and indoor ambient air sampling was conducted at specific locations within the Site buildings in order to evaluate the potential for soil vapor intrusion into the buildings. (See October 2004 Indoor Air Sampling & Analysis Report, EML, on CD). Instead of continuing with a full-scale on-site SVI investigation, Kings agreed to install a sub-slab depressurization (SSD) system in the Site's current storage facility.

On August 3, 2005, NYSDEC approved an On-Site SSD System Work Plan for the installation of the SSD system at the Site. On January 19, 2006, the property was sold to Marbledale, which undertook extensive interior demolition, renovation and conversion of the property for self-storage use. In coordination with Marbledale's renovation activities, Kings' contractor, Mitigation Tech, installed the SSD systems in stages (as interior spaces were completed and utility services restored) and made necessary field modifications.

Installation was substantially completed in late November 2007. Following a short evaluation period that ended with the March 2008 replacement of a failed fan impeller unit, the systems were deemed fully operational by Kings. The on-site SSD systems have been maintained in accordance with a May 16, 2008 *OM&M/Site Management Plan for the On-Site SSD System* (on CD), which was approved by NYSDEC on August 6, 2008 (the 2008 On-Site SSD OM&M Plan).

Certified on-site SSD System As-Builts are attached in Appendix B to this SMP and were also part of Geovation's June 2009 *Final Engineering Report Re: Soil Vapor*, approved by NYSDEC on November 22, 2010. A May 2008 *Comprehensive On-Site SSD Report* requested by the State (on CD) sets forth additional details of the on-site SSD system and installation.

The on-site SSD System will continue to be operated by the current Site owner or operator as discussed in Section 6.2.2 below.

4.3.2 Off-Site Soil Vapor Activities

The State conducted an off-site SVI investigation in March of 2005 and issued findings in July of 2005 (2005 SVI Study). Three properties (41& 43 Marbledale Road and 15 Marble Place) fell into a monitoring requirement under the then-current NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York, Section 3: Data Evaluation and Recommendations for Action,* while the remaining properties required no further action. Four properties were inaccessible at the time of the 2005 SVI Study and Kings agreed to conduct an SVI evaluation at two such properties: 15 Marbledale Place, the Village of Tuckahoe Department of Public Works (DPW) and 10 Marble Place, a residential dwelling. (The two other inaccessible properties remained inaccessible). A SSD system was eventually installed at 10 Marble Place in July of 2006, while SVI evaluations were conducted at DPW in March 2006, 2007, 2008 and finally in 2009 (see CD for SVI Evaluation Report, 10 Marble Place and 15 Marbledale Road - DPW) dated 7-18-06, and SVI Evaluation Reports for 15 Marbledale Road (DPW), dated September 2007, May 2008 and June 2009, respectively).

In addition, as a conservative measure and in lieu of continued SVI monitoring, in July and August of 2006, Kings installed sub-slab depressurization (SSD) mitigation systems at 41 and 43 Marbledale Road and 15 Marble Place (Shiloh Baptist Church) (i.e., the three properties that fell into further monitoring in the 2005 SVI Study).

The off-site SSD systems have been maintained by Kings pursuant to State approved SSD OM&M Plans (see August 17, 2006 *Off-Site SSD OM&M Plan (Residences)* and *Off-Site SSD OM&M Plan (Shiloh Baptist Church)* on CD). The May 2008 *Comprehensive Final SSD Construction and Operation Report* for each off-site SSD system (submitted to the State on June 2, 2008) includes the approved SSD system asbuilts.

Section 6.2.2 below provides for tracking the off-site SSD systems going forward.

5.0 <u>SITE MONITORING PLAN: POST-CLOSURE GROUNDWATER</u> <u>SAMPLING</u>

While the cleanup goals of the groundwater remediation were reached in January of 2008 and eight quarters of post-remedial groundwater monitoring from October 2008 through July 2010 confirmed the effectiveness of the remedy with no rebound of site constituents (see the NYSDEC-approved *Final Post-Remedial Annual Report*), NYSDEC has requested one limited post-closure groundwater sampling event (the Post-Closure Sampling). This section will set forth the details of the Post-Closure Sampling.

5.1 GROUNDWATER SAMPLING

The Post-Closure Sampling will be for Target Compound List (TCL) Volatile Organic Compounds (VOCs) using EPA Method 8260 (or the then-current applicable method) and will be conducted on one occasion during the month of January 2014. The following three monitoring wells will be sampled during the Post-Closure Sampling: MW-9S, GP-103R and MW-13R. In addition, MW-6S (on-site at the upgradient northern property line) will be sampled during the Post-Closure Sampling event to further document upgradient groundwater quality.

5.2 SAMPLING METHODOLOGY

Prior to sampling, field screening with a photoionization detector (PID) will be conducted at each wellhead space as a precautionary measure. Groundwater elevation measurements will be recorded for each monitoring well. A low-flow groundwater sampling technique will be utilized to collect groundwater samples. All groundwater samples will be transferred properly into sample containers and placed in coolers with ice and maintained at 4° C for delivery to an ELAP-certified laboratory for analysis under proper chain of custody.

5.3 QUALITY ASSURANCE/QUALITY CONTROL

In addition to the procedures set forth above, all monitoring well samples will be analyzed by the ELAP certified laboratory following the quality assurance/quality control (QA/QC) procedures specified in the analytical method. Category B data deliverables and a data usability summary report (DUSR) will be provided for the Post-Closure Sampling event.

QA/QC samples will be collected to assure quality control. A QA/QC sample set will include a trip blank, field blank, and a blank duplicate, as necessary. A trip blank will be shipped from and back to the laboratory, with each cooler containing samples collected for VOC analyses. A field blank will be collected for each day of Post-Closure Sampling where a decontamination process is employed. In addition, one blank duplicate shall be collected and a MS/MSD sample will be analyzed to determine the quality of laboratory analysis.

5.4 POST-CLOSURE SAMPLING RESULTS

Analytical results of the Post-Closure Sampling event and the corresponding DUSR will be provided to NYSDEC in electronic format within 90 days of the completion of field activities.

5.5 CONCLUSION OF GROUNDWATER SAMPLING

The one Post-Closure Sampling (January 2014) event is intended to be the final groundwater sampling, analysis and/or monitoring of groundwater at the Site. However, if there is an exponential (100x) increase of TCE concentrations in MW-9S, GP-103R or MW-13R over the concentrations present in those wells during the post-remedial monitoring period (October 2008 – July 2010) (see Table 2) and MW-6S has not increased to a similar concentration range, NYSDEC may request another round of groundwater sampling.

In any event, no further action shall be required of Kings based on any sampling result at MW-6S.

6.0 ENGINEERING AND INSTITUTIONAL CONTROL (EC/IC) PLAN

6.1 PURPOSE

Engineering controls and institutional controls (EC/ICs) have been established for the Site to protect human health and the environment.

6.2 ENGINEERING CONTROL SYSTEMS

6.2.1 Soil Cover

Exposure to remaining residual soil contamination is prevented by current soil cap coverings that include asphalt cover, concrete floor cover and grass cover. Figure 3 identifies locations of known residual soil contamination and Figure 4 identifies existing soil cover.

The Site owner/operator shall maintain the soil cap by maintaining its grass cover or asphalt cover or concrete floor cover, or, after obtaining written approval from NYSDEC, by capping the Site with another material. In addition, there shall be no construction, use or occupancy of the Site that results in the unauthorized disturbance or excavation of the Site, which threatens the integrity of the soil cap, or which results in unacceptable human exposure to contaminated soil. An excavation work plan to be approved by NYSDEC must be followed in the event the cover system is to be breached, penetrated or temporarily removed and underlying remaining contamination is to be disturbed.

The annual EC/IC certification required by Section 6.4 below will provide confirmation that the Site owner is in compliance with the soil cover provisions of this section.

6.2.2 Sub-Slab Depressurization Systems

6.2.2.1 On-Site Sub-Slab Depressurization Systems

Until such time as NYSDEC agrees it may be discontinued, the On-Site SSD System shall continue to be operated by the Site's owner or operator as set forth in the Owners Manual and Information Packet (attached as Appendix C to this SMP), which was part of the NYSDEC-approved May 2008 On-Site SSD OM&M Plan. This SMP shall supersede any and all other agreements with the State with respect to the operation and maintenance of the on-site SSD system.

6.2.2.2 Off-Site Sub-Slab Depressurization Systems

The four off-site SSD systems installed by Kings (41 & 43 Marbledale Road and 10 & 15 Marble Place) in July and August of 2006 (the Off-Site SSD Systems) have been maintained by Kings since installation. These Off-Site SSD Systems shall be registered in NYSDEC's tracking and notification system, with responsibility for these systems turned over to NYSDEC and the individual property owners.

The basis for such turn over is: (1) Based on information previously supplied to the State, there is a potential separate off-site groundwater plume; (2) SSD systems were installed as a precautionary measure in lieu of continued monitoring; and (3) Groundwater at the Site was remediated and essentially achieved site criteria (i.e., drinking water quality standards) since January 2008 and post-remedial monitoring through July 2010 shows no rebound of site constituents.

This SMP shall supersede any and all other agreements with the State with respect to the operation and maintenance of the off-site SSD systems.

6.3 INSTITUTIONAL CONTROLS

The Site has a series of institutional controls in the form of site restrictions contained in a Declaration of Covenants and Restrictions (Deed Restriction). The Site owner will record the Deed Restriction with the Office of Westchester County Clerk. A copy of the recorded Deed Restriction is attached as Appendix D.

Institutional Controls identified in the Deed Restriction may not be discontinued without an amendment to or extinguishment of the Deed Restriction. Site restrictions contained in the Deed Restriction are as follows:

• Unless prior written approval by NYSDEC or, if NYSDEC shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, there shall be no construction, use or occupancy of the Property that results in the disturbance or excavation of the Property, which threatens the integrity of the soil cap, or which results in unacceptable human exposure to contaminated soils.

- The owner of the Property shall maintain the cap covering the Property by maintaining its grass cover or asphalt cover or concrete floor cover, or, after obtaining written approval of the Relevant Agency, by capping the Property with another material.
- The owner of the Property shall prohibit the Property from ever being used for purposes other than the Contemplated Use set forth in the VCA, defined as "commercial purposes, other than as a daycare, childcare or medical facility, consistent with the permitted zoning classification of the Site," without the express written waiver of such prohibition by the Relevant Agency.
- The owner of the Property shall prohibit the use of the groundwater underlying the Property without treatment rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the Relevant Agency.
- The owner of the Property shall continue in full force and effect any institutional and engineering controls required under this SMP and maintain such controls unless the owner first obtains permission to discontinue such controls from the Relevant Agency.

6.4 ANNUAL EC/IC CERTIFICATION

The Site's owner or operator will submit an annual certification (until no longer required by NYSDEC) that the terms of the Site's recorded Deed Restriction have not been violated, that the identified engineering controls remain in place, and the property owner is in compliance with the SMP.

7.0 <u>REPORTS/CERTIFICATIONS</u>

No 18-month report/review shall take place for this Site, as Kings has already submitted the *Final Post-Remedial Annual Report* (see CD). This report covered eight (8) quarters (October 2008-July 2010) of data after remedial goals were reached (in January 2008) and all remediation activities ceased (in August 2008). The report, approved by NYSDEC on January 5, 2011, concluded there was no rebound of the site constituents during the post-remediation monitoring period, October 2008 through July 2010.

The following reports and/or certifications shall be submitted to NYSDEC:

 (1) Kings or the Site's owner or operator shall submit the Post-Closure Groundwater Sampling results and accompanying DUSR, as required by Section 5.4 above.
 (2) The Site's owner or operator shall submit an annual EC/IC certification as set forth in Section 6.4 above.

8.0 PERSONNEL- REMEDIAL AND POST-CLOSURE OPERATIONS

The following chart reflects personnel who have been involved in the remediation, postremedial activities, or are involved in Site operations at this time.

ENVIRONMENTAL MANAGEMENT, LTD. (EMI	()
As environmental consultant to Kings, EML was respon	sible for overall supervision and Site
management including: coordinating Site activities, con	ducting inspections, accompanying
contractors, routine reporting, and acting as primary con	tact between Kings and the State (i.e.;
both NYSDEC and NYSDOH project managers).	
Key Personnel	Contact
Donald Wanamaker, President	(888) 436-5932
	dwanamaker@emlweb.com
ARCADIS OF NEW YORK, INC. (ARCADIS)	
As a contractor to Kings, ARCADIS was responsible for	r all post-remedial groundwater
monitoring, reactivation of ERD system and other grour	ndwater activity including: reporting,
well injection and well maintenance.	
Key Personnel	Contact
Moh Mohuiddin, P.E.	(732) 225-5061
Eric Rodriguez	
GEOVATION ENGINEERING, P.C. (Geovation)	
As a contractor to Kings, Geovation was responsible for	soil investigation activities, as well as
SSD system as builts. Geovation's principals are profes	ssional engineers and/or certified
professional geologists (CPG).	
Key Personnel	Contact
Robert Zimmer, P.E., C.P.G.	(845) 651-0040
MITIGATION TECH (MT)	
As a contractor to Kings, MT was responsible for the in	stallation, continued operation.
maintenance and effectiveness of the on-site and off-site	e SSD systems.
Key Personnel	Contact
Nicholas Mouganis, President	(800) 637-9228
STORACE DELUXE (SD)	
Storage Deluxe is the current Site operator	
Key Personnel	Contact
Steven Novenstein, President	(877) 989-7867
The following State personnel currently oversee the Si	te.

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC)											
Edward Hampston, P.E. 518-402-9814											
NYS DEPARTMENT OF HEALTH (NYSDOH)											
Carl Obermeyer, P.E. 845-794-3165											

9.0 EMERGENCY CONTINGENCY PLAN

9.1 EMERGENCY SPILL RESPONSE

Except for the preservatives used in groundwater sampling procedures, there are no postclosure activities that involve the use of hazardous materials, hazardous substances or petroleum products. Preservatives (e.g., HCL for VOCs) are used in such small quantities that they would not require any emergency spill response.

9.2 FIRE/EXPLOSION

There are no activities under this SMP that involve the use of flammable materials or oxidizers.

There is a fire potential for SSD system fans to overheat. In case of smoke or fire from the fan housing unit, *call 911 and report a potential electrical fire. Turn the fan off.*

9.3 PUBLIC NOTIFICATION

Based on the post-closure activities at the Site, there are no anticipated situations arising that would require immediate notification to the public.

9.4. EMERGENCY TELEPHONE NUMBERS, MAP AND DIRECTIONS TO NEAREST HEALTH FACILITY

In the event of a serious personal injury or event during a post-closure activity, call 911, or one of the emergency contact numbers below. The nearest hospital is Lawrence Hospital, 55 Palmer Avenue, Bronxville, NY (914-787-1000). Driving directions are below.

Emergency Contact	Phone Numbers
Local Police	911 or 914.961.4800
Local Ambulance	911 or 914.723.2003
Local Fire Department	911 or 914.793.6402
Local Hospital – Lawrence Hospital	914.787.1000

DIRECTIONS TO LAWRENCE HOSPITAL

55 Palmer Avenue, Bronxville, NY 10708, (914) 787-1000



- SOUTHWEST on Marbledale Road toward Marble Place (approximately 0.1 • mile)
- **LEFT** onto Winter Hill Road (approximately 0.1 mile)
- **RIGHT** onto Midland Avenue (approximately 1 mile) •
- •
- **RIGHT** onto Pondfield Road (approximately 0.5 mile) Enter next roundabout and take 2nd exit onto Palmer Avenue (approximately 0.1 • mile)

FIGURE 1

Site Location



GONZALEZ, JAMES 12/12/2008 9:04 AM BY: ARCADIS.CTB PLOTTED: -PLOTSTYLETABLE: 17.1S (LMS TECH) PAGESETUP: LYR:ON=*;OFF=*REF* SAVED: 12/12/2008 9:04 AM ACADVER: Ч MM TM: I Ä PIC:MM PN B1 OM.dwg Ж ë ġ ä ENRI-1 DIV/GROUP: EDISON no/Kii CITX:

FIGURE 2

Site Plan (Includes all On/Off-Site Monitoring and Injection Wells)



OFF=*REF* PM: TM: LYR:ON=' M&M!4230503B2_OM.0 LD: PIC: 0005\0003\ B g S'TD':

FIGURE 3

Location, Depth and Summary of VOC Soil Sampling Results



FIGURE 4

Surface Area Showing Buildings, Asphalt/Concrete, Bedrock Outcrops and Soil at Storage Deluxe Facility



TABLE 1

Summary of Historical Volatile Organic Compounds Detected in Groundwater

Sample ID: Date Sampled:	MW-6S 01/06/2003	MW-6S 05/28/2003	MW-6S 09/09/2003	MW-6S 12/3/2003	MW-6S 03/22/2004	MW-6S 06/14/2004	MW-6S 09/08/2004	MW-6S 01/26/2005	MW-6S 04/19/2005	MW-6S 07/27/2005	MW-6S 11/09/2005	MW-6S 02/15/2006	MW-6S 04/17/2006
Chlorinated VOCs (ug/L)													
Trichloroethene	<u>106</u>	<u>161</u>	<u>76.4</u>	<u>123</u>	<u>104</u>	36.8	72.9	<u>70.4</u>	<u>109</u>	32.8	63.4	44.6	24.3
cis-1,2-Dichloroethene	1.02	1.83	0.473	1.74	1.19	ND	0.599	0.802	0.762	ND	0.672	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	0.79	1.19	ND								
1,1,1-Trichloroethane	<u>14.5</u>	<u>23.7</u>	<u>11.3</u>	<u>18.9</u>	<u>17.9</u>	<u>6.16</u>	<u>12</u>	<u>10.1</u>	<u>17.7</u>	3.41	<u>6.48</u>	4.39	3.31
Tetrachloroethene	<u>12.3</u>	<u>14.8</u>	<u>8.67</u>	<u>14.6</u>	<u>11.2</u>	3.2	<u>9.33</u>	<u>7.23</u>	<u>9.12</u>	3.61	7.23	<u>5.21</u>	3
1,1-Dichloroethane	1.04	1.96	0.804	1.58	1.26	ND	0.516	0.877	1.18	ND	0.445	ND	ND
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters													
Dissolved Oxygen (mg/L)	7.38	6.05	7.42	3.12	4.43	5.19	4.74	6.52	9.27	6	7.5	8.98	7.2
ORP (mV)	206.5	226.6	66.4		98.3	460.5	91.5	241.7	534.5	534.9	213.5	168	250.3
pH (SU)	6.7	6.96	6.18	6.78	6.76	6.47	6.6	6.83	5.78	5.19	6.75	6.82	6.59
S. Conductivity (umhos/cm)	1010	1301	1060	1005	1346	1391	1235	1053	1420	1680	1397	1377	1630
Total Organic Carbon (ppm)	2.2	2.06	2.01	2.02	1.52	1.67	6.47	1.18	1.69	5.75	2.72	7.46	1.81
Dissolved Organic Carbon (ppm)	2.18	1.82	1.93	1.94	1.41	1.42	1.43		1.55	1.1	2.1	1.54	
Biogeochemical Parameters													
Carbon Dioxide (mg/L)	27	39		72		52		43	42		43	34	
Nitrogen (mg/L)													
Methane (ug/L)	0.68	0.53		62		0.98		10	24		3.5	13	
Ethane (ng/L)	8	ND		63		44		88	38		140	200	
Ethene (ng/L)	23	77		220		410		72	26		ND	69	
Sulfide (mg/L)	0.03	0.007		0.06		0.02		0.02	0.02		0	0	
Ferrous Iron (mg/L)	0.2	0.01		0.16		0.001		0	0.01		0.01	0	
Dissolved Iron (ug/L)	ND	ND		ND		ND		111	ND		ND	ND	
Total Iron (ug/L)	143												
Dissolved Manganese (ug/L)	ND												
Total Manganese (ug/L)	40.2												
Alkalinity (mg/L)	150												
Chloride (mg/L)	248												
Nitrate (mg/L)	9.25												
Nitrite (mg/L)	ND												
Sulfate (mg/L)	64.2	62.6		44.4		59		53.2	57.6		72.6	53.6	

--- Not Analyzed

Sample ID: Date Sampled:	MW-6S 07/25/2006	MW-6S 10/25/2006	MW-6S 01/30/2007	MW-6S 04/24/2007	MW-6S 07/26/2007	MW-6S 10/02/2007	MW-6S 01/16/2008	MW-6S 04/17/2008	MW-6S 07/24/2008
Chlorinated VOCs (ug/L)									
Trichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl Chloride 1,1-Dichloroethene 1,1,1-Trichloroethane Tetrachloroethene 1,2-Dichloroethane (EDC)	74.4 1.13 ND ND 13.9 8.53 0.979 ND	66.3 0.706 ND ND 17.3 7.26 1.12 ND	53.1 0.588 ND ND 11.4 6 0.694 ND	66.5 0.528 ND ND 15.9 8.44 1.03 ND	44.2 ND ND ND 16.1 6.84 ND	20.6 ND ND ND 4.56 3.32 ND ND	31 ND ND ND 3.91 3.97 ND ND	46.8 ND ND ND 8.56 4.93 ND ND	38.8 ND ND ND <u>7.62</u> 4.66 ND ND
1,1,2-1 richloroethane 1,1,2,2-Tetrachloroethane	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
Field Parameters									
Dissolved Oxygen (mg/L) ORP (mV) pH (SU) S. Conductivity (umhos/cm) Total Organic Carbon (ppm) Dissolved Organic Carbon (ppm)	7.08 701 1291 1.4 1.33	4.81 222 6.63 1351 1.87	5.77 153.7 6.38 1554 	5.13 -20.7 6.62 1837 	8.78 164.3 6.3 906 	3.2 76.6 6.58 1353 2.19 	6.33 27.8 6.88 1050 	8.31 125.8 6.61 1293 1.9	7.35 89 6.64 1520 1.69
Biogeochemical Parameters									
Carbon Dioxide (mg/L) Nitrogen (mg/L) Methane (ug/L) Ethane (ng/L)	52 1.9 25								
Sulfide (mg/L) Ferrous Iron (mg/L) Dissolved Iron (ug/L) Total Iron (ug/L)	0.009 0.03 119								
Dissolved Manganese (ug/L) Total Manganese (ug/L) Alkalinity (mg/L)									
Chloride (mg/L) Nitrate (mg/L) Nitrite (mg/L) Sulfate (mg/L)	 59.2	 	 	 	 	 	 	 	

--- Not Analyzed

 ND
 Not Detected

 Bold
 concentration exceeded NYSDEC Groundwater Quality Standards

Sample ID Date Sampled	: MW-9S : 01/08/2003	MW-9S 05/28/2003	MW-9S 07/15/2003	MW-9S 09/10/2003	MW-9S 11/04/2003	MW-9S 12/2/2003	MW-9S 3/22/2004	MW-9S 6/16/2004	MW-9S 9/8/2004	MW-9S 1/27/2005	MW-9S 4/19/2005	MW-9S 7/27/2005
Chlorinated VOCs (ug/L)												
Trichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene Vinyl Chloride 1,1-Dichloroethene 1,1-Trichloroethane Tetrachloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Zictrichloroethane	1760 D 2950 D 26.9 99.2 8.25 ND 24.5 ND ND ND ND	1650 D 2840 D 19.5 149 7.24 2.43 14.8 0.652 ND ND		916 1380 14.9 413 ND ND 20.9 ND ND ND		662 D 391 D 6.29 41.2 1.22 1.19 1.59 ND ND ND	371 D 502 D 8.2 76.3 1.01 ND 10.5 ND ND ND	144 921 3.35 28.3 ND ND 5.16 ND ND ND	93.4 1490 ND 20.8 ND ND ND ND ND ND ND	22.5 149 0.526 19.7 ND ND 1.66 0.994 ND ND	12.1 84.4 0.598 17.8 ND ND 0.829 2.20 ND ND	9.27 170 ND 27 ND 0.774 0.811 ND ND
	ND	ND		ND		ND	ND	ND	ND	ND	ND	ND
Field Parameters												
Dissolved Oxygen (mg/L) ORP (mV) pH (SU) S. Conductivity (umhos/cm) Total Organic Carbon (ppm) Dissolved Organic Carbon (ppm)	2.31 123.5 5.73 822 9.51 9.24	0.6 214.1 6.52 1174 8.48 7.65	0.51 -64.3 6.45 1161 5.94	0.76 36.7 6.38 1259 13 10.9	0.65 -80.2 6.4 1305 20.3	0.19 -132.5 6.53 1425 26.4 24.5	0.42 -123.7 6.55 1695 12.8 8.96	0.2 -47.7 6.52 1738 10 9.61	0.85 -98.5 6.38 1616 7 6.66	 -220.8 6.38 1662 8.16 	110.1 8.21 1807 4.89 4.84	1.08 -2.9 5.73 1705 12 7.85
Biogeochemical Parameters												
Carbon Dioxide (mg/L) Nitrogen (mg/L) Methane (ug/L)	110	110				170 29		230 3900		210 960	200 7100	
Ethane (ng/L) Ethene (ng/L) Sulfide (ng/L)	1100 14000 0.07	3500 12000 0.003				6400 9200 0.04 2.95		20000 1100 0.03		2900 39000 0.37 2.14	9700 16000 0.02 1.63	
Dissolved Iron (ug/L) Total Iron (ug/L) Dissolved Manganese (ug/L)	ND ND 796	ND 				16300 		29200		7660	24300	
I otal Manganese (ug/L) Alkalinity (mg/L) Chloride (mg/L) Nitrate (mg/L)	807 308 144 0.858	 	 	 	 	 	 	 	 	 	 	
Nitrite (mg/L) Sulfate (mg/L)	0.108 72.4	 98				 43.6		 41		 26.2	 23	

--- Not Analyzed

Sample ID: Date Sampled:	MW-9S 11/9/2005	MW-9S 2/15/2006	MW-9S 4/19/2006	MW-9S 7/26/2006	MW-9S 10/26/2006	MW-9S 1/30/2007	MW-9S 04/24/2007	MW-9S 07/25/2007	MW-9S 10/02/2007	MW-9S 01/15/2008	MW-9S 04/17/2008	MW-9S 07/22/2008
Chlorinated VOCs (ug/L)												
Trichloroethene	13.9	4.33	3.26	0.668	ND	ND	ND	0.893	0.406	0.707	0.383	ND
cis-1,2-Dichloroethene	52.1	8.64	5.04	3.35	1.31	2.06	1.37	ND	ND	0.703	0.918	0.637
trans-1,2-Dichloroethene	ND	0.41	ND	0.418	0.474	0.596	ND	ND	ND	0.775	1.34	0.795
Vinyl Chloride	<u>8.56</u>	<u>2.27</u>	1.08	<u>2.76</u>	1.24	1.22	<u>2</u>	ND	ND	ND	1.33	0.979
1,1-Dichloroethene	ND	1.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.971	ND	ND	ND	ND	ND	ND	ND	ND	0.492	ND	ND
1,1-Dichloroethane	1.4	1.12	1.25	ND	ND	ND	ND	1.08	1.24	0.878	1.02	0.672
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters												
Dissolved Oxygen (mg/l)	0.32	0 14	3.68		0.42		0 19	1.53	3 86	0 47	0.67	0.29
ORP (mV)	-37.2	-93.5	-67.3	-85.7	-124.1	-90.9	-53.2	-74.9	-123.7	-135.6	-115.1	-79.7
pH (SU)	6.34	6.47	6.59	6.18	6.5	6.62	6.4	6.49	6.66	6.73	7.12	6.6
S. Conductivity (umhos/cm)	1739	1732	1714	1851	2000	1634	2172	835	1589	1689	1661	1744
Total Organic Carbon (ppm)	12.1	17.6	6.12	71.2	48.2				12.9		15.6	27.7
Dissolved Organic Carbon (ppm)	12	13.7		68.9								
Biogeochemical Parameters												
Carbon Dioxide (mg/L)	210	270		340								
Nitrogen (mg/L)												
Methane (ug/L)	3400	6000		11000								
Ethane (ng/L)	18000	17000		7300								
Ethene (ng/L)	4600	1700		370								
Sulfide (mg/L)	0.007	0.011		0.055								
Ferrous Iron (mg/L)	>3.3	5.88		2.71								
Dissolved Iron (ug/L)	12700	25200		55600								
Total Iron (ug/L)												
Dissolved Manganese (ug/L)												
Total Manganese (ug/L)												
Alkalinity (mg/L)												
Chloride (mg/L)												
Nitrate (mg/L)												
Nitrite (mg/L)												
Sulfate (mg/L)	26.9	21.2		ND								

--- Not Analyzed

Sample ID: Date Sampled:	MW-9D 1/8/2003	MW-9D 9/10/2003	MW-9D 11/04/2003	MW-9D 12/2/2003	MW-9D 3/22/2004	MW-9D 6/16/2004	MW-9D 9/8/2004	MW-9D 1/27/2005	MW-9D 4/19/2005	MW-9D 7/27/2005	MW-9D 11/9/2005	MW-9D 2/14/2006	MW-9D 4/19/2006
Chlorinated VOCs (ug/L)													
Trichloroethene	545 D	44		90.3	13	0.479	ND	1.33	1.94	ND	ND	ND	ND
cis-1,2-Dichloroethene	2.71	105		174	40.6	13.1	<u>9.15</u>	1.59	ND	0.902	2.16	ND	ND
trans-1,2-Dichloroethene	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	<u>2.26</u>		<u>8.02</u>	<u>10.9</u>	23.4	24.4	<u>3.72</u>	1.12	<u>3.63</u>	<u>6.94</u>	<u>5.92</u>	<u>5.55</u>
1,1-Dichloroethene	ND	ND		0.873	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	<u>13.9</u>	1.61		1.59	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND		0.45	ND	ND	ND	ND	ND	ND	ND	ND	0.564
1,2-Dichloroethane(EDC)	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1.1.2-Trichloroethane	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters													
Dissolved Oxvaen (ma/L)	2.1	0.39	0.21	0.07	0.4	0.64	0.69	0.14	0.54	0.17		0.14	0.26
ORP (mV)	230.5	-264.3	-113.7	-343.5	-268.6	-145	-182.1	-249.4	-142.5	-123.3	-161.9	-177.4	-130.4
pH (SU)	5.98	6.05	6.35	6.5	6.73	6.6	6.71	6.76	6.67	7.14	6.8	6.89	6.74
S. Conductivity (umhos/cm)	1195	2002	1832	1991	1998	1450	1767	1731	1866	1633	1620	1543	1684
Total Organic Carbon (ppm)	1.16	402	136	133	162	12.4	14.4	7.82	5.55	8.25	4.95	3.11	3.19
Dissolved Organic Carbon (ppm)	1.07	297		122	147	11.4	14.3		5.78	4.83	3.8	2.93	
Biogeochemical Parameters													
Carbon Dioxide (mg/L)	62			280		80		110	140		56	64	
Nitrogen (mg/L)													
Methane (ug/L)	0.36			8600		6800		30000	23000		7300	13000	
Ethane (ng/L)	ND			59		320		2900	1900		3100	5700	
Ethene (ng/L)	26			3200		3600		600	170		820	980	
Sulfide (mg/L)	0.01			0.63		0.21		0.14	0.11		0.144	0.103	
Ferrous Iron (mg/L)	0.02			2.39		1.85		>3.30	2.8		>3.3	3.29	
Dissolved Iron (ug/L)	ND			33300		40100		110000	104000		66300	57500	
Total Iron (ug/L)	ND												
Dissolved Manganese (ug/L)	116												
Total Manganese (ug/L)	128												
Alkalinity (mg/L)	98												
Chloride (mg/L)	407												
Nitrate (mg/L)	3.22												
Nitrite (mg/L)	ND												
Sulfate (mg/L)	46			20.4		ND		ND	2.4		18.5	9.4	

--- Not Analyzed

Sample ID: Date Sampled:	MW-9D 7/26/2006	MW-9D 10/26/2006	MW-9D 1/30/2007	MW-9D 04/24/2007	MW-9D 07/25/2007	MW-9D 10/02/2007	MW-9D 01/15/2008	MW-9D 04/17/2008	MW-9D 07/22/2008
Chlorinated VOCs (ug/L)									
Trichloroethene	0.856	ND	ND	ND	ND	0.452	ND	ND	ND
cis-1,2-Dichloroethene	0.485	ND	ND	ND	ND	ND	ND	ND	ND
trans-1.2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	7.14	<u>10.2</u>	5.6	5.4	2.32	2.6	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.645	ND	ND	ND	ND	ND	0.699	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	0.626	ND	ND	ND	ND
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters									
Dissolved Oxygen (mg/L)	0.23	0.27	0.41	0.42	0.32	0.13	0.52	0.25	
ORP (mV)	-85.6	-144.7	-101.5	-86.5	-101.5	-118.6	-125.3	-104.7	-104.5
pH (SU)	6.25	6.69	6.58	6.78	6.62	6.67	6.74	6.55	6.67
S. Conductivity (umhos/cm)	1601	1610	1345	1478	989	1468	1370	1249	1622
Total Organic Carbon (ppm)	2.28	3.38				2.91		3.61	3.12
Dissolved Organic Carbon (ppm)	1.95								
Biogeochemical Parameters									
Carbon Dioxide (mg/L)	48								
Nitrogen (mg/L)									
Methane (ug/L)	4600								
Ethane (ng/L)	4300								
Ethene (ng/L)	860								
Sulfide (mg/L)	0.3								
Ferrous Iron (mg/L)	1.82								
Dissolved Iron (ug/L)	44400								
Total Iron (ug/L)									
Dissolved Manganese (ug/L)									
Total Manganese (ug/L)									
Alkalinity (mg/L)									
Chloride (mg/L)									
Nitrate (mg/L)									
Nitrite (mg/L)									
Sulfate (mg/L)	59.2								

--- Not Analyzed

ND Not Detected Bold concentration exceeded NYSDEC Groundwater Quality Standards

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Sample ID: Date Sampled:	PTW-2 01/08/2003	PTW-2 05/27/2003	PTW-2 09/10/2003	PTW-2 12/02/2003	PTW-2 3/23/2004	PTW-2 6/15/2004	PTW-2 9/7/2004	PTW-2 1/26/2005	PTW-2 4/18/2005	PTW-2 7/27/2005	PTW-2 11/9/2005	PTW-2 2/15/2006	PTW-2 4/18/2006
Chlorinated VOCs (ug/L)													
Trichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene	243 D 434 D 3.81	<u>98.6</u> <u>31.6</u> 0.627	<u>111</u> <u>62.6</u> 0.733	<u>9.53</u> <u>123</u> 1.58	<u>19.5</u> <u>19.5</u> ND	<u>22.7</u> <u>16</u> ND	<u>6.05</u> <u>16.6</u> 0.747	1.73 4 0.473	<u>11.1</u> <u>12.1</u> ND	3.3 <u>5.94</u> ND	1.63 <u>9.48</u> 0.67	2.53 2.26 ND	1.75 1.41 ND
Vinyl Chloride 1,1-Dichloroethene	<u>86.8</u> 0.760	<u>3.54</u> ND	<u>10.7</u> ND	<u>15.6</u> ND	<u>2.96</u> ND	<u>2.53</u> ND	1.13 ND	ND ND	<u>2.37</u> ND	1.48 ND	<u>3.06</u> ND	ND ND	ND ND
1,1,1-Trichloroethane Tetrachloroethene	ND <u>7.87</u>	2.45 <u>6.5</u>	1.48 <u>6.06</u>	ND 0.967	ND 1.03	ND 1.16	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
1,1-Dichloroethane 1,2-Dichloroethane(EDC)	0.787 ND	1.21 ND	1.48 ND	0.8 ND	0.906 ND	0.679 ND	0.701 ND	ND ND	0.911 ND	0.97 ND	0.784 ND	0.72 ND	1.97 ND
1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
Field Parameters													
Dissolved Oxygen (mg/L)	0.62	0.65	0.7	0.11	0.55	1.44	0.17	0.13	0.32	0.26	0.15	0.09	0.23
ORP (mV) pH (SU)	-272.6 5.65	-95.2 6.56	-197.6 6.56	-312.5 6.69	-112.2 6.57	113.5 6.55	-114.5 6.29	-147.4 6.43	-43.2 6.62	-27.1 6.56	-66.2 6.45	-108.5 6.7	-134 6.67
S. Conductivity (umhos/cm) Total Organic Carbon (ppm)	848 34.3	1347 11.9	1411 13.9	1498 11.3	1485 6.45	1494 5.95	1603 8.57	1455 6.27	1333 4.98	1224 11.7	1361 16.7	745 11.8	1417 8.45
Dissolved Organic Carbon (ppm)	31.4	9.38	8	11.2	5.97	5.67	7.96		3.41	11.7	16.6	5.53	
Biogeochemical Parameters													
Carbon Dioxide (mg/L) Nitrogen (mg/L)	180	140		270		180		270	160		190	64	
Methane (ug/L)	16000	18000		13000		12000		12000	13000		9300	5300 3400	
Ethene (ng/L)	41000	13000		21000		1700		2500	1200		5100	770	
Ferrous Iron (mg/L)	>3.30	3.21		0.02		2.07		3.13	2.69		>3.3	>6.6	
Dissolved Iron (ug/L) Total Iron (ug/L)	49900 49900	45300		33900		30700		35100	16600		33500	20700	
Dissolved Manganese (ug/L) Total Manganese (ug/L)	5640 5750												
Alkalinity (mg/L) Chloride (mg/L)	323 112												
Nitrate (mg/L)	0.539 0.16												
Sulfate (mg/L)	48.4	37.6		14.5		20.4		3.7	25.6		3.8	9.2	

--- Not Analyzed
Sample ID: Date Sampled:	PTW-2 7/27/2006	PTW-2 10/25/2006	PTW-2 3/2/2007	PTW-2 04/24/2007	PTW-2 07/25/2007	PTW-2 10/02/2007	PTW-2 01/15/2008	PTW-2 04/18/2008	PTW-2 07/22/2008
Chlorinated VOCs (ug/L)									
Trichloroethene	2.37	1.02	ND	8.17	0.449	ND	ND	0.871	0.968
cis-1,2-Dichloroethene	1.54	1.73	ND	5.96	ND	ND	ND	1.1	2.32
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	0.646
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	0.406	ND	ND
1,1-Dichloroethane	2.76	0.691	0.882	1.33	ND	0.783	2.44	1.41	2.68
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters									
Dissolved Oxygen (mg/L)	0.45	0.35	0.22	0.37		4.73	1.49	0.61	0.24
ORP (mV)	-68.2	117.1	-155.8	-120.5	-102.8	-147.5	-116.3	-99.9	-83.9
pH (SU)	6.23	6.46	6.56	7.17	6.59	6.84	6.44	6.79	6.54
S. Conductivity (umhos/cm)	1551	1799	1744	2130	640	1607	1590	1378	1648
Total Organic Carbon (ppm)	10.6	29.5				16.6		4.22	4.34
Dissolved Organic Carbon (ppm)	8.07								
Biogeochemical Parameters									
Carbon Dioxide (mg/L)	180								
Nitrogen (mg/L)									
Methane (ug/L)	7700								
Ethane (ng/L)	5600								
Ethene (ng/L)	200								
Sulfide (mg/L)	0.038								
Ferrous Iron (mg/L)	>6.6								
Dissolved Iron (ug/L)	55800								
Total Iron (ug/L)									
Dissolved Manganese (ug/L)									
Total Manganese (ug/L)									
Alkalinity (mg/L)									
Chloride (mg/L)									
Nitrate (mg/L)									
Nitrite (mg/L)									
Sultate (mg/L)	28.4								

--- Not Analyzed

Sample ID: Date Sampled:	GP-103-R 01/10/2003	GP-103-R 05/28/2003	GP-103-R 09/10/2003	GP-103-R 12/3/2003	GP-103-R 3/23/2004	GP-103-R 6/15/2004	GP-103-R 9/7/2004	GP-103-R 1/27/2005	GP-103-R 4/19/2005	GP-103-R 7/27/2005	GP-103-R 11/10/2005	GP-103-R 2/16/2006	GP-103-R 4/18/2006
Chlorinated VOCs (ug/L)													
Trichloroethene	971 D	467 D	17	7.21	4.71	3.03	4.73	2	1.76	1.86	2.46	0.94	1.14
cis-1,2-Dichloroethene	111	173	40.2	5.83	3.59	0.583	2.36	1.6	0.507	6.23	1.41	0.682	17.7
trans-1,2-Dichloroethene	0.622	0.866	ND	ND	ND	ND	ND	ND	ND	0.65	ND	ND	0.5
Vinyl Chloride	<u>2.79</u>	1.16	<u>17.1</u>	1.43	1.14	ND	ND	ND	ND	0.695	ND	1.24	<u>25.1</u>
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	1.35	1.86	4.41	2.99	1.92	4.03	2.02	ND	ND	ND	ND	ND	ND
Tetrachloroethene	<u>14.1</u>	<u>5.64</u>	0.435	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.422	1.3	2.1	2.29	1.39	3.13	1.48	2.49	4.00	1.08	2.82	2.46	0.411
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters													
Dissolved Oxygen (mg/L)	0.21	0.21	0.53	0.88	0.44	1.12	0.71	0.11	0.3	0.28	0.12	0.1	0.19
ORP (mV)	-217	-44	-205.7	-251.1	-233	151.2	-143.2	-180.3	-99.6	-117.7	-117.7	-148.9	-118.3
pH (SU)	6.21	7.04	7.07	6.91	6.88	6.77	6.78	6.86	6.85	7.07	6.91	6.89	6.9
S. Conductivity (umhos/cm)	1026	1414	1480	1260	1198	1765	1383	1015	1414	1832	1634	1566	1460
Total Organic Carbon (ppm)	2.93	6.29	17.9	8.96	13	2.02	4.23	3.59	2.02	12	13.4	9.26	4.32
Dissolved Organic Carbon (ppm)	2.63	5.79	12.5	8.94	8.92	1.88	3.46		2.02	6.99	5.84	6.56	
Biogeochemical Parameters													
Carbon Dioxide (mg/L)	40	60		79		67		60	58		65	68	
Nitrogen (mg/L)													
Methane (ug/L)	200	2900		15000		3500		13000	6500		6900	5500	
Ethane (ng/L)	220	100		68		15		640	140		8600	14000	
Ethene (ng/L)	290	1200		4400		400		1100	180		2000	29000	
Sulfide (mg/L)	0.02	0.007		0.04		0.03		0.02	0.05		0.001	0.007	
Ferrous Iron (mg/L)	>3.30	0.22		2.4		3.1		2.35	>3.30		>3.3	2.69	
Dissolved Iron (ug/L)	3390	190		17900		14200		11100	12000		18000	24300	
Total Iron (ug/L)	3740												
Dissolved Manganese (ug/L)	5570												
Total Manganese (ug/L)	5820												
Alkalinity (mg/L)	300												
Chloride (mg/L)	263												
Nitrate (mg/L)	0.502												
Nitrite (mg/L)	ND												
Sulfate (mg/L)	48.8	34.4		35.6		60.4		63	65		57.2	48	

--- Not Analyzed

Sample ID: Date Sampled:	GP-103-R 7/26/2006	GP-103-R 10/26/2006	GP-103-R 3/2/2007	GP-103-R 04/24/2007	GP-103-R 07/25/2007	GP-103-R 10/03/2007	GP-103-R 01/16/2008	GP-103-R 04/16/2008	GP-103-R 07/23/2008
Chlorinated VOCs (ug/L)									
Trichloroethene	1.53	2	6.51	2.3	4.47	2.67	1.74	0.739	0.539
cis-1,2-Dichloroethene	0.509	ND	ND	ND	ND	ND	0.606	0.527	0.923
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	1.26
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	0.901	ND	0.981	4.94	ND	ND	ND	ND
Tetrachloroethene	ND	ND	0.629	ND	1.07	ND	0.505	ND	ND
1,1-Dichloroethane	<u>5.01</u>	5.99	ND	1.01	4.43	<u>6.7</u>	1.44	ND	ND
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters									
Dissolved Oxygen (mg/L)	0.9	0.24	4.36	0.2	1.67	0.2		0.53	2.32
ORP (mV)	-65.3	-112.9	-12.3	-58.8	28.2	-98.6	-139	-106.2	-110.6
pH (SU)	6.68	6.78	6.68	6.85	6.66	6.81	6.28	6.44	6.79
S. Conductivity (umhos/cm)	1355	1113	932	1387	572	1475	1716	1515	1432
Total Organic Carbon (ppm)	6.56	4.29				28.4		2.63	3.8
Dissolved Organic Carbon (ppm)	3.01								
Biogeochemical Parameters									
Carbon Dioxide (mg/L)	39								
Nitrogen (mg/L)									
Methane (ug/L)	810								
Ethane (ng/L)	2900								
Ethene (ng/L)	230								
Sulfide (mg/L)	0.005								
Ferrous Iron (mg/L)	3.22								
Dissolved Iron (ug/L)	14700								
Total Iron (ug/L)									
Dissolved Manganese (ug/L)									
Total Manganese (ug/L)									
Alkalinity (mg/L)									
Chloride (mg/L)									
Nitrate (mg/L)									
Nitrite (mg/L)									
Sulfate (mg/L)	80.8								

--- Not Analyzed

Sample ID: Date Sampled:	GP-104-R 01/10/2003	GP-104-R 05/28/2003	GP-104-R 09/10/2003	GP-104-R 12/3/2003	GP-104-R 3/23/2004	GP-104-R 6/15/2004	GP-104-R 9/7/2004	GP-104-R 1/27/2005	GP-104-R 4/19/2005	GP-104-R 7/27/2005	GP-104-R 11/10/2005	GP-104-R 2/16/2006	GP-104-R 4/19/2006	GP-104-R 7/26/2006
Chlorinated VOCs (ug/L)														
Trichloroethene	23.8	<u>8.4</u>	8.36	<u>9.03</u>	4.78	4.09	7.45	3.12	1.27	1.98	0.738	0.912	0.772	1.48
cis-1,2-Dichloroethene	<u>39.2</u>	42.2	27.2	35.9	<u>17.2</u>	<u>6.03</u>	<u>16.9</u>	7.02	2.04	0.906	0.825	1.3	1.71	3.59
trans-1,2-Dichloroethene	ND	0.6	ND	0.496	ND	ND	0.814	0.476	ND	ND	0.828	1.29	0.478	1.26
Vinyl Chloride	0.859	1.84	1.33	1.66	ND	ND	ND	ND	ND	0.527	ND	ND	ND	0.5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	3.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.65	0.569	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	2.41	2.8	1.33	1.74	2.59	3.36	1.11	3.2	1.56	1.6	1.8	1.77	1.57	1.39
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1.1.2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters														
Dissolved Oxygen (mg/L)	0.32	0.38	0.71	0.87	0.42	0.77	1.02	0.04		0.73	0.32	0.09	0.24	
ORP (mV)	-69.2	-126	-316.6	-207.8	-131.4	-135.4	-165.4	-234.3	-155.6	-66.8	-143.5	-192.9	-137.8	-101.5
pH (SU)	6.67	7.1	6.66	6.82	6.91	6.52	6.65	6.82	7.32	6.26	6.62	7.04	6.94	6.7
S. Conductivity (umhos/cm)	905	1770	1744	1775	1651	1939	2255	1652	1321	1429	1879	1992	1211	1917
Total Organic Carbon (ppm)	5.09	7.41	12.2	9.14	6.18	9.23	16.3	7.23	5.92	9.89	12.8	10.3	8.44	6.84
Dissolved Organic Carbon (ppm)	3	6.64	8.55	8.86	4.84	8.94	12.7		5.44	5.43	11	8.98		6.17
Biogeochemical Parameters														
Carbon Dioxide (mg/L)	61	97		180		210		140	61		150	130		94
Nitrogen (mg/L)														
Methane (ug/L)	1800	17000		19000		18000		9700	14000		13000	2400		3900
Ethane (ng/L)	30	14		1900		950		1500	1400		2800	680		4200
Ethene (ng/L)	57	2200		1100		450		740	110		220	4200		150
Sulfide (mg/L)	0.05	0.012		0.09		0.08		0.05	0.02		0.006	0.009		0.007
Ferrous Iron (mg/L)	0.42	2.71		2.73		2.44		>3.30	1.32		>3.3	>6.6		>6.6
Dissolved Iron (ug/L)	160	16200		22200		67100		53800	31700		73100	37000		33700
Total Iron (ug/L)	259													
Dissolved Manganese (ug/L)	10100													
Total Manganese (ug/L)	10200													
Alkalinity (mg/L)	315													
Chloride (mg/L)	153													
Nitrate (mg/L)														
Nitrite (mg/L)	ND													
Sulfate (mg/L)	60.8	30.4		29.8		32		52	51.5		141	147		56

--- Not Analyzed

Sample ID: Date Sampled:	GP-104-R 10/26/2006	GP-104-R 1/30/2007	GP-104-R 3/2/2007	GP-104-R 04/24/2007	GP-104-R 07/25/2007	GP-104-R 10/03/2007	GP-104-R 01/16/2008	GP-104-R 04/16/2008	GP-104-R 07/23/2008
Chlorinated VOCs (ug/L)									
Trichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene	2.53 3.9 3.33	89.1 6.04 0.772	<u>53.3</u> 3.52 0.749	<u>134</u> 3.74 ND	<u>23.9</u> 1.35 ND	<u>6.42</u> 2 1.92	2.29 1.12 ND	0.669 1.68 ND	ND 0.849 ND
1,1-Dichloroethene 1,1,1-Trichloroethane Tetrachloroethene	0.992 ND ND ND	ND ND 1.75 4.2	0.647 ND 0.785 2.92	ND 3.92 <u>7.57</u>	ND ND 1.6	ND ND ND	ND ND 0.597	ND ND ND	ND ND ND ND
1,1-Dichloroethane 1,2-Dichloroethane(EDC) 1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane	1.55 ND ND ND	1.9 ND ND ND	1.04 ND ND ND	0.44 ND ND ND	1.41 ND ND ND	1.52 ND ND ND	0.572 ND ND ND	1.22 ND ND ND	ND ND ND ND
Field Parameters									
Dissolved Oxygen (mg/L) ORP (mV) PH (SU) S. Conductivity (umhos/cm) Total Organic Carbon (ppm) Dissolved Organic Carbon (ppm)	0.32 -130.0 6.70 1912 7.88 	 -67.2 7.07 1649 	0.26 -47.2 6.98 1968 	0.38 41.2 7.08 1799 	0.4 -10.9 6.98 1072 	 -90.8 7.6 1471 5.83 	0.61 -139.7 6.99 1776 	0.81 -151 6.67 2132 17.3 	0.84 -125.4 7.01 1869 7.49
Biogeochemical Parameters									
Carbon Dioxide (mg/L) Nitrogen (mg/L) Methane (ug/L) Ethane (ng/L)	 	 	 	 	 	 	 	 	
Sulfide (mg/L) Ferrous Iron (mg/L) Dissolved Iron (ug/L) Total Iron (ug/L)		 							
Dissolved Manganese (ug/L) Total Manganese (ug/L) Alkalinity (mg/L) Chloride (mg/L)	 	 	 	 	 	 	 	 	
Nitrate (mg/L) Nitrite (mg/L) Sulfate (mg/L)									

--- Not Analyzed

Sample ID: Date Sampled:	MW-13 01/16/2003	MW-13 05/27/2003	MW-13 09/10/2003	MW-13 12/02/2003	MW-13 3/22/2004	MW-13 6/15/2004	MW-13 9/7/2004	MW-13 4/18/2005	MW-13 7/28/2005	MW-13 11/10/2005	MW-13 2/15/2006	MW-13 4/18/2006	MW-13 7/25/2006
Chlorinated VOCs (ug/L)													
Trichloroethene	196	<u>224 D</u>	<u>121</u>	38.9	14.7	7.87	7.78	4.78	2.56	2.75	1.68	1.59	2.11
cis-1,2-Dichloroethene	75.7	44.3	23	10.5	5.09	2.61	1.93	0.963	0.759	1.1	0.967	0.974	1.70
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	<u>3.12</u>	1.01	0.78	0.986	0.591	ND	ND	ND	ND	ND	ND	ND	0.949
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	4.51	3.25	2.19	1.94	1.85	1.27	1.15	0.771	ND	ND	ND	ND	ND
Tetrachloroethene	<u>5.44</u>	3.5	2.49	1	0.485	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1.92	1.73	1.21	1.44	1.53	1.2	1.2	4.26	2.18	1.99	2.04	2.11	1.99
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters													
Dissolved Oxygen (mg/L)	0.92	0 59	0.68	0.9	0 45	2.08	1 45	0.27	0.22	0.21	0 14	0.22	0 99
ORP (mV)	200.8	160	64.2	27.6	137.7	407 7	130.9	42.7	-53.9	-64	-100.6	-50	184.5
pH (SU)	6 46	6.67	6 29	6 79	6.8	6.07	6 62	6.31	6.87	6.5	6 76	6 79	
S Conductivity (umbos/cm)	1162	1467	1496	1576	1467	1485	1467	1470	1450	1493	1308	1275	1195
Total Organic Carbon (ppm)	3.65	3 41	11 7	3 76	7 56	5 25	7 59	64	9 25	6.05	9.61	4 32	3 33
Dissolved Organic Carbon (ppm)	1.97	2.54	4.2	3.4	5.57	4.81	4.87	4.02	5.55	5.98	4.78		2.59
Biogeochemical Parameters													
Carbon Dioxide (mg/L)	85	110		130		120		95		92	81		61
Nitrogen (mg/L)													
Methane (ug/L)	110	270		1600		9600		6100		1000	710		270
Ethane (ng/L)	270	660		1100		1000		620		1000	1700		2100
Ethene (ng/L)	160	300		200		230		110		110	180		82
Sulfide (mg/L)	0.07	0.152		0.65		0.52		0.22		0.424	0.087		0.05
Ferrous Iron (ma/L)	0.21	0.07		1.65		0.08		1.67		6.14	3.15		2.74
Dissolved Iron (ug/L)	ND	ND		ND		ND		2480		7470	8450		ND
Total Iron (ug/L)	595												
Dissolved Manganese (ug/L)	111												
Total Manganese (ug/L)	176												
Alkalinity (mg/L)	272												
Chloride (mg/L)	255												
Nitrate (mg/L)	2.57												
Nitrite (mg/L)	ND												
Sulfate (mg/L)	43.4	41.2		33.4		24.4		40		45	54		74.4

--- Not Analyzed

Sample ID: Date Sampled:	MW-13 10/25/2006	MW-13 1/30/2007	MW-13 04/23/2007	MW-13R 10/03/2007	MW-13R 01/15/2008	MW-13R 04/16/2008	MW-13R 07/24/2008
Chlorinated VOCs (ug/L)							
Trichloroethene	2.49	1.58	1.68	2.99	3.87	0.989	1.7
cis-1,2-Dichloroethene	1.20	0.42	ND	0.435	0.509	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.677	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	0.582	ND	ND
1,1-Dichloroethane	2.81	2.07	ND	1.08	2.37	1.23	0.796
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
Field Parameters							
Dissolved Oxvgen (mg/L)	0.28		0.38	0.13	1.22	0.45	0.68
ORP (mV)	-70.2	-71	-24.2	160.8	147.8	187	218.9
pH (SU)	6.64	6.89	6.69	6.57	6.65	6.26	6.42
S. Conductivity (umhos/cm)	1243	1048	1074	1707	1888	1955	2943
Total Organic Carbon (ppm)	4.11			2.51		1.99	1.64
Dissolved Organic Carbon (ppm)							
Biogeochemical Parameters							
Carbon Dioxide (mg/L)							
Nitrogen (mg/L)							
Methane (ug/L)							
Ethane (ng/L)							
Ethene (ng/L)							
Sulfide (mg/L)							
Ferrous Iron (mg/L)							
Dissolved Iron (ug/L)							
Total Iron (ug/L)							
Dissolved Manganese (ug/L)							
Total Manganese (ug/L)							
Alkalinity (mg/L)							
Chloride (mg/L)							
Nitrate (mg/L)							
Nitrite (mg/L)							
Sulfate (mg/L)	74.4	74.4					

--- Not Analyzed

 Sample ID:
 MW-HP-2S
 MW-HP-2S

Chlorinated VOCs (ug/L)															
Trichloroethene	4	1.9	6.56	<u>5.13</u>	1.51	1.51	1.16	3.05	1.35	1.2	1.66	2.3	4.52	2.42	2.24
cis-1,2-Dichloroethene	<u>5</u>	1.1	2.24	2.64	0.404	0.843	1.86	2.07	0.462	ND	0.437	1.95	3.39	0.903	1.5
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.511	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	24	<u>20</u>	7.21	7.32	24.3	15.9	8.14	<u>18.1</u>	<u>18.9</u>	17.7	<u>11.2</u>	8.28	22.6	30	16.8
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1.1.2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters															
Dissolved Oxygen (mg/L)			0.49	0.14	0.14	0.38		0.27	0.57	0.27	0.41	0.14	0.56	0.23	2.47
ORP (mV)			330.8	86.5	155.1	369.5	530.7	-14.5	15.8	-67.5	10	207.3	160.4	262.4	144.6
pH (SU)			5.19	6.72	7.03	6.91		6.75	7.15	6.89	6.91	6.69	6.85	6.79	6.83
S. Conductivity (umhos/cm)			737	926	1430	1269	1367	1237	1109	1277	1109	1163	1264	1324	1438
Total Organic Carbon (ppm)			8.41	12	13.5	1.73	12	2.02				2.72		1.61	1.96
Dissolved Organic Carbon (ppm)			1.69	2.22	1.89		2.53								
Biogeochemical Parameters															
Carbon Dioxide (mg/L)															
Nitrogen (mg/L)															
Methane (ug/L)															
Ethane (ng/L)															
Ethene (ng/L)															
Sulfide (mg/L)															
Ferrous Iron (mg/L)															
Dissolved Iron (ug/L)															
Total Iron (ug/L)															
Dissolved Manganese (ug/L)															
Total Manganese (ug/L)															
Alkalinity (mg/L)															
Chloride (mg/L)															
Nitrate (mg/L)															
Nitrite (mg/L)															
Sulfate (mg/L)															

--- Not Analyzed

ND Not Detected

 Sample ID:
 MW-HP-2D
 MW-HP-2D

Chlorinated VOCs (ug/L)															
Trichloroethene	1	0.98	1.16	1.12	1.02	0.762	0.752	0.914	0.825	0.76	ND	0.907	1.04	1.41	1.06
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.923
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	<u>23</u>	<u>19</u>	<u>30</u>	<u>22.8</u>	26.3	<u>16.3</u>	<u>10.3</u>	<u>19.1</u>	<u>14.1</u>	<u>13.1</u>	<u>8.94</u>	<u>14.3</u>	<u>16.9</u>	<u>21.1</u>	<u>19.5</u>
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane(EDC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters															
Dissolved Oxygen (mg/L)			3.94	1.75	3.3	3.45		2.7	3.02	1.24	0.13	5.07	4.1	3.7	2.69
ORP (mV)			470.6	220.8	155.3	383.8	735.9	579.2	134	138.5	247.1	30.5	117.8	162	340.7
pH (SU)			4.21	6.89	7.07	6.99		6.97	6.94	7	7.01	6.83	7.1	7.03	6.94
S. Conductivity (umhos/cm)			1295	1270	1328	1255	1286	1256	1119	1263	1045	1372	1270	1208	1344
Total Organic Carbon (ppm)			3.74	11	12.9	1.33	9.44	1.15				1.52		1.02	1.23
Dissolved Organic Carbon (ppm)			ND	1.45	ND		1.4								
Biogeochemical Parameters															
Carbon Dioxide (mg/L)															
Nitrogen (mg/L)															
Methane (ug/L)															
Ethane (ng/L)															
Ethene (ng/L)															
Sulfide (mg/L)															
Ferrous Iron (mg/L)															
Dissolved Iron (ug/L)															
Total Iron (ug/L)															
Dissolved Manganese (ug/L)															
Total Manganese (ug/L)															
Alkalinity (mg/L)															
Chloride (mg/L)															
Nitrate (mg/L)															
Nitrite (mg/L)															
Sulfate (mg/L)															

--- Not Analyzed

ND Not Detected

 Sample ID:
 OS-MW-3PL OS-MW

Chlorinated VOCs (ug/L)															
Trichloroethene	ND	0.77	0.95	ND	ND	0.897	ND	ND	ND	ND	0.717	ND	0.408	0.479	ND
cis-1,2-Dichloroethene	ND	<u>6.9</u>	1.84	ND	0.738	1.00	0.700	1.61	2.16	5.26	1.84	1.16	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.719	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane(EDC)	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Field Parameters															
Dissolved Oxygen (mg/L)			0.27	1.69	0.15	0.31	3.07	0.29	0.39	2.45	1.8	4.79	4	2.11	0.76
ORP (mV)			316.4	79.6	204	301.6	506.7	341.2	156	-40.5	113.9	-32.1	153	190.2	-21.4
pH (SU)			5.61	6.51	6.85	6.86		6.82	6.73	6.8	6.75	7.06	6.83	6.64	6.85
S. Conductivity (umhos/cm)			744	638	1546	1637	1735	1563	1350	1306	1066	1380	1124	1315	1504
Total Organic Carbon (ppm)			11.2	15.8	29.6	7.11	8.16	6.2				6.92		7.69	8.03
Dissolved Organic Carbon (ppm)			2.35	1.84	8.28		5.61								
Biogeochemical Parameters															
Carbon Dioxide (mg/L)															
Nitrogen (mg/L)															
Methane (ug/L)															
Ethane (ng/L)															
Ethene (ng/L)															
Sulfide (mg/L)															
Ferrous Iron (mg/L)															
Dissolved Iron (ug/L)															
Total Iron (ug/L)															
Dissolved Manganese (ug/L)															
Total Manganese (ug/L)															
Alkalinity (mg/L)															
Chloride (mg/L)															
Nitrate (mg/L)															
Nitrite (mg/L)															
Sulfate (mg/L)															

--- Not Analyzed

ND Not Detected

Sample ID: Date Sampled:	OS-MW-2 08/11/2004	OS-MW-2 04/26/2005	OS-MW-2 07/27/2005	OS-MW-2 11/09/2005	OS-MW-2 02/13/2006	OS-MW-2 04/18/2006	OS-MW-2 07/28/2006	OS-MW-2 10/24/2006	OS-MW-2 01/30/2007	OS-MW-2 04/23/2007	OS-MW-2 07/26/2007	OS-MW-2 10/03/2007	OS-MW-2 01/14/2008	OS-MW-2 04/16/2008	OS-MW-2 07/24/2008
Chlorinated VOCs (ug/L)															
Trichloroethene	<u>13</u>	<u>9.4</u>	8.86	<u>9.88</u>	3.67	3.17	<u>5.51</u>	6.38	2.71	2.13	4.65	2.64	3.43	3.24	5.73
cis-1,2-Dichloroethene	<u>10</u>	<u>6.8</u>	3.79	4.8	2.45	3.99	2.91	3.15	3.81	3.41	1.69	1.6	2.49	1.23	1.68
trans-1,2-Dichloroethene	ND														
Vinyl Chloride	ND														
1,1-Dichloroethene	ND														
1,1,1-Trichloroethane	ND														
Tetrachloroethene	<u>7</u>	3.9	8.3	<u>8.85</u>	<u>9.61</u>	<u>9.21</u>	<u>5.05</u>	4.22	3.69	3.03	5.69	6.63	4.41	<u>8.01</u>	<u>10.3</u>
1,1-Dichloroethane	ND														
1,2-Dichloroethane(EDC)	ND														
1.1.2-Trichloroethane	ND														
1,1,2,2-Tetrachloroethane	ND														
Field Parameters															
Dissolved Oxygen (mg/L)			1.1	1.17	1.05	1.36	0.13	0.72	0.83	0.59	2.27	0.16	1.12	3.85	1.79
ORP (mV)			107.5	126.2	123	268.9	653.8	294.6	180.3	-62.8	390	201	153.2	173.6	128.4
pH (SU)			5.79	6.88	6.94	6.95		6.77	6.83	6.84	5.61	6.89	6.9	6.77	6.85
S. Conductivity (umhos/cm)			1888	1903	1670	1595	1767	1737	1482	1686	790	1353	1574	1520	1573
Total Organic Carbon (ppm)			6.72	11	12.8	1.88	8.93	2.59				2.17		1.98	1.71
Dissolved Organic Carbon (ppm)			1.85	2.5	1.57		1.56								
Biogeochemical Parameters															
Carbon Dioxide (mg/L)															
Nitrogen (mg/L)															
Methane (ug/L)															
Ethane (ng/L)															
Ethene (ng/L)															
Sulfide (mg/L)															
Ferrous Iron (mg/L)															
Dissolved Iron (ug/L)															
Total Iron (ug/L)															
Dissolved Manganese (ug/L)															
Total Manganese (ug/L)															
Alkalinity (mg/L)															
Chloride (mg/L)															
Nitrate (mg/L)															
Nitrite (mg/L)															
Sulfate (mg/L)															

--- Not Analyzed

ND Not Detected

Sample ID: Date Sampled:	OS-MW-1 08/11/2004	OS-MW-1 04/26/2005	OS-MW-1 07/28/2005	OS-MW-1 11/10/2005	OS-MW-1 02/14/2006	OS-MW-1 04/18/2006	OS-MW-1 07/28/2006	OS-MW-1 10/23/2006	OS-MW-1 01/30/2007	OS-MW-1 04/23/2007	OS-MW-1 07/26/2007	OS-MW-1 10/03/2007	OS-MW-1 01/14/2008	OS-MW-1 04/15/2008	OS-MW-1 07/24/2008
Chlorinated VOCs (ug/L)															
Trichloroethene	3	4.8	2.41	2.59	2.51	2.51	2.01	1.22	1.52	3.39	2.68	1.15	0.528	1.33	1.94
cis-1,2-Dichloroethene	<u>6</u>	<u>5.9</u>	4.15	<u>6.27</u>	4.36	<u>5.75</u>	4.02	3.45	2.69	1.36	1.39	1.78	1.36	2.48	1.9
trans-1,2-Dichloroethene	ND														
Vinyl Chloride	ND	ND	ND	<u>2.6</u>	<u>2.41</u>	<u>3.32</u>	<u>2.61</u>	<u>3.47</u>	1.68	ND	1.38	1.87	ND	1.93	1.88
1,1-Dichloroethene	ND														
1,1,1-Trichloroethane	ND														
Tetrachloroethene	<u>8</u>	<u>7.8</u>	<u>6.41</u>	4.62	<u>7.37</u>	3.94	4.38	2.14	2.53	1.5	1.45	0.975	1.03	0.66	2.52
1,1-Dichloroethane	ND	0.73	3.17	ND											
1,2-Dichloroethane(EDC)	ND	0.42	ND												
1,1,2-Trichloroethane	ND														
1,1,2,2-Tetrachloroethane	ND														
Field Parameters															
Dissolved Oxygen (mg/L)			0.68	0.37	0.12	0.29	0.35	0.26	0.27	0.52	0.93		0.12	0.46	1.19
ORP (mV)			-33.6	-71.7	-133.2	-90.7	-13.8	-127.9	-103.5	-44.7	-43.8	-109.6	-125.3	-88	-92.6
pH (SU)			6.29	6.78	6.95	6.77	5.33	6.90	7.10	6.55	6.36	7.55	6.7	6.87	6.79
S. Conductivity (umhos/cm)			1394	1378	1307	1436	1418	1407	1262	3381	828	1182	1470	1288	1510
Total Organic Carbon (ppm)			7.14	6.47	8.93	2.01	3.67	3.05				2.13		1.99	2.07
Dissolved Organic Carbon (ppm)			1.65	2.33	ND		1.42								
Biogeochemical Parameters															
Carbon Dioxide (mg/L)															
Nitrogen (mg/L)															
Methane (ug/L)															
Ethane (ng/L)															
Ethene (ng/L)															
Sulfide (mg/L)															
Ferrous Iron (mg/L)															
Dissolved Iron (ug/L)															
Total Iron (ug/L)															
Dissolved Manganese (ug/L)															
Total Manganese (ug/L)															
Alkalinity (mg/L)															
Chloride (mg/L)															
Nitrate (mg/L)															
Nitrite (mg/L)															
Sulfate (mg/L)															

--- Not Analyzed

TABLE 2

Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 – July 2010

(Table 1 from NYSDEC approved Final Post-Remedial Annual Report and Project Evaluation for On-Site Groundwater – Year 2, ARCADIS, 2010)

Location ID MW-9D MW-9D_E08-MW-9D E09-MW-9D E09-MW-9D E09-MW-9D E09-MW-9D E10-MW-9D E10-MW-9D E10-Lab Sample ID 12330-010 00763-006 03980-007 07112-005 10185-005 00249-003 03186-005 06728-005 10/21/2008 1/21/2009 4/22/2009 7/15/2009 10/6/2009 1/7/2010 4/6/2010 7/8/2010 Sample Date SCGs Compound < 0.51 < 0.23 < 0.930 <1.00 < 0.360 Chloromethane 5 < 0.18 < 0.23 <1.00 Vinyl chloride 2 < 0.56 < 0.46 < 0.26 < 0.26 < 0.470 <1.00 <1.00 < 0.420 Bromomethane 5 < 0.51 < 0.37 < 0.36 < 0.36 < 0.950 <1.00 <1.00 < 0.590 Chloroethane 5 < 0.71 < 0.64 < 0.29 < 0.29 < 0.170 <1.00 <1.00 < 0.410 5 Trichlorofluoromethane < 0.6 < 0.74 < 0.23 < 0.23 < 0.310 <1.00 <1.00 < 0.390 Acrolein < 2.57 < 4.34 <1.74 <20.0 <20.0 ---< 1.87 < 4.34 <1.64 5 1.1-Dichloroethene < 0.42 < 0.53 < 0.61 < 0.61 < 0.360 <1.00 <1.00 < 0.390 5 Methylene chloride < 1.98 < 1.98 < 1.98 < 1.98 <1.98 <2.00 <2.00 <1.98 Acrylonitrile ----< 1.19 < 0.74 < 0.95 < 0.95<1.16 <20.0 <20.0 <1.40 5 trans-1,2-Dichloroethene < 0.45 < 0.25 < 0.19 < 0.19 < 0.340 <1.00 <1.00 < 0.330 1,1-Dichloroethane 5 < 0.34 < 0.21 < 0.23 < 0.23 <1.00 < 0.350 < 0.260 <1.00 cis-1,2-Dichloroethene 5 <0.220 < 0.32 < 0.19 < 0.2 < 0.2 <0.270 <1.00 <1.00 7 Chloroform < 0.29 < 0.14 < 0.17 < 0.17 < 0.220 <1.00 <1.00 < 0.330 5 1.1.1-Trichloroethane < 0.43 < 0.36 < 0.23 < 0.23 < 0.250 <1.00 <1.00 < 0.360 5 Carbon tetrachloride < 0.45 < 0.3 < 0.16 < 0.16 < 0.280 <1.00 < 0.320 <1.00 < 0.21 < 0.240 < 0.340 1.2-Dichloroethane (EDC) 0.6 < 0.28 < 0.19 < 0.21 <1.00 <1.00 Benzene < 0.29 < 0.17 < 0.21 < 0.21 < 0.290 <1.00 <1.00 < 0.270 1 Trichloroethene 5 < 0.32 < 0.19 < 0.28 < 0.28 < 0.310 <1.00 <1.00 < 0.320 1,2-Dichloropropane 1 < 0.21 < 0.16 < 0.2 < 0.2 <0.280 <1.00 <1.00 <0.220 Bromodichloromethane 50 < 0.21 < 0.18 < 0.12 < 0.12 < 0.250 <1.00 <1.00 < 0.310 <1.00 < 0.350 2-Chloroethyl vinyl ether < 0.63 < 1.04 < 0.99 < 0.99 < 0.400 <1.00 --cis-1,3-Dichloropropene 0.4 < 0.2 < 0.24 < 0.15 < 0.15 < 0.140 <1.00 <1.00 < 0.210 Toluene 5 < 0.34 < 0.23 < 0.2 < 0.2 < 0.300 <1.00 <1.00 < 0.270 trans-1,3-Dichloropropene 0.4 < 0.13 < 0.32 < 0.27 < 0.27 < 0.130 <1.00 <1.00 < 0.250 1,1,2-Trichloroethane 1 < 0.36 < 0.15 < 0.15 < 0.15 < 0.240 <1.00 <1.00 <0.280 5 Tetrachloroethene < 0.38 < 0.33 < 0.19 < 0.19 < 0.300 <1.00 <1.00 <0.280 Dibromochloromethane 50 < 0.16 < 0.330 <1.00 < 0.230 < 0.25 < 0.16 < 0.16 <1.00 5 Chlorobenzene < 0.27 < 0.2 < 0.2 < 0.2 <0.170 <1.00 <1.00 < 0.270 Ethylbenzene 5 < 0.33 < 0.27 < 0.19 < 0.19 < 0.240 <1.00 <1.00 < 0.220 5 Total Xylenes < 0.98 < 0.79 < 0.44 < 0.44 < 0.740 <2.00 <2.00 < 0.600 Bromoform 50 < 0.15 < 0.14 < 0.14 < 0.250 <1.00 < 0.210 < 0.3 <1.00 5 < 0.210 1.1.2.2-Tetrachloroethane < 0.14 < 0.17 < 0.12 < 0.12 < 0.190 <1.00 <1.00 3 < 0.240 1,3-Dichlorobenzene < 0.32 < 0.23 < 0.17 < 0.17 < 0.130 <1.00 <1.00 3 1,4-Dichlorobenzene < 0.28 < 0.25 < 0.16 < 0.16 <0.180 <1.00 <1.00 < 0.230 3 1,2-Dichlorobenzene < 0.28 < 0.23 < 0.15 < 0.15 <0.110 <1.00 <1.00 < 0.210

Table 1. Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

Location ID MW-9S MW-9S_E08-MW-9S E09-MW-9SR E09-MW-9S E09-MW-9S E09-MW-9S E10-MW-9S E10-MW-9S E10-Lab Sample ID 12330-008 00763-007 03980-006 07112-006 10185-006 00249-004 03186-004 06728-004 Sample Date 10/21/2008 1/21/2009 4/22/2009 7/15/2009 10/6/2009 1/7/2010 4/6/2010 7/8/2010 SCGs Compound Chloromethane < 0.51 < 0.23 < 0.930 <1.00 <1.00 < 0.360 5 < 0.18 < 0.23 Vinyl chloride 2 0.861 0.808 0.757 < 0.26 1.15 0.757 J 7.31 1.17 5 Bromomethane < 0.51 < 0.37 < 0.36 < 0.36 < 0.950 <1.00 <1.00 < 0.590 Chloroethane 5 < 0.71 < 0.64 < 0.29 < 0.29 < 0.170 <1.00 <1.00 < 0.410 5 Trichlorofluoromethane < 0.6 < 0.74 < 0.23 < 0.23 < 0.310 <1.00 <1.00 < 0.390 Acrolein < 2.57 < 4.34 < 4.34 <1.74 <20.0 <20.0 ---< 1.87 <1.64 5 1.1-Dichloroethene < 0.42 < 0.53 < 0.61 < 0.61 < 0.360 <1.00 <1.00 < 0.390 5 Methylene chloride < 1.98 < 1.98 < 1.98 < 1.98 <1.98 <2.00 <2.00 <1.98 Acrylonitrile ----< 1.19 < 0.74 < 0.95 < 0.95<1.16 <20.0 <20.0 <1.40 5 trans-1,2-Dichloroethene 0.882 < 0.25 1.31 < 0.19 0.934 0.514 J 2.00 0.626 J 1,1-Dichloroethane 5 0.52 0.547 0.877 < 0.23 0.646 0.671 J 4.16 1.11 cis-1,2-Dichloroethene 5 6.59 0.668 0.64 0.657 0.564 0.687 0.518 J 0.360 J Chloroform 7 < 0.330 < 0.29 < 0.14 < 0.17 < 0.17 < 0.220 <1.00 <1.00 5 1.1.1-Trichloroethane < 0.43 < 0.36 < 0.23 < 0.23 < 0.250 <1.00 <1.00 < 0.360 5 Carbon tetrachloride < 0.45 < 0.3 < 0.16 < 0.16 < 0.280 <1.00 <1.00 < 0.320 0.6 < 0.21 < 0.240 < 0.340 1.2-Dichloroethane (EDC) < 0.28 < 0.19 < 0.21 <1.00 <1.00 Benzene < 0.29 < 0.17 < 0.21 < 0.21 < 0.290 <1.00 <1.00 < 0.270 1 Trichloroethene 5 < 0.32 < 0.19 < 0.28 < 0.28 < 0.310 0.338 J 1.90 < 0.320 1,2-Dichloropropane 1 < 0.21 < 0.16 < 0.2 < 0.2 <0.280 <1.00 <1.00 <0.220 Bromodichloromethane 50 < 0.21 < 0.18 < 0.12 < 0.12 < 0.250 <1.00 <1.00 < 0.310 <1.00 < 0.350 2-Chloroethyl vinyl ether < 0.63 < 1.04 < 0.99 < 0.99 < 0.400 <1.00 --cis-1,3-Dichloropropene 0.4 < 0.2 < 0.24 < 0.15 < 0.15 < 0.140 <1.00 <1.00 < 0.210 Toluene 5 < 0.34 < 0.23 < 0.2 < 0.2 < 0.300 <1.00 <1.00 < 0.270 trans-1,3-Dichloropropene 0.4 < 0.13 < 0.32 < 0.27 < 0.27 < 0.130 <1.00 <1.00 < 0.250 1,1,2-Trichloroethane 1 < 0.36 < 0.15 < 0.15 < 0.15 < 0.240 <1.00 <1.00 <0.280 5 Tetrachloroethene < 0.38 < 0.33 < 0.19 < 0.19 < 0.300 <1.00 <1.00 <0.280 Dibromochloromethane 50 < 0.16 < 0.330 <1.00 < 0.230 < 0.25 < 0.16 < 0.16 <1.00 5 Chlorobenzene < 0.27 < 0.2 < 0.2 < 0.2 <0.170 <1.00 <1.00 < 0.270 Ethylbenzene 5 < 0.33 < 0.27 < 0.19 < 0.19 < 0.240 <1.00 <1.00 < 0.220 5 Total Xylenes < 0.98 < 0.79 < 0.44 < 0.44 < 0.740 <2.00 <2.00 < 0.600 Bromoform 50 < 0.15 < 0.14 < 0.14 < 0.250 <1.00 < 0.210 < 0.3 <1.00 5 < 0.210 1.1.2.2-Tetrachloroethane < 0.14 < 0.17 < 0.12 < 0.12 < 0.190 <1.00 <1.00 3 < 0.240 1,3-Dichlorobenzene < 0.32 < 0.23 < 0.17 < 0.17 < 0.130 <1.00 <1.00 3 1,4-Dichlorobenzene < 0.28 < 0.25 < 0.16 < 0.16 <0.180 <1.00 <1.00 <0.230 3 1,2-Dichlorobenzene < 0.28 < 0.23 < 0.15 < 0.15 <0.110 <1.00 <1.00 < 0.210

Table 1. Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

	Location ID	PTW-2											
	Lab Sample ID	PTW-2_E08- 12330-014	PTW-2_E09- 00763-017	PTW-2_E09- 03980-001	PTW-2_E09- 07112-010	PTW-2_E09- 10185-003	PTW-2_E10- 00249-009	PTW-2_E10- 03186-003	PTW-2_E10- 06728-003				
	Sample Date	10/23/2008	1/22/2009	4/21/2009	7/16/2009	10/7/2009	1/8/2010	4/6/2010	7/8/2010				
Compound	SCGs												
Chloromethane	5	< 0.51	< 0.18	< 0.23	< 0.23	<0.930	<1.00	<1.00	< 0.360				
Vinyl chloride	2	< 0.56	< 0.46	0.816	< 0.26	0.632	0.658 J	1.38	0.846 J				
Bromomethane	5	< 0.51	< 0.37	< 0.36	< 0.36	<0.950	<1.00	<1.00	<0.590				
Chloroethane	5	< 0.71	< 0.64	< 0.29	< 0.29	<0.170	<1.00	<1.00	<0.410				
Trichlorofluoromethane	5	< 0.6	< 0.74	< 0.23	< 0.23	<0.310	<1.00	<1.00	<0.390				
Acrolein		< 1.87	< 2.57	< 4.34	< 4.34	<1.74	<20.0	<20.0	<1.64				
1,1-Dichloroethene	5	< 0.42	< 0.53	< 0.61	< 0.61	<0.360	<1.00	1.79	<0.390				
Methylene chloride	5	< 1.98	< 1.98	< 1.98	< 1.98	<1.98	<2.00	<2.00	<1.98				
Acrylonitrile		< 1.19	< 0.74	< 0.95	< 0.95	<1.16	<20.0	<20.0	<1.40				
trans-1,2-Dichloroethene	5	< 0.45	< 0.25	0.717	< 0.19	0.384	0.799 J	<1.00	<0.330				
1,1-Dichloroethane	5	0.657	1.69	1.88	0.576	1.41	3.37	<1.00	1.39				
cis-1,2-Dichloroethene	5	0.395	< 0.19	1.31	1.76	2.19	0.510 J	<1.00	2.67				
Chloroform	7	< 0.29	< 0.14	< 0.17	< 0.17	<0.220	<1.00	<1.00	<0.330				
1,1,1-Trichloroethane	5	< 0.43	< 0.36	< 0.23	< 0.23	<0.250	<1.00	<1.00	0.691 J				
Carbon tetrachloride	5	< 0.45	< 0.3	< 0.16	< 0.16	<0.280	<1.00	<1.00	<0.320				
1,2-Dichloroethane (EDC)	0.6	< 0.28	< 0.19	< 0.21	< 0.21	<0.240	<1.00	<1.00	<0.340				
Benzene	1	< 0.29	< 0.17	< 0.21	< 0.21	<0.290	<1.00	<1.00	<0.270				
Trichloroethene	5	< 0.32	0.525	1.54	2.22	1.14	0.794 J	3.48	6.22				
1,2-Dichloropropane	1	< 0.21	< 0.16	< 0.2	< 0.2	<0.280	<1.00	<1.00	<0.220				
Bromodichloromethane	50	< 0.21	< 0.18	< 0.12	< 0.12	<0.250	<1.00	<1.00	<0.310				
2-Chloroethyl vinyl ether		< 0.63	< 1.04	< 0.99	< 0.99	<0.400	<1.00	<1.00	<0.350				
cis-1,3-Dichloropropene	0.4	< 0.2	< 0.24	< 0.15	< 0.15	<0.140	<1.00	<1.00	<0.210				
Toluene	5	< 0.34	< 0.23	< 0.2	< 0.2	<0.300	<1.00	<1.00	<0.270				
trans-1,3-Dichloropropene	0.4	< 0.13	< 0.32	< 0.27	< 0.27	<0.130	<1.00	<1.00	<0.250				
1,1,2-Trichloroethane	1	< 0.36	< 0.15	< 0.15	< 0.15	<0.240	<1.00	<1.00	<0.280				
Tetrachloroethene	5	< 0.38	< 0.33	< 0.19	< 0.19	<0.300	<1.00	<1.00	0.290 J				
Dibromochloromethane	50	< 0.25	< 0.16	< 0.16	< 0.16	<0.330	<1.00	<1.00	<0.230				
Chlorobenzene	5	< 0.27	< 0.2	< 0.2	< 0.2	<0.170	<1.00	<1.00	<0.270				
Ethylbenzene	5	< 0.33	< 0.27	< 0.19	< 0.19	<0.240	<1.00	<1.00	<0.220				
Total Xylenes	5	< 0.98	< 0.79	< 0.44	< 0.44	<0.740	<2.00	<2.00	<0.600				
Bromoform	50	< 0.3	< 0.15	< 0.14	< 0.14	<0.250	<1.00	<1.00	<0.210				
1,1,2,2-Tetrachloroethane	5	< 0.14	< 0.17	< 0.12	< 0.12	<0.190	<1.00	<1.00	<0.210				
1,3-Dichlorobenzene	3	< 0.32	< 0.23	< 0.17	< 0.17	<0.130	<1.00	<1.00	<0.240				
1,4-Dichlorobenzene	3	< 0.28	< 0.25	< 0.16	< 0.16	<0.180	<1.00	<1.00	<0.230				
1,2-Dichlorobenzene	3	< 0.28	< 0.23	< 0.15	< 0.15	<0.110	<1.00	<1.00	<0.210				

Table 1. Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

Location ID GP-104R GP-104R E08 GP-104R E09 GP-104R E09-GP-104R E09-GP-104R E09 GP-104R E10-GP-104R E10- GP-104R E10 Lab Sample ID 12330-013 00763-012 03980-005 07112-009 10185-001 00249-007 03186-009 06728-009 Sample Date 10/23/2008 1/22/2009 4/22/2009 7/16/2009 10/7/2009 1/8/2010 4/7/2010 7/9/2010 SCGs Compound Chloromethane < 0.51 < 0.23 < 0.930 <1.00 <1.00 < 0.360 5 < 0.18 < 0.23 Vinyl chloride 2 < 0.56 0.502 < 0.26 < 0.26 1.48 1.04 <1.00 2.41 5 Bromomethane < 0.51 < 0.37 < 0.36 < 0.36 < 0.950 <1.00 <1.00 < 0.590 Chloroethane 5 < 0.71 < 0.64 < 0.29 < 0.29 < 0.170 <1.00 <1.00 < 0.410 5 <1.00 Trichlorofluoromethane < 0.6 < 0.74 < 0.23 < 0.23 < 0.310 <1.00 < 0.390 Acrolein < 2.57 < 4.34 < 4.34 <1.74 <20.0 <20.0 <1.64 ---< 1.87 5 1.1-Dichloroethene < 0.42 < 0.53 < 0.61 < 0.61 < 0.360 <1.00 <1.00 < 0.390 5 Methylene chloride < 1.98 < 1.98 < 1.98 < 1.98 <1.98 <2.00 <2.00 <1.98 Acrylonitrile ----< 1.19 < 0.74 < 0.95 < 0.95<1.16 <20.0 <20.0 <1.40 5 0.686 J trans-1,2-Dichloroethene 0.459 1.19 0.759 < 0.19 0.971 1.43 < 0.330 1,1-Dichloroethane 5 0.789 < 0.23 0.931 1.30 1.84 0.573 1.48 1.16 cis-1,2-Dichloroethene 5 2.75 0.589 1.58 1.16 1.64 1.26 1.36 1.06 Chloroform 7 < 0.330 < 0.29 < 0.14 < 0.17 < 0.17 < 0.220 <1.00 <1.00 5 1.1.1-Trichloroethane < 0.43 < 0.36 < 0.23 < 0.23 < 0.250 <1.00 <1.00 < 0.360 5 Carbon tetrachloride < 0.45 < 0.3 < 0.16 < 0.16 < 0.280 <1.00 <1.00 < 0.320 < 0.21 < 0.240 < 0.340 1.2-Dichloroethane (EDC) 0.6 < 0.28 < 0.19 < 0.21 <1.00 <1.00 Benzene < 0.29 < 0.17 < 0.21 < 0.21< 0.290 <1.00 <1.00 < 0.270 1 Trichloroethene 5 0.402 1.49 1.13 1.82 0.591 1.74 1.05 0.533 J 1,2-Dichloropropane 1 < 0.21 < 0.16 < 0.2 < 0.2 <0.280 <1.00 <1.00 <0.220 Bromodichloromethane 50 < 0.21 < 0.18 < 0.12 < 0.12 < 0.250 <1.00 <1.00 < 0.310 <1.00 < 0.350 2-Chloroethyl vinyl ether < 0.63 < 1.04 < 0.99 < 0.99 < 0.400 <1.00 ---<0.210 cis-1,3-Dichloropropene 0.4 < 0.2 < 0.24 < 0.15 < 0.15 < 0.140 <1.00 <1.00 Toluene 5 < 0.34 < 0.23 < 0.2 < 0.2 < 0.300 <1.00 <1.00 < 0.270 trans-1,3-Dichloropropene 0.4 < 0.13 < 0.32 < 0.27 < 0.27 < 0.130 <1.00 <1.00 < 0.250 1,1,2-Trichloroethane 1 < 0.36 < 0.15 < 0.15 < 0.15 < 0.240 <1.00 <1.00 <0.280 5 Tetrachloroethene < 0.38 < 0.33 < 0.19 < 0.19 < 0.300 <1.00 <1.00 <0.280 Dibromochloromethane 50 < 0.16 < 0.330 <1.00 < 0.230 < 0.25 < 0.16 < 0.16 <1.00 5 Chlorobenzene < 0.27 < 0.2 < 0.2 < 0.2 <0.170 <1.00 <1.00 < 0.270 Ethylbenzene 5 < 0.33 < 0.27 < 0.19 < 0.19 < 0.240 <1.00 <1.00 < 0.220 5 Total Xylenes < 0.98 < 0.79 < 0.44 < 0.44 < 0.740 <2.00 <2.00 < 0.600 Bromoform 50 < 0.15 < 0.14 < 0.14 < 0.250 <1.00 < 0.210 < 0.3 <1.00 5 < 0.210 1.1.2.2-Tetrachloroethane < 0.14 < 0.17 < 0.12 < 0.12 < 0.190 <1.00 <1.00 3 < 0.240 1,3-Dichlorobenzene < 0.32 < 0.23 < 0.17 < 0.17 < 0.130 <1.00 <1.00 3 1,4-Dichlorobenzene < 0.28 < 0.25 < 0.16 < 0.16 <0.180 <1.00 <1.00 <0.230 3 1,2-Dichlorobenzene < 0.28 < 0.23 < 0.15 < 0.15 <0.110 <1.00 <1.00 < 0.210

Table 1. Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

Location ID GP-103R GP-103R E08 GP-103R E09 GP-103R E09-GP-103R E09-GP-103R E09 GP-103R E10-GP-103R E10- GP-103R E10 Lab Sample ID 12330-007 00763-011 03980-004 07112-004 10185-002 00249-008 03186-010 06728-010 Sample Date 10/23/2008 1/22/2009 4/22/2009 7/16/2009 10/7/2009 1/8/2010 4/7/2010 7/9/2010 SCGs Compound Chloromethane < 0.51 < 0.18 < 0.23 < 0.930 <1.00 <1.00 < 0.360 5 < 0.23 Vinyl chloride 2 35.2 0.763 10.9 < 0.26 5.61 1.26 3.02 10.9 5 Bromomethane < 0.51 < 0.37 < 0.36 < 0.36 < 0.950 <1.00 <1.00 < 0.590 Chloroethane 5 < 0.71 < 0.64 < 0.29 < 0.29 < 0.170 <1.00 <1.00 < 0.410 5 Trichlorofluoromethane < 0.6 < 0.74 < 0.23 < 0.23 < 0.310 <1.00 <1.00 < 0.390 Acrolein < 2.57 < 4.34 <1.74 <20.0 <20.0 <1.64 ---< 1.87 < 4.34 5 1.1-Dichloroethene < 0.42 < 0.53 < 0.61 < 0.61 < 0.360 <1.00 <1.00 < 0.390 5 Methylene chloride < 1.98 < 1.98 < 1.98 < 1.98 <1.98 <2.00 <2.00 <1.98 Acrylonitrile ----< 1.19 < 0.74 < 0.95 < 0.95<1.16 <20.0 <20.0 <1.40 5 trans-1,2-Dichloroethene 0.468 < 0.25 1.8 < 0.19 0.479 0.582 J <1.00 < 0.330 1,1-Dichloroethane 5 0.418 < 0.21 < 0.23 < 0.23 0.620 <1.00 < 0.350 0.458 J cis-1,2-Dichloroethene 5 3.22 6.31 0.579 < 0.2 2.21 0.657 J 1.91 1.74 Chloroform 7 < 0.330 < 0.29 < 0.14 < 0.17 < 0.17 < 0.220 <1.00 <1.00 5 1.1.1-Trichloroethane < 0.43 < 0.36 < 0.23 < 0.23 < 0.250 <1.00 <1.00 < 0.360 5 Carbon tetrachloride < 0.45 < 0.3 < 0.16 < 0.16 < 0.280 <1.00 <1.00 < 0.320 0.6 < 0.21 < 0.240 < 0.340 1.2-Dichloroethane (EDC) < 0.28 < 0.19 < 0.21 <1.00 <1.00 Benzene < 0.29 < 0.17 < 0.21 < 0.21< 0.290 <1.00 <1.00 < 0.270 1 Trichloroethene 5 0.585 < 0.19 0.323 0.285 0.541 <1.00 1.29 < 0.320 1,2-Dichloropropane 1 < 0.21 < 0.16 < 0.2 < 0.2 <0.280 <1.00 <1.00 <0.220 Bromodichloromethane 50 < 0.21 < 0.18 < 0.12 < 0.12 < 0.250 <1.00 <1.00 < 0.310 <1.00 < 0.350 2-Chloroethyl vinyl ether < 0.63 < 1.04 < 0.99 < 0.99 < 0.400 <1.00 --cis-1,3-Dichloropropene 0.4 < 0.2 < 0.24 < 0.15 < 0.15 < 0.140 <1.00 <1.00 < 0.210 Toluene 5 < 0.34 < 0.23 < 0.2 < 0.2 < 0.300 <1.00 <1.00 < 0.270 trans-1,3-Dichloropropene 0.4 < 0.13 < 0.32 < 0.27 < 0.27 < 0.130 <1.00 <1.00 < 0.250 1,1,2-Trichloroethane 1 < 0.36 < 0.15 < 0.15 < 0.15 < 0.240 <1.00 <1.00 <0.280 5 Tetrachloroethene < 0.38 < 0.33 < 0.19 < 0.19 < 0.300 <1.00 <1.00 <0.280 Dibromochloromethane 50 < 0.16 < 0.330 <1.00 < 0.230 < 0.25 < 0.16 < 0.16 <1.00 5 Chlorobenzene < 0.27 < 0.2 < 0.2 < 0.2 <0.170 <1.00 <1.00 < 0.270 Ethylbenzene 5 < 0.33 < 0.27 < 0.19 < 0.19 < 0.240 <1.00 <1.00 < 0.220 5 Total Xylenes < 0.98 < 0.79 < 0.44 < 0.44 < 0.740 <2.00 <2.00 < 0.600 Bromoform 50 < 0.15 < 0.14 < 0.14 < 0.250 <1.00 < 0.210 < 0.3 <1.00 5 < 0.210 1.1.2.2-Tetrachloroethane < 0.14 < 0.17 < 0.12 < 0.12 < 0.190 <1.00 <1.00 3 < 0.240 1,3-Dichlorobenzene < 0.32 < 0.23 < 0.17 < 0.17 < 0.130 <1.00 <1.00 3 1,4-Dichlorobenzene < 0.28 < 0.25 < 0.16 < 0.16 <0.180 <1.00 <1.00 <0.230 3 1,2-Dichlorobenzene < 0.28 < 0.23 < 0.15 < 0.15 <0.110 <1.00 <1.00 < 0.210

Table 1. Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

Location ID MW-13R MW-13R_E08-MW-13 E09-MW-13R E09-MW-13R E09-MW-13R E09- MW-13R E10-MW-13R E10- MW-13R E10-Lab Sample ID 12330-012 00763-009 03980-002 07112-008 10185-004 00249-005 03186-011 06728-007 Sample Date 10/22/2008 1/21/2009 4/21/2009 7/15/2009 10/6/2009 1/7/2010 4/7/2010 7/8/2010 SCGs Compound Chloromethane < 0.51 < 0.18 < 0.23 < 0.930 <1.00 < 0.360 5 < 0.23 <1.00 Vinyl chloride 2 < 0.56 2.73 0.546 < 0.26 0.673 1.09 <1.00 < 0.420 5 Bromomethane < 0.51 < 0.37 < 0.36 < 0.36 < 0.950 <1.00 <1.00 < 0.590 Chloroethane 5 < 0.71 < 0.64 < 0.29 < 0.29 < 0.170 <1.00 <1.00 < 0.410 5 <1.00 Trichlorofluoromethane < 0.6 < 0.74 < 0.23 < 0.23 < 0.310 <1.00 < 0.390 Acrolein < 2.57 < 4.34 < 4.34 <1.74 <20.0 <20.0 <1.64 ---< 1.87 5 1.1-Dichloroethene < 0.42 < 0.53 < 0.61 < 0.61 < 0.360 <1.00 <1.00 < 0.390 5 Methylene chloride < 1.98 < 1.98 < 1.98 < 1.98 <1.98 <2.00 <2.00 <1.98 Acrylonitrile ----< 1.19 < 0.74 < 0.95 < 0.95<1.16 <20.0 <20.0 <1.40 5 trans-1,2-Dichloroethene < 0.45 < 0.25 < 0.19 < 0.19 < 0.340 <1.00 <1.00 < 0.330 1,1-Dichloroethane 5 0.86 0.792 < 0.23 1.20 0.980 J <1.00 0.636 J 0.61 cis-1,2-Dichloroethene 5 0.853 0.433 J 0.647 1.85 0.721 0.668 0.941 J <1.00 Chloroform 7 < 0.330 < 0.29 < 0.14 < 0.17 < 0.17 < 0.220 <1.00 <1.00 5 1.1.1-Trichloroethane < 0.43 < 0.36 < 0.23 < 0.23 < 0.250 <1.00 <1.00 < 0.360 Carbon tetrachloride 5 < 0.45 < 0.3 < 0.16 < 0.16 < 0.280 <1.00 < 0.320 <1.00 < 0.21 < 0.240 < 0.340 1.2-Dichloroethane (EDC) 0.6 < 0.28 < 0.19 < 0.21 <1.00 <1.00 Benzene < 0.29 < 0.17 < 0.21 < 0.21< 0.290 <1.00 <1.00 < 0.270 1 Trichloroethene 5 1.62 1.62 1.18 0.862 1.08 1.22 <1.00 0.969 J 1,2-Dichloropropane 1 < 0.21 < 0.16 < 0.2 < 0.2 <0.280 <1.00 <1.00 <0.220 Bromodichloromethane 50 < 0.21 < 0.18 < 0.12 < 0.12 < 0.250 <1.00 <1.00 < 0.310 <1.00 < 0.350 2-Chloroethyl vinyl ether < 0.63 < 1.04 < 0.99 < 0.99 < 0.400 <1.00 ---<0.210 cis-1,3-Dichloropropene 0.4 < 0.2 < 0.24 < 0.15 < 0.15 < 0.140 <1.00 <1.00 Toluene 5 < 0.34 < 0.23 < 0.2 < 0.2 < 0.300 <1.00 <1.00 < 0.270 trans-1,3-Dichloropropene 0.4 < 0.13 < 0.32 < 0.27 < 0.27 < 0.130 <1.00 <1.00 < 0.250 1,1,2-Trichloroethane 1 < 0.36 < 0.15 < 0.15 < 0.15 < 0.240 <1.00 <1.00 <0.280 5 Tetrachloroethene < 0.38 < 0.33 < 0.19 < 0.19< 0.300 <1.00 <1.00 <0.280 Dibromochloromethane 50 < 0.16 < 0.330 <1.00 < 0.230 < 0.25 < 0.16 < 0.16 <1.00 5 Chlorobenzene < 0.27 < 0.2 < 0.2 < 0.2 <0.170 <1.00 <1.00 < 0.270 Ethylbenzene 5 < 0.33 < 0.27 < 0.19 < 0.19 < 0.240 <1.00 <1.00 < 0.220 5 Total Xylenes < 0.98 < 0.79 < 0.44 < 0.44 < 0.740 <2.00 <2.00 < 0.600 Bromoform 50 < 0.15 < 0.14 < 0.14 < 0.250 <1.00 < 0.210 < 0.3 <1.00 5 < 0.210 1.1.2.2-Tetrachloroethane < 0.14 < 0.17 < 0.12 < 0.12 < 0.190 <1.00 <1.00 3 < 0.240 1,3-Dichlorobenzene < 0.32 < 0.23 < 0.17 < 0.17 < 0.130 <1.00 <1.00 3 1,4-Dichlorobenzene < 0.28 < 0.25 < 0.16 < 0.16 <0.180 <1.00 <1.00 <0.230 3 1,2-Dichlorobenzene < 0.28 < 0.23 < 0.15 < 0.15 <0.110 <1.00 <1.00 < 0.210

Table 1. Volatile Organic Compound Results for Post-Remedial Groundwater Monitoring Wells, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

TABLE 3

Volatile Organic Compound Results for Upgradient Groundwater Monitoring Well MW-6S, October 2008 – July 2010

(Table 2 from NYSDEC approved Final Post-Remedial Annual Report and Project Evaluation for On-Site Groundwater – Year 2, ARCADIS, 2010)

	Location ID	MW-6S											
	Lab Sample ID	MW-6S_E08- 12330-015	MW-6S_E09- 00763-004	MW-6S_E09- 03980-003	MW-6S_E09- 07112-007	MW-6S_E09- 10185-007	MW-6S_E10- 00249-011	MW-6S_E10- 03186-006	MW-6S_E10- 06728-006				
	Sample Date	10/23/2008	1/20/2009	4/21/2009	7/15/2009	10/6/2009	1/8/2010	4/6/2010	7/8/2010				
Compound	SCGs												
Chloromethane	5	< 0.51	< 0.18	< 0.23	< 0.23	<0.930	<1.00	<1.00	< 0.360				
Vinyl chloride	2	< 0.56	< 0.46	< 0.26	< 0.26	<0.470	<1.00	<1.00	<0.420				
Bromomethane	5	< 0.51	< 0.37	< 0.36	< 0.36	<0.950	<1.00	<1.00	<0.590				
Chloroethane	5	< 0.71	< 0.64	< 0.29	< 0.29	<0.170	<1.00	<1.00	<0.410				
Trichlorofluoromethane	5	< 0.6	< 0.74	< 0.23	< 0.23	<0.310	<1.00	<1.00	<0.390				
Acrolein		< 1.87	< 2.57	< 4.34	< 4.34	<1.74	<20.0	<20.0	<1.64				
1,1-Dichloroethene	5	< 0.42	< 0.53	< 0.61	1.55	<0.360	<1.00	<1.00	<0.390				
Methylene chloride	5	< 1.98	< 1.98	< 1.98	< 1.98	<1.98	<2.00	<2.00	<1.98				
Acrylonitrile		< 1.19	< 0.74	< 0.95	< 0.95	<1.16	<20.0	<20.0	<1.40				
trans-1,2-Dichloroethene	5	< 0.45	< 0.25	< 0.19	< 0.19	<0.340	<1.00	<1.00	<0.330				
1,1-Dichloroethane	5	< 0.34	0.417	0.382	< 0.23	<0.260	0.336 J	<1.00	<0.350				
cis-1,2-Dichloroethene	5	< 0.32	< 0.19	< 0.2	< 0.2	<0.270	0.578 J	<1.00	<0.220				
Chloroform	7	< 0.29	< 0.14	< 0.17	< 0.17	<0.220	<1.00	<1.00	<0.330				
1,1,1-Trichloroethane	5	4.22	5.1	6.31	< 0.23	<0.250	<1.00	4.23	2.51				
Carbon tetrachloride	5	< 0.45	< 0.3	< 0.16	< 0.16	<0.280	<1.00	<1.00	<0.320				
1,2-Dichloroethane (EDC)	0.6	< 0.28	< 0.19	< 0.21	< 0.21	<0.240	<1.00	<1.00	<0.340				
Benzene	1	< 0.29	< 0.17	< 0.21	< 0.21	<0.290	<1.00	<1.00	<0.270				
Trichloroethene	5	24.1	43.3	33.9	37.3	18.5	40.3	25.1	16.3				
1,2-Dichloropropane	1	< 0.21	< 0.16	< 0.2	< 0.2	<0.280	<1.00	<1.00	<0.220				
Bromodichloromethane	50	< 0.21	< 0.18	< 0.12	< 0.12	<0.250	<1.00	<1.00	<0.310				
2-Chloroethyl vinyl ether		< 0.63	< 1.04	< 0.99	< 0.99	<0.400	<1.00	<1.00	<0.350				
cis-1,3-Dichloropropene	0.4	< 0.2	< 0.24	< 0.15	< 0.15	<0.140	<1.00	<1.00	<0.210				
Toluene	5	< 0.34	< 0.23	< 0.2	< 0.2	<0.300	<1.00	<1.00	<0.270				
trans-1,3-Dichloropropene	0.4	< 0.13	< 0.32	< 0.27	< 0.27	<0.130	<1.00	<1.00	<0.250				
1,1,2-Trichloroethane	1	< 0.36	< 0.15	< 0.15	< 0.15	<0.240	<1.00	<1.00	<0.280				
Tetrachloroethene	5	3.23	5.55	3.54	5.48	2.49	5.17	3.28	2.46				
Dibromochloromethane	50	< 0.25	< 0.16	< 0.16	< 0.16	<0.330	<1.00	<1.00	<0.230				
Chlorobenzene	5	< 0.27	< 0.2	< 0.2	< 0.2	<0.170	<1.00	<1.00	<0.270				
Ethylbenzene	5	< 0.33	< 0.27	< 0.19	< 0.19	<0.240	<1.00	<1.00	<0.220				
Total Xylenes	5	< 0.98	< 0.79	< 0.44	< 0.44	<0.740	<2.00	<2.00	<0.600				
Bromoform	50	< 0.3	< 0.15	< 0.14	< 0.14	<0.250	<1.00	<1.00	<0.210				
1,1,2,2-Tetrachloroethane	5	< 0.14	< 0.17	< 0.12	< 0.12	<0.190	<1.00	<1.00	<0.210				
1,3-Dichlorobenzene	3	< 0.32	< 0.23	< 0.17	< 0.17	<0.130	<1.00	<1.00	<0.240				
1,4-Dichlorobenzene	3	< 0.28	< 0.25	< 0.16	< 0.16	<0.180	<1.00	<1.00	<0.230				
1,2-Dichlorobenzene	3	< 0.28	< 0.23	< 0.15	< 0.15	<0.110	<1.00	<1.00	<0.210				

Table 2. Volatile Organic Compound Results for Upgadient Groundwater Monitoring Well MW-6S, October 2008 to July 2010, Former Kings Electronics Co., Inc. Site Tuckahoe, New York.

Results are reported in micrograms per liter (ug/l)

Results exceeding an SCG are shaded gray

APPENDIX A

As-Built Remedial System Layout Plan (Groundwater)



Σú

ENVIRONMENTAL

19 [♥]IW-15R $\mathbf{\Theta}$ MW-7D MW-13R INJECTION LINE 6



			MW-1	20.0	
			Injection Line 2		
			MW-10	23.5	
			MW-11	23.5	
			MW-12	23.5	
			MW-2	20.0	
Total Depth			Injection Line 3		
(ft bgs/floor	Screen Leng	th	IW-8	19.5	
surface)	(ft)	Location	IW-9	21.0	
-			IW-10	20.0	
nce Monitoring \	Vells		IW-11	21.0	
16.0	10	Inside - Unit #0045	Injection Line 4		
16.0	10	Inside - Electric Room	GP-106R2	20.0	
20.0	10	Outside	IW-1	20.5	
20.0	10	Inside - Hallway	IW-2	20.5	
40.0	10	Inside - Hallway	IW-3	20.5	
21.0	10	Outside	IW-4	20.5	
19.0	10	Inside - Office Area	Injection Line 5		
ng Wells			IW-12	16.0	
40.0	10	Outside	IW-13	16.0	
20.0	5	Outside	IW-14	21.5	
48.5	10	Outside	Injection Line 6		
20.0	10	Outside	IW-15R	20.0	
58.0	10	Outside	IW-16	21.0	
17.0	10	Inside - Office Area	MW-7S	20.0	

ARCADIS Project No. NJ000423.00005.0003 Date SEPTEMBER 11, 2008 ARCADIS 1 INTERNATIONAL BLVD SUITE 406 MAHWAH, NEW JERSEY 07495 TEL 201.684.1410

Total Depth

surface)

20.5

21.0

20.0

Injections

Injection Line

MW-HP-8S

Wells

1IW-5

IW-6

(ft bgs/floor Screen Length

(ft)

10

10

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Location

Inside - Unit #1200

Inside - Unit #1208

Inside - Unit #1188 Inside - Unit #1068

Inside - Hallway

Inside - Unit #1018

Inside - Unit #1040

Inside - Unit #0013

Inside - Unit #0068

Outside

C1

APPENDIX B

As-Builts - On-Site SSD System

STORAGE DELUXE TUCKAHOE, NY BUILDING PLAN A



Warning: It is a violation of New York State Education Law Article 145 section 7209 for any person, unless he is acting under the direction of a licensed professional engineer, to alter this Item in any way.

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STORAGE DELAUXE TUCKAHOE, NY BUILDING PLAN B

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1370		144	140	1					(GAU	GE		-	1396	13	95		5		1	and the	-	in sealing	-i-		GAL	ige 🗐		
1371	244 ·····	14	05	14	12	14	01	145	0	139	9	1398	1397	1;	394			XX	1440	1441	1442	1443	1444	T	1445	1446	1447	1448	1449
1374		14	06											ELEV	ATOR		A X	3		<u>唐</u>			-0	L			Contraction of the local distribution of the	Anosaurration The Automation	
1375		14	07	14	10	14	11	14	2	141	3	1414	1415	1410	5L	141	8					1	AO.		NG				
1376		408	140	9				C	ILD	G7	1		1	1	14	17		(B	LDG	8)			DO	U.S.	k el	1	1	. N	1
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Warning: It is a violation of New York State Education Law Article 145 section 7209 for any person, unless he is acting under the direction of a licensed professional engineer, to alter this item in any way.





DRAWING #3

STORAGE DELUXE 40 MARBLEDALE ROAD, TUCKAHOE, NY ELEVATION - BUILDING 1 EMISSION POINT #1







STORAGE DELUXE















STORAGE DELUXE 40 MARBLEDALE ROAD, TUCKAHOE, NY ELEVATION - BUILDING 7 EMISSION POINT #5

DRAWING #4
STORAGE DELUXE 40 MARBLEDALE ROAD, TUCKAHOE, NY SUB SLAB DEPRESSURIZATION (SSD) SYSTEM EMISSION POINT #6





KEY Suction Point Cartering Suct Suction

DRAWING #3



APPENDIX C

On-Site SSD System Owners Manual and Information Packet

OWNERS MANUAL

AND

INFORMATION PACKET

FOR MITIGATION SYSTEMS

STORAGE DELUXE, TUCKAHOE NY

Mitigation System Information For Storage Deluxe, Tuckahoe NY

Purpose

A six section sub-slab depressurization system (SSDS) has been installed at the Storage Deluxe facility. This system creates a vacuum (negative pressure field) beneath the concrete slab at the lowest level of the conditioned air space. The purpose of this system is to prevent the potential intrusion of soil vapor into the ambient interior air. This system is not intended to remediate the soil or groundwater beneath the building.

Description

This SSDS consists of six specially designed externally mounted fans (blowers) connected to a network of horizontal ceiling mounted PVC piping within the building. Descending from this network are vertical pipes connecting to suction cavities that have been excavated in the soil beneath the concrete slab. The suction cavities are strategically located to provide balanced distribution of the negative pressure field. The vertical pipes are protected by metal coverings generally located at the sidewalls of storage lockers. In some instances, these coverings have removable panels that furnish access to adjusting valves, and are so labeled.

The attached color coded layouts of the Storage Deluxe facility show the location of the exhaust fan, suction cavities and manometer gauges (in relation to numbered lockers) for each of the six (6) systems. Existing sub slab trenches are also marked with a dotted line. (At the time of this writing, the basement of Building 7 was not yet built out with storage lockers.)

The SSDS fans have individual exterior exhaust stacks terminating at a point above their respective buildings. The fans are designed and intended for continuous operation. Each individual SSDS includes a vacuum indicator (gauge), usually a U-tube type manometer, to monitor system performance and provide a visual indication of system degradation and failure. (Because of higher operating pressure, the indicator on SSDS #1 is a "Magnahelic" dial type pressure gauge.) Illustrations of the two types are attached.

Operation

Each fan has an on/off switch, at its exterior location. All fans should be switched "on" at all times. Each (6) vacuum indicator (gauge) should be inspected periodically (at least weekly) to determine that vacuum levels have not changed. Initial vacuum pressure is marked on each manometer. If any change (increase or decrease) in the pressure reading is observed, the SSDS contractor should be contacted, as follows:

MITIGATION TECH 55 Shumway Rd Brockport, NY 14420 1-800-637-9228 info@mitigationtech.com

Maintenance, by Storage Deluxe

Weekly: Gauge inspection (see "operation" above) Monthly: Inspect all components for changes in appearance and for unusual noises. Per occurrence: Notify SSDS contractor in the event of new penetrations of lowest level concrete slab or structural changes to premises.

Maintenance, by Mitigation Tech

Routine Maintenance will be conducted every 12-18 months by Mitigation Tech until Kings is no longer responsible for SSDS operations.

How to contact Mitigation Tech for service:

Call toll free: 1-800-637-9228

Contact Information for New York State Department of Health (NYSDOH)

Toll Free Information Line: 1-800-458-1158 Ext. 27850 NYSDOH Site Manager- Carl Obermeyer: 845-794-2045

Manufacturers' documentation for the following system fans is attached.

- Fan # 1. RADONAWAY HS-5000
- Fan # 2. Plastec Storm 12 with 3850 RPM motor
- Fan # 3. Plastec Storm 12 with 3850 RPM motor
- Fan # 4. RADONAWAY GP-501
- Fan # 5. Plastec Storm 12 with 3850 RPM motor
- Fan # 6. RADONAWAY GP-501



Typical SSD system installation, showing major components.

Figure 5.2 Example of an illustration showing how a SSD system works.

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Storage Deluxe Buildings 1 through 6. SSD systems layout superimposed.



Storage Deluxe Buildings 7 through 9. SSD systems layout superimposed.

Note: Dotted purple lines are pre-existing sub slab trenches.



Exhaust Fan 1, Building 1



Exhaust Fan 2, Building 4



Exhaust Fan 3, Building 4



Exhaust Fan 4, Building 6



Exhaust Fan 5, Building 7



Exhaust Fan 6, Building 9



Magnehelic type Manometer (Note pressure reading: 17) **Building 1 system**



U-tube type Manometer, Building 4, system 2 Type used on systems 2, 3, 4, 5 & 6

MANUFACTURERS'

EQUIPMENT

INFORMATION





RadonAway Ward Hill, MA. HS Series Fan Installation Instructions

Please Read and Save These Instructions.

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

- **1. WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.
- **2. WARNING!** Do not use fan to pump explosive or corrosive gases.
- **3. WARNING!** Check voltage at the fan to insure it corresponds with nameplate.
- **4. WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.
- 5. **NOTICE!** There are no user serviceable parts located inside the fan unit. **Do NOT attempt to open.** Return unit to the factory for service.
- 6. All wiring must be in accordance with local and national electrical codes.
- 7. **WARNING!** In the event that the fan is immersed in water, return unit to factory for service before operating.
- 8. **WARNING!** Do not twist or torque fan inlet or outlet piping as Leakage may result.

INSTALLATION INSTRUCTIONS (Rev D) for DynaVac High Suction Series HS2000 p/n 23004-1 HS3000 p/n 23004-2 HS5000 p/n 23004-3

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The DynaVac is intended for use by trained, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of the DynaVac. This instruction should be considered as a supplement to EPA standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The DynaVac is designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the DynaVac should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F. The DynaVac is thermally protected such that it will shut off when the internal temperature is above 104 degrees F. Thus if the DynaVac is idle in an area where the ambient temperature exceeds this shut off, it will not restart until the internal temperature falls below 104 degrees F.

1.3 ACOUSTICS

The DynaVac, when installed properly, operates with little or no noticable noise to the building occupants. There are, however, some considerations to be taken into account in the system design and installation. When installing the DynaVac above sleeping areas, select a location for mounting which is as far away as possible from those areas. Avoid mounting near doors, fold-down stairs or other uninsulated structures which may transmit sound. Insure a solid mounting for the DynaVac to avoid structure-borne vibration or noise.

The velocity of the outgoing air must also be considered in the overall system design. With small diameter piping, the "rushing" sound of the outlet air can be disturbing. The system design should incorporate a means to slow and quiet the outlet air. The use of the RadonAway Exhaust Muffler, p/n 24001, is strongly recommended.

1.4 GROUND WATER

Under no circumstances should water be allowed to be drawn into the inlet of the DynaVac as this may result in damage to the unit. The DynaVac should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the DynaVac with water in installations with occasional high water tables.

In the event that a temporary high water table results in water at or above slab level, water will be drawn into the riser pipes thus blocking air flow to the DynaVac. The lack of cooling air will result in the DynaVac cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, it is recommended that the DynaVac be disconnected until the water recedes allowing for return to normal operation.

1.5 CONDENSATION & DRAINAGE

(WARNING!: Failure to provide adequate drainage for condensation can result in system failure and damage the DynaVac).

Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation.

The use of small diameter piping in a system increases the speed at which the air moves. The speed of the air can pull water uphill and at sufficient velocity it can actually move water vertically up the side walls of the pipe. This has the potential of creating a problem in the negative pressure (inlet) side piping. For DynaVac inlet piping, the following table provides the minimum recommended pipe diameters as well as minimum pitch under several system condition. Use this chart to size piping for a system.

Pipe Diam.	Minimum Rise per Foot of Run*						
	@ 25 CFM	@ 50 CFM	@ 100 CFM				
4"	1/32 "	3/32 "	3/8 "				
3"	1/8 "	3/8 "	1 1/2 "				

Rise

Run

*Typical operational flow rates:

HS3000,	or	HS5000	
HS2000			

20 - 40 CFM 50 - 90 CFM

All exhaust piping should be 2" PVC.

1.6 "SYSTEM ON" INDICATOR

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A Magnehelic pressure gauge is recommended for this purpose. The indicator should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the gauge with water in installations with occasional high water tables.

1.7 SLAB COVERAGE

The DynaVac can provide coverage of well over 1000 sq. ft. per slab penetration. This will, of course, depend on the sub-slab aggregate in any particular installation and the diagnostic results. In general, sand and gravel are much looser aggregates than dirt and clay. Additional suction points can be added as required. It is recommended that a small pit (2 to 10 gallons in size) be created below the slab at each suction hole.

1.8 ELECTRICAL WIRING

The DynaVac plugs into a standard 120V outlet. All wiring must be performed in accordance with the National Electrical Code and state and local building codes.

1.8a ELECTRICAL BOX (optional)

The optional Electrical Box (p/n 20003) provides a weathertight box with switch for outdoor hardwire connection. All wiring must be performed in accordance with the National Electrical Code and state and local building codes. All electrical work should be performed by a qualified electrician. Outdoor installations require the use of a U.L. listed watertight conduit.

1.9 SPEED CONTROLS

Electronic speed controls can NOT be used on HS series units.



2.0 INSTALLATION

2.1 MOUNTING

Mount the DynaVac to the wall studs, or similar structure, in the selected location with (4) 1/4" x 1 1/2" lag screws (not provided). Insure the DynaVac is both plumb and level.

2.2 DUCTING CONNECTIONS

Make final ducting connection to DynaVac with flexible couplings. Insure all connections are tight. Do not twist or torque inlet and outlet piping on DynaVac or leaks may result.

2.3 VENT MUFFLER INSTALLATION

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed above the roofline at the end of the vent pipe.

2.5 OPERATION CHECKS

 $\underline{\quad}$ Make final operation checks by verifying all connections are tight and $\underline{\quad}$ leak-free.

Insure the DynaVac and all ducting is secure and vibration-free.

Verify system vacuum pressure with Magnehelic. Insure vacuum pressure is less than the maximum recommended as shown below:

DynaVac	HS2000	14"	WC
DynaVac	HS3000	21"	WC
DynaVac	HS5000	40"	WC

(Above are based on sea-level operation, at higher altitudes reduce above by about 4% per 1000 Feet.) If these are exceeded, increase number of suction points.

Verify Radon levels by testing to EPA protocol.

Addendum

PRODUCT SPECIFICATIONS

Model	Maximum		Power* Watts @					
	Static Suction	0"	10"	15"	20"	25"	35"	115 VAC
HS2000	18"	110	72	40	-	-	-	150-270
HS3000	27"	40	33	30	23	18	-	105-195
HS5000	50"	53	47	42	38	34	24	180-320

*Power consumption varies with actual load conditions

Inlet: 3.0" PVC Outlet: 2.0" PVC Mounting: Brackets for vertical mount Weight: Approximately 18 lbs. Size: Approximately 15"W x 13"H x 8"D Minimum recommended inlet ducting (greater diameter may always be used): HS3000, HS5000 --- 2.0" PVC Pipe HS2000 --- Main feeder line of 3.0" or greater PVC Pipe Branch lines (if 3 or more) may be 2.0" PVC Pipe Outlet ducting: 2.0" PVC Storage temperature range: 32 - 100 degrees F. Thermally protected Locked rotor protection Internal Condensate Bypass

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the HS Series Fan for shipping damage within 15 days of receipt. Notify **RadonAway of any damages immediately**. Radonaway is not responsible for damages incurred during shipping. However, for your benefit, Radonaway does insure shipments.

There are no user serviceable parts inside the fan. **Do not attempt to open.** Return unit to factory for service.

Install the HS Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.





STORM 12



Metal stand does not come standard with fan (see accessories). Motor frame sizes may vary upon type of motor used.

	DIMENSIONS (inches)														
Α	В	C	D	Ε	G	Η	L	М	Ν	Ρ	Y	Y ₁	Z	X	X ₁
5.71	6.89	6.42	3.54	8.35	5.12	1.77	3.15	2.83	5.98	13.78	7.09	6.30	13.39	9.45	2.80

Rotation and Discharge for Centrifugal Fans



Notes:

- (1) Direction of rotation is determined from the drive side of fan. *Standard position is up-blast CCW 360*.
- (2) On single inlet fans, drive side is always considered as the side opposite fan inlet.







		Storm	12-4	:						
0.5	5-17	25 rpm.	1/3	HP/0).25 K	w 🔨				
			<u> </u>			\checkmark				_
() —		-							_
	Ó	50	10	0	150	20	00	23	50	
					Ai	rflo	w	CI	FM	
5D C	10-85 lozzle amber	Type B Noise Level 7	Test type	e B, visi	t our webs	ite for deta	ails	٤		
							_	Но	ousing	а
n (T/min) R.P.M.		dB (A)			dB				n I	(R
1450		71,7			83,9	9				
1720		75,3			87,6	5				1

98,1

100,9

85,8

88,8

	Type D Ducted inlet/Ducted outlet
--	--------------------------------------

Housing and motor noise level when fan is running near maximum output

n (T/min) R.P.M.	Global dB	Global dB (A)
1450	60,4	56,8
1720	65,2	61,5
2850	76,8	74
3300	80,5	77,8

ISO 9614/1

2850

3300

PLASTEC VENTILATION, INC.



GP Series



Radon Mitigation Fans

Specially designed for radon mitigation, GP Series Fans provide a wide range of performance that makes them ideal for most subslab radon mitigation systems.





- 5-Year Warranty
- Mounts on duct pipe or with integral flange
- 3" diameter ducts for use with 3" or 4" pipe
- Electrical box for hard wire or plug in
- ETL Listed for indoor or outdoor use.

	Dimensions					
Model	Α	В	C Duct Size			
GP series	12.5"	13"	3"			

The following chart shows performance of GP Series fans:

Model	Watts	Watta	Watta	Watts	Maximum		Туріс	al CFM	vs. Static	Pressure	e WC	
		"WC	1.0"	1.5"	2.0"	2.5"	3.0"	3.5"	4.0"			
GP201	40-60	2.0	82	58	5	-	-	-	-			
GP301	55-90	2.6	92	77	45	10	-	-	-			
GP401	60-110	3.4	93	82	60	40	15	-	-			
GP501	70-140	4.2	95	87	80	70	57	30	10			

Choice of model is dependent on certain building characteristics including sub-slab materials and should be made by a radon professional.

FOR FURTHER INFORMATION CONTACT:

APPENDIX D

Declaration of Covenants and Restrictions

(To Be Inserted After Recording)