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ENVIRONMENTAL

Mr. Payson Long
Remedial Bureau E
Section D
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Subject:
McKesson Envirosystems
Former Bear Street Facility
Syracuse, New York
Site No. 7-34-020

Date:
October 1, 2013

Contact:
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Our ref:
B0026003.0001.00190 #2

Dear Mr. Long:

ARCADIS of New York, Inc. (ARCADIS) prepared this Periodic Review Report (PRR) for the McKesson Envirosystems Former Bear Street Facility, located at 400 Bear Street West in Syracuse, New York (Site), on behalf of McKesson Corporation to fulfill the requirements set forth by Section 6.3(b) of the DER-10 Technical Guidance for Site Investigation and Remediation (New York State Department of Environmental Conservation [NYSDEC] 2010a). This PRR describes the operation and maintenance (O&M) activities conducted at the Site and the monitoring results obtained during the reporting period from January through June 2013.

This PRR also fulfills the requirements of the NYSDEC-approved Site Operation and Maintenance Plan (Site O&M Plan; Blasland, Bouck & Lee, Inc. [BBL] 1999a) and the December 29, 1999 letter from Mr. David Ulm (BBL) to Mr. Michael Ryan, P.E. (NYSDEC), which presented the long-term process control monitoring program as an addendum to the Site O&M Plan (BBL 1999b). The long-term process control monitoring program was modified by ARCADIS' September 3, 2010 modification proposal letter (ARCADIS 2010a) and the NYSDEC's modification proposal response letter dated September 23, 2010 (NYSDEC 2010b). The Site O&M Plan (BBL 1999a), the addendum to the Site O&M Plan (BBL 1999b), and the 2010 modifications (ARCADIS 2010a and NYSDEC 2010b) are collectively referred to herein as the Site O&M Plan and associated documents.

The April 2013 monitoring event was conducted from April 1 through April 8, 2013. Following the monitoring event, NYSDEC verbally approved the shutdown of the *in-*

situ bioremediation treatment and closed loop hydraulic systems on April 9, 2013. Accordingly, the systems were shutdown on April 10, 2013 and NYSDEC provided written approval in an April 11, 2013 letter from Mr. Payson Long (NYSDEC) to Ms. Jean Mescher (McKesson Corporation) (NYSDEC 2013). Further details of Operable Unit 2 (OU2) remedial activities and monitoring results from the April 2013 monitoring event are presented herein.

Submitted with this PRR for NYSDEC review are a draft Site Management Plan (SMP) for managing the remaining constituents of concern (COCs) at the Site, two draft deed restrictions (one for each parcel of the Site), which are included as an appendix to the SMP. The draft SMP was developed using the NYSDEC's February 2013 template and includes plans for institutional and engineering controls, post-shutdown process control monitoring, site operation and maintenance, and reporting (ARCADIS 2013a). Adhering to the recommendation stated in NYSDEC's template, both a redline/strikeout and clean copy of the draft SMP and draft Excavation Work Plan (EWP) text are provided to facilitate the review process. The redline/strikeout copy is provided in the draft SMP document (Attachment D to this PRR) and a clean copy (text only) is provided in Attachment E. In addition, the Institutional and Engineering Control Certification Form is included with this PRR.

This PRR is arranged in the following sections:

Site Background and Remedial Treatment Program Activities

- *Site Remediation Background.* Summarizes the history of the remediation activities at the Site and Site O&M Plan modifications.

- *In-Situ Aerobic Bioremediation Treatment Program Activities.* Discusses the *in-situ* aerobic bioremediation treatment and closed loop hydraulic control activities conducted at the Site from January through April 2013.

- *Shutdown of In-Situ Bioremediation Treatment and Closed Loop Hydraulic Systems.* Describes the shutdown of the *in-situ* aerobic bioremediation treatment and closed loop hydraulic systems.

Process Control Monitoring and Evaluation

- *Hydraulic Process Control Monitoring.* Provides the results of the hydraulic process control monitoring activities conducted at the Site from January through April 2013.

- *Institutional and Engineering Controls.* Identifies the institutional and engineering controls that are currently in place.

- *Constituent of Concern (COC) Process Control and Biannual Groundwater Monitoring Program*. Provides the April 2013 results of the COC process control and Biannual Groundwater Monitoring Program, and summarizes the COC data obtained at the Site from 1998 through April 2013.

- *Conclusions.* Provides conclusions based on the results of the process control monitoring activities.

Next Steps

- *Continued Implementation of the Post-Shutdown Process Control Monitoring Program*. Provides an overview of the program described in the draft SMP and summarizes the first post-shutdown process control monitoring event that was conducted in July 2013.

- *Finalize the SMP and complete the Deed Restriction Process.* Identifies that the SMP, once approved by the NYSDEC, will supersede the Site O&M Plan and will be used for long-term management of the Site. Also discusses the deed restrictions planned for the Site.

- *Proposed Next Steps*. Describes the data evaluation and reporting processes proposed to be followed during the post-shutdown process control monitoring program, and summarizes the proposed second post-shutdown process control monitoring event planned to be conducted in October 2013.

Summary

- Summarizes key points addressed in this PRR.

Site Background and Remedial Treatment Program Activities

<u>Site Remediation Background</u>

The 8.6-acre Site is divided into three areas (Areas 1, 2, and 3; as shown on Figure 1), and consists of two parcels (029-300-380 and 029-300-390). Additionally, the Site is divided vertically into two OUs: OU1 – Unsaturated Soil and OU2 –

Saturated Soil and Groundwater. The NYSDEC-selected remedy for both OUs includes ongoing O&M activities. The Record of Decision for OU1, signed in March 1994 (OU1 ROD; NYSDEC 1994), called for *in-situ* aerobic bioremediation of the unsaturated soils comprising OU1. A ROD for OU2 signed in March 1997 (NYSDEC 1997) called for anaerobic bioremediation of groundwater and saturated soil. Biannual reports detailing both the O&M activities and results of the process control monitoring program have been submitted to the NYSDEC since OU1 remedial activities were completed in 1994/1995 and OU2 *in-situ* anaerobic bioremediation treatment activities commenced in July 1998.

Historically, the Site was zoned for commercial and industrial use. The Site has since been re-zoned as a Lakefront Zoning District (T5) as part of the City of Syracuse Lakefront Master Plan[1], which was adopted in March 1999. This zoning designation permits mixed uses of the Site as an urban center, including commercial and residential uses (City of Syracuse 2013).

The OU1 bioremediation remedy successfully treated an estimated 20,000 cubic yards (cy) of contaminated soil to the technology-based cleanup levels. A minimum of 1 foot of clean fill material was installed over the treated soils to promote surface water runoff and limit infiltration of rain and surface water into the remediated areas (BBL 1995).

The initial components of the remedy implemented for OU2 are identified below:

- An infiltration trench and a withdrawal trench were installed upgradient and downgradient, respectively, of Area 3 as a means to introduce Revised Anaerobic Mineral Media- (RAMM-) amended groundwater into the shallow hydrogeologic unit while maintaining hydraulic control. The introduction of RAMM supplied macronutrients and micronutrients to enhance naturally occurring anaerobic biodegradation of the COCs.

- Two additional infiltration trenches were installed within Area 3 to increase the distribution of RAMM-amended groundwater within this area and to act as overflow devices if the amended groundwater in the aforementioned infiltration trench exceeds maximum capacity.

[1] The City of Syracuse zoning map is available online at: http://www.syracuse.ny.us/ZoningAtlas/Map06.pdf.

- Groundwater was pumped from the withdrawal trench, amended with RAMM, and distributed into the shallow hydrogeologic unit via the infiltration trenches described above.

- Two infiltration trenches were installed in both Areas 1 and 2. RAMM-amended groundwater was periodically introduced into these trenches by manually filling standpipes screened within the filter pack of the trenches (i.e., within the shallow hydrogeologic unit). Groundwater used for the RAMM amendment was pumped from pumping well MW-26S because COCs were not detected in any of the groundwater samples from this well, the adjacent monitoring well MW-13S, or the previously existing adjacent monitoring well MW-14D that was abandoned during the OU2 remediation activities.

Figure 1 shows the locations of the withdrawal trench and the infiltration trenches. The trenches in Area 3 have been designated as main infiltration trench "C", secondary infiltration trench "B", and secondary infiltration trench "A". In addition to the aforementioned components, the remedy for OU2 initially included the following:

- Conducting a process control monitoring program to monitor the effectiveness of the *in-situ* anaerobic bioremediation treatment systems.

- Introducing RAMM into the shallow hydrogeologic unit within each of the three areas, at discrete locations throughout each area, using a truck-mounted vertical injection mast. Two discrete RAMM injection events were conducted: an initial event in August 1998 and a second event in August 2000.

A process control monitoring program was implemented to monitor the effectiveness of the *in-situ* anaerobic bioremediation treatment systems. The process control monitoring program included hydraulic, biological, and COC monitoring. Ongoing O&M activities were performed as part of the NYSDEC-selected remedies for OU2. These O&M activities, in general, included the following:

- Conducting biannual groundwater monitoring in association with the NYSDEC-selected remedy for OU2

- Operating and maintaining the *in-situ* anaerobic bioremediation systems installed as part of the NYSDEC-selected remedy for OU2

- Conducting process control monitoring in association with the remedy for OU2.

The data obtained during the process control monitoring program have been periodically reviewed. In 2004, the periodic review of the data obtained as part of the monitoring program suggested that concentrations of aniline and N,N-dimethylaniline near MW-8S, MW-27, and MW-28 in Area 3, TW-02R in Area 2, and MW-33 in Area 1 were not being reduced as successfully as in other areas of the Site. A selected excavation program was designed and implemented for the removal of 65 cy of saturated soil near MW-8S, approximately 6 cy of saturated soil around TW-02R, and approximately 1 cy of saturated soil around MW-27. The backfill placed in the excavation areas surrounding MW-8S, TW-02R, and MW-27 was amended with RAMM (in addition to Suga-Lik™ [Blackstrap Molasses] at MW-27) to facilitate the anaerobic degradation of COCs in groundwater. In addition, eight well points were installed around monitoring wells MW-27, MW-28, and MW-33 to allow for monthly RAMM (and Suga-Lik™) amendments to these areas of relatively higher COC concentrations.

After evaluating the biological data (i.e., microbiological analytes, indicator compounds, and permanent gases) obtained during the first 6 years of monitoring, it was concluded that the biological data consistently verified that the saturated soils/ groundwater of the shallow hydrogeologic unit within each area are conducive to anaerobic bioremediation and that there are sufficient carbon electron acceptors and nutrients to sustain microbial activity in each of the three areas. Therefore, the biological portion of the monitoring program was eliminated following the first monitoring event in 2005.

In 2006, the periodic review of the COC data suggested that the *in-situ* anaerobic treatment program was effectively reducing the concentrations of volatile organic COCs, but concentrations of semi-volatile organic COCs (aniline and N,N-dimethylaniline) were not being reduced in a timely manner. The OU2 *in-situ* anaerobic bioremediation treatment program was modified to an *in-situ* aerobic bioremediation treatment program in August 2006. From August 2006 to October 2008, the *in-situ* aerobic bioremediation treatment program consisted of amending the groundwater with an oxygen source (i.e., dilute hydrogen peroxide) and macronutrients. The *in-situ* aerobic bioremediation treatment program was modified in October 2008 to provide a new and continuous source of oxygen to Areas 2 and 3; however, dilute hydrogen peroxide continued to be added to Area 1. The modifications included the following:

- Constructing an oxygen gas diffusion system in both Areas 2 and 3 (Figures 2 and 3, respectively)

- Installing an aerator stone in the equalization tank of the Area 3 treatment system to add oxygen gas to the groundwater before it was pumped into the infiltration trenches.

In October 2008, macronutrient amendments were discontinued in Areas 1, 2, and 3.

In 2010, the periodic review of the data obtained as part of the monitoring program suggested that concentrations of aniline in the area between TW-02RR and MW-36 were not being reduced as successfully as in other areas of the Site. A selected excavation program was designed and implemented for the removal of 117.39 tons of saturated soil from Area 2. The backfill placed in the Area 2 excavation was amended with Oxygen Release Compound® (ORC®) to facilitate the aerobic degradation of COCs in groundwater that entered that area of the Site. In addition, a system of five standpipes was installed within the excavation area to allow for additional ORC® amendments.

Based on historical groundwater monitoring and analytical data trends, the following modifications were made to the long-term process control monitoring program beginning in October 2010:

- Eliminating methanol analysis in select wells/piezometers
- Removing select wells from the COC monitoring program
- Removing select deep wells/piezometers from the hydraulic monitoring program
- Abandoning select wells/piezometers

In addition, the NYSDEC added MW-4S to the COC monitoring program as a downgradient sentinel well for Area 2. Groundwater samples collected at MW-4S are analyzed for all site COCs, excluding methanol. Because there were no detections of COCs at this location at concentrations above the NYSDEC Groundwater Quality Standards (NYSDEC 1998) during the October 2010 monitoring event, the low hydraulic gradient near this well, and its relatively remote location on site (Figure 1), MW-4S has been included in the sampling program every third biannual monitoring event. Samples were collected during the October 2010 and April 2012 monitoring events and were collected from this well again during the July 2013 quarterly post-shutdown process control monitoring event, which is described in further detail in the *Recommendations* section of this PRR.

Beginning in June 2011, the *in-situ* aerobic bioremediation treatment program was modified to include monthly injections of ORC®-amended groundwater into the five standpipes within Area 2. The ORC® was the product leftover from the December 2010 excavation work. Monthly ORC®-amended groundwater injections ended in December 2011.

***In-Situ* Aerobic Bioremediation Treatment Program Activities**

In July 2006, the NYSDEC verbally approved the *in-situ* aerobic bioremediation treatment program as an alternate approach to lowering concentrations of aniline and other COCs (i.e., benzene, toluene, ethylbenzene, and xylene [BTEX]; acetone; methanol; N,N-dimethylaniline; methylene chloride; and trichloroethene) at the three areas. This treatment program consisted of introducing an oxygen source and macronutrients into Areas 1, 2, and 3. The oxygen source for all three areas between August 10, 2006 (beginning of the *in-situ* aerobic bioremediation treatment program) and October 27, 2008 (modifications to the *in-situ* aerobic bioremediation treatment program) was dilute hydrogen peroxide at a concentration of 200 parts per million (ppm). The macronutrients were added at an approximate carbon:nitrogen:phosphorus ratio of 50:25:10 in the form of Miracle-Gro®.

In October 2008, the *in-situ* aerobic bioremediation treatment program was modified to include an oxygen infusion system to provide a continuous source of oxygen gas to the groundwater in Areas 2 and 3 via iSOC® units. An oxygen diffuser (i.e., Oxygen Edge Unit) was also installed in the Area 3 equalization tank in January 2009. Dilute hydrogen peroxide amendments continued to be added to groundwater in Area 1, but macronutrient amendments were discontinued.

During the current reporting period, the following activities were conducted as part of the *in-situ* aerobic bioremediation treatment program from January through April 2013 (see Figures 1, 2, and 3 for referenced locations):

- Added dilute hydrogen peroxide-amended groundwater into the infiltration trenches in Area 1 (monthly).

- Added dilute hydrogen peroxide-amended groundwater into piezometers in Area 1 (PZ-S, PZ-G, PZ-Q, and PZ-R) and into well points in Area 1 (WP-4 and WP-5; monthly).

- Added oxygen gas to groundwater via infusion wells in Area 2 (IW-1, IW-2, IW-3, IW-4, and IW-5).

- Added oxygen gas to groundwater via infusion wells in Area 3 (IW-6, IW-7, IW-8, IW-9, IW-10, IW-11, IW-12, and IW-13).

- Added oxygen gas to groundwater in the Area 3 equalization tank.

- Measured dissolved oxygen (DO) levels in the field each month in Area 1 (MW-33), Area 2 (MW-36R and TW-02RRR), and Area 3 (MW-27, MW-28, and MW-8SR).

Dilute hydrogen peroxide was added to groundwater at a concentration of 200 ppm before it was injected into the Area 1 infiltration trenches, piezometers, and well points indicated above. Oxygen gas was continuously added to the Area 2 and 3 infusion wells, resulting in a groundwater concentration of at least 40 ppm at the infusion wells. Oxygen gas was continuously added to the Area 3 equalization tank at a concentration of approximately 25 ppm.

In Area 3, the *in-situ* aerobic bioremediation treatment system and the hydraulic process control system operated properly between January 1 and April 10, 2013. No substantial system repairs were required. Between January 1 and April 10, 2013, approximately 576,280 gallons of water were pumped from the withdrawal trench and introduced into the Area 3 infiltration trenches, as detailed in this PRR.

The fencing around the Site, which serves as an engineering control, was inspected and observed to be intact.

Shutdown of *In-Situ* Bioremediation Treatment and Closed Loop Hydraulic Systems

A comprehensive evaluation of the monitoring data from 1998 to October 2012 was conducted and the results were presented in the January 15, 2013 PRR. As detailed in that PRR, the Remedial Action Objectives (RAOs) for OU2, as stated in the OU2 Record of Decision (NYSDEC 1994), have been attained (ARCADIS 2013c). The OU2 RAOs are as follows:

- Reduce, control, or eliminate the concentrations of COCs present within the saturated soils at the Site.

- Attain the NYSDEC Class GA Groundwater Quality Standards (NYSDEC 1998), to the extent practicable, for the COCs present in on site groundwater.

- Mitigate the potential for migration beyond the Site boundary of groundwater that contains concentrations of COCs in excess of their respective NYSDEC Class GA Groundwater Quality Standard.

In addition, as detailed in the January 15, 2013 PRR, NYSDEC guidance for initiating remedial process closure identified in NYSDEC's *Technical Guidance for Site Investigation and Remediation DER-10*, Section 6.4(a) (NYSDEC 2010a) have been met because:

- the remedy has achieved the bulk reduction of groundwater contamination

- the remedy has been properly implemented and optimized to the fullest extent

- public health and environment are protected

The *in-situ* bioremediation treatment system (hydrogen peroxide amendments in Area 1 and oxygen diffusion in Areas 2 and 3) and closed loop hydraulic system were shutdown on April 10, 2013 upon approval of NYSDEC (NYSDEC 2013). As specified in NYSDEC's April 11, 2013 letter, a post-shutdown process control monitoring program is required to determine the continued effectiveness of the remedial action on the remaining contamination and to evaluate the need to re-start remedial processes (i.e., the *in-situ* bioremediation treatment and closed loop hydraulic systems). On July 15, 2013, Ms. Dawn Penniman (ARCADIS) notified Mr. Payson Long (NYSDEC) via email of the details for the first post-shutdown process control monitoring event, which was conducted July 18 (hydraulic monitoring) and July 22 through 26 (COC monitoring). These results will be presented in an upcoming monitoring memo. The post-shutdown process control monitoring program is further detailed herein, as well as in the SMP (ARCADIS 2013a).

Process Control Monitoring and Evaluation

<u>Hydraulic Process Control Monitoring</u>

As stated in the Remedial Design/Remedial Action Work Plan for OU2 (BBL 1999c), the hydraulic process control monitoring program was established in each of the three areas to:

- Confirm that containment has been established in each area.

- Verify that the groundwater withdrawal rates in Area 3 do not cause the freshwater/ saltwater interface to upcone to the bottom of the withdrawal trench.

- Verify that saturated soil/groundwater conditions within the shallow hydrogeologic unit are conducive to microbial degradation of the COCs by aerobic microbial populations.

- Optimize the system operation performance in Area 3.

As part of the hydraulic process control monitoring, groundwater level measurements were obtained at monitoring wells and piezometers that are screened entirely within the sand layer of the shallow hydrogeologic unit and located in and around each of the three areas. Additionally, the Barge Canal surface-water elevation was obtained from measurements made from a reference point on the Bear Street Bridge, which passes over the canal. The hydraulic process control monitoring was conducted on April 1, 2013. Monitoring locations are listed in Table 1 and shown on Figure 1. The January 15, 2013 PRR identified that the monitoring event would be performed in April 2013.

Table 2 summarizes the groundwater elevation measurements obtained during the April 1, 2013 hydraulic process control monitoring event, as well as those obtained since October 2006 (just after initiating the *in-situ* aerobic bioremediation treatment program). Table 1 of Attachment A summarizes the historical groundwater elevation measurements obtained from June 1998 (immediately prior to commencing the *in-situ* anaerobic bioremediation treatment activities) through June 2006 (prior to initiating the *in-situ* aerobic bioremediation treatment program). Figure 4 depicts the potentiometric surface of the Site's shallow hydrogeologic unit using the April 1, 2013 data set. Site-wide groundwater elevations for this round of monitoring were consistent with elevations measured since startup of the treatment system. The results and corresponding conclusions of the hydraulic process control monitoring from January to April 10, 2013 (prior to system shutdown) are summarized below:

- A closed loop hydraulic cell was maintained in Area 3, as shown on Figure 4. This groundwater containment was an engineering control for the Site prior to system shut down.

- The groundwater withdrawal rate in Area 3 ranged from approximately 2.36 to 4.94 gallons per minute.

- The withdrawal of groundwater induced a hydraulic gradient in Area 3 from perimeter monitoring wells MW-23S, MW-25S, and MW-24SR toward the withdrawal trench.

- In Area 3, approximately 25 percent of the recovered groundwater continued to be introduced to the secondary infiltration trench “B”, and the remaining 75 percent continued to be introduced to the primary infiltration trench “C”.

- The hydraulic data that have been obtained to date, throughout the operating history of the treatment system in Area 3, have consistently indicated no discernible effect on the hydraulic gradient of the deep hydrogeologic unit.

The weekly conductivity measurements of groundwater pumped from the withdrawal trench in Area 3 ranged from approximately 2.10 to 2.30 milliSiemens per centimeter (mS/cm), which is consistent with the range of conductivity levels measured prior to system operation (1 to 4 mS/cm). These measurements are well below the measured conductivity of the deep unit, which is greater than the calibration range of the field instrument (10 mS/cm). These data indicate that operation of the Area 3 treatment system did not cause the freshwater/saltwater interface to upcone to the base of the withdrawal trench. This lack of upconing also indicates that the hydraulic gradient of the deep hydrogeologic unit was not significantly impacted by withdrawal of groundwater in Area 3.

Institutional and Engineering Controls

As identified in NYSDEC’s September 12, 2011 letter, a deed restriction is necessary “to prevent the consumption of groundwater that does not meet drinking water standards” (NYSDEC 2011). Draft deed restrictions (Declaration of Covenant and Restrictions) establishing site restrictions are included in the draft SMP submitted to NYSDEC with this PRR. For further details on the deed restrictions, refer to the SMP.

For the engineering controls identified at the Site (i.e., fencing/access control and groundwater containment), the following statements are true:

- The fencing/access engineering control employed at the Site remained in place and unchanged from the date of the last PRR.

- The groundwater containment engineering control employed at the Site remained unchanged from the date of the last PRR to April 10, 2013. At that time, the *in-situ* bioremediation treatment and closed loop hydraulic systems were discontinued at the Site and a post-shutdown process control monitoring program was implemented. The groundwater containment engineering control is not in effect when the closed loop hydraulic system is shutdown.

- Nothing has occurred that would impair the ability of such controls to protect public health and the environment.

- Access to the Site will continue to be provided to the DER to evaluate the remedy, including access to evaluate the continued maintenance of the fencing/access engineering control.

Attachment C contains the Institutional and Engineering Controls Certification Form.

Constituent of Concern Process Control and Biannual Groundwater Monitoring Program

The groundwater COCs for the Site are acetone, BTEX, methanol, trichloroethene, aniline, N,N-dimethylaniline, and methylene chloride. The COC process control and Biannual Groundwater Monitoring Program activities were conducted from April 2 to April 8, 2013 in accordance with the Site O&M Plan. Groundwater samples were analyzed by TestAmerica Laboratories, Inc. in Edison, New Jersey (Nationally Accredited Environmental Laboratory ID #12028) via Methods 8260B (volatile organic compounds) and 8270C (semi-volatile organic compounds), and in Buffalo, New York via Method 8015B (methanol). In addition, the following groundwater quality parameters were measured in the field during the April 2013 monitoring event: turbidity, pH, temperature, specific conductivity, DO, and oxidation/reduction potential. Table 1 lists the existing monitoring wells and piezometers used to conduct the process control monitoring program. The monitoring locations are shown on Figure 1.

In accordance with the requirements of the NYSDEC-approved monitoring program, ARCADIS validated laboratory analytical results for the April 2013 samples using the Tier III full validation process. COC groundwater analytical results are summarized in Table 3 and shown on Figures 5 and 6. These figures and table also summarize the COC groundwater analytical results obtained during the biannual monitoring events conducted from March 2009 through April 2013, which collectively represent the results obtained since the start of the modified *in-situ* aerobic bioremediation treatment activities. The COC groundwater analytical results obtained prior to March 2009 are summarized in Table 2 of Attachment A and presented on Figures 1 through 7 of Attachment A. Copies of the validated analytical laboratory reports associated with the April 2013 monitoring event are presented in Attachment B. This PRR summarizes the COC analytical results and DO measurements for each of the three areas and the downgradient perimeter monitoring locations.

COC groundwater analytical results are compared to the NYSDEC Groundwater Quality Standards, as presented in Technical and Operational Guidance Series 1.1.1 (NYSDEC 1998).

During the April 2013 monitoring event, the presence or absence of nonaqueous phase liquid (NAPL) was assessed in the monitoring wells and piezometers included in the hydraulic monitoring program based on observations made during the monitoring event. NAPL was not identified in any of the monitoring wells or piezometers used during the April 2013 process control monitoring program.

DO levels continued to be measured monthly at monitoring locations MW-8SR, MW-27, MW-28, MW-33, MW-36R, and TW-02RRR from January through April 2013 when the *in-situ* bioremediation treatment and closed loop hydraulic systems were shutdown. Table 4 summarizes these DO measurements.

The COC analytical results and DO measurements for the April 2013 groundwater monitoring event are summarized below for each area and sentinel and downgradient monitoring wells.

Sentinel Wells. COCs were not detected at sentinel well MW-3S (Table 3 and Figure 5). Sentinel well MW-4S was not sampled during the April 2013 monitoring event because it is included in the sampling program every third biannual monitoring event. COCs have not exceeded standards in either sentinel well since June 2005 (aniline in MW-3S).

Area 1

- COC concentrations detected in groundwater samples collected from Area 1 monitoring wells during April 2013 were generally low, ranging from non-detect to concentrations greater than their respective NYSDEC Groundwater Quality Standards (Table 3 and Figure 5). Thirty-two out of 49 groundwater COCs from all monitoring wells in Area 1 were not detected. The majority (38 out of 49) of COC concentrations were generally consistent with or below concentrations reported during the October 2012 monitoring event. Eight out of 49 COC concentrations exceeded their respective NYSDEC Groundwater Quality Standards for benzene, ethylbenzene, total xylenes, and N,N-dimethylaniline.

- At TW-01, two COC concentrations were detected below their respective NYSDEC Groundwater Quality Standards. Eight of ten COCs were not detected.

- At MW-9S, ethylbenzene (19 ppb), total xylenes (62 ppb), and N,N-dimethylaniline (5.9 ppb) were detected above their respective NYSDEC Groundwater Quality Standards (5, 5, and 1 ppb, respectively). All other COCs either were not detected (four of ten) or were detected below their respective NYSDEC Groundwater Quality Standards (three of nine; note that there is no standard for methanol).

- At MW-31, benzene (12 ppb), total xylenes (5.6 ppb), and N,N-dimethylaniline (1.1 ppb) were detected at concentrations above their respective NYSDEC Groundwater Quality Standards (1, 5, and 1 ppb, respectively). All other COCs either were not detected (five of ten) or were detected below their respective NYSDEC Groundwater Quality Standards (two of nine; note that there is no standard for methanol).

- At MW-32, two COC concentrations were detected below their respective NYSDEC Groundwater Quality Standards. Eight of ten COCs were not detected.

- Benzene (1.1 ppb) and N,N-dimethylaniline (2.1 ppb) were detected at MW-33 at concentrations above their respective NYSDEC Groundwater Quality Standards (both 1 ppb). All other COCs were not detected (seven of nine).

- DO levels measured at MW-33 from January through April 2013 ranged from 0.61 to 0.68 ppm (Table 4). Aerobic conditions in groundwater are generally indicated when DO levels are greater than 2 ppm. Therefore, it does not appear that aerobic conditions have been established beyond the points of injection.

<u>Area 2</u>

- COC concentrations detected in groundwater samples collected from Area 2 monitoring wells were generally low, ranging from non-detect to concentrations slightly greater than their respective NYSDEC Groundwater Quality Standards (Table 3 and Figure 5). Twenty-one out of 39 COCs from all monitoring wells in Area 2 were not detected. The majority (26 out of 39) of COC concentrations were generally consistent with or below concentrations reported during the October 2012 monitoring event. Eight out of 39 COC concentrations exceeded their respective NYSDEC Groundwater Quality Standards for benzene, aniline, and N,N-dimethylaniline.

- At TW-02RRR, benzene (1.4 ppb), aniline (620 ppb), and N,N-dimethylaniline (3.5 ppb) were detected at concentrations above their respective NYSDEC Groundwater Quality Standards (1, 5, and 1 ppb, respectively). TW-02RRR has historically had high concentrations of aniline. Since September 1998 (except in April 2011 and October 2012), aniline concentrations have been detected above the NYSDEC Groundwater Quality Standard (5 ppb). All other COCs were either not detected (four of ten) or were detected below their respective NYSDEC Groundwater Quality Standards (three of nine; note that there is no standard for methanol).

- At MW-34, benzene (1.3 ppb) and N,N-dimethylaniline (1.7 ppb) were detected at concentrations above their respective NYSDEC Groundwater Quality Standards (both 1 ppb). All other COCs either were not detected (five of ten) or were detected below their respective NYSDEC Groundwater Quality Standards (three of nine; note that there is no standard for methanol).

- At MW-35, no COCs have exceeded the NYSDEC Groundwater Quality Standards since November 2004. During the April 2013 monitoring event, nine out of ten COC concentrations were not detected. Methanol was detected, but there is no NYSDEC Groundwater Quality Standard for methanol.

- At MW-36R, benzene (1.8 ppb), aniline (150 ppb), and N,N-dimethylaniline (4 ppb) were detected at concentrations greater than their respective NYSDEC Groundwater Quality Standards (1, 5, and 1 ppb, respectively). Since September 1998, aniline concentrations at MW-36R have exceeded the NYSDEC Groundwater Quality Standard (except in March 2001, October 2002, September 2006, and August 2008; Table 2 of Attachment A). All other COCs either were not detected (three of nine) or were detected below their respective NYSDEC Groundwater Quality Standards (three of nine).

- DO levels measured in Area 2 (MW-36R and TW-02RRR) between January and April 2013 are summarized in Table 4. The DO levels ranged from 0.60 and 0.68 ppm at MW-36R and from 0.54 to 0.84 ppm at TW-02RRR. Aerobic conditions in groundwater are generally indicated when DO levels are greater than 2 ppm. Therefore, it does not appear that aerobic conditions have been established beyond the points of injection.

Area 3

- The majority of COC concentrations detected in groundwater samples collected from Area 3 monitoring wells during the April 2013 monitoring event were non-detect or below their respective NYSDEC Groundwater Quality Standards (Table 3 and Figure 6). Thirty-two out of 46 COCs from all monitoring wells in Area 3 were not detected. Most COC concentrations in Area 3 groundwater samples (36 out of

46) were generally consistent with or lower than the concentrations reported in the previous monitoring event conducted in October 2012. Seven out of 46 COC concentrations exceeded their respective NYSDEC Groundwater Quality Standards for benzene, total xylenes, aniline, and N,N-dimethylaniline.

- Monitoring Well MW-8SR is located in the center of Area 3, an area that has been identified in the past as containing relatively higher concentrations of COCs (Table 2 of Attachment A). Benzene (1.1 ppb), total xylenes (7.7 ppb), and N,N-dimethylaniline (1.7 ppb) concentrations were detected above the NYSDEC Groundwater Quality Standards (1, 5, and 1 ppb, respectively). All other COCs were either not detected (four of nine), or were detected below their respective NYSDEC Groundwater Quality Standards (two of nine).

- At MW-27, benzene (1.1 ppb), aniline (11 ppb), and N,N-dimethylaniline (2.4 ppb) exceeded their respective NYSDEC Groundwater Quality Standards (1, 5, and 1 ppb, respectively). All other COCs were either not detected (three of nine), or were detected below their respective NYSDEC Groundwater Quality Standard (three of nine).

- At MW-28, benzene (1.7 ppb) was the only COC detected above its NYSDEC Groundwater Quality Standard (1 ppb). All other COCs were either not detected (seven of ten), or were not detected above their NYSDEC Groundwater Quality Standards (two of nine; note there is no standard for methanol). Monitoring well MW-28 has historically exhibited relatively higher concentrations of aniline (Table 2 of Attachment A). In April 2013, aniline was not detected, and has not been detected above the NYSDEC Groundwater Quality Standard (5 ppb) for seven consecutive biannual monitoring events (since September 2009).

- At MW-29, all COCs were not detected (nine of nine). No COCs have exceeded the NYSDEC Groundwater Quality Standards at this well since May 2003.

- At MW-30, no COCs have exceeded the NYSDEC Groundwater Quality Standards since October 2010 (Table 2 of Attachment A). All COCs were not detected (nine of nine).

- DO levels measured at MW-8SR, MW-27, and MW-28 between January and April 2013 are summarized in Table 4. The DO levels at MW-8SR ranged from 0.66 to 0.72 ppm. The DO levels at MW-27 ranged from 0.57 to 0.77 ppm. The DO levels at MW-28 ranged from 0.68 to 0.87 ppm. Aerobic conditions in groundwater are generally indicated when DO levels are greater than 2 ppm. Therefore, it does not appear that aerobic conditions have been established beyond the points of injection.

Downgradient perimeter monitoring locations. No COCs were detected in downgradient perimeter monitoring locations MW-17R, MW-23I, MW-23S, PZ-4S, and PZ-4D during the April 2013 monitoring event. In perimeter well MW-18, no COCs were detected, except toluene (0.60 ppb), although concentrations did not exceed the NYSDEC Groundwater Quality Standard (5 ppb) during the April 2013 monitoring event (Table 3 and Figure 6).

Conclusions

The process control monitoring data presented in this PRR were used to monitor and evaluate the effectiveness of the *in-situ* aerobic bioremediation treatment and closed loop hydraulic control activities. As part of this evaluation, April 2013 data were incorporated into the historical groundwater dataset (1998 through April 2013) for technical analyses to assess whether the most recent data support the conclusions and recommendations presented in the January 2013 PRR (ARCADIS 2013c). The technical analyses conducted were the same as those detailed in the January 2013 PRR and consisted of the following:

- Change in annual total COC molar concentration (i.e., concentration normalized by its molecular weight) over time.

- Statistical analyses that included first order decay functions and regression analyses between time (year) and percent COC reduction fitted to each area's annual total COC molar concentration.

The data from April 2013 fully support the recommendations and conclusions presented in the January 2013 PRR, demonstrating that the remedy continues to be protective of public health and the environment, complies with the OU2 ROD (NYSDEC 1997), and meets remedial process closure requirements in Section 6.4 of DER-10 (NYSDEC 2010a). The conclusions developed based on the process control monitoring data obtained since 1998 through April 2013 are summarized below.

- COCs in groundwater in Area 3 continued to be contained in the Area 3 treatment system from January to April 2013, thus achieving the OU2 RAO of "mitigate the potential for migration beyond the Site boundary of groundwater that contains concentrations of COCs in excess of their respective NYSDEC Class GA Groundwater Quality Standard" (NYSDEC 1997).

- Operation of the Area 3 treatment system did not cause the freshwater/saltwater interface to upcone to the base of the withdrawal trench. The lack of upconing indicates that the hydraulic gradient of the deep hydrogeologic unit was not significantly impacted by withdrawal of groundwater in Area 3.

- In accordance with the RAOs of the OU2 ROD (NYSDEC 1997), COC concentrations within saturated soils have been reduced, controlled, or eliminated within Areas 1, 2, and 3, as indicated by the decrease in COC concentrations in groundwater samples collected from July 1998 to April 2013. Furthermore, COC concentrations in the April 2013 monitoring event were mostly not detected or below their respective NYSDEC Class GA Groundwater Quality Standards in each area.

- Results from the current reporting period (January through June 2013) fully support the conclusions and recommendations made in the January 2013 PRR (ARCADIS 2013c). Based on evaluation of the April 2013 groundwater data in conjunction with monitoring data collected since July 1998, remedial process closure requirements identified in Section 6.4 of DER-10 (NYSDEC 2010a) continues to be met because:

    - Each of the three RAOs established in the OU2 ROD continues to be attained.

    - The remedy continues to achieve the bulk of reduction of groundwater contamination, as indicated by total COC molar concentrations exceeding 98.5 percent reduction in each area.

    - The remedy has been properly implemented and optimized to its fullest extent, as demonstrated by the rapid decay rate of total COC concentrations and COC concentrations trending at asymptotic levels.

    - The remedy continues to remain protective of public health and the environment.

Next Steps

The following subsections describe the continued implementation of the post-shutdown process control monitoring program, the completion of the SMP and deed restriction process, and the proposed next steps.

Continued Implementation of the Post-Shutdown Process Control Monitoring Program

Following the shutdown of the *in-situ* bioremediation treatment and closed loop hydraulic systems, NYSDEC required post-shutdown process control monitoring to determine the continued effectiveness of the OU2 remedial action and to evaluate the need to re-start the remedial processes (NYSDEC 2013). This monitoring program is proposed to be conducted for two years, consisting of quarterly monitoring during the first year (2013-2014), and biannual monitoring during the second year (2014-2015). The proposed monitoring schedule and reporting frequency are presented in Table 5 below.

Table 5. Proposed Schedule of Post-Shutdown Process Control Monitoring and Reporting Frequency

Monitoring Frequency	Deliverable	Reporting Frequency
Quarterly (2013-2014)	PRR	The annual PRR will be submitted after the following post-shutdown process control monitoring event: · Monitoring Year 1: April 2014
	Monitoring Memo	A Monitoring Memo will be submitted quarterly after the following post-shutdown process control monitoring events: · Monitoring Year 1: July 2013, October 2013, and January 2014
Biannually (2014-2015)	PRR	The annual PRR will be submitted after the following post-shutdown process control monitoring event: · Monitoring Year 2: April 2015
	Monitoring Memo	A Monitoring Memo will be submitted after the following post-shutdown process control monitoring event: · Monitoring Year 2: October 2014

The first post-shutdown process control monitoring event occurred in July 2013 following notification to Mr. Payson Long (NYSDEC). This monitoring event consisted of hydraulic and COC monitoring and included all of the monitoring wells/piezometers sampled during the April 2013 process control monitoring event, in addition to MW-4S and PZ-4S for COC monitoring. Four monitoring wells were also included back in the sampling plan for methanol analysis for this monitoring event only: (1) MW-33 (Area 1), (2) MW-36R (Area 2), (3) MW-8SR (Area 3), and (4) MW-27 (Area 3). Table 6 identifies each of the hydraulic and COC monitoring locations.

The July 2013 monitoring event will function as a baseline of hydraulic and COC groundwater quality conditions immediately following the shutdown of the *in-situ* bioremediation treatment and closed loop hydraulic systems. Groundwater monitoring activities, results, and recommendations for future monitoring events will be documented in subsequent PRRs and separate monitoring memos. The results of the July 2013 monitoring event will be documented in a monitoring memo. Proposed reporting requirements for the monitoring memos are described below under *Proposed Next Steps*.

Finalize the SMP and complete the Deed Restriction Process

Finalize the SMP

As identified above, a draft SMP for managing the remaining COCs at the Site has been submitted with this PRR for NYSDEC review. The draft SMP was developed using the NYSDEC's February 2013 template[2] and includes plans for institutional and engineering controls, post-shutdown process control monitoring, site operation and maintenance, and reporting (ARCADIS 2013a). Once the SMP is approved by the NYSDEC, it will supersede the Site O&M Plan and will be used for long-term management of the Site.

Complete Deed Restriction Process

The OU1 ROD (NYSDEC 1994) identifies that a deed restriction (institutional control) is required for the Site. Draft deed restrictions have been submitted to NYSDEC as an appendix to the enclosed SMP (ARCADIS 2013a). Upon approval of the language, the

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[2] NYSDEC Site Management Template available online at:
http://www.dec.ny.gov/docs/remediation_hudson_pdf/smptemplate.pdf

deed restriction process will be completed as outlined in Section V.2.a.b.7 of DEC-33 (Institutional Controls: A Guide to Drafting and Recording Institutional Controls; NYSDEC 2010c). Reclassification of the Site to Class 4 Inactive Hazardous Waste Disposal Site (i.e., site properly closed – requires continued management) is anticipated after establishment of the deed restrictions.

Proposed Next Steps

Evaluation of Groundwater Monitoring Data

Following each post-shutdown process control monitoring event, including the July 2013 monitoring event, the data will be evaluated to determine the continued effectiveness of the remedial action. The remedial action will be considered to have "continued effectiveness" if COC concentrations meet the following conditions:

- Do not rebound substantially above the pre-shutdown COC concentrations based on an evaluation of the most up-to-date dataset
- Continue to trend at asymptotic levels
- Do not migrate beyond the site boundary above NYSDEC Groundwater Quality Standards (as determined by sampling from the sentinel and downgradient perimeter monitoring wells)

Upon satisfying these conditions, the OU2 remedial activities for Areas 1, 2, and 3 will be considered complete and the Site can proceed to site closure, in accordance with the site closure guidelines outlined in DER-10 Section 6.4(a) (NYSDEC 2010a) and upon approval of NYSDEC.

In the event that the remedy is determined to not have continued effectiveness, potential reactivation of the prior treatment programs for Areas 1, 2, and 3, operation of the closed loop hydraulic system in Area 3, or other remedial measures will be evaluated.

Reporting

The first year of post-shutdown process control monitoring is proposed to be conducted quarterly, and commenced with the July 2013 monitoring event. During this first year of post-shutdown process control monitoring, the results of the July 2013, October 2013, and January 2014 monitoring events are proposed to be presented to NYSDEC in monitoring memos, and results of the April 2014 monitoring event are proposed to be presented in an annual PRR. Table 5 shows the proposed schedule of post-shutdown process control monitoring and reporting frequency.

Monitoring memos will include, at a minimum:

- A description of the activities performed
- Types of samples collected
- Sampling results in comparison to appropriate standards/criteria
- A figure illustrating sample type and sampling locations
- Copies of all laboratory data sheets and required laboratory data deliverables required for all points sampled (to be submitted electronically)
- Any observations, conclusions, or recommendations
- A determination as to whether groundwater conditions have changed since the last reporting event
- An evaluation to determine the continued effectiveness of the remedial action

Next Monitoring Event – Planned for October 2013

The second quarterly post-shutdown process control monitoring event is planned to occur in October 2013 and will consist of hydraulic and COC monitoring similar to that conducted in July 2013. As previously identified, the July 2013 monitoring event will function as a baseline of hydraulic and COC groundwater quality conditions immediately following the shutdown of the systems. As detailed in Table 6, the October 2013 monitoring event will consist of measuring groundwater/surface water elevations at the locations identified with an "H" and collecting groundwater samples from the monitoring wells/piezometers identified with a "C", except for MW-4S and PZ-4S which have been and will continue to be included in the COC monitoring program every third and second monitoring event, respectively.

Summary

The *in-situ* aerobic bioremediation treatment system and closed loop hydraulic system operated properly during the current reporting period (January to June 2013), and the OU2 remedy continues to be protective of public health and the environment.

Results of the Hydraulic Process Control Monitoring Program indicate that groundwater in Area 3 continued to be contained in the Area 3 treatment system from January to April 10, 2013, and the hydraulic gradient of the deep hydrogeologic unit was not significantly impacted by groundwater withdrawal in Area 3.

Results of the COC Process Control and Biannual Groundwater Monitoring Program from the April 2013 monitoring event indicate that COC concentrations within saturated soils have been reduced, controlled, or eliminated within Areas 1, 2, and 3. COC concentrations were mostly non-detect or below their respective NYSDEC Class GA Groundwater Quality Standards in each area. A few COCs (i.e., N,N-dimethylaniline, aniline, benzene, total xylenes, and ethylbenzene) continue to be present at concentrations greater than their respective NYSDEC Groundwater Quality Standards, although only in specific wells.

The results from the current reporting period (January through June 2013) fully support the conclusions and recommendations made in the January 2013 PRR (ARCADIS 2013c). Based on evaluation of the April 2013 data in conjunction with monitoring data collected since July 1998, NYSDEC guidance for initiating remedial process closure identified in NYSDEC's DER-10 Section 6.4(a) (NYSDEC 2010a) continues to be met.

Following the April 2013 monitoring event, the *in-situ* bioremediation treatment and closed loop hydraulic systems were shutdown upon approval of NYSDEC. A post-shutdown process control monitoring program is required to determine the continued effectiveness of the remedial action and to evaluate the need to re-start the remedial processes. The first post-shutdown process control monitoring event occurred in July 2013 and the results will function as a baseline of post-shutdown hydraulic and groundwater quality conditions.

As part of the proposed next steps, monitoring activities and results from the July 2013 monitoring event are anticipated to be presented to NYSDEC in the aforementioned monitoring memo. That memo is planned to be submitted to NYSDEC in October prior to the second post-shutdown process control monitoring event, which is planned to occur the week of October 21, 2013. The specific sampling plan for the October 2013 monitoring event is identified in Table 6.

In addition, the Institutional and Engineering Controls Certification Form, a draft SMP for the long-term management of remaining COCs at the Site (including a clean copy of the draft SMP and draft EWP text), and draft deed restrictions have been submitted to NYSDEC, along with this PRR.

If you have any questions or require additional information, please contact me at 315.671.9210.

Sincerely,

ARCADIS of New York, Inc.

David J. Ulm
Senior Vice President

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Enclosures:

Tables

Table 1	Revised Long-Term Hydraulic and COC Process Control Monitoring Schedule
Table 2	Summary of Groundwater Level Measurements, Aerobic Bioremediation Treatment Program, October 2006 through April 2013
Table 3	Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Table 4	Summary of Dissolved Oxygen Measurements, August 2006 through April 2013
Table 5	Proposed Schedule of Post-Shutdown Process Control Monitoring and Reporting Frequency (in-text)
Table 6	Post-Shutdown Process Control Monitoring Wells and Piezometers

Figures

Figure 1	Site Plan
Figure 2	Oxygen Infusion System Layout Area 2
Figure 3	Oxygen Infusion System Layout Area 3
Figure 4	Potentiometric Surface of the Shallow Hydrogeologic Unit Sand Layer April 1, 2013
Figure 5	Groundwater Monitoring Data Summary for April 2010 – April 2013, Areas 1 & 2 (Aerobic Treatment)
Figure 6	Groundwater Monitoring Data Summary for April 2010 – April 2013, Area 3 (Aerobic Treatment)

Attachments

Attachment A

	Table 1	Summary of Historical Groundwater Level Measurements, June 1988 through June 2006
	Table 2	Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
	Figures 1 – 7	Groundwater Monitoring Data Summaries
Attachment B		Validated Analytical Laboratory Report
Attachment C		Institutional and Engineering Controls Certification Form
Attachment D		Draft Site Management Plan
Attachment E		Clean Copy of the Draft Site Management Plan Text and Draft Excavation Work Plan Text

Copies:
Ms. Susan Edwards, NYSDEC (w/out Attachment B)
Mr. Harry Warner, NYSDEC (w/out Attachment B)
Mr. Richard Jones, NYSDOH (w/out Attachment B)
Ms. Margaret Sheen, Esq. (w/out Attachment B)
Ms. Jean Mescher, McKesson Corporation (w/out Attachment B)
Mr. Douglas Morrison, Bristol-Myers Squibb Company (w/out Attachment B)
Mr. Christopher Young, P.G., de maximis, inc. (w/out Attachment B)
Mr. Kevin Bernstein, Esq. (w/out Attachment B)
Ms. Dawn Penniman, P.E., ARCADIS (w/out Attachment B)

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Tables

Table 1. Revised Long-Term Hydraulic and COC Process Control Monitoring Schedule
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Location	Annual Sampling Schedule	
	First Sampling Event	Second Sampling Event
Sentinel		
MW-3S*	C	C
MW-4S*	C	NM
Area 1		
TW-01	C	C
MW-9S	C	C
MW-31	C	C
MW-32	C	C
MW-33*	C	C
PZ-F	H	H
PZ-G	H	H
PZ-HR	H	H
PZ-P	H	H
PZ-Q	H	H
PZ-R	H	H
PZ-S	H	H
Area 2		
TW-02RRR	C	C
MW-34	C	C
MW-35	C	C
MW-36R*	C	C
PZ-I	H	H
PZ-J	H	H
PZ-T	H	H
PZ-U	H	H
PZ-V	H	H
Area 3		
MW-8SR*	C	C
MW-11S	H	H
MW-27*	C	C
MW-28	C	C
MW-29*	C	C
MW-30*	C	C
PZ-A	H	H
PZ-B	H	H
PZ-C	H	H
PZ-D	H	H
PZ-E	H	H
PZ-K	H	H
PZ-L	H	H
PZ-M	H	H
PZ-N	H	H
PZ-O	H	H
Collection Sump	H	H
Downgradient Perimeter		
MW-17R	C	C
MW-18	C	C
MW-23I	C	C
MW-23S	C, H	C, H
PZ-4S*	C	NM
PZ-4D*	C, H	H
Barge Canal	H	H

See Notes on Page 2.

Table 1. Revised Long-Term Hydraulic and COC Process Control Monitoring Schedule
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Notes:

1. This table lists the monitoring wells and piezometers that are part of the constituent of concern (COC) and/or hydraulic process control monitoring program that was conducted semi-annually until the *in-situ* bioremediation treatment and closed loop hydraulic systems were shutdown on April 10, 2013 upon approval from the New York State Department of Enivromental Conservation (NYSDEC).
2. Hydraulic monitoring involves obtaining groundwater level measurements from monitoring wells/piezometers identified in the table and surface-water level measurements from the Barge Canal. The surface-water level of the Barge Canal is measured from a demarcated reference point on the Bear Street Bridge, which crosses over the canal. Groundwater elevation data are used to map the potentiometric surface of the shallow hydrogeologic unit sand layer.
3. The COCs are acetone, benzene, ethylbenzene, methylene chloride, toluene, trichloroethene, xylenes, aniline, N,N-dimethylaniline, and methanol.
4. Monitoring well MW-4S and piezometer PZ-4S were included in the COC process control monitoring program every third and second sampling event, respectively.

Abbreviations:

C = COC monitoring.
H = hydraulic monitoring.
NM = Not monitored.
* = NYSDEC approved the elimination of methanol analysis from the COC groundwater monitoring program (NYSDEC 2010b).

Table 2. Summary of Groundwater Level Measurements, Aerobic Bioremediation Treatment Program, October 2006 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Location	Reference Elevation (feet AMSL)	10/30/06	6/6/07	11/12/07	3/24/08	8/25/08	3/23/09	9/14/09	4/26/10	10/11/10	4/4/11	10/24/11	4/9/2012	10/1/2012	4/1/2013
Barge Canal[3]	393.39	364.29	362.99	362.06	364.34	363.21	363.54	362.89	362.97	363.49	362.07	363.71	358.39	360.59	360.74
Collection Sump	372.81	363.18	362.26	361.86	363.81	362.14	362.20	362.18	362.18	360.72	359.90	361.33	360.95	361.70	361.24
MW-3S[1]	376.54	369.08	--	367.60	367.93	365.19	367.32	365.50	365.67	367.95	369.21	--	366.44	365.15	367.55
MW-11S	373.50	366.11	364.27	363.88	365.69	363.86	364.88	363.89	364.42	364.30	365.00	364.18	363.92	363.62	364.42
MW-18[1]	372.57	363.82	362.63	362.32	363.51	362.26	363.16	362.22	362.67	362.87	363.82	--	362.57	362.32	362.85
MW-23I[1]	372.77	366.43	365.02	364.74	366.12	364.64	365.69	364.67	365.19	365.38	366.57	--	364.99	364.73	365.29
MW-23S	372.61	365.28	362.98	362.56	364.81	362.62	363.50	362.63	362.99	362.71	364.57	362.66	362.23	362.29	362.88
MW-24SR	375.55	366.49	365.21	364.83	366.26	364.73	365.81	364.79	365.32	365.81	366.60	365.63	365.09	364.84	365.48
MW-25S	373.39	365.26	363.32	362.87	364.84	362.88	363.97	362.89	363.34	363.30	364.10	363.17	362.81	362.61	363.48
PZ-4D	376.11	366.64	365.29	364.98	366.39	364.90	365.96	364.94	365.49	366.02	366.74	365.78	365.24	364.94	365.59
PZ-5D	375.58	366.87	365.49	365.19	366.69	365.09	366.21	365.14	365.01	366.09	366.99	366.02	365.48	365.16	365.84
PZ-A	373.94	365.62	363.11	362.72	364.83	362.96	363.56	362.95	362.28	362.35	362.68	362.53	363.24	362.54	362.68
PZ-B	373.92	365.85	363.12	362.62	365.03	362.87	363.64	362.83	362.96	362.22	363.24	362.47	362.14	362.35	362.64
PZ-C	374.85	367.14	365.85	365.30	367.15	365.16	366.71	365.23	366.37	367.11	367.88	366.6	366.10	365.41	366.76
PZ-D	375.12	367.68	365.98	365.40	367.29	365.28	366.81	365.40	366.57	367.17	368.20	366.87	366.39	365.65	367.07
PZ-E	374.12	368.13	365.16	364.07	366.58	364.14	366.82	364.20	364.25	364.16	364.83	364.18	363.67	363.35	364.38
PZ-F	377.06	368.32	366.18	365.76	367.99	365.50	367.41	365.69	366.72	367.10	368.10[3]	367.04	366.46	365.44	366.91
PZ-G	377.16	368.64	366.28	365.82	368.14	365.94	367.29	367.22	367.32	367.36	368.12	367.17	366.53	365.48	367.04
PZ-HR	376.99	368.31	366.23	365.74	368.00	365.48	367.41	365.63	366.65	367.15	368.00[3]	367.04	366.40	365.38	366.90
PZ-I	375.15	369.00	366.49	365.92	368.55	365.50	367.97	365.71	367.04	367.49	368.60	367.47	366.77	365.36	367.52
PZ-J	374.89	367.96	366.16	365.82	367.69	365.55	367.20	365.70	366.55	367.05	367.81	366.94	366.30	365.55	366.74
PZ-K	373.19	365.58	363.36	362.91	364.96	363.08	363.80	363.04	363.33	363.34	361.94	362.97	362.65	362.75	363.03
PZ-L	374.62	365.23	362.94	362.63	364.64	362.79	363.39	362.80	363.80	362.36	362.52	362.54	362.16	362.42	362.60
PZ-M	374.35	365.60	363.54	363.11	365.13	363.30	364.00	363.31	363.62	363.04	363.47	363.22	362.86	362.87	363.28
PZ-N	376.94[2]	367.51	365.76	365.26	367.05	365.09	366.63	365.17	366.22	367.01	367.79	366.62	366.06	365.33	366.72
PZ-O	375.36	365.42	363.22	362.82	365.01	362.91	363.94	362.93	363.35	362.90	363.57	362.94	362.61	362.52	363.14
PZ-P	376.89	368.30	366.31	365.83	368.06	365.58	367.51	365.75	366.76	367.26	368.08	367.15	366.49	365.45	366.93[1]
PZ-Q	377.61	368.61	366.33	365.83	368.23	365.57	367.61	365.77	366.78	367.26	368.13	367.21	366.52	365.44	367.04
PZ-R	377.05	368.51	366.19	365.79	368.20	365.55	367.57	365.73	366.74	367.24	368.10	367.15	366.48	365.45	367.03
PZ-S	378.13	372.48	366.51	365.81	368.21	365.55	367.60	365.74	366.76	367.13	369.67[3]	367.48	366.51	365.45	367.34[1]
PZ-T	376.25	368.04	366.24	365.84	367.89	365.52	367.37	365.66	366.63	367.12	367.94	367.00	366.32	365.41	366.86
PZ-U	375.35	367.99	366.07	365.80	367.75	365.52	367.25	365.66	366.52	367.05	367.83	366.92	366.29	365.44	366.77
PZ-V	375.78	367.97	366.17	365.78	367.78	365.48	367.24	365.64	366.52	367.04	367.81	366.93	366.28	365.40	366.77

Notes:

[1]Well not used in potentiometric surface mapping of the shallow hydrogeologic unit sand layer.

[2]The reference elevation for PZ-N was 376.02 feet AMSL prior to November 16, 2000. The new reference elevation is 376.94 feet AMSL.

[3]Surface-water level measurements are obtained from the Barge Canal. The surface-water level is measured from a demarcated reference point on the Bear Street Bridge, which crosses over the canal.

Abbreviations:

AMSL = above mean sea level (National Geodetic Vertical Datum of 1929).

-- = Not Measured.

Table 3. Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (feet AMSL)		Acetone	Benzene	Ethyl-benzene	Methylene Chloride	Toluene	Trichloro-ethene	Xylene[A]	Aniline	N,N-Dimethyl-aniline	Methanol
		Top	Bottom										
NYSDEC Groundwater Quality Standards (TOGS 1.1.1)				50	1	5	5	5	5	5	5	1	NS
MW-3S	3/09	365.1	350.1	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10	**0.17 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	4/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	<1.0	NA
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3 J	<1.1 J	NA
	10/11			<10	<1.0	<1.0	<1.0	0.35 J	<1.0	<3.0	<5.0	<1.0	NA
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	NA
	10/12			<10	**0.27 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.61 J	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	<1.0	NA
MW-4S	10/10	365.5	350.5	<10 [<10]	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	<3.0 [<3.0]	<5.0 [<5.0]	<1.0 [<1.0]	<500 J [<500 J]
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	NA
MW-8SR[B]	3/09	362.7	352.7	**6.5 J [5.8 J]**	**6.8 [6.8]**	**66 [63]**	<1.0 [<1.0]	**10 [10]**	<1.0 [<1.0]	**140 [140]**	**2,200 [1,800]**	<12 [<12]	<500 [<500]
	6/09			NA	NA	NA	NA	NA	NA	NA	**7,000**	<50	NA
	9/09			**<10 [8.3 J]**	**8.5 J [7.9]**	**44 J [38]**	<1.0 [<1.0]	**6.8 J [6.5]**	<1.0 J [<1.0]	**81 J [71]**	**4,000 [3,400]**	<20 [<20]	<500 [<500]
	4/10			<10 [<10]	**4.2 [3.5]**	**23 J [18]**	<1.0 [<1.0]	**4.6 [3.7]**	<1.0 [<1.0]	**41 [33]**	**370 J [720 J]**	**1.0 J [<5.0]**	<500 [<500]
	10/10			<10	**2.7**	**16**	<1.0	**2.0**	<1.0	**31**	**220**	**1.6**	NA
	4/11			**5.9 J [4.3 J]**	**3.2 [3.2]**	**10 [8.8]**	<1.0 [<1.0]	**2.8 [2.6]**	<1.0 [<1.0]	**32 [31]**	**57 J [64]**	**1.5 [1.6]**	NA
	10/11			<10 [<10]	**1.9 [2.0]**	**2.0 [2.1]**	<1.0 [<1.0]	**1.3 [1.3]**	<1.0 [<1.0]	**14 [15]**	<5.0 [<5.0]	**2.6 [<1.0]**	NA
	4/12			**8.7 J [6.7 J]**	**1.2 [1.7]**	**2.3 [3.3]**	<0.18 [<0.18]	**0.76 J [1.2]**	<0.090 [<0.090]	**9.5 [15]**	<1.9 [<1.9]	**2.4 [2.6]**	NA
	10/12			<10 [<10]	**0.69 J [0.70]**	**0.16 J [0.14 J]**	<1.0 [<1.0]	**0.36 J [0.39 J]**	<1.0 [<1.0]	**1.4 J [1.2 J]**	<5.3 [<5.0]	**2.3 [2.7]**	NA
	4/13			<10 [<10]	**1.1 [1.1]**	**0.32 J [0.28 J]**	<1.0 [<1.0]	**0.67 J [0.68 J]**	<1.0 [<1.0]	**7.7 [8.0]**	<5.1 [<5.1]	**1.7 [1.4]**	NA
MW-9[C]	3/09	365.6	356	<10	**1.2**	**27**	<1.0	**2.5**	<1.0	**65**	<5.0	**4.2**	<500
(Replaced by MW-9S)	9/09			<10	**1.7**	**20**	<1.0	**2.2**	<1.0	**70**	<5.0	**4.1**	**730**
	4/10			<10	**0.86 J**	**26**	<1.0	**2.1**	<1.0	**69**	<5.0	**6.5**	<500
	10/10			<10	**1.3**	**11**	<1.0	**1.9**	<1.0	**45**	<5.1	**7.5**	<500 J
	4/11			<10	**0.91 J**	**29**	<1.0	**2.6**	<1.0	**89**	<5.3	**5.4**	<500
	10/11			<10	**1.2**	**4.2**	<1.0	**1.8**	<1.0	**41 J**	<5.0	**7.6**	<500
	4/12			**7.5 J**	**1.1**	**18**	<0.18	**1.5**	<0.090	**67**	<1.9	**6.3**	<500
	10/12			<10	**1.9 J**	**4.7**	<1.0	**3.2**	<1.0	**84**	<5.0	**3.9**	NA
	4/13			**12 J**	**0.95 J**	**19**	<1.0	**1.6**	<1.0	**62**	<5.1	**5.9**	<1000
MW-17[D]	3/09	365.7	356.1	<10	**2.3**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
(Replaced by MW-17R)	9/09			<10 J	**0.86 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	4/10			<10	**0.22 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	10/10			<10	**1.3**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.6	<1.1	<500 J
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3 J	<1.1 J	<500
	10/11			<10	<1.0	<1.0	<1.0	**0.19 J**	<1.0	<3.0 J	<5.0	<1.0	<500
	4/12			<2.7	**0.22 J**	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	<500
	10/12			<10	**0.55 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	<1000

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Table 3. Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (feet AMSL)		Acetone	Benzene	Ethyl-benzene	Methylene Chloride	Toluene	Trichloro-ethene	Xylene[A]	Aniline	N,N-Dimethyl-aniline	Methanol
		Top	Bottom										
NYSDEC Groundwater Quality Standards (TOGS 1.1.1)				50	1	5	5	5	5	5	5	1	NS
MW-18	3/09	325.15	316.15	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	4/10			<10	<1.0	<1.0	33	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	6/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	NA	NA	NA
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	<500 J
	4/11			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	<500
	10/11			<10	<1.0	<1.0	<1.0	0.23 J	<1.0	<3.0 J	<5.0	<1.0	<500
	4/12			<2.7	<0.080	<0.10	<0.18	0.27 J	<0.090	<0.36	<1.8	<0.21	<500
	10/12			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	<1.0	NA
	4/13			<10	<1.0	<1.0	<1.0	0.60 J	<1.0	<3.0	<4.8	<0.95	<1000
MW-23S	3/09	364.1	354.1	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	4/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	10/10			3.7 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500 J
	4/11			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	<500
	10/11			<10	<1.0	<1.0	<1.0	0.31 J	<1.0	<3.0	<5.0	<1.0	<500
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	<500
	10/12			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	<1000
MW-23I	3/09	341.2	336.2	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	4/10			<10	<1.0	<1.0	8.4	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	6/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	NA	NA	NA
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500 J
	4/11			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	<500
	10/11			<10	<1.0	<1.0	<1.0	0.29 J	<1.0	<3.0	<5.0	<1.0	<500
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	<500
	10/12			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.6	<1.1	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<9.5	<1000
MW-27	3/09	362.5	354.5	14 J	8.7	36	<1.0	9.4	<1.0	88	8,200 J	<50 J	<500
	6/09			NA	NA	NA	NA	NA	NA	NA	7,400	<50	NA
	9/09			10	6.2	5.9	<1.0	6.9	<1.0	23	2,100	<10	<500
	4/10			<10	4.5	6.1	<1.0	2.4	<1.0	10	1,300	<10	<500
	10/10			<10	2.7	1.4	<1.0	1.3	<1.0	3.4	220	2.5	NA
	4/11			3.9 J	3.1	5.1	<1.0	5.7	<1.0	9.1	1,000	<11	NA
	10/11			<10	2.1	2.2	<1.0	1.3	<1.0	3.1	36	2.7	NA
	4/12			<2.7	1.5	1.4	<0.18	0.45 J	<0.090	2.2 J	<1.9	2.7	NA
	10/12			<10	1.1	<1.0	<1.0	0.22 J	<1.0	<3.0	<5.0	2.2	NA
	4/13			<10	1.1	0.88 J	<1.0	0.34 J	<1.0	1.4 J	11	2.4	NA

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Table 3. Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (feet AMSL)		Acetone	Benzene	Ethyl-benzene	Methylene Chloride	Toluene	Trichloro-ethene	Xylene[A]	Aniline	N,N-Dimethyl-aniline	Methanol
		Top	Bottom										
NYSDEC Groundwater Quality Standards (TOGS 1.1.1)				50	1	5	5	5	5	5	5	1	NS
MW-28	3/09	363.6	355.6	<10	3.5	0.8 J	<1.0	0.3 J	<1.0	1.1 J	18	<0.5	851
	9/09			<10	3.1	0.32 J	<1.0	0.25 J	<1.0	0.48 J	6.7	<1.0	<500
	4/10			<10	2.8	0.60 J	<1.0	0.23 J	<1.0	0.46 J	<5.0	0.49 J	<500
	10/10			<10	1.8	<1.0	<1.0	<1.0	<1.0	<3.0	2.4 J	0.60 J	<500 J
	4/11			4.3 J	2.3	<1.0	<1.0 B	0.11 J	<1.0	<3.0	3.9 J	0.75 J	<500
	10/11			<10	1.8	<1.0	<1.0	0.38 J	<1.0	<3.0	<5.0	<1.0	<500
	4/12			<2.7	1.4	<0.10	<0.18	0.22 J	<0.090	<0.36	<1.8	0.48 J	<500
	10/12			<10	1.9	<1.0	<1.0	0.16 J	<1.0	<3.0	<5.0	0.62 J	NA
	4/13			<10	1.7	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	0.32 J	410 J
MW-29	3/09	362.9	345.9	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10	<1.0	<1.0	<1.0	0.16 J	<1.0	<3.0	<5.0	0.29 J	<500
	4/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	<1.0	NA
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3 J	<1.1 J	NA
	10/11			<10	<1.0	<1.0	<1.0	0.22 J	<1.0	<3.0 J	<5.0	0.22 J	NA
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	NA
	10/12			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	NA
MW-30	3/09	363.5	355.5	<10	0.8 J	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10	0.78 J	<1.0	<1.0	0.17 J	<1.0	<3.0	21	<1.0	<500
	4/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	10/10			<10 J	0.14 J	<1.0	37	<1.0	<1.0	<3.0	<5.1	<1.0	NA
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3 J	<1.1 J	NA
	10/11			<10	<1.0	<1.0	<1.0	0.18 J	<1.0	<3.0 J	<5.0	<1.0	NA
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	NA
	10/12			<10	0.099 J	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	<1.0	NA
MW-31	3/09	363.7	355.4	9.4 J	8.3	< 1.0	<1.0	0.6 J	<1.0	0.8 J	<5.0	2.3	<500
	9/09			<10	10	<1.0	<1.0	0.49 J	<1.0	2.0 J	<5.0	2.5	730
	4/10			<10	4.8	<1.0	<1.0	0.40 J	<1.0	1.3 J	<5.0	2.3	<500
	10/10			<10	6.9	<1.0	<1.0	0.50 J	<1.0	1.5 J	<5.3	3.5	<500 J
	4/11			<10	8.3	<1.0	<1.0	0.77 J	<1.0	2.5 J	<5.3	2.3	<500
	10/11			<10	5.7	<1.0	<1.0	0.62 J	<1.0	1.5 J	<5.0	3.5	<500
	4/12			6.5 J	6.8	0.16 J	<0.18	0.65 J	<0.090	2.7 J	<1.9	2.1	<500
	10/12			<10	6.3 J	0.16 J	<1.0	0.44 J	<1.0	2.3 J	<5.0	0.90 J	NA
	4/13			<10	12	0.21 J	<1.0	1.3	<1.0	5.6	<5.2	1.1	<1000

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Table 3. Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (feet AMSL)		Acetone	Benzene	Ethyl-benzene	Methylene Chloride	Toluene	Trichloro-ethene	Xylene[A]	Aniline	N,N-Dimethyl-aniline	Methanol
		Top	Bottom										
NYSDEC Groundwater Quality Standards (TOGS 1.1.1)				50	1	5	5	5	5	5	5	1	NS
MW-32	3/09	364	356	<10	**0.5 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	**1.1**	**1,200**
	4/10			<10	**0.23 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	**0.89 J**	<500
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	**0.87 J**	<500 J
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	<500
	10/11			<10	<1.0	<1.0	<1.0	**0.19 J**	<1.0	<3.0 J	<5.0	**1.5**	<500
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	**1.1**	<500
	10/12			<10	<1.0 J	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	**2.2**	NA
	4/13			<10	**0.098 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	**0.91 J**	<1000
MW-33	3/09	344.1	356.1	<10	**3.2**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	**2.4**	<500
	9/09			<10	**2.6**	<1.0	<1.0	**0.20 J**	<1.0	<3.0	<5.0	<1.0	<500
	4/10			<10	**1.6**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	**2.0**	<500
	10/10			<10	**1.7**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	**2.7**	NA
	4/11			<10	**0.79 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	**1.9**	NA
	10/11			<10	**0.58 J**	<1.0	<1.0	**0.12 J**	<1.0	<3.0	<5.3	**1.9**	NA
	4/12			<2.7	**0.11 J**	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	**1.3**	NA
	10/12			<10	**0.33 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	**2.1**	NA
	4/13			<10	**1.1**	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8 J	**2.1 J**	NA
MW-34	3/09	362.7	354.7	**14**	**1.4**	<1.0	<1.0	**0.7 J**	<1.0	**1.5 J**	**12**	**2.0**	<500
	9/09			**24**	<1.0	<1.0	<1.0	**0.64 J**	<1.0	**1.7 J**	<5.0	**2.5**	**1,000**
	4/10			**50 J**	**0.82 J**	<1.0	<1.0	**0.42 J**	<1.0	**1.4 J**	<5.0	**2.4**	<500
	10/10			**20**	**1.0**	<1.0	<1.0	**0.44 J**	<1.0	**1.3 J**	**1.8 J**	**2.9**	<500 J
	4/11			**16**	**1.7**	<1.0	<1.0	**0.74 J**	<1.0	**2.0 J**	**10**	**2.7**	<500
	10/11			**350**	**1.2**	<1.0	<1.0	**0.71 J**	<1.0	**0.90 J**	<5.6	**2.5**	<500
	4/12			**37 J**	**1.3**	<0.10	<0.18	**0.59 J**	<0.090	**1.4 J**	**2.1 J**	**2.4**	<500
	10/12			**61**	**1.6**	<1.0	<1.0	**0.78 J**	<1.0	**2.2 J**	<5.2	**2.7**	NA
	4/13			**26 J**	**1.3**	<1.0	<1.0	**0.60 J**	<1.0	**2.3 J**	<4.8	**1.7**	<1000
MW-35	3/09	363	355	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	9/09			**6.5 J**	<1.0	<1.0	<1.0	**0.16 J**	<1.0	<3.0	<5.0	<1.0	**1,100**
	4/10			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	<500 J
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.6	<1.1	<500
	10/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	<500
	4/12			**14 J**	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	<500
	10/12			<36 B	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.1	<1.0	**470 J**

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Table 3. Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (feet AMSL) Top	Bottom	Acetone	Benzene	Ethyl-benzene	Methylene Chloride	Toluene	Trichloro-ethene	Xylene[A]	Aniline	N,N-Dimethyl-aniline	Methanol
NYSDEC Groundwater Quality Standards (TOGS 1.1.1)				50	1	5	5	5	5	5	5	1	NS
MW-36[E]	3/09	363.6	355.6	**28**	**2.4**	<1.0	<1.0	**0.8 J**	<1.0	**2.8 J**	**150**	**2.8**	<500
(Replaced by MW-36R)	6/09			NA	NA	NA	NA	NA	NA	NA	**460**	<5.0	NA
	9/09			**21**	**3.1**	<1.0	<1.0	**0.96 J**	<1.0	**3.2**	**390**	**3.1**	<500
	4/10			<10 J	**3.3**	**0.26 J**	<1.0	**1.1**	<1.0	**5.4**	**77**	**2.6**	<500
	10/10			**12**	**3.9**	**0.28 J**	<1.0	**1.2**	<1.0	**4.8**	**620**	<5.0	<500 J
	4/11			<10	**4.3**	<1.0	<1.0	**0.95 J**	<1.0	**4.4**	**310**	**4.0**	NA
	10/11			<10	**1.8**	<1.0	<1.0	**0.66 J**	<1.0	**1.4 J**	**92**	**3.6**	NA
	12/11			NA	NA	NA	NA	NA	NA	NA	**120**	NA	NA
	4/12			**6.3 J**	**1.6**	**0.16 J**	<0.18	**0.45 J**	<0.090	**1.9 J**	**150**	**4.1**	NA
	10/12			<10	**1.5 J**	<1.0	<1.0	**0.54 J**	<1.0	**2.2 J**	**10**	**3.1**	NA
	4/13			<10	**1.8**	**0.14 J**	<1.0	**0.53 J**	<1.0	**2.9 J**	**150**	**4.0**	NA
TW-01	3/09	365.1	355.4	<10	**1.9**	<1.0	<1.0	<1.0	<1.0	**0.6 J**	<5.0	<0.5	**22,300**
	9/09			**2.9 J**	<1.0	<1.0	<1.0	**0.11 J**	<1.0	<3.0	<5.0	**1.1**	**970**
	4/10			<10	**0.32 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	**1.0**	<500
	10/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	**1.3**	<500 J
	4/11			<10	**0.21 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	<500
	10/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0 J	<5.6	**1.6**	<500
	4/12			<2.7	**0.11 J**	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	**1.7**	<500
	10/12			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	**1.9**	NA
	4/13			<10	**0.090 J**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	**0.98 J**	<1000
TW-02RR[BE]	3/09	363.3	353.3	<10 [<10]	**5.0 [4.6]**	**1.5 [1.6]**	<1.0 [<1.0]	**1.0 [1.0 J]**	<1.0 [<1.0]	**4.2 [4.1]**	**2,000 [1,600]**	<10 [<10]	<500 [<500]
(Replaced by TW-02RRR)	6/09			NA	NA	NA	NA	NA	NA	NA	**2,800**	<20	NA
	9/09			<10 [<10]	**4.3 [4.2]**	**1.2 [1.3]**	<1.0 [<1.0]	**0.79 J [0.81 J]**	<1.0 [<1.0]	**3.5 [3.6]**	**1,600 [1,500]**	<10 [<10]	**1,000 [1,200]**
	4/10			**9.5 J [12 J]**	**4.1 [4.0]**	**1.2 [1.2]**	<1.0 [<1.0]	**0.78 J [0.75 J]**	<1.0 [<1.0]	**4.2 [4.0]**	**2,800 J [3,100 J]**	<20 J [<20 J]	<500 [<500]
	10/10			<10 [<10]	**3.3 [3.0]**	**1.0 [0.91 J]**	<1.0 [<1.0]	**0.82 J [0.76 J]**	<1.0 [<1.0]	**3.6 [3.6]**	**760 [810]**	**<5.0 [2.2 J]**	<500 J [<500 J]
	4/11			<10 [<10]	**2.1 [2.0]**	**1.2 [1.3]**	<1.0 [<1.0]	**0.74 J [0.75 J]**	<1.0 [<1.0]	**5.2 [5.3]**	**1.9 J [2.1 J]**	**3.4 [3.3]**	<500 [<500]
	10/11			<10 [<10]	**1.2 [1.1]**	**0.67 J [0.69 J]**	<1.0 [<1.0]	**0.53 J [0.48 J]**	<1.0 [<1.0]	**1.5 J [1.4 J]**	**1,300 D [1,500 D]**	**5.5 [6.2]**	<500 [<500]
	12/11			NA	NA	NA	NA	NA	NA	NA	**1,400**	NA	NA
	4/12			**15 J [13 J]**	**1.6 [1.5]**	**0.73 J [0.76 J]**	<0.18 [<0.18]	**0.51 J [0.48 J]**	<0.090 [<0.090]	**1.6 J [1.6 J]**	**1,400 J [1,600 J]**	<2.2 J [<2.2 J]	<500 [<500]
	10/12			<10 [<10]	**1.1 J [0.98 J]**	**0.29 J [0.27 J]**	<1.0 [<1.0]	**0.26 J [0.27 J]**	<1.0 [<1.0]	**0.91 J [0.89 J]**	<5.2 **[3.2 J]**	**2.2 [1.9]**	NA
	4/13			<10 [<10]	**1.4 [1.3]**	**0.60 J [0.64 J]**	<1.0 [<1.0]	**0.36 J [0.38 J]**	<1.0 [<1.0]	**1.5 J [1.5 J]**	**620 [700]**	**3.5 J [3.4 J]**	<1000 [<1000]
PZ-4D	3/09	350.8	345.9	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	4/10			<10	<1.0	<1.0	**5.3 J**	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	6/10			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	NA	NA	NA
	4/11			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	NA
	4/12			<2.7	<0.080	<0.10	<0.18	**0.23 J**	<0.090	<0.36	<1.8	<0.21	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<0.95	NA
PZ-4S	3/09	362.79	357.88	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<0.5	<500
	4/10			<10	<1.0	<1.0	**17**	<1.0	<1.0	<3.0	<5.0	<1.0	<500
	6/10			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	NA	NA	NA
	4/11			<10 J	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.3	<1.1	NA
	4/12			<2.7	<0.080	<0.10	<0.18	<0.15	<0.090	<0.36	<1.8	<0.21	NA
	4/13			<10	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.2	<1.0	NA

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Table 3. Summary of Groundwater Monitoring Data, Aerobic Bioremediation Treatment Program, March 2009 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

General Notes:

1. Concentrations are presented in micrograms per liter, which is equivalent to parts per billion.
2. Compounds detected are indicated by bold-faced type.
3. Detections exceeding New York State Department of Environmental Conservation (NYSDEC) Groundwater Standards (TOGS 1.1.1; NYSDEC 1998) are indicated by shading.
4. Duplicate sample results are presented in brackets (e.g., [14]).
5. The sampling event in June 2010 was an interim sampling event to check for the presence of methylene chloride.

Superscript Notes:

[A] = Data presented is total xylenes (m- and p-xylenes and o-xylenes).
[B] = Wells MW-8S and TW-02R were abandoned in August 2004 and replacement wells MW-8SR and TW-02RR were installed in August 2004.
[C] = Well MW-9 was abandoned during OU1 soil remediation activities (1994).
[D] = Well/piezometer MW-17 was abandoned November 1997 through January 1998.
[E] = Wells/piezometers MW-36, PZ-5S, PZ-W, and TW-02RR were abandoned in November 2010. Replacement wells TW-02RRR (replaced TW-02RR) and MW-36R (replaced MW-36 and PZ-W) were installed in November 2010.

Abbreviations:

AMSL = above mean sea level (National Geodetic Vertical Datum of 1929).
NA = compound was not analyzed for in the sample
NS = standard not available
TOGS = Technical and Operational Guidance Series

Analytical Qualifiers:

B = The compound was found in associated method blank.
J = The compound was positively identified; however, the numerical value is an estimated concentration only.
< = Compound was not detected at the listed quantitation limit.

Table 4. Summary of Dissolved Oxygen Measurements, August 2006 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Date	Dissolved Oxygen (ppm)					
	MW-33 (Area 1)	MW-36R (Area 2)	TW-02RRR (Area 2)	MW-27 (Area 3)	MW-28 (Area 3)	MW-8SR (Area 3)
8/21/06	N/R	N/R	N/R	N/R	3.35	N/R
8/28/06	0.28	N/R	N/R	0.88	2.18	N/R
9/1/06	0.53	N/R	N/R	0.41	0.40	N/R
9/8/06	0.22	N/R	N/R	0.42	0.53	N/R
9/21/06	0.17	N/R	N/R	0.21	0.37	N/R
9/29/06	0.28	N/R	N/R	0.37	0.40	N/R
10/6/06	0.16	N/R	N/R	0.43	0.29	N/R
10/13/06	0.21	N/R	N/R	0.33	0.31	N/R
10/28/06	0.17	N/R	N/R	0.24	0.29	N/R
11/10/06	0.37	N/R	N/R	0.33	0.38	N/R
11/16/06	0.27	N/R	N/R	0.23	0.21	N/R
11/22/06	0.41	N/R	N/R	0.37	0.42	N/R
12/4/06	0.29	N/R	N/R	0.23	0.32	N/R
12/7/06	0.24	N/R	N/R	0.22	0.29	N/R
12/14/06	0.57	N/R	N/R	0.27	0.32	N/R
1/7/07	0.30	N/R	N/R	0.27	0.21	N/R
1/12/07	0.24	N/R	N/R	0.27	0.30	N/R
1/19/07	0.23	N/R	N/R	0.20	0.37	N/R
1/26/07	0.26	N/R	N/R	0.61	0.57	N/R
2/9/07	0.24	N/R	N/R	0.28	0.44	N/R
2/22/07	0.33	N/R	N/R	0.44	0.30	N/R
3/2/07	0.62	N/R	N/R	0.20	0.36	N/R
3/16/07	0.29	N/R	N/R	0.37	0.55	N/R
3/23/07	0.25	N/R	N/R	0.22	0.46	N/R
3/30/07	0.47	N/R	N/R	0.45	0.79	N/R
4/5/07	0.31	N/R	N/R	0.59	0.91	N/R
4/19/07	0.32	N/R	N/R	0.27	0.73	N/R
4/26/07	0.26	N/R	N/R	0.49	0.48	N/R
5/11/07	0.50	N/R	N/R	0.43	0.58	N/R
5/25/07	0.22	N/R	N/R	0.53	0.81	N/R
6/1/07	0.30	N/R	N/R	0.32	0.70	N/R
6/29/07	0.48	0.90	N/R	1.87	2.76	N/R
7/3/07	0.21	0.48	N/R	0.43	0.66	N/R
7/13/07	0.38	0.38	N/R	0.68	1.18	N/R
7/19/07	0.36	0.22	N/R	0.52	0.98	N/R
7/27/07	0.24	0.32	N/R	0.50	0.86	N/R
8/3/07	0.47	0.47	N/R	0.57	0.79	N/R
8/9/07	0.63	0.31	N/R	0.42	0.70	N/R
8/16/07	0.37	0.31	N/R	0.40	0.85	N/R
8/24/07	0.38	0.33	N/R	0.50	0.88	N/R
8/31/07	0.54	0.40	N/R	0.52	0.77	N/R
9/7/07	0.47	0.40	N/R	0.35	0.52	N/R
9/14/07	0.40	0.38	N/R	0.39	0.83	N/R
9/21/07	0.36	0.31	N/R	0.34	0.46	N/R
9/28/07	0.28	0.43	N/R	0.57	0.71	N/R
10/5/07	0.38	0.41	N/R	0.41	0.68	N/R
10/12/07	0.41	0.44	N/R	0.65	1.03	N/R
10/19/07	0.44	0.52	N/R	0.59	1.02	N/R
10/26/07	0.32	0.50	N/R	0.71	1.04	N/R
11/2/07	0.38	0.48	N/R	0.44	0.90	N/R
11/9/07	0.43	0.43	N/R	0.68	1.04	N/R
11/16/07	0.50	0.64	N/R	0.33	0.38	N/R
11/21/07	0.56	0.32	N/R	0.44	1.24	N/R
11/30/07	0.42	0.51	N/R	0.84	1.28	N/R
12/7/07	0.44	0.41	N/R	0.54	0.66	N/R
12/14/07	0.49	0.55	N/R	0.55	1.02	N/R
12/20/07	0.45	0.44	N/R	0.89	0.90	N/R
12/28/07	0.42	0.46	N/R	0.56	1.10	N/R
1/4/2008	0.46	0.39	N/R	0.77	0.89	N/R
1/11/2008	0.48	0.36	N/R	0.64	0.91	N/R
1/18/2008	0.45	0.44	N/R	0.74	1.02	N/R
1/25/2008	0.42	0.33	N/R	0.96	0.92	N/R
2/1/2008	0.43	0.38	N/R	0.89	1.00	N/R

See Notes on Page 3.

Table 4. Summary of Dissolved Oxygen Measurements, August 2006 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Date	Dissolved Oxygen (ppm)					
	MW-33 (Area 1)	MW-36R (Area 2)	TW-02RRR (Area 2)	MW-27 (Area 3)	MW-28 (Area 3)	MW-8SR (Area 3)
2/8/2008	0.42	0.61	N/R	0.63	0.77	N/R
2/15/2008	0.46	0.54	N/R	0.86	0.99	N/R
2/22/2008	0.53	0.51	N/R	0.84	0.71	N/R
2/29/2008	0.44	0.45	N/R	0.73	0.92	N/R
3/7/2008	0.61	0.45	N/R	0.74	1.01	N/R
3/14/2008	0.65	0.34	N/R	0.77	0.82	N/R
3/21/2008	0.65	0.46	N/R	0.63	0.81	N/R
3/28/2008	0.62	0.33	N/R	0.71	0.87	N/R
4/4/2008	0.66	0.44	N/R	0.68	0.98	N/R
4/9/2008	0.77	0.35	N/R	0.54	0.79	N/R
4/20/2008	0.68	0.44	N/R	0.64	0.77	N/R
4/25/2008	0.48	0.61	N/R	0.43	0.76	N/R
5/2/2008	0.44	0.48	N/R	0.66	0.79	N/R
5/9/2008	0.46	0.41	N/R	0.67	0.81	N/R
5/16/2008	0.49	0.44	N/R	0.79	0.97	N/R
5/22/2008	0.38	0.40	N/R	0.43	0.59	N/R
5/30/2008	0.44	0.34	N/R	0.72	0.55	N/R
6/6/2008	0.31	0.33	N/R	0.40	0.67	N/R
6/13/2008	0.38	0.37	N/R	0.48	0.58	N/R
6/20/2008	0.41	0.70	N/R	0.40	0.58	N/R
6/27/2008	0.68	0.90	N/R	0.69	1.02	N/R
7/2/2008	0.97	0.88	N/R	1.03	1.18	N/R
7/10/2008	1.07	0.86	N/R	1.24	1.40	N/R
7/18/2008	2.06	1.89	N/R	2.03	2.31	N/R
7/23/2008	1.94	1.75	N/R	1.98	2.42	N/R
8/1/2008	1.29	1.12	N/R	1.27	1.48	N/R
8/8/2008	1.21	1.38	N/R	1.43	1.71	N/R
8/15/2008	1.29	1.53	N/R	1.68	1.94	N/R
8/22/2008	1.06	1.05	N/R	1.07	1.40	N/R
8/29/2008	1.18	0.98	N/R	1.04	1.32	N/R
9/5/2008	0.90	0.78	N/R	1.02	1.17	N/R
9/12/2008	0.85	0.83	N/R	0.87	1.00	N/R
9/19/2008	0.91	1.03	N/R	0.97	1.07	N/R
9/25/2008	0.74	0.68	N/R	0.74	0.96	N/R
10/3/2008	0.77	0.54	N/R	0.81	0.92	N/R
10/10/2008	0.71	0.58	N/R	0.77	1.03	N/R
10/17/2008	0.69	0.62	N/R	0.70	0.98	N/R
10/23/2008	0.66	0.89	N/R	0.91	0.71	N/R
10/31/2008	0.47	0.50	N/R	0.62	0.68	N/R
11/7/2008	0.42	0.58	0.43	0.53	0.53	0.60
11/14/2008	0.55	0.66	1.15	0.74	0.63	0.70
11/21/2008	0.90	0.81	0.90	1.02	1.20	1.02
11/25/2008	0.90	0.78	0.88	0.80	1.12	0.88
12/4/2008	0.74	0.78	0.76	0.94	1.02	0.92
12/12/2008	0.77	0.79	0.79	0.96	1.09	0.88
12/18/2008	0.80	0.83	0.80	0.84	1.03	0.86
12/22/2008	0.78	0.82	0.79	0.91	1.09	0.87
12/29/2008	0.83	0.80	0.86	0.84	0.98	0.93
1/9/2009	1.01	0.97	0.96	1.00	1.33	1.02
1/13/2009	1.12	0.96	0.94	0.98	1.28	1.01
1/23/2009	1.18	0.85	0.96	1.04	1.35	1.00
1/30/2009	1.16	0.88	0.91	0.99	1.19	0.98
2/6/2009	1.07	1.28	1.30	1.67	3.30	2.34
2/13/2009	1.08	1.03	0.97	1.07	2.04	1.23
2/20/2009	1.08	1.10	0.96	1.34	2.38	1.29
2/26/2009	0.80	0.97	0.86	1.20	1.44	1.12
3/6/2009	0.73	0.96	0.93	0.97	1.20	1.01
3/13/2009	0.81	1.26	1.05	1.16	1.68	1.16
3/20/2009	0.83	1.00	2.34	1.05	1.32	1.10
3/27/2009	0.50	0.56	0.55	0.80	0.95	0.76
4/2/2009	0.55	0.55	0.94	0.53	0.82	0.60
4/7/2009	0.68	0.71	0.87	0.77	0.91	0.78
4/19/2009	0.77	0.68	0.93	0.81	0.98	0.77
4/24/2009	0.43	0.48	0.39	0.60	0.73	0.74
5/1/2009	0.43	0.46	0.43	0.81	0.87	1.02
5/8/2009	0.40	0.54	0.43	0.58	1.03	0.55
5/15/2009	0.41	0.38	0.34	0.60	0.88	0.51
5/22/2009	0.43	0.44	0.40	0.53	0.70	0.65
5/29/2009	0.41	0.46	0.38	0.58	0.81	0.55
6/5/2009	0.38	0.58	0.62	0.34	0.60	0.48
6/12/2009	0.28	0.40	0.31	0.60	0.44	0.44

See Notes on Page 3.

Table 4. Summary of Dissolved Oxygen Measurements, August 2006 through April 2013
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Date	Dissolved Oxygen (ppm)					
	MW-33 (Area 1)	MW-36R (Area 2)	TW-02RRR (Area 2)	MW-27 (Area 3)	MW-28 (Area 3)	MW-8SR (Area 3)
6/26/2009	0.34	0.43	0.34	0.52	0.45	0.42
6/29/2009	0.33	0.42	0.57	0.50	0.83	0.60
7/7/2009	0.31	0.44	0.48	0.55	0.81	0.64
7/16/2009	0.30	0.37	0.27	0.37	0.73	0.43
7/24/2009	0.30	0.30	0.22	0.44	0.53	0.37
7/29/2009	0.33	0.36	0.28	0.41	0.55	0.41
8/7/2009	0.30	0.46	0.35	0.36	0.92	0.39
8/12/2009	0.31	0.41	0.28	0.42	0.41	0.34
8/20/2009	0.33	0.32	0.27	0.44	0.53	0.40
8/28/2009	0.25	0.31	0.34	0.52	0.77	0.47
9/3/2009	0.31	0.37	0.35	0.48	0.68	0.44
9/25/2009	0.45	0.58	0.35	0.52	0.73	0.50
10/2/2009	0.44	0.55	0.33	0.54	0.78	0.51
10/9/2009	0.41	0.53	0.32	0.58	0.95	0.77
10/15/2009	0.48	0.55	0.37	0.61	0.71	0.58
10/23/2009	0.43	0.51	0.54	0.80	0.74	0.61
11/17/2009	0.48	0.55	0.56	0.78	0.84	0.68
12/4/2009	0.42	0.53	0.48	0.76	0.88	0.71
1/20/2010	0.62	0.59	0.55	0.81	0.90	0.67
2/26/2010	0.57	0.51	0.47	0.77	0.91	0.74
3/12/2010	0.85	0.90	0.74	1.11	0.91	1.02
4/9/2010	0.78	0.94	0.68	0.98	0.87	0.86
5/7/2010	0.84	0.91	0.73	0.84	1.97	0.96
6/22/2010	0.52	0.47	0.60	0.47	0.82	0.58
7/8/2010	0.78	0.56	0.71	0.87	1.67	0.55
8/26/2010	0.64	0.40	0.35	0.67	1.70	0.98
9/23/2010	0.33	0.46	0.30	0.50	0.98	0.40
10/19/2010	0.30	0.37	0.46	0.48	0.85	0.48
11/23/2010	0.38	N/R	0.58	0.61	0.88	0.56
12/20/2010	0.41	N/R	0.48	0.54	0.81	0.40
1/12/2011	0.36	N/R	0.44	0.68	1.13	0.61
2/172011	0.58	N/R	0.36	0.55	1.30	0.75
3/2/2011	0.61	N/R	0.42	0.68	1.28	0.71
4/29/2011	0.34	N/R	0.35	0.76	1.31	0.77
5/20/2011	0.50	0.51	0.47	0.94	1.26	0.76
6/24/2011	0.40	0.35	0.25	0.15	0.36	0.12
7/13/2011	0.36	0.20	0.21	0.56	0.57	0.25
8/2/2011	0.37	0.22	0.26	0.36	0.47	0.25
9/19/2011	0.38	0.33	0.34	0.40	0.42	0.51
10/14/2011	0.36	0.36	0.55	0.42	0.52	0.66
11/7/2011	0.49	1.57	0.42	0.47	0.61	0.62
12/14/2011	0.42	0.43	0.47	0.79	0.85	0.52
1/10/2012	0.37	0.67	0.51	0.63	0.96	0.61
2/9/2012	0.56	0.50	0.54	0.50	0.70	0.50
3/7/2012	0.54	0.40	0.46	0.50	0.77	0.73
4/30/2012	0.44	0.38	0.49	0.55	0.93	0.51
5/18/2012	0.67	0.44	0.51	0.67	0.62	0.44
6/8/2012	0.61	0.51	0.54	0.69	0.79	0.66
7/20/2012	0.60	0.65	0.72	0.64	0.67	0.57
8/14/2012	0.67	0.62	0.67	0.69	0.71	0.59
9/24/2012	0.70	0.63	0.71	0.74	0.98	0.66
10/9/2012	0.53	0.54	0.56	0.55	0.71	0.52
11/9/2012	0.66	0.60	0.69	0.63	0.67	0.68
12/13/2012	0.68	0.68	0.67	0.60	0.82	0.64
1/30/2013	0.61	0.67	0.66	0.77	0.74	0.72
2/26/2013	0.68	0.65	0.66	0.57	0.87	0.72
3/5/2013	0.64	0.68	0.84	0.65	0.79	0.71
4/22/2013	0.63	0.60	0.54	0.76	0.68	0.66

Notes:
1. No readings were taken at MW-36 between 8/21/2006 and 6/1/2007 and 11/23/2010 and 4/29/2011.
2. DO readings were taken at TW-02RR and MW-8SR beginning 11/7/2008, just after the installation of the oxygen infusion system in Areas 2 and 3.
3. TW-02RR was replaced by TW-02RRR and MW-36 was replaced by MW-36R in 11/2010.
4. The *in-situ* bioremediation treatment and closed loop hydraulic systems were shutdown in Areas 1, 2, and 3 on April 10, 2013 upon approval of New York State Department of Environmental Conservation (NYSDEC 2013).

Abbreviations:
DO = dissolved oxygen.
N/R = no reading was taken.
ppm = parts per million.

Table 6. Post-Shutdown Process Control Monitoring Wells and Piezometers
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Location	Purpose of Monitoring
Sentinel	
MW-3S*	C
MW-4S*	C
Area 1	
TW-01	C
MW-9S	C
MW-31	C
MW-32	C
MW-33*	C
PZ-F	H
PZ-G	H
PZ-HR	H
PZ-P	H
PZ-Q	H
PZ-R	H
PZ-S	H
Area 2	
TW-02RRR	C
MW-34	C
MW-35	C
MW-36R*	C
PZ-I	H
PZ-J	H
PZ-T	H
PZ-U	H
PZ-V	H
Area 3	
MW-8SR*	C
MW-11S	H
MW-27*	C
MW-28	C
MW-29*	C
MW-30*	C
PZ-A	H
PZ-B	H
PZ-C	H
PZ-D	H
PZ-E	H
PZ-K	H
PZ-L	H
PZ-M	H
PZ-N	H
PZ-O	H
Collection Sump	H
Downgradient Perimeter	
MW-17R	C
MW-18	C
MW-23I	C
MW-23S	C, H
MW-24SR	H
MW-25S	H
PZ-4S*	C
PZ-4D*	C, H
PZ-5D	H
Barge Canal	H

See Notes on Page 2.

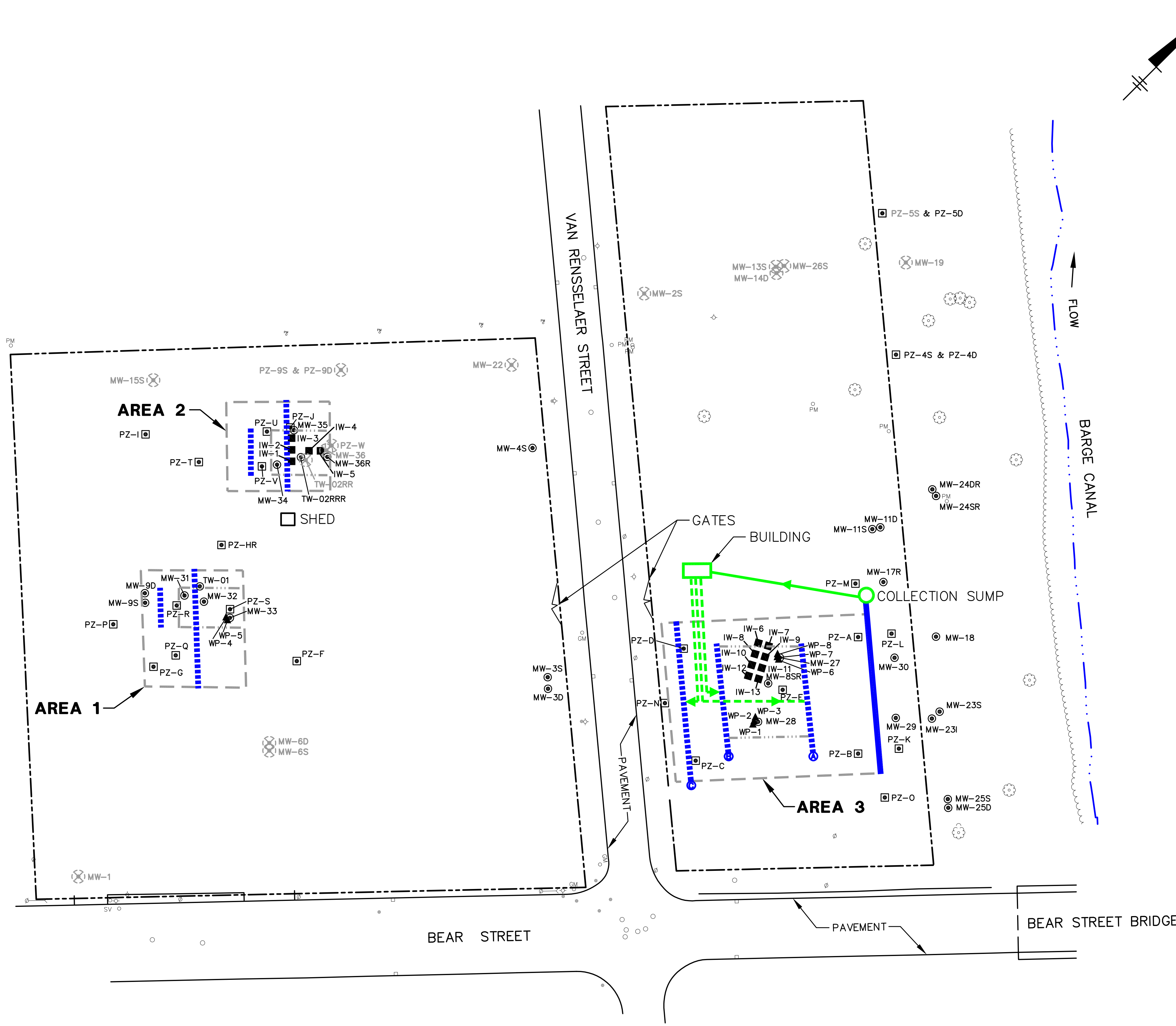
Table 6. Post-Shutdown Process Control Monitoring Wells and Piezometers
Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Notes:

1. The table lists the monitoring wells and piezometers that are part of the constituent of concern (COC) and/or hydraulic post-shutdown process control monitoring program.
2. Hydraulic monitoring involves obtaining groundwater level measurements from monitoring wells/piezometers identified in the table and surface-water level measurements from the Barge Canal. The surface-water level of the Barge Canal is measured from a demarcated reference point on the Bear Street Bridge, which crosses over the canal. Groundwater elevation data are used to map potentiometric surface of the shallow hydrogeologic unit sand layer.
3. The COCs are acetone, benzene, ethylbenzene, methylene chloride, toluene, trichloroethene, xylenes, aniline, N,N-dimethylaniline, and methanol.
4. Monitoring well MW-4S and piezometer PZ-4S are included in the COC monitoring program every third and second monitoring event, respectively.

C = COC monitoring.
H = hydraulic monitoring.
* = New York State Department of Environmental Conservation approved the elimination of methanol analysis from the COC groundwater monitoring program (NYSDEC 2010b).

Figures



LEGEND:

- UTILITY POLE
- CATCH BASIN
- PM PETROLEUM PIPE LINE MARKER
- GM GAS LINE MARKER
- SV SEWER VENT
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- PZ-W REMOVED/DECOMMISSIONED WELL/PIEZOMETER
- WP-8 WELL POINT
- IW-3 OXYGEN INFUSION WELL
- APPROXIMATE BOUNDARY OF OPERABLE UNIT 2 TREATMENT AREA
- GROUNDWATER WITHDRAWAL TRENCH
- GROUNDWATER INFILTRATION TRENCH
- AREA 3 GROUNDWATER INFILTRATION TRENCH IDENTIFICATION
- PIPING TO BUILDING
- PIPING FROM BUILDING
- TREE LINE
- EDGE OF BARGE CANAL

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. LOCATIONS ARE APPROXIMATE.
3. STANDPIPES ARE LOCATED IN AREAS 1 AND 2, SCREENED WITHIN THE INFILTRATION TRENCHES. ADDITIONAL STANDPIPES ARE LOCATED IN AREA 2 OUTSIDE OF THE INFILTRATION TRENCHES. STANDPIPE LOCATIONS ARE NOT SHOWN ON THE FIGURE.
4. DURING HYDRAULIC MONITORING EVENTS, BARGE CANAL SURFACE WATER LEVELS ARE MEASURED FROM A DEMARCATED REFERENCE POINT AT THE CENTER OF THE BEAR STREET BRIDGE (LOCATION NOT SHOWN ON THIS FIGURE).

0 100' 200'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK

PERIODIC REVIEW REPORT

SITE PLAN

ARCADIS

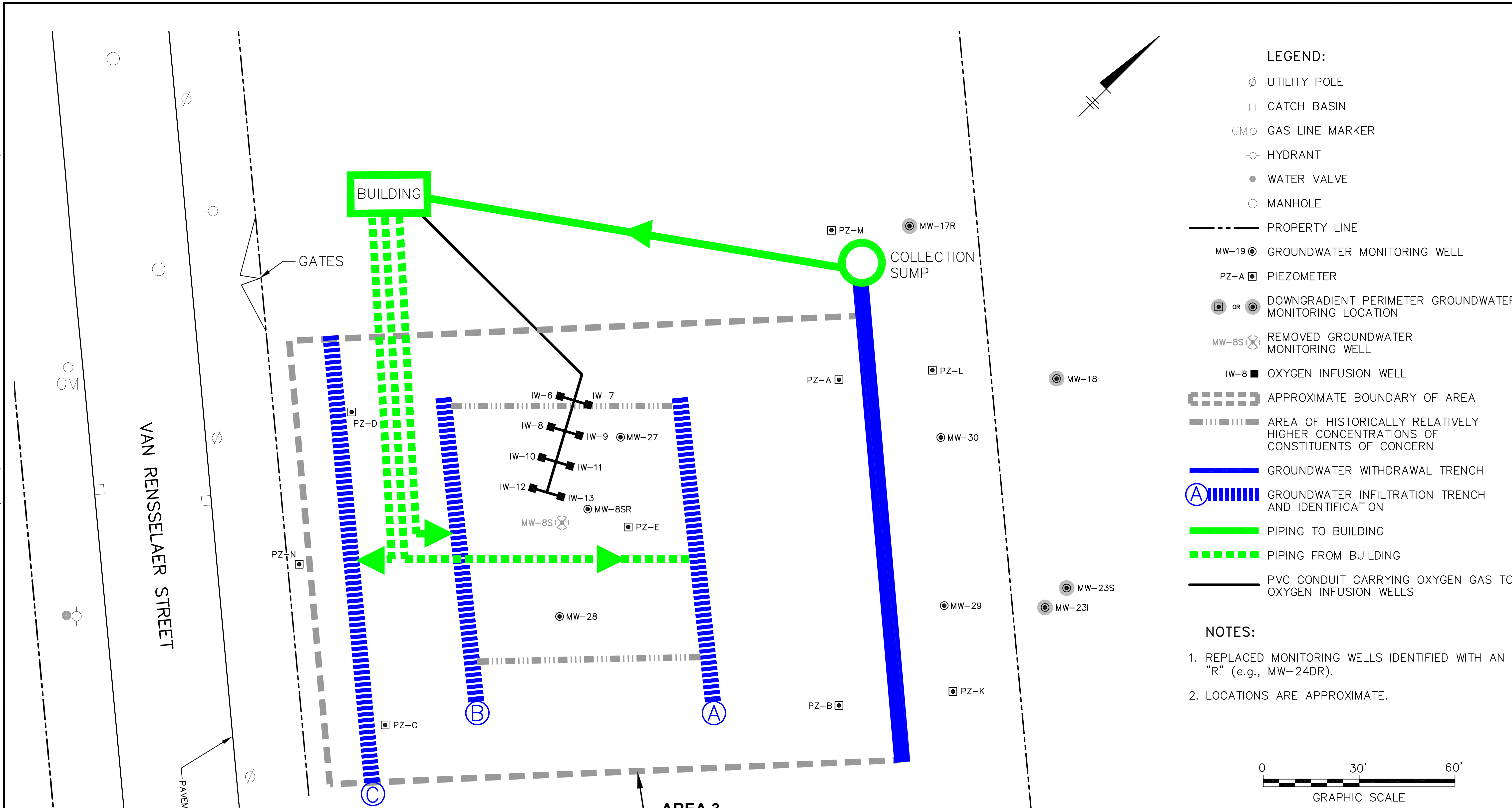
FIGURE 1

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

OXYGEN INFUSION SYSTEM LAYOUT AREA 2

ARCADIS

FIGURE
2

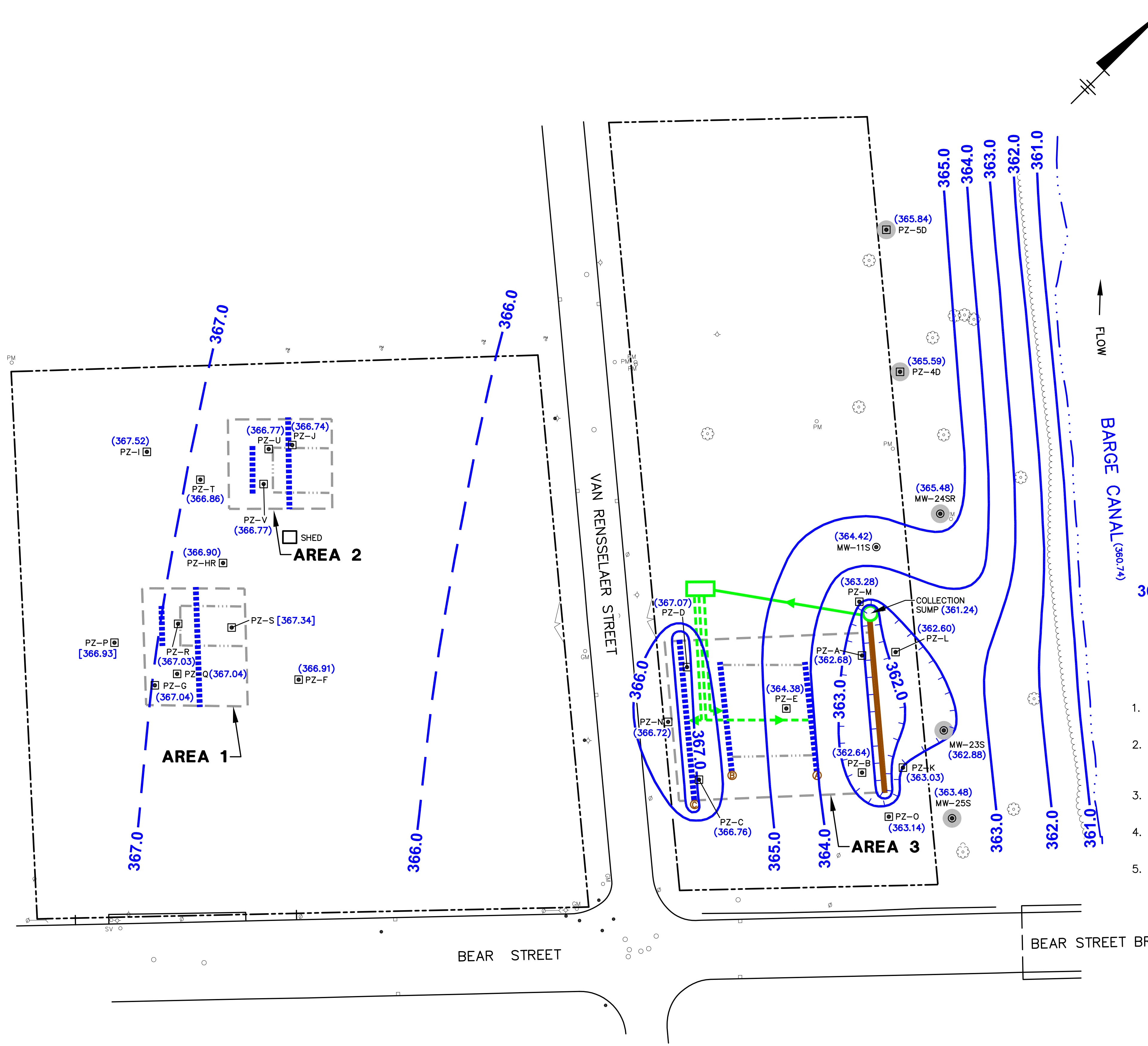


McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

OXYGEN INFUSION SYSTEM LAYOUT AREA 3

ARCADIS

FIGURE
3



LEGEND:

- UTILITY POLE
- CATCH BASIN
- PETROLEUM PIPE LINE MARKER
- GAS LINE MARKER
- SEWER VENT
- HYDRANT
- WATER VALVE
- MANHOLE
- TREE LINE
- EDGE OF BARGE CANAL
- PROPERTY LINE
- OR — DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- PZ–A — PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- AREA OF HISTORICALLY RELATIVELY HIGHER CONCENTRATIONS OF CONSTITUENTS OF CONCERN
- GROUNDWATER WITHDRAWAL TRENCH
- GROUNDWATER INFILTRATION TRENCH
- Ⓐ AREA 3 GROUNDWATER INFILTRATION TRENCH IDENTIFICATION
- PIPING TO BUILDING
- PIPING FROM BUILDING
- (365.59) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (AMSL)
- [367.34] GROUNDWATER ELEVATION NOT USED FOR CONTOURING PURPOSES
- 361.0 — GROUNDWATER ELEVATION CONTOUR (FEET AMSL) DASHED WHERE INFERRED
- CLOSED DEPRESSION

NOTES:

1. ONLY THE HYDRAULIC MONITORING LOCATIONS USED TO DRAW THIS MAP ARE SHOWN.
2. REPLACED MONITORING WELLS AND PIEZOMETERS ARE IDENTIFIED WITH AN "R" (e.g., MW–24DR).
3. ELEVATIONS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. THE BARGE CANAL ELEVATION WAS MEASURED FROM A MARKED POINT ON THE BEAR STREET BRIDGE.
5. CONTOUR INTERVAL = 1 FOOT.

0 100' 200'
GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

POTENTIOMETRIC SURFACE OF THE SHALLOW HYDROGEOLOGIC UNIT SAND LAYER
APRIL 1, 2013

ARCADIS

FIGURE
4

TW-02RRR								
Date	4/30/2010	10/14/2010	4/5/2011	10/27/2011	12/15/2011	4/12/2012	10/5/2012	4/8/2013
Acetone	9.5 J [12 J]	<10 [<10]	<10 [<10]	<10 [<10]	NA	15 J [13 J]	<10 [<10]	<10 [<10]
Benzene	4.1 [4.0]	3.3 [3.0]	2.1 [2.0]	1.2 [1.1]	NA	1.6 [1.5]	1.1 J [0.98 J]	1.4 [1.3]
Ethylbenzene	1.2 [1.2]	1.0 [0.91 J]	1.2 [1.3]	0.67 J [0.69 J]	NA	0.73 J [0.76 J]	0.29 J [0.27 J]	0.60 J [0.64 J]
Methylene Chloride	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	NA	<0.18 [<0.18]	<1.0 [<1.0]	<1.0 [<1.0]
Toluene	0.78 J [0.75 J]	0.82 J [0.76 J]	0.74 J [0.75 J]	0.53 J [0.48 J]	NA	0.51 J [0.48 J]	0.26 J [0.27 J]	0.36 J [0.38 J]
Trichloroethene	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	<1.0 [<1.0]	NA	<0.090 [<0.090]	<1.0 [<1.0]	<1.0 [<1.0]
Xylenes (total)	4.2 [4.0]	3.6 [3.6]	5.2 [5.3]	1.5 J [1.4 J]	NA	1.6 J [1.6 J]	0.91 J [0.89 J]	1.5 J [1.5 J]
Aniline	2800 J [3100 J]	760 [810]	1.9 J [2.1 J]	1300 D [1500 D]	1400	1400 J [1600 J]	<5.2 [3.2 J]	620 [700]
N,N-Dimethylaniline	<20 J [<20 J]	<5.0 [2.2 J]	3.4 [3.3]	5.5 [6.2]	NA	<2.2 J [<2.2 J]	2.2 [1.9]	3.5 J [3.4 J]
Methanol	<500 [<500]	<500 J [<500 J]	<500 [<500]	<500 [<500]	NA	<500 [<500]	NA	<1000 [<1000]

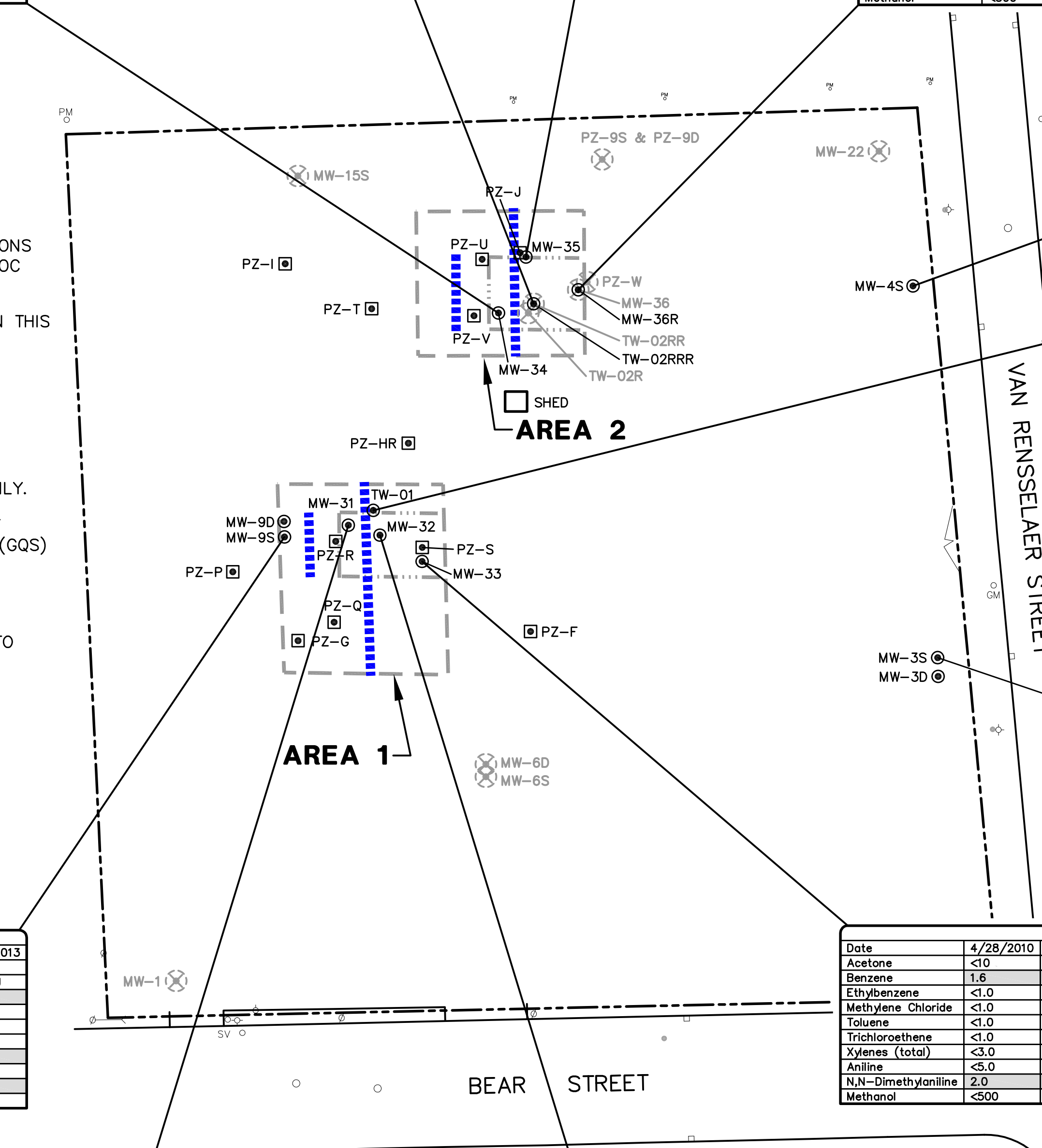
MW-35							
Date	4/30/2010	10/14/2010	4/5/2011	10/26/2011	4/11/2012	10/4/2012	4/4/2013
Acetone	<10 J	<10	<10	<10	14 J	<36 B	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<0.080	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0	<0.36	<3.0	<3.0
Aniline	<5.0	<5.0	<5.6	<5.1	<1.8	<5.0	<5.1
N,N-Dimethylaniline	<1.0	<1.0	<1.1	<1.0	<0.21	<1.0	<1.0
Methanol	<500	<500 J	<500	<500	<500	NA	470 J

MW-34							
Date	4/30/2010	10/14/2010	4/5/2011	10/26/2011	4/12/2012	10/4/2012	4/8/2013
Acetone	50 J	20	16	350	37 J	61	26 J
Benzene	0.82 J	1	1.7	1.2	1.3	1.6	1.3
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	0.42 J	0.44 J	0.74 J	0.71 J	0.59 J	0.78 J	0.60 J
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	1.4 J	1.3 J	2.0 J	0.90 J	1.4 J	2.2 J	2.3 J
Aniline	<5.0	1.8 J	10	<5.6	2.1 J	<5.2	<4.8
N,N-Dimethylaniline	2.4	2.9	2.7	2.5	2.4	2.7	1.7
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

MW-36R								
Date	4/30/2010	10/14/2010	4/5/2011	10/26/2011	12/15/2011	4/12/2012	10/5/2012	4/8/2013
Acetone	<10 J	12	<10	<10	NA	6.3 J	<10	<10
Benzene	3.3	3.9	4.3	1.8	NA	1.6	1.5 J	1.8
Ethylbenzene	0.26 J	0.28 J	<1.0	<1.0	NA	0.16 J	<1.0	0.14 J
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	NA	<0.18	<1.0	<1.0
Toluene	1.1	1.2	0.95 J	0.66 J	NA	0.45 J	0.54 J	0.53 J
Trichloroethene	<1.0	<1.0	<1.0	<1.0	NA	<0.090	<1.0	<1.0
Xylenes (total)	5.4	4.8	4.4	1.4 J	NA	1.9 J	2.2 J	2.9 J
Aniline	77	620	310	92	120	150	10	150
N,N-Dimethylaniline	2.6	<5.0	4.0	3.6	NA	4.1	3.1	4.0
Methanol	<500	<500 J	NA	NA	NA	NA	NA	NA

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS CONSTITUENT OF CONCERN (COC) CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE COC PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY COCs WITH CURRENT OR PAST DETECTIONS ARE PRESENTED ON THIS FIGURE.
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. NA = COMPOUND WAS NOT ANALYZED FOR IN THE SAMPLE.
8. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
9. SAMPLE DATA ARE COMPARED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION GROUNDWATER QUALITY STANDARDS (GQS) (TECHNICAL AND OPERATIONAL GUIDANCE SERIES 1.1.1).
10. NS = GQS NOT AVAILABLE.
11. RESULTS FOR DUPLICATE SAMPLES ARE SHOWN IN BRACKETS NEXT TO PARENT SAMPLE RESULTS.



MW-4S		
Date	10/15/2010	4/11/2012
Acetone	<10 [<10]	<2.7
Benzene	<1.0 [<1.0]	<0.080
Ethylbenzene	<1.0 [<1.0]	<0.10
Methylene Chloride	<1.0 [<1.0]	<0.18
Toluene	<1.0 [<1.0]	<0.15
Trichloroethene	<1.0 [<1.0]	<0.090
Xylenes (total)	<3.0 [<3.0]	<0.36
Aniline	<5.0 [<5.0]	<1.8
N,N-Dimethylaniline	<1.0 [<1.0]	<0.21
Methanol	<500 J [<500 J]	NA

TW-01							
Date	4/28/2010	10/12/2010	4/4/2011	10/25/2011	4/11/2012	10/4/2012	4/4/2013
Acetone	<10	<10	<10	<10	<2.7	<10	<10
Benzene	0.32 J	<1.0	0.21 J	<1.0	0.11 J	<1.0	0.090 J
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0 J	<0.36	<3.0	<3.0
Aniline	<5.0	<5.3	<5.3	<5.6	<1.8	<5.2	<5.2
N,N-Dimethylaniline	1	1.3	<1.1	1.6	1.7	1.9	0.98 J
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

MW-3S							
Date	4/28/2010	10/12/2010	4/6/2011	10/27/2011	4/11/2012	10/4/2012	4/4/2013
Acetone	<10	<10	<10	<10	<2.7	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<0.080	0.27 J	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.35 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0	<0.36	<3.0	<3.0
Aniline	<5.0	<5.2	<5.3 J	<5.0	<1.8	<5.0	<5.2
N,N-Dimethylaniline	<1.0	<1.0	<1.1 J	<1.0	<0.21	<0.61 J	<1.0
Methanol	<500	NA	NA	NA	NA	NA	NA

LEGEND:

- UTILITY POLE
- CATCH BASIN
- PM PETROLEUM PIPE LINE MARKER
- GM GAS LINE MARKER
- SV SEWER VENT
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- TW-02RRR GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- TW-02R REMOVED/DECOMMISSIONED GROUNDWATER MONITORING WELL/PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER INFILTRATION TRENCH
- AREA OF HISTORICALLY RELATIVELY HIGHER CONCENTRATION OF COCs

SAMPLE IDENTIFICATION

DETECTIONS EXCEEDING NYSDEC GQS ARE INDICATED BY SHADING.

MW-##			
Date	Sep-06	Nov-06	Jun-07
Acetone	NA	130 J	33
Benzene	NA	3.6	4.6
Ethylbenzene	NA	<4.0	0.80 J
Methylene Chloride	NA	<3.0	<3.0
Toluene	NA	1.2 J	1.4 J
Trichloroethene	NA	<1.0	<1.0
Xylenes (total)	NA	1.1 J	5
Aniline	3.5	420	1300
N,N-Dimethylaniline	1.2	1.7 J	<10
Methanol	NA	<500	<500

CONCENTRATION (ppb)

NYSDEC GQS (ppb)	
Acetone	50
Benzene	1
Ethylbenzene	5
Methylene Chloride	5
Toluene	5
Trichloroethene	5
Xylenes (total)	5
Aniline	5
N,N-dimethylaniline	1
Methanol	NS

0 100' 200'

GRAPHIC SCALE

MW-9S							
Date	4/28/2010	10/13/2010	4/5/2011	10/25/2011	4/12/2012	10/5/2012	4/8/2013
Acetone	<10	<10	<10	<10	7.5 J	<10	12 J
Benzene	0.86 J	1.3	0.91 J	1.2	1.1	1.9 J	0.95 J
Ethylbenzene	26	11	29	4.2	18	4.7	19
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	2.1	1.9	2.6	1.8	1.5	3.2	1.6
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	69	45	89	41 J	67	84	62
Aniline	<5.0	<5.1	<5.3	<5.0	<1.9	<5.0	<5.1
N,N-Dimethylaniline	6.5	7.5	5.4	7.6	6.3	3.9	5.9
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

MW-33							
Date	4/28/2010	10/12/2010	4/5/2011	10/26/2011	4/11/2012	10/5/2012	4/4/2013
Acetone	<10	<10	<10	<10	<2.7	<10	<10
Benzene	1.6	1.7	0.79 J	0.58 J	0.11 J	0.33 J	1.1
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.12 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0	<0.36	<3.0	<3.0
Aniline	<5.0	<5.1	<5.3	<5.3	<1.8	<5.1	<4.8 J
N,N-Dimethylaniline	2.0	2.7	1.9	1.9	1.3	2.1 J	2.1 J
Methanol	<500	NA	NA	NA	NA	NA	NA

MW-31							
Date	4/28/2010	10/13/2010	4/5/2011	10/25/2011	4/12/2012	10/5/2012	4/5/2013
Acetone	<10	<10	<10	<10	6.5 J	<10	<10
Benzene	4.8	6.9	8.3	5.7	6.8	6.3 J	12
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	0.16 J	0.16 J	0.21 J
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	0.40 J	0.50 J	0.77 J	0.62 J	0.65 J	0.44 J	1.3
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	1.3 J	1.5 J	2.5 J	1.5 J	2.7 J	2.3 J	5.6
Aniline	<5.0	<5.3	<5.3	<5.0	<1.9	<5.0	<5.2
N,N-Dimethylaniline	2.3	3.5	2.3	3.5	2.1	0.90 J	1.1
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

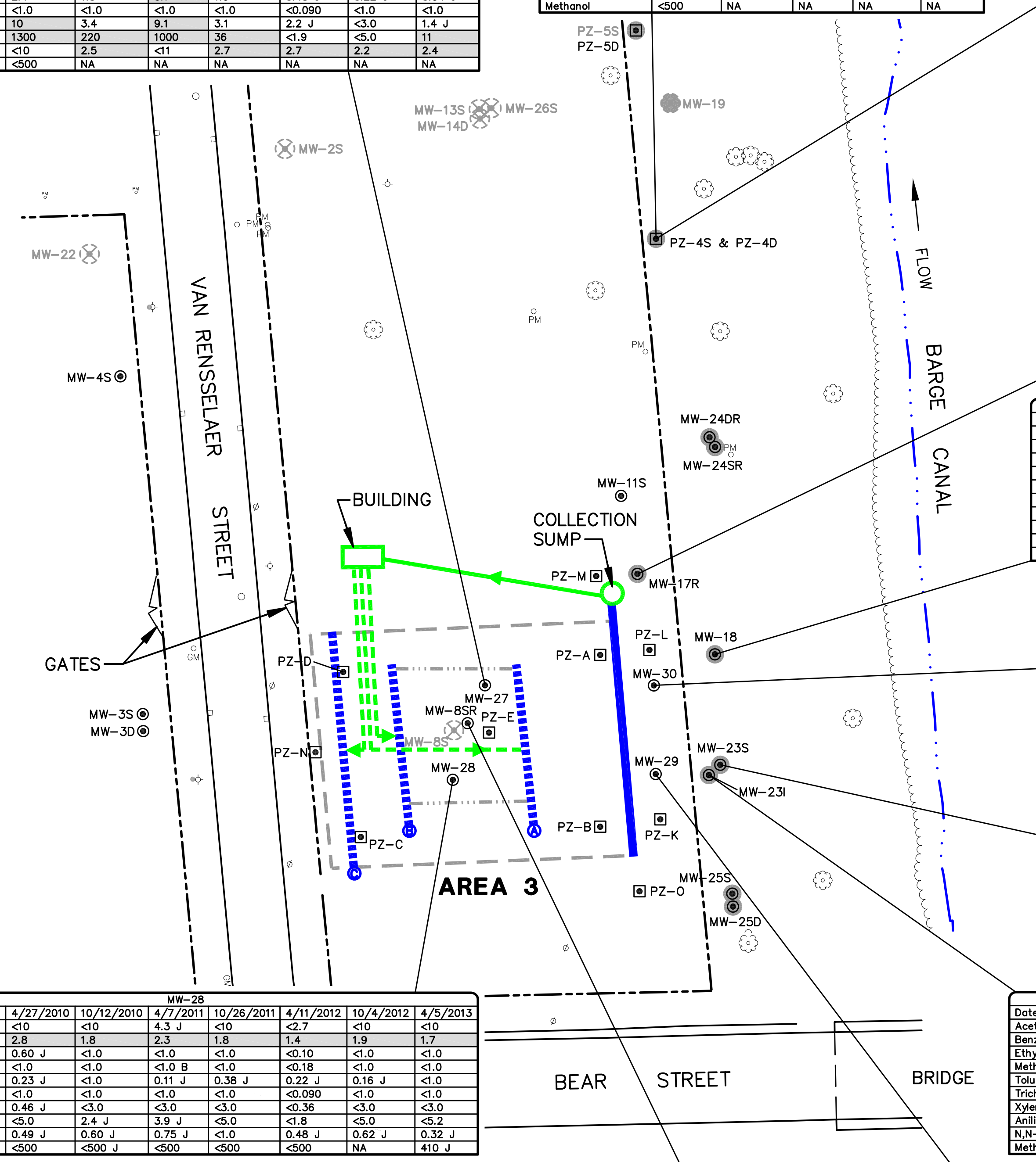
MW-32							
Date	4/28/2010	10/12/2010	4/4/2011	10/25/2011	4/11/2012	10/5/2012	4/5/2013
Acetone	<10	<10	<10	<10	<2.7	<10	<10
Benzene	0.23 J	<1.0	<1.0	<1.0	<0.080	<1.0 J	0.098 J
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.19 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0 J	<0.36	<3.0	<3.0
Aniline	<5.0	<5.2	<5.3	<5.0	<1.8	<5.1	<5.1
N,N-Dimethylaniline	0.89 J	0.87 J	<1.1	1.5	1.1	2.2	0.91 J
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR APRIL 2010 - APRIL 2013 AREAS 1 & 2 (AEROBIC TREATMENT)

ARCADIS

FIGURE 5



MW-27							
Date	4/27/2010	10/12/2010	4/7/2011	10/26/2011	4/12/2012	10/4/2012	4/5/2013
Acetone	<10	<10	3.9 J	<10	<2.7 J	<10	<10
Benzene	4.5	2.7	3.1	2.1	1.5	1.1	1.1
Ethylbenzene	6.1	1.4	5.1	2.2	1.4	<1.0	0.88 J
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	2.4	1.3	5.7	1.3	0.45 J	0.22 J	0.34 J
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	10	3.4	9.1	3.1	2.2 J	<3.0	1.4 J
Aniline	1300	220	1000	36	<1.9	<5.0	11
N,N-Dimethylaniline	<10	2.5	<11	2.7	2.7	2.2	2.4
Methanol	<500	NA	NA	NA	NA	NA	NA

PZ-4S					
Date	4/29/2010	6/22/2010	4/7/2011	4/10/2012	4/2/2013
Acetone	<10	<10 [<10]	<10 J	<2.7	<10
Benzene	<1.0	<1.0 [<1.0]	<1.0	<0.080	<1.0
Ethylbenzene	<1.0	<1.0 [<1.0]	<1.0	<0.10	<1.0
Methylene Chloride	17	<1.0 [<1.0]	<1.0	<0.18	<1.0
Toluene	<1.0	<1.0 [<1.0]	<1.0	<0.15	<1.0
Trichloroethene	<1.0	<1.0 [<1.0]	<1.0	<0.090	<1.0
Xylenes (total)	<3.0	<3.0 [<3.0]	<3.0	<0.36	<3.0
Aniline	<5.0	NA	<5.3	<1.8	<5.2
N,N-Dimethylaniline	<1.0	NA	<1.1	<0.21	<1.0
Methanol	<500	NA	NA	NA	NA

PZ-4D					
Date	4/29/2010	6/22/2010	4/7/2011	4/10/2012	4/2/2013
Acetone	<10	<10	<10	<2.7	<10
Benzene	<1.0	<1.0	<1.0	<0.080	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<0.10	<1.0
Methylene Chloride	5.3 J	<1.0	<1.0	<0.18	<1.0
Toluene	<1.0	<1.0	<1.0	0.23 J	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<0.090	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<0.36	<3.0
Aniline	<5.0	NA	<5.3	<1.8	<4.8
N,N-Dimethylaniline	<1.0	NA	<1.1	<0.21	<0.95
Methanol	<500	NA	NA	NA	NA

MW-17R							
Date	4/28/2010	10/13/2010	4/6/2011	10/25/2011	4/10/2012	10/3/2012	4/3/2013
Acetone	<10	<10	<10	<10	<2.7	<10	<10
Benzene	0.22 J	1.3	<1.0	<1.0	0.22 J	0.55 J	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.19 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0 J	<0.36	<3.0	<3.0
Aniline	<5.0	<5.6	<5.3 J	<5.0	<1.8	<5.1	<5.1
N,N-Dimethylaniline	<1.0	<1.1	<1.1 J	<1.0	<0.21	<1.0	<1.0
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

MW-18								
Date	4/29/2010	6/22/2010	10/13/2010	4/7/2011	10/25/2011	4/10/2012	10/3/2012	4/3/2013
Acetone	<10	<10	<10	<10 J	<10	<2.7	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<0.080	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	33	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	0.23 J	0.27 J	<1.0	0.60 J
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0	<3.0 J	<0.36	<3.0	<3.0
Aniline	<5.0	NA	<5.1	<5.3	<5.0	<1.8	<5.2	<4.8
N,N-Dimethylaniline	<1.0	NA	<1.0	<1.1	<1.0	<0.21	<1.0	<0.95
Methanol	<500	NA	<500 J	<500	<500	<500	NA	<1000

MW-30							
Date	4/27/2010	10/13/2010	4/6/2011	10/25/2011	4/10/2012	10/4/2012	4/4/2013
Acetone	<10	<10 J	<10	<10	<2.7	<10	<10
Benzene	<1.0	0.14 J	<1.0	<1.0	<0.080	0.099 J	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	37	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.18 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0 J	<0.36	<3.0	<3.0
Aniline	<5.0	<5.1	<5.3 J	<5.0	<1.8	<5.3	<5.2
N,N-Dimethylaniline	<1.0	<1.0	<1.1 J	<1.0	<0.21	<1.1	<1.0
Methanol	<500	NA	NA	NA	NA	NA	NA

MW-23S							
Date	4/29/2010	10/14/2010	4/7/2011	10/26/2011	4/10/2012	10/2/2012	4/3/2013
Acetone	<10	3.7 J	<10 J	<10	<2.7	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<0.080	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.31 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0	<0.36	<3.0	<3.0
Aniline	<5.0	<5.0	<5.3	<5.0	<1.8	<5.1	<5.1
N,N-Dimethylaniline	<1.0	<1.0	<1.1	<1.0	<0.21	<1.0	<1.0
Methanol	<500	<500 J	<500	<500	<500	NA	<1000

MW-28							
Date	4/27/2010	10/12/2010	4/7/2011	10/26/2011	4/11/2012	10/4/2012	4/5/2013
Acetone	<10	<10	4.3 J	<10	<2.7	<10	<10
Benzene	2.8	1.8	2.3	1.8	1.4	1.9	1.7
Ethylbenzene	0.60 J	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0 B	<1.0	<0.18	<1.0	<1.0
Toluene	0.23 J	<1.0	0.11 J	0.38 J	0.22 J	0.16 J	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	0.46 J	<3.0	<3.0	<3.0	<0.36	<3.0	<3.0
Aniline	<5.0	2.4 J	3.9 J	<5.0	<1.8	<5.0	<5.2
N,N-Dimethylaniline	0.49 J	0.60 J	0.75 J	<1.0	0.48 J	0.62 J	0.32 J
Methanol	<500	<500 J	<500	<500	<500	NA	410 J

MW-23I								
Date	4/29/2010	6/22/2010	10/14/2010	4/7/2011	10/26/2011	4/10/2012	10/2/2012	4/3/2013
Acetone	<10	<10	<10	<10 J	<10	<2.7	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<0.080	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	8.4	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	0.29 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0	<3.0	<0.36	<3.0	<3.0
Aniline	<5.0	NA	<5.0	<5.3	<5.0	<1.8	<5.6	<4.8
N,N-Dimethylaniline	<1.0	NA	<1.0	<1.1	<1.0	<0.21	<1.1	<0.95
Methanol	<500	NA	<500 J	<500	<500	<500	NA	<1000

MW-8SR							
Date	4/27/2010	10/12/2010	4/7/2011	10/26/2011	4/12/2012	10/4/2012	4/5/2013
Acetone	<10 [<10]	<10	5.9 J [4.3 J]	<10 [<10]	8.7 J [6.7 J]	<10 [<10]	<10 [<10]
Benzene	4.2 [3.5]	2.7	3.2 [3.2]	1.9 [2.0]	1.2 [1.7]	0.69 J [0.70 J]	1.1 [1.1]
Ethylbenzene	23 J [18]	16	10 [8.8]	2.0 [2.1]	2.3 [3.3]	0.16 J [0.14 J]	0.32 J [0.28 J]
Methylene Chloride	<1.0 [<1.0]	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<0.18 [<0.18]	<1.0 [<1.0]	<1.0 [<1.0]
Toluene	4.6 [3.7]	2.0	2.8 [2.6]	1.3 [1.3]	0.76 J [1.2]	0.36 J [0.39 J]	0.67 J [0.68 J]
Trichloroethene	<1.0 [<1.0]	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<0.090 [<0.090]	<1.0 [<1.0]	<1.0 [<1.0]
Xylenes (total)	41 [33]	31	32 [31]	14 [15]	9.5 [15]	1.4 J [1.2 J]	7.7 [8.0]
Aniline	370 J [720 J]	220	57 J [64]	<5.0 [<5.0]	<1.9 [<1.9]	<5.3 [<5.0]	<5.1 [<5.1]
N,N-Dimethylaniline	1.0 J [<5.0]	1.6	1.5 [1.6]	2.6 [<1.0]	2.4 [2.6]	2.3 [2.7]	1.7 [1.4]
Methanol	<500 [<500]	NA	NA	NA	NA	NA	NA

MW-29							
Date	4/27/2010	10/12/2010	4/6/2011	10/25/2011	4/11/2012	10/3/2012	4/5/2013
Acetone	<10	<10	<10	<10	<2.7	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<0.080	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	<0.18	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	0.22 J	<0.15	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<0.090	<1.0	<1.0
Xylenes (total)	<3.0	<3.0	<3.0	<3.0 J	<0.36	<3.0	<3.0
Aniline	<5.0	<5.2	<5.3 J	<5.0	<1.8	<5.1	<5.1
N,N-Dimethylaniline	<1.0	<1.0	<1.1 J	0.22 J	<0.21	<1.0	<1.0
Methanol	<500	NA	NA	NA	NA	NA	NA

LEGEND:

- UTILITY POLE
- CATCH BASIN
- PMO PETROLEUM PIPE LINE MARKER
- GMO GAS LINE MARKER
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY
- LINE EDGE OF WATER
- EDGE OF TREELINE
- TREE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- OR DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- MW-8S REMOVED/DECOMMISSIONED GROUNDWATER MONITORING WELL/PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER WITHDRAWAL TRENCH
- GROUNDWATER INFILTRATION TRENCH AND IDENTIFICATION
- PIPING TO BUILDING
- PIPING FROM BUILDING
- AREA OF HISTORICALLY RELATIVELY HIGHER CONCENTRATION OF COCs

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS CONSTITUENT OF CONCERN (COC) CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE COC PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY COCs WITH CURRENT OR PAST DETECTIONS ARE PRESENTED ON THIS FIGURE.
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. NA = COMPOUND WAS NOT ANALYZED FOR IN THE SAMPLE.
8. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
9. B = COMPOUND WAS FOUND IN ASSOCIATED METHOD BLANK.
10. THE 6/22/10 SAMPLING EVENT WAS AN INTERIM SAMPLING EVENT ANALYZING FOR VOLATILE ORGANIC COMPOUNDS ONLY.
11. SAMPLE DATA ARE COMPARED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) GROUNDWATER QUALITY STANDARDS (GQS) (TECHNICAL AND OPERATIONAL GUIDANCE SERIES 1.1.1).
12. NS = GQS NOT AVAILABLE.
13. RESULTS FOR DUPLICATE SAMPLES ARE SHOWN IN BRACKETS NEXT TO PARENT SAMPLE RESULTS.

SAMPLE IDENTIFICATION

PZ-##							
Date	Jun-06	Jun-07	Mar-08	Mar-09	Apr-10	Jun-10	Apr-11
Acetone	<5.0	<5.0	<5.0	<10	<10	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0	5.3 J	<1.0	<1.0
Toluene	0.50 J	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<3.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0
Aniline	<1.0	<5.5	<5.0	<5.0	<5.0	NA	<5.3
N,N-Dimethylaniline	<1.0	<1.1	<0.50	<0.50	<1.0	NA	<1.1
Methanol	<1000	<500	NA	NA	<500	NA	NA

NYSDEC GQS (ppb)	
Acetone	50
Benzene	1
Ethylbenzene	5
Methylene Chloride	5
Toluene	5
Trichloroethene	5
Xylenes (total)	5
Aniline	5
N,N-dimethylaniline	1
Methanol	NS

CONCENTRATION (ppb)

DETECTIONS EXCEEDING NYSDEC GQS ARE INDICATED BY SHADING.

0 100' 200'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK

PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR APRIL 2010 - APRIL 2013 AREA 3 (AEROBIC TREATMENT)

ARCADIS

FIGURE 6

ARCADIS

Attachment A

Table 1. Summary of Historical Groundwater Level Measurements, June 1998 through June 2006

Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008

Figures 1 – 7. Groundwater Monitoring Data Summaries

Table 1. Summary of Historical Groundwater Level Measurements, June 1998 through June 2006
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Location	Reference Elevation (feet AMSL)	6/10/98 Static	6/22/98	7/6/98	7/20/98 Week 1	7/27/98 Week 2	8/5/98 Week 3	8/10/98 (morning) Week 4	8/10/98 (afternoon) Week 4	8/11/98 (morning) Week 4	8/11/98 (afternoon) Week 4	8/12/98 (morning) Week 4	8/12/98 (afternoon) Week 4	10/16/98 Week 13	11/17/98 Week 18
Canal	393.39*	362.91	363.37	363.72	363.08	363.08	362.94		362.78	362.94			362.84	363.27	
Collection Sump	372.81	364.33	363.08	363.68	362.50	361.31	361.83	361.89	362.14	361.00	361.71	361.95	362.31	362.01	361.48
MW-3S	376.54	365.93	366.26	367.82	366.20			365.29							365.25
MW-3D	375.56	365.63	365.87	366.16			364.97	364.85						365.08	365.00
MW-6D	377.07	365.75	366.01	366.29										365.25	365.15
MW-8D	374.68	365.51	365.74	366.05			364.80		364.67	364.79	364.88	364.87	364.87	364.93	364.83
MW-9D	376.76**	365.78					365.14	365.10						365.25	365.16
MW-11D	373.68	365.46	365.67	365.29			364.62	364.49	364.50	364.62		364.69	364.67	364.77	364.68
MW-11S	373.50	364.88	364.62	365.11	364.12	363.70	363.58	363.52	363.58	363.73		363.69	363.74	363.74	363.69
MW-18	372.57	362.64													361.90
MW-19	376.00	362.42													361.78
MW-23I	372.77	365.04	365.34	365.72			364.34		364.45	364.16			364.43	364.43	364.34
MW-23S	372.61	363.99	363.43	364.04	362.92	362.50	362.41		362.40	362.66		362.54	362.67	362.68	362.56
MW-24DR	375.14	365.41													364.63
MW-24SR	375.55	365.15	365.32	365.66	364.91	364.45	364.27		364.20				364.36	364.47	364.37
MW-25D	373.67	365.43													364.74
MW-25S	373.39	363.91	363.64	364.14	363.21	362.95	362.75		362.75			362.89	362.96	363.01	362.89
PZ-4D	376.11	365.46	365.73	366.01	365.21	364.83	364.63		364.54	364.67	364.75	364.74	364.70	364.80	364.69
PZ-5D	375.58	365.66	365.91	366.18	365.36	365.07	364.84		364.76	364.88	364.94	364.93	364.91	364.99	364.89
PZ-8D	375.83	365.90	366.11	366.35			365.25	365.13	365.83					365.35	365.27
PZ-9D	377.29	365.73					365.47	365.28						365.12	365.03
PZ-A	373.94	364.49	363.69	364.28	363.13	362.58	362.56	362.62	362.76	363.39	362.82	362.64	363.02	362.75	362.56
PZ-B	373.92	364.49	363.60	364.21	363.02	362.62	362.50	363.26	362.71	363.00	362.97	362.59	363.01	362.67	362.54
PZ-C	374.85	365.69	366.29	367.02	365.93	365.97	365.47	365.38	365.30	365.54	365.99	365.53	365.54	365.56	365.52
PZ-D	375.12	365.78	366.25	366.99	365.99	365.91	365.53	365.37	365.30	365.53	366.06	365.58	365.67	365.59	365.55
PZ-E	374.12	364.75	364.25	364.86	363.73	364.00	363.41	363.61	363.54	364.22	364.67	364.67	364.08	363.57	363.67
PZ-F	377.06	366.17					365.56	365.50						365.37	365.27
PZ-G	377.16	366.21					365.66	365.60						365.46	365.36
PZ-HR	376.99	366.16					365.54							365.44	365.34
PZ-I	375.15	366.56					365.86	365.64						365.88	365.57
PZ-J	374.89	366.15					365.53	365.40						365.53	365.39
PZ-K	373.19	364.53	363.78	364.35	363.27	362.69	362.69	362.71	362.75	362.92	362.80	362.78	362.98	362.82	362.66
PZ-L	374.62	364.25	363.59	364.18	363.04	362.42	362.48	362.44		362.88	362.63	362.57	362.84	362.65	362.40
PZ-M	374.35	364.70	364.09	364.64	363.52	362.96	362.96	362.96	363.09	363.29	363.15	363.05	363.30	363.12	362.93
PZ-N	376.94***	365.79	366.37	367.06	365.99	365.91	365.53	365.39	365.33	365.55	365.97	365.58	365.59	365.59	365.55
PZ-O	375.36	364.29	363.68	364.29	363.21	362.84	362.72	362.87	362.78	363.05	362.97	362.80	363.03	362.81	362.74
PZ-P	376.89	366.25					365.65	365.60						365.52	365.39
PZ-Q	377.61	366.23					365.64	365.57						365.45	365.35
PZ-R	377.05	366.23		366.94			365.65	365.57						365.50	365.38
PZ-S	378.13	366.19					365.57	365.52						365.43	365.35
PZ-T	376.25	366.14					365.54	365.43						365.52	365.38
PZ-U	375.35	365.99		366.81			365.50	365.33						365.37	365.30
PZ-V	375.78	366.07					365.48	365.35						365.43	365.29
PZ-W	375.78	366.07					365.46	365.31						365.41	365.28

See notes on page 4.

Table 1. Summary of Historical Groundwater Level Measurements, June 1998 through June 2006
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Location	Reference Elevation (feet AMSL)	12/16/98 Week 22	12/22/98 Week 23	1/6/99 Week 25	1/13/99 Week 26	4/14/99 Week 39	6/3/99 Week 46	7/13/99 Week 52	3/27/00	6/1/00	9/18/00	11/14/00	3/19/01	9/24/01
Canal	393.39*	363.14	362.21	363.11			363.22	362.78	363.73	363.75	362.75^	363.24	363.01	362.96
Collection Sump	372.81	361.75	363.09	361.93	361.73	363.17	362.45	361.87	362.99	361.48	361.69	361.66	361.59	362.04
MW-3S	376.54	365.67	366.81	365.67	365.25		365.26		357.10					
MW-3D	375.56	365.04		365.04	364.91	365.41	364.92	364.57	355.64	365.57	364.81	355.16	365.40	364.54
MW-6D	377.07	365.23	365.36	365.23	365.06	365.62	365.12	364.79	365.85	365.77	364.97	365.34	365.64	364.75
MW-8D	374.68	364.86		364.88	364.74	365.22	364.77	364.35	365.42	365.36	364.62	364.94	365.18	364.34
MW-9D	376.76**	365.22	365.36	365.26	365.08	365.65	365.17	364.83	365.88	365.80	365.01	365.36	365.68	364.76
MW-11D	373.68	364.73		364.73	364.57	365.02	364.60	364.18	365.24	365.18	364.46	364.81	364.96	364.18
MW-11S	373.50	363.69	364.27	363.79	363.61	364.50	363.88	363.39	364.72	364.35	363.55	363.86	364.48	363.33
MW-18	372.57	361.93	362.05	362.05	361.84	362.18	361.79	361.38	362.43	361.77	361.71	362.08	362.17	361.50
MW-19	376.00	361.84	361.98	361.87	361.89	362.15	361.80	361.46	362.58	361.88	361.90	362.25	362.44	361.82
MW-23I	372.77	364.36		364.47	364.26	364.69	364.28	363.83	364.99	364.93	364.25	364.58	364.73	363.99
MW-23S	372.61	362.52	363.35	362.66	362.46	363.64	362.94	362.42	363.85	363.17	362.64	362.87	363.59	362.36
MW-24DR	375.14	364.67	364.81	364.69	364.54	364.96	364.49	364.09	365.19	364.60	364.39	364.77	364.91	364.16
MW-24SR	375.55	364.44	364.66	364.50	364.33	364.87	364.41	363.95	365.12	365.55	364.30	364.60	364.86	364.05
MW-25D	373.67	364.76		364.77	364.64	365.07	364.64	364.20	365.28	365.20	364.51	364.84	364.97	364.22
MW-25S	373.39	362.87	363.48	362.96	362.79	363.89	363.20	364.75	364.12	363.69	362.94	363.23	364.14	362.61
PZ-4D	376.11	364.73	364.87	364.72	364.55	365.02	364.60	364.22	365.28	365.21	364.49	364.82	365.03	364.22
PZ-5D	375.58	364.93	365.09	364.94	364.78	365.28	364.86	364.47	365.57	365.48	364.71	365.10	365.36	364.46
PZ-8D	375.83	365.33	365.48	365.33	365.19	365.78	365.08	365.00						
PZ-9D	377.29	365.08	365.24		364.94	365.50	365.04	364.68	365.70	365.72	364.87	365.16	365.55	364.60
PZ-A	373.94	362.60	364.04	362.72	362.56	363.81	363.12	362.61	363.95	363.15	362.75	362.91	363.56	362.58
PZ-B	373.92	362.51	364.27	362.62	363.45	363.91	363.19	362.67	364.08	363.32	362.79	362.94	363.94	362.55
PZ-C	374.85	365.52	365.97	365.18	365.02	365.79	365.10	364.75	366.04	366.04	365.03	365.35	366.39	364.54
PZ-D	375.12	365.53	366.06	365.25	365.12	365.79	365.18	364.89	366.09	366.10	365.10	365.46	366.36	364.65
PZ-E	374.12	363.53	366.41	363.57	363.52	364.93	364.20	363.81	365.16	365.03	363.92	364.40	365.90	363.49
PZ-F	377.06	365.52	365.73	365.62	365.27	366.36	365.53	365.11	366.89	366.72	365.27	365.70	367.06	364.93
PZ-G	377.16	365.60	365.76	365.71	365.44	366.44	365.61	365.17	366.89	366.80	365.36	365.75	367.11	364.93
PZ-HR	376.99	365.54	365.84	365.60	365.39	366.34	365.55	365.11	366.80	366.68	365.33	365.66	367.02	364.91
PZ-I	375.15	365.90	366.59	366.05	365.76	366.93	365.79	365.23	367.30	367.23	365.55	366.08	367.81	364.91
PZ-J	374.89	365.55	365.93	365.59	365.47	366.21	365.53	365.14	366.55	366.50	365.32	365.64	366.69	364.96
PZ-K	373.19	362.66	363.70	362.78	362.58	363.87	363.13	362.59	363.97	363.19	362.69	362.86	363.53	362.49
PZ-L	374.62	362.51	363.59	362.65	362.45	363.69	363.00	362.47	363.84	363.03	362.61	362.68	363.42	362.47
PZ-M	374.35	363.01	364.07	363.13	362.94	364.06	363.40	362.90	364.22	363.54	363.05	363.24	363.86	362.90
PZ-N	376.94***	365.56	366.09	365.31	365.12	365.87	365.19	364.87	366.17	366.12	NM	365.35	366.43	364.47
PZ-O	375.36	362.75	363.74	362.87	362.68	364.01	363.25	362.73	364.22	363.57	362.86	363.06	364.22	362.64
PZ-P	376.89	365.61	365.78	365.73	365.44	366.43	365.59	365.18	366.85	366.73	365.34	365.77	367.02	364.93
PZ-Q	377.61	365.59	365.70	365.71	365.42	366.44	365.60	365.16	366.93	366.78	365.26	365.76	367.21	364.89
PZ-R	377.05	365.61	365.81	365.67	365.47	366.46	365.61	365.20	366.89	366.81	365.37	365.72	367.21	364.93
PZ-S	378.13	365.57	365.94	365.65	365.40	366.39	365.56	365.15	366.84	366.73	365.32	365.71	367.12	364.90
PZ-T	376.25	365.58	365.96	365.64	365.47	366.34	365.53	365.10	366.71	366.65	365.29	375.70	366.90	364.90
PZ-U	375.35	365.49	365.91	365.55	365.40	366.17	365.46	365.08	366.55	366.49	365.22	365.60	366.75	364.85
PZ-V	375.78	365.47	365.90	365.52	365.37	366.20	365.44	365.06	366.54	366.50	365.25	365.58	366.76	364.83
PZ-W	375.78	365.44	365.78	365.53	365.33	366.15	365.41	365.02	366.49	366.41	365.20	365.59	366.63	364.85

See notes on page 4.

Table 1. Summary of Historical Groundwater Level Measurements, June 1998 through June 2006
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Location	Reference Elevation (feet AMSL)	4/15/02	6/3/02	6/18/02	10/7/02	1/20/03	5/5/03	10/27/03	6/14/04	11/1/04	6/6/05	10/31/05	6/5/06
Canal	393.39*	364.59	363.64	364.17	362.19	^^	363.34	363.34	363.39	363.39	364.39^^^	363.84	363.69
Collection Sump	372.81	362.27	361.50	361.42	362.05	361.90	361.91	361.86	362.11	362.00	361.49	362.96	361.70
MW-3S	376.54	367.70	366.26	367.50	364.26	366.27	366.38	366.98	366.65	365.54	365.82	368.11	368.19
MW-3D	375.56	364.16	364.55	365.10	363.92	365.10	365.53	365.05	365.59	365.27	365.36	366.25	366.07
MW-6D	377.07	364.22	364.62	365.21	364.07	365.31	365.75	365.24	365.80	365.46	365.59	366.45	366.29
MW-8D	374.68	364.13	364.51	365.01	363.82	^^	365.30	364.83	365.39				
MW-9D	376.76**	364.05	364.47	365.10	364.00	365.31	365.79	365.26	365.85	365.51	365.64	366.47	366.34
MW-11D	373.68	364.07	364.44	364.92	363.73	364.81	365.17	364.75	365.26	364.93	364.00	365.94	365.78
MW-11S	373.50	363.57	363.89	364.33	363.09	364.15	364.38	363.89	364.34	363.98	364.12	365.06	365.04
MW-18	372.57	361.65	362.09	362.50	361.37	362.26	362.69	362.26	362.62	362.29	362.37	363.17	363.07
MW-19	376.00	361.83	362.11	362.57	361.51	362.52	361.91	362.46	362.89	362.59	362.69	363.50	363.38
MW-23I	372.77	363.99	364.34	364.80	363.62	364.60	365.01	364.56	364.99	364.67	364.77	365.66	365.47
MW-23S	372.61	363.97	363.38	363.68	362.50	362.26	363.31	362.81	363.04	362.77	362.80	364.05	363.80
MW-24DR	375.14	364.06	364.43	364.90	363.71	364.75	365.13	364.69	365.19	364.86	364.94	365.90	365.74
MW-24SR	375.55	364.00	364.40	364.86	363.64	364.69	365.03	364.62	365.12	364.78	364.88	365.81	365.66
MW-25D	373.67	364.19	364.57	365.02	363.82	364.82	365.24	364.74	365.26	364.93	365.00	364.49	365.77
MW-25S	373.39	364.39	363.83	364.21	362.74	363.61	363.67	363.19	363.49	363.08	363.14	365.63	364.13
PZ-4D	376.11	364.06	364.43	364.94	363.73	364.81	365.23	364.78	365.28	364.96	365.07	365.96	365.85
PZ-5D	375.58	364.12	364.47	365.03	363.81	365.05	365.49	365.02	365.53	365.20	365.29	365.19	365.98
PZ-8D	375.83												
PZ-9D	377.29	363.75	364.14	364.79	363.71	365.08	365.64	365.09	365.68	365.35	365.48	366.33	366.19
PZ-A	373.94	363.92	363.05	363.22	362.59	^^	363.40	363.57	363.18	362.89	362.96	364.20	364.14
PZ-B	373.92	364.44	363.24	363.40	362.65	363.39	363.47	363.89	363.21	362.92	362.92	364.32	364.32
PZ-C	374.85	365.68	365.38	366.26	364.19	365.65	365.76	365.44	366.07	365.50	365.65	366.65	366.45
PZ-D	375.12	365.58	365.41	366.21	364.21	365.65	365.84	365.53	366.11	365.62	365.75	366.75	366.57
PZ-E	374.12	366.51	364.63	364.77	363.47	364.94	365.00	366.92	364.58	364.07	364.47	365.25	366.51
PZ-F	377.06	365.50	365.51	366.29	364.29	366.25	366.41	365.46	366.65	365.75	366.13	367.59	367.16
PZ-G	377.16	365.39	365.53	366.22	364.36	366.35	366.46	365.43	366.68	365.81	366.14	367.76	366.97
PZ-HR	376.99	365.39	365.46	366.19	364.24	366.22	366.41	365.50	366.62	365.81	366.12	367.56	367.14
PZ-I	375.15	366.29	366.16	367.05	364.22	366.58	366.90	365.97	367.01	365.26	366.41	368.02	367.82
PZ-J	374.89	365.10	365.18	365.89	364.21	365.96	366.73	365.61	366.45	365.86	366.07	367.29	367.04
PZ-K	373.19	363.82	363.19	363.48	362.56	363.25	363.36	363.12	363.13	362.84	362.97	364.21	364.01
PZ-L	374.62	363.44	362.96	363.26	362.53	363.42	363.25	363.06	363.04	362.79	362.91	364.02	363.89
PZ-M	374.35	363.93	363.37	363.62	362.82	363.60	363.77	363.66	363.61	363.31	363.45	364.53	364.40
PZ-N	376.94***	366.60	365.29	366.13	364.09	365.54	365.74	364.48	365.95	365.47	365.53	366.56	366.41
PZ-O	375.36	364.47	363.63	363.98	362.75	363.61	363.53	363.36	363.43	363.04	363.13	364.36	364.26
PZ-P	376.89	365.31	365.48	366.19	364.25	366.25	366.45	365.53	366.65	365.87	366.20	367.63	367.19
PZ-Q	377.61	366.11	365.70	366.41	364.41	366.40	366.55	365.38	366.77	365.85	366.21	367.80	367.16
PZ-R	377.05	365.40	365.58	366.31	364.31	366.34	366.46	365.31	366.72	365.85	366.17	367.73	367.15
PZ-S	378.13	365.27	365.53	366.29	364.31	366.29	366.42	365.42	367.18	367.10	366.31	367.83	367.20
PZ-T	376.25	365.34	365.37	366.10	364.20	366.16	366.38	365.74	366.54	365.85	366.13	367.48	367.15
PZ-U	375.35	365.18	365.23	365.96	364.18	366.00	365.83	365.66	366.43	365.82	366.05	367.33	367.07
PZ-V	375.78	365.30	365.24	365.97	364.15	365.98	366.71	365.84	366.44	365.76	365.99	367.33	367.06
PZ-W	375.78	365.05	365.12	365.86	364.09	365.88	366.18	365.49	366.36	365.72	365.98	367.21	366.94

See notes on page 4.

Table 1. Summary of Historical Groundwater Level Measurements, June 1998 through June 2006
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Notes:

1. Weeks 1, 2, 3, 4, 13, 18, 22, 23, 25, 26, 39, 46 and 52 are weeks after the initial introduction of Revised Anaerobic Mineral Media (RAMM) into the three impacted areas.
2. 8/10, 8/11, and 8/12/98 water level measurements were taken during the initial discrete RAMM injection event.
3. AMSL = above mean sea level (NGVD of 1929)
4. The groundwater level in PZ-8D was not measured on 3/27/00 and 6/1/00 because this piezometer was damaged and subsequently decommissioned on August 30, 2000.
5. ^ = The canal water-level measurement for the third quarter of the first year of the long-term process control monitoring program was obtained on September 29, 2000.
6. * = The reference elevation for canal gauging point was 363.06 feet AMSL prior to 11/16/00. The canal gauging point was re-marked and re-surveyed 11/16/00. The new reference elevation is 393.39 feet AMSL.
7. NM = The groundwater level in PZ-N was not measured on 9/18/00 because this piezometer was damaged. This piezometer was repaired and subsequently resurveyed on 11/16/00. The new reference elevation for PZ-N is 376.94 feet AMSL.
8. 376.76** = The reference elevation for MW-9D as of 9/19/01.
9. *** = The reference elevation for PZ-N was 376.02 feet AMSL prior to 11/16/00 and, as noted above, the new reference elevation is 376.94 feet AMSL.
10. ^^ = Due to frigid weather conditions, the groundwater level in PZ-A and MW-8D could not be measured on 1/20/03, because the locks were frozen. The canal water level for the 1/03 resampling event could not be measured due to strong winds and ice on the water surface.
11. Monitoring location MW-8D was decommissioned on August 3, 2004.
12. The canal water level measurement for the 2005 second quarter long-term process control monitoring program was obtained on November 1, 2005.
13. ^^^ = The water level measurement of the canal collected during the first 2005 monitoring was not measured from the correct measuring point. The spring 2005 measurement was taken approximately 3 feet higher than the surveyed measuring point. This value reflects the corrected canal water level for the spring 2005 monitoring event.

Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-1[K]	3/88	370.3	355.3	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	1/89			<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
	11/89			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/90			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/92			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	7/99			**0.7 JN**	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	9/00			**8 J**	<10 J	**3 J**	<10 J	**5.0 J**	<1,000	<10 J	<10 J	<10	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	**10**
	9/01			<10	<10	<10	<10	<10	<1,000 J	<10	<10	<10	<10
	4/02			<12	<5.0	<5.0	<5.0	<10	**990 J**	<5	<5	<5	<5
	10/02			<25	<10	<10	<10	<20	<1,000	<10	<5	R	<10
	5/03			<12	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**2 J**	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	**0.2 J**	<1.0	<3.0
	11/05			<1.3 J	<0.3	<0.4	<0.5	<0.5	<1,000	<0.4	<1.0	<1.0 J	<0.5
	6/06			<5.0 J	<1.0 J	<5.0 J	<4.0 J	<5.0 J	<1,000 J	<1.0 J	<1.0 J	<1.0 J	<3.0 J
	11/06			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0	<3.0
	6/07			<5	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500 J	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			**7.4**	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.6	<0.6	<3.0
MW-2S	3/88	368.1	353.1	<1,000	**1,900**	**110**	**610**	**2,800**	<1,000	<10	<10	<10	<10
	1/89			<1,000	**2,000**	**65**	**330**	**1,200**	<1,000	<10	<11	<11	<10
	11/89			<1,000	**1,800**	<100	**360**	**810**	**38,000**	<100	<100	<100	<100
MW-3S	3/88	365.1	350.1	<100	<1	<1	<1	<1	<1,000	**50**	<10	<10	**110**
	1/89			<10,000	<100	**120**	<100	<100	<1,000	**1,100**	<11	**5,570**	**4,700**
	11/89			<10,000	<100	<100	<100	<100	<1,000	**100**	<52	**440**	**2,700**
	11/91			**2,900**	**10**	**10**	**4.0**	**31**	<1,000	<10	**790**	**170**	<10
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5.0	**15**	**2.0 J**	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	7/99			<10	**1 J**	**0.7 J**	<10	<10	<1,000	<10	**9 J**	<10	<10
	3/00			<10 J	<10	<10	<10	<10	<1,000 J	<10	<10	<10	<10
	9/00			<10 J	**1 J**	**2 J**	<10 J	<10 J	<1,000	<10 J	**2 J**	**1 J**	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	**3 J**	**8 J**	**1 J**	**2 J**	<1,000 J	<10	**690 D (69)[B]**	**4 J**	<10
	4/02			<12	<5	<5	<5	<10	**370 J**	<5.0	**1.7 J**	<5	<5

See notes on page 18.

Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-3S	10/02			<25	<10	<10	<10	<20	<1,000	<10	<5	R	<10
(cont'd)	5/03			<12	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**4 J**	<5	<5
	6/04			**6.0 J**	<10	<10	<10	<20	<1,000	<10	**0.8 J**	<6	<10
	11/04			<25	<10	<10	<10	<20	**150 J**	<10	**4 J**	<5.0	<10
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	**15**	<1.0	<3.0
	11/05			<1.3 J	<0.3	<0.4	<0.5	<0.4	<1,000	<0.4	<1.0	<1.0 J	<0.5
	6/06			<5.0	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/06			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500 J	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.6	<0.6	<3.0
MW-3D	8/95	343.8	339	<1,000	<25 D	<25 D	<25 D	<25 D	<1,000	<25 D	**1 J**	**5 J**	**200 D**
MW-4S	3/88	365.5	350.5	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	1/89			<100	<1	<1	<1	<1	<1,000	<1	<11	**19**	**280**
	11/89			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-5[C]	3/88	363.3	348.3	<100	<1	<1	<1	<1	<1,000	<1	**230**	**130**	<1
	1/89			<100	<1	<1	<1	<1	<1,000	<1	**34**	<11	<1
	11/89			<100	<1	<1	<1	<1	<1,000	<1	**17**	<10	<1
MW-6[D]	1/89	365.5	355.9	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
(Replaced by MW-6S)	11/89			<10	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
MW-7[D]	1/89	367	357.4	<100	<1	<1	<1	**2**	<1,000	<1	<11	<11	**100**
	11/89			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-8[D]	1/89	364.7	355.1	<1,000,000	<10,000	<10,000	<10,000	<10,000	**430,000**	<10,000	**2,900**	**24,000**	**3,200,000**
(Replaced by MW-8S)[E]	11/89			**470,000**	<10,000	<10,000	<10,000	<10,000	**300,000**	<10,000	**8,500**	**52,000**	**2,800,000**
	11/91			<1,000,000	<10,000	<10,000	<10,000	<30,000	**150,000**	<10,000	**8,000**	**33,000**	**1,600,000**
	8/95			<1,000	<250,000D	<250,000D	<250,000D	<250,000D	**22,000**	**60,000 JD**	<25,000D	**380,000 D**	**7,700,000 D**
	9/98			<10,000 J	<10,000	<10,000	<10,000	<10,000	**7,900**	**3,300 J**	**1,200 J**	**26,000 D**	**140,000**
	2/99			<20,000	<20,000	<20,000	<20,000	<20,000	**16,000JN**	**11,000 J**	**30,000 D**	**120,000 D**	**650,000 DB**
	7/99			**10 J**	**22 J**	**240 J**	**58 J**	**220 J**	**17,000**	**11,000 J**	**24,000**	**77,000**	**450,000 D**
	3/00			<100,000	<100,000	<100,000	<100,000	<100,000	**30,000 J**	<100,000	**62,000**	**270,000 D**	**1,300,000**
	9/00			<50,000 J	<50,000 J	<50,000 J	<50,000 J	<50,000 J	**14,000 J**	**9,200 J**	**42,000 J**	**59,000**	**540,000 BJ**
	3/01			<50,000	<50,000	<50,000	<50,000	<50,000	**53,000**	**11,000 J**	**90,000 D**	**120,000 D**	**990,000**
	9/01			<400	<400	**430**	**170 J**	**680**	**8,900 J**	**18,000 JD**	**21,000**	**29,000**	**440,000 BD**
	4/02			**2,100**	**50 J**	**410**	**100 J**	**400**	<1,000	**9,600 J**	**793,000 D**	**773,000 D**	**660,000 D**
	10/02			**120 J**	**23**	**310**	**73**	**267**	<1,000	**3,100**	**80,000**	**21,000 J**	**320,000**
	5/03			<12	**20 J**	**600 D**	**81**	**300**	<1,000	**6,700 D**	**79,000 D**	**29 J**	**910,000 D**
	10/03			**21**	**25**	**330 D**	**93**	**360**	**1,200 J**	**3,100 D**	**67,000 D**	**24,000 D**	**400,000 D**
	6/04			<25	**40**	**330 EJ**	**110**	**400**	<1,000	**5,900 D**	**56,000**	**51,000**	**1,200,000 D**

See notes on page 18.

Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-8SR[B]	11/04	362.7	352.7	<1,200	<500	100 DJ	<500	164 DJ	<1,000	<500	35,000 D	5,300 D	10,000 D
(cont'd)	6/05			81 J	13	100	53	180	<1,000	<1.0	30,000	<200	<3.0
	11/05			15 J	13	130	66	260	<1,000	<1.0	32,000	<260 J	<3.0
	6/06			48	15	120	79	260	<1,000	<1.0	23,000	<200	<3.0
	9/06			NA	NA	NA	NA	NA	NA	NA	52,000 [51,000]	<520 [<520]	NA
	11/06			28	16	100	84	270	<500	<1.0	28,000	<200	<3.0
	6/07			58	14	110	83	250	<500	<2.0	2,700	<22	<6.0
	8/07			NA	NA	NA	NA	NA	NA	NA	17,000	<100	NA
	11/07			<5.0 J	12	22	73	210	<500	<1.0	22,000 J	<100 J	<3.0
	3/08			<10 [9.6 J]	5.5 [5.7]	22 [22]	70 [68]	160 [160]	<500 [<500]	<2.0 [<2.0]	5,800 [5,200]	<25 [<50]	<6.0 [<6.0]
	8/08			8.2 J [<10]	11 [11]	24 [22]	70 [70]	190 [190]	<500 [<500]	<2.0 [<2.0]	32,000 [25,000]	<250 [<250]	<6.0 [<6.0]
MW-9[D]	1/89	365.6	356	1,600	NA	64	130	270	<1,000	<10	660	1,200	1,500
(Replaced by MW-9S)	11/89			<1,000	48	25	60	60	<1,000	<10	670	150	<10
	11/91			<100	<10	9	19	30	<1,000	<1.0	95	18	<1
	8/95			<1,000	11 JD	26 JD	69 D	226 JD	<1,000	<50	50	28	110 D
	7/99			<10	4 J	2 J	9 J	18	<1,000	<10	<10	5.0 J	<10
	3/00			<10	2 J	2 J	11	21	<1,000 J	<10	2.0 J	9.0 J	<10
	9/00			<10 J	11 J	2 J	6.0 J	18 J	<1,000	<10 J	1.0 J	6.0 J	<10 J
	3/01			<10	1 J	3 J	17	61	<1,000	<10	2.0 J	11	<10
	9/01			<10	10	3 J	7.0 J	35	<1,000 J	<10	<10	10	<10
	4/02			<23	10	2 J	6	17 J	370 J	<5	9	43	<5
	10/02			16 J	38	40	2 J	15 J	<1,000	<10	<5.0	2.0 J	<10
	5/03			<12	11	<5	7	18	<1,000	<5.0	0.9 J	3.0 J	<5
	10/03			<12	2 J	<5	5	19	<1,000	<5.0	1.0 J	<5.0	<5
	6/04			14 J	6 J	2.0 J	8 J	19 J	<1,000	<10	<5.0	<5.0	<10
	11/04			<25	4 J	2 J	9 J	30 J	<1,000	<10	<5.0	<5.0	<10
	6/05			44 J	1.9	3.2 J	24	64	<1,000	<1.0	2.6	1.9	<3.0
	11/05			<1.3 J	3.5	3.8	11	33	<1,000	<0.4	1.4	6.1 J	<0.5
	6/06			<5.0 J	1.1 J	2.3 J	25 J	60 J	<1,000 J	<1.0 J	<1.1 J	3.8 J	<3.0 J
	11/06			<5.0	1.4	3.5 J	23	63	<500	<1.0	0.5 J	3.3 J	<3.0
	6/07			<5.0	1.4	3.3 J	42	110	<500	<1.0	<5.0	4.1	<3.0
	11/07			<5.0	0.9 J	2.0 J	11	58	<500 J	<1.0	1.7 J	8.6	<3.0
	3/08			<5.0 J	1.1	3.0 J	37	73	<500	1.2	0.7 J	6.8	<3.0
	8/08			24	3.7	3.3 J	21	72	<500	<1.0	<5.5	5.1	<3.0
MW-10[D]	1/89	355.5	345.9	<1,000,000	<10,000	<10,000	<10,000	<10,000	210,000	<10,000	720	9,400	520,000
(Replaced by MW-9D)	11/89			<100,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	900	2,400	28,000
	11/91			<100	<1	3.0	2.0	<3.0	<1,000	<1	230	<10	41
	8/95			<1,000	<25 UD	<25 UD	<25 UD	<25 UD	<1,000	<25 UD	<5.0	<10	350 D
MW-11[D]	1/89	355.1	345.5	<100	<1	<1	<1	<1	8,400	<1	<12	<12	1
(Replaced MW-6D)	11/89			<100	<1	<1	<1	<1	<1,000	<1	230	<52	<1
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-11S	12/94	359.9	354.9	<380	<10	<10	<10	<10	**880**	<10	<5	<10	<10
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<26
	10/95			NA	<5	<5	<5	<5	NA	<5	NA	NA	<5
MW-11D	12/94	349.8	344.8	<310	<5	<5	<5	<5	**2,100**	<5	<5	<10	<5
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
	10/95			NA	<5	<5	<5	<5	NA	<5	NA	NA	<5
MW-12D[D]	1/89	354.8	345.2	<100,000	<1,000	<1,000	<1,000	<1,000	**12,000**	<1,000	**67**	**410**	**120,000**
(Replaced MW-8D)[E]	11/89			**69,000**	<1,000	<1,000	<1,000	<1,000	**39,000**	<1,000	<1,000	**4,900**	**360,000**
	11/91			<1,000,000	<10,000	<10,000	<10,000	<30,000	<10,000	<10,000	**750**	**5,800**	**220,000**
	8/95			<1,000	**450 JD**	**430 JD**	**430 JD**	**1,250 JD**	<1,000	<1,300 D	**30 D**	**230 D**	<13,000 D
	8/96			**13**	<10	<10	<10	<10	<1,000	**2.0 J**	<5	<10	**40**
MW-13S	11/89	368.7	359.1	<100	**3**	<1	<1	<1	<1,000	<1.0	<52	<52	<1.0
	11/90			<100	<1	<1	<1	<3	<1,000	<1.0	<10	<10	<1.0
	11/91			<100	<1	<1	<1	<3	<1,000	<1.0	<10	<10	<1.0
	11/92			<100	<1	<1	<1	<3	<1,000	<1.0	<10	<10	<1.0
MW-14D[C]	1/89	359	349.4	<100	<1	<1	<1	<1	<1,000	<1.0	<11	<11	<1.0
	11/89			<100	<1	<1	<1	<1	<1,000	<1.0	<10	<10	<1.0
MW-15S	1/89	370	360.25	<100	<1	<1	<1	<1	<1,000	<1.0	<11	<11	<1.0
	11/89			<100	<1	<1	<1	<1	<1,000	<1.0	<52	<52	<1.0
MW-16D[C]	1/89	350.8	341.2	<100	<1	<1	<1	<1	<1,000	<1.0	<11	<11	<1.0
	11/89			<100	<1	<1	<1	<1	<1,000	<1.0	<10	<10	<1.0
MW-17[C]	11/90	365.7	356.1	<100	<1	<1	<1	<3	<1,000	<1.0	<10	<10	<1.0
(Replaced by MW-17R)	11/91			<100	<1	<1	<1	<3	<1,000	<1.0	<10	<10	<1.0
	11/92			<100	<1	<1	<1	<3	<1,000	<1.0	<10	<10	<1.0
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<11
	10/95			NA	<5	<5	<5	<5	NA	**2 J**	NA	NA	<5
	8/96			**11**	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/99			<10	**1 J**	<10	<10	<10	<1,000	<10	<10	<10	<10 J
	3/00			<10	**8 J**	<10	<10	<10	<1,000 J	<10	<5.0	<10	<10
	9/00			<10 J	**15 J**	<10 J	<10 J	<10 J	<1,000 J	<10 J	**24 J**	**4 J**	**1 J**
	3/01			<10	**8 J**	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	**5 J**	<10	<10	<10	<1,000	<10	<10	<10	<10
	4/02			<10	**6**	<5	<5	<10	**620 J**	<5	**150** (<5)[F]	**110** (<5)[F]	<5
	10/02			<25 J	**14**	<10	<10	<20	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<12	**8**	<5	<5	<5	<1,000	<5	<5	<5	<5
	11/03			<12	**7**	<5	<5	<10	<1,000	<5	<5	<5	<5

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-17[D]	6/04			<25	**5 J**	<10	<10	<20	<1,000	<10	<5	<5	<10
(cont'd)	11/04			--	--	--	--	--	**200 J**	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0	**0.8 J**	<5.0	<4.0	<5.0	<1,000	<1.0	<1.1	<1.1	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	**0.7 J**	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500 J	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			**2.3 J**	**1.8**	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
MW-18	11/89	325.15	316.15	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/90			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/92			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	12/94			<10	<5	<5	<5	<5	<200	<5	<5	<10	<5
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/96			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	<10	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	7/99			<10 J	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	4/02			<10	<10	<10	<10	<20	**720 J**	<10	**280 D** (<5)[F]	**200 D** (<5)[F]	<10
	10/02			**6 J**	<10	<10	<10	<20	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<12	<5	<5	<5	<5	**280 J**	<5	<5	<5	<5
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**0.7 J**	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	R	R	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.1	<1.1 J	<3.0
	6/06			<5.0	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-18	8/08			**5.5**	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.6	<0.6	<3.0
MW-19[K]	11/89	318.45	309.45	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	12/94			<10	<5	<5	<5	<5	<200	<5	<5	<10	<5
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<12
	10/95			NA	<5	<5	<5	<5	NA	<5	NA	NA	<5
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/96			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	**5 J**	<11
	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	7/99			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000	<10 J	<10	<10	<10 J
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<12	<5	<5	<5	<5	<1,000	<5	<5	<5	<5
	10/03			<11	<5	<5	<5	<10	<1,000	<5	**51 J**	**16 J**	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.1	<1.1	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.5	<1.1	<3.0
	11/07			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.6	<0.6	<3.0
	3/09			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<0.5	<1.0
	9/09			<10 J	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
	4/10			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
MW-20[C]	11/89	329.85	320.85	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/90			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/92			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
MW-21[C]	11/89	323.65	314.65	<100	<5	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-22[L]	11/89	368.55	359.55	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	10/10			<10	<1.0	<1.0	<1.0	<3.0	<500 J	<1.0	<5.0	<1.0	<1.0
MW-23S	12/94	364.1	354.1	<10	<5	<5	<5	<5	<200	<5	<5	<10	<5
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-23S	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/96			<10	<10	<10	<10	<10	<1,000	<10	**7**	<10	<10
	2/97			<10	<10	<10	<10	<10	<1,000	<10	**11**	<10	<10
	8/97			**12**	<10	<10	<10	<10	<1,000	<10	**92**	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	**56**[H]	**7 J**	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	**10**	<10 J
	6/99			<10 J	<10	<10	<10	<10	<1,000 J	<10	<10 J	**2 J**	<10 J
	7/99			<10 J	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	**2 J**	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	**2 J**	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<62	<25	<25	<25	<50	**380 J**	<25	<5	<5	<25
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**60**	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.2	<1.2	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.6	<0.6	<3.0
MW-23I	12/94	341.2	336.2	<10	<5.0	<5	<5.0	<5.0	<200	<5.0	<5.0	<10	<5
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/96			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<11	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	<10	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10 J
	7/99			<10 J	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			**4 J**	<10	<10	<10	**2 J**	<1,000	<10	<10	<10	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	<5	<5	**2 J**
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<12	<5	<5	<5	<5	<1,000	<5	<5	<5	<5

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Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-23I	10/03			<12	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
(cont'd)	6/04			<25	<10	<10	<10	<20	<1,000	<10	**1 J**	<5	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0 J	<1.0	**0.6 J**	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
MW-24S[CL]	12/94	358.4	352.4	<10	<5	<5	<5	<5	<1,000	<5	<5	<10	<5
(Replaced by MW-24SR)	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	<10	<10
	6/99			<10 J	<10	<10	<10	<10	<1,000 J	<10	<10 J	<10 J	<10 J
	7/99			<10 J	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	3/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	6/02[F]			NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**16**	<6	<5
	6/04[J]			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.7	<0.6	<3.0
	9/09			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
MW-24D[CL]	12/94	334.4	341.2	<10	<5	<5	<5	<5	<1,000	<5	<5	<10	<5
(Replaced by MW-24DR)	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<10
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	<10	<10
	7/99			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000	<10 J	<10	<10	<10 J
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	6/02[F]			NA	NA	NA	NA	NA	NA	NA	ND	ND	NA

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-24D[DL]	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
(cont'd)	10/03			<12	<5	<5	<5	<10	<1,000	<5	**0.5 J**	<5	<5
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5 J	<1	<5	<4	<5	<1,000	<1	<1	<1	<3
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.1	<1.1 J	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.7	<0.6	<3.0
	9/09			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
MW-25S[L]	8/95	361.2	356.2	<1,000	<5	<5	<5	<5	<1,000	<5	<5	**0.7 J**	<10
	10/95			NA	<5	<5	<5	<5	NA	<5	<5	<10	<5
	8/96			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	**130**	<10	<10 J
	6/99			<10 J	<10	<10	<10	<10	<1,000 J	<10	**110 J**	**21 J**	<10 J
	7/99			<10 J	<10	<10	<10	<10	<1,000	<10	**5 J**	<10	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	10/02			<25	<10	<10	<10	<20	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<12	<5	<5	<5	<5	<1,000	<5	<5	<5	<5
	11/03			<12	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.1	<1.1	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.2	<0.5	<3.0
	3/09			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<0.5	<1.0
	9/09			<10 J	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
	4/10			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
MW-25D[L]	8/95	349.55	344.55	<1,000	<5	<5	<5	<5	<1,000	<5	<5	**1 J**	<5
	10/95			NA	<5	<5	<5	<5	NA	**3 J**	<5	<10	<5
	8/96			**15**	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<11	<10

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-25D[L]	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10 J
(cont'd)	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	3/01			<10	<10	<10	<10	<10	<1,000	<10	**5 J**	<10	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	5/03			<12	<5	<5	<5	<5	<1,000	<5	<5	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	6/06			<5.0 J	<1.0	**0.7 J**	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	6/07			**12 J**	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	3/09			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<0.5	<1.0
	4/10			<10	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
MW-26	12/96	365	355.3	<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
MW-27	9/98	362.5	354.5	**23**	**3 J**	**4 J**	<10	**3 J**	<1,000	<10	**340 DJ**	<10	<10
	7/99			<10 J	**4 J**	**2 J**	**3 J**	**8 J**	<1,000	<10	**740 D**	<10	<10
	3/00			<10	**6 J**	<10	**8 J**	**2 J**	<1,000 J	<10	**110 D**	**1 J**	<10
	9/00			<10 J	**4 J**	<10 J	**3 J**	**1 J**	<1,000 J	<10 J	**16 J**	**2 J**	**1 J**
	3/01			<10	**5 J**	<10	**5 J**	**2 J**	<1,000	<10	**260 D**	**2 J**	<10
	9/01			<10	**5 J**	<10	**2 J**	<10	<1,000 J	<10	**26**	<10	<10
	4/02			<18	**7**	**11**	**12**	**26**	<1,000	<5	**176,000 DJ**	**19 J**	<5
	10/02			**9 J**	**3 J**	<10	<10	<20	<1,000	**4 J**	**2,700 D**	**100 J**	**60 JN**
	5/03			<12	**8**	**11**	**23**	**51**	<1,000	<5	**15,000 DJ**	**11**	**43**
	10/03			**170**	**5**	<5	<5	**3 J**	<1,000	<5	**3,700 D**	<5	**240 D**
	6/04			**23 J**	**5 J**	**4 J**	**2 J**	**6 J**	<1,000	<10	**3,700 D**	**20 J**	<10
	11/04			<120 (28)	<50 (**4 J**)	<50 (**2 J**)	<50 (<10)	<100 (<20)	<1,000	<50 (<10)	**1,100 DJ**	<5	**310 (490 D)**
	6/05			**31 J**	**6.1**	**15**	**5.8**	**15**	<1,000	<1.0	**5,200**	<23	<3.0
	11/05			**35 J (37 J)**	**11 (12)**	**77 (78)**	**26 (26)**	**86 (88)**	<1,000 (<1,000)	<1.0 (<1.0)	**37,000 (38,000)**	<270 J (<260 J)	<3.0 (<3.0)
	6/06			**5.3 J (5.8 J)**	**9.5 J (8.9 J)**	**50 J (48 J)**	**25 J (25 J)**	**66 J (63 J)**	<1,000 J (<1,000 J)	<1.0 J (<1.0 J)	**14,000 J (12,000 J)**	<100 J (<100 J)	<3.0 J (<3.0 J)
	9/06			NA	NA	NA	NA	NA	NA	NA	**1,700**	<10	NA
	11/06			**31 [24]**	**14 [14]**	**71 [71]**	**42 [45]**	**91 [110]**	<500 [<500]	<1.0 [<1.0]	**33,000 [33,000]**	<210 [<200]	<3.0 [<3.0]
	6/07			**21**	**8.4**	**9.5**	**14**	**24**	<500	<1.0	**1,100**	<10	<3.0
	8/07			NA	NA	NA	NA	NA	NA	NA	**<10 J [4,300 J]**	<1.0 [<20]	NA
	11/07			<5.0 J [<5.0]	**6.6 [5.9]**	**4.7 J [4.1 J]**	**8.6 [7.2]**	**24 [21]**	<500 [<500]	<1.0 [<1.0]	**3,000 J [3,800 J]**	<25 J [<25 J]	<3.0 [<3.0]
	3/08			**21**	**9.4**	**23**	**43**	**68**	<500	<2.0	**13,000**	<100	<6.0
	8/08			**3.8 J**	**5**	**2.2 J**	**1.8 J**	**10**	<500	<1.0	**2,400**	<25	<3.0
MW-28	9/98	363.6	355.6	<5,000 J	<5,000	<5,000	<5,000	<5,000	**2,200**	<5,000	**546 D[H]**	**54**	**64,000 J**
	7/99			<500 J	<500	<500	<500	<500	<1,000	<500	**1,100 D**	**40**	**39,000 D**
	3/00			<10,000	<10,000	<10,000	<10,000	<10,000	<1,000 J	<10,000	**1,300 D**	**30**	**130,000 J**
	9/00			<1,000 J	<1,000 J	<1,000 J	<1,000 J	<1,000 J	<1,000 J	<1,000 J	**540 DJ**	<10	**8,100 BJ**
	3/01			<400	<400	<400	<400	<400	<1,000	<400	**3,200 D**	**7 J**	**5,900 B**
	9/01			<400	<400	<400	<400	<400	<1,000 J	<400	**1,000 D**	<10	**4,700 B**

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL)		Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
		Top	Bottom										
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-28	4/02			<49	**8**	**6**	**9**	**10 J**	<1,000	<5	**33,400 D**	**57**	**4,600 D**
(cont'd)	10/02			**14 J**	**8 J**	**6 J**	**11**	**12 J**	<1,000	<10	**2,700 D**	R	<10
	5/03			**13**	**4 J**	**2 J**	**2 J**	**8 J**	<1,000	<5	**1,000 DJ**	**3 J**	**52**
	10/03			**24**	**11**	**6**	**12**	**13 J**	<1,000	<5	**1,900 D**	<5	<5
	6/04			**20 J**	**4 J**	**2 J**	**5 J**	**4 J**	<1,000	<10	**910 D**	<5	<10
	11/04			<120 (<25)	<50 (**4 J**)	<50 (<10)	<50 (**5 J**)	<100 (**3 J**)	**190 J**	<50 (<10)	**640 DJ**	<5	<50 (<10)
	6/05			**5.2 J**	**4.5**	**1.2 J**	**4.6**	**3.9 J**	<1,000	<1.0	**630**	<5.0	<3.0
	11/05			**6.8 J (7.8 J)**	**6.1 (5.8)**	<5.0 (<5.0)	**4.7 (4.7)**	<5.0 (<5.0)	<1,000 (<1,000)	<1.0 (<1.0)	**380 J (350 J)**	<2.2 (<2.1)	<3.0 (<3.0)
	6/06			<5.0 J (<5.0 J)	**6.0 J (6.3 J)**	**1.2 J (1.3 J)**	**5.3 J (5.4 J)**	**4.2 J (4.3 J)**	<500 J (<1,000 J)	<1.0 J (<1.0 J)	**430 J (530 J)**	<2.1 J (<5.0 J)	<3.0 J (<3.0 J)
	9/06			NA	NA	NA	NA	NA	NA	NA	**280**	<2.2	NA
	11/06			**12**	**8.2**	**1.4 J**	**5.6**	**4.4 J**	<500	<1.0	**1,000**	<5.2	<3.0
	6/07			**13**	**4.6**	**0.4 J**	**0.8 J**	**0.6 J**	<500	<1.0	**60**	<1.0	<3.0
	8/07			NA	NA	NA	NA	NA	NA	NA	**40**	<1.0	NA
	11/07			<5.0 J	**4.5**	**0.5 J**	**1.4 J**	**0.8 J**	<500	<1.0	**29 J**	<0.5 J	<3.0
	3/08			<5.0	**4.0**	**0.5 J**	**1.6 J**	**1.3 J**	<500	<1.0	**81**	**0.9**	<3.0
	8/08			<5.0	**3.8**	<5.0	<4.0	<5.0	<500	<1.0	**0.7 J**	<0.5	<3.0
MW-29	9/98	362.9	345.9	<10	<10	<10	<10	**2 J**	<1,000	<10	<10	**13**	<10
	2/99			**7 J**	<10	<10	<10	**1 J**	<1,000	<10	**5 J**	**4 J**	<10
	7/99			<10	<10	<10	<10	<10	<1,000	<10	**2 J**	**4 J**	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	**450 D**	**6 J**	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	**24 J**	**4 J**	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	**30**	**4 J**	<10
	9/01			<10	<10	<10	<10	<10	<1,000	<10	**7 J**	**2 J**	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	**3 J**	**9**	<6
	10/02			<25 J	<10	<10	<10	<20	<1,000	<10	**8**	R	**4 JN**
	5/03			<12	<5	<5	<5	<10	<1,000	<5	**19**	**1 J**	<3
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**2 J**	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	**3 J**	<5	<10
	11/04			<120	<50	<50	<50	<100	**420 J**	<50	<5	<5	<50
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/06			**5.4**	<1.0	<5.0	<4.0	<5.0	<500	<1.0	**0.4 J**	<1.0	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	**0.5 J**	<500	<1.0	<5.5	<1.1	<3.0
	11/07			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0 J	<0.5 J	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
MW-30	9/98	363.5	355.5	<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	2/99			**7 J**	<10	<10	<10	<10	<1,000	<10	<10	**2 J**	<10
	7/99			<10	**0.7 J**	<10	<10	<10	<1,000	**0.5 J**	<10	**1 J**	<10
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	**18**	**2 J**	**4 J**
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	**9 J**	**2 J**	**2 J**

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Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-30	3/01			<10	<10	<10	<10	<10	<1,000	<10	**8 J**	**2 J**	<10
(cont'd)	9/01			**4 J**	**2 J**	<10	<10	<10	<1,000 J	<10	**8 J**	**1 J**	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	**250**	**210**	<5
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	R	R	<10
	5/03			<62	<25	<25	<25	<50	<1,000	<25	**18**	0.6 J	**8 J**
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**4 J**	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			<120	<50	<50	<50	<100	<1,000	<50	<5	<5	<50
	6/05			<5.0 J	**0.3 J**	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	**0.7 J**	**0.6 J**	<4.0	**0.5 J**	<1,000	<1.0	**240**	<1.0 J	<3.0
	6/06			<5.0	**0.6 J**	**0.4 J**	<4.0	<5.0	<1,000	<1.0	**29**	<1.0	<3.0
	11/06			**11**	**1.0**	<5.0	<4.0	<5.0	<500	<1.0	**200**	<1.0	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	**30**	<1.1	<3.0
	11/07			<5.0 J	**0.8 J**	<5.0	<4.0	<5.0	<500	<1.0	**49**	<0.5	<3.0
	3/08			<5.0	**0.6 J**	<5.0	<4.0	**0.2 J**	<500	<1.0	**3.0 J**	**0.7**	<3.0
	8/08			<5.0	**0.7 J**	<5.0	<4.0	<5.0	<500	<1.0	**31**	<0.5	<3.0
MW-31	9/98	363.7	355.4	<10	**12**	<10	<10	<10	<1,000	<10	**34**	**4 J**	<10
	7/99			<10	**16**	<10	<10	<10	<1,000	<10	**230 D**	**3 J**	<10
	3/00			<10	**16**	<10	<10	<10	<1,000 J	<10	**3 J**	**4 J**	<10
	9/00			<10 J	**12 J**	<10 J	<10 J	<10 J	<1,000	<10 J	**10**	**6 J**	<10 J
	3/01			**21**	**11**	<10	<10	<10	<1,000	<10	<10	**5 J**	<10
	9/01			<10	**14**	<10	<10	<10	<1,000 J	<10	**91 D**	**3 J**	<10
	4/02			<14	**9**	<5	<5	<10	<1,000	<5	**804 D**	**21**	<5
	10/02			<25	**11**	<10	<10	<20	<1,000	<10	**560 D**	**1 J**	<10
	5/03			<12	**9**	<5	<5	<10	<1,000	<5	**0.9 J**	**3 J**	<5
	10/03			**1,200 D**	**13**	<5	<5	<5	<1,000	<5	**88**	<5	<5
	6/04			**15 J**	**12**	<10	<10	<20	<1,000	<10	**3 J**	<5	<10
	11/04			<25	**9 J**	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	**11**	<5.0	<4.0	**1.3 J**	<1,000	<1.0	**3.2**	**2.7**	<3.0
	11/05			<1.3 J	**6.7**	<0.4	<0.5	**0.6**	<1,000	<0.4	**16**	<1.0 J	<0.5
	6/06			<5.0 J	**11 J**	**0.6 J**	<4.0 J	**1.7 J**	<1,000 J	<1.0 J	<1.0 J	**2.4 J**	<3.0 J
	9/06			NA	NA	NA	NA	NA	NA	NA	**1.6**	**3.4**	NA
	11/06			R	**6.9**	<5.0	<4.0	<5.0	<500	<1.0	**0.4 J**	**1.1 J**	<3.0
	6/07			<5.0	**14**	**0.7 J**	<4.0	**1.3 J**	<500	<1.0	<5.0	**2.0**	<3.0
	8/07			NA	NA	NA	NA	NA	NA	NA	**0.5 J**	**2.7**	NA
	11/07			<5.0 [<5.0]	**12 [10]**	<5.0 [0.4 J]	<4.0 [<4.0]	**1.1 J [1.4 J]**	<500 J [<500 J]	<1.0 [<1.0]	<5.0 [0.3 J]	**2.3 [2.8]**	<3.0 [<3.0]
	3/08			<5.0 J	**2.0**	<5.0	<4.0	<5.0	<500	<1.0	**0.2 J**	**1.6**	<3.0
	8/08			**22**	**13**	**0.4 J**	<1.0	**2.2 J**	<500	<1.0	<5.6	**2.4**	<3.0
MW-32	9/98	364	356	<10	**16**	**2 J**	**5 J**	**3 J**	<1,000	<10	**6,300 D**	**4 J**	<10
	7/99			**3 J**	**14**	**2 J**	**4 J**	<10	<1,000	**56**	<10	**3 J**	<10
	3/00			<10	**5 J**	<10	<10	<10	<1,000 J	<10	**800 D**	<10	<10

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Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-32	9/00			<10 J	**12 J**	<10 J	<10 J	<10 J	<1,000	<10 J	**4,500 D**	<10	<10 J
(cont'd)	3/01			<10	**5 J**	<10	<10	<10	<1,000	<10	**1,900 D**	**2 J**	<10
	9/01			<10	**10**	<10	<10	<10	<1,000 J	<10	**1,100 D**	**2 J**	<10
	4/02			<15	**4 J**	<5	<5	<10	<1,000	<5	**4,620 D**	**11**	<5
	10/02			<25	**4 J**	<10	<10	<20	<1,000	<10	**50**	R	<10
	5/03			<12	<5	<5	<5	<10	<1,000	<5	**0.6 J**	**0.7 J**	<5
	10/03			**20**	**2 J**	<5	<5	<10	<1,000	<5	<5	<5	<5
	6/04			**6 J**	**1 J**	<10	<10	<20	<1,000	<10	**1 J**	<5	<10
	11/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	**1.0**	<5.0	<4.0	<5.0	<1,000	<1.0	**0.4 J**	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0 J	<1.0 J	<5.0 J	<4.0 J	<5.0 J	<1,000 J	<1.0 J	<1.0 J	<1.0 J	<3.0 J
	11/06			R	<1.0	**0.8 J**	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500 J	<1.0	**0.1 J**	**0.8**	<3.0
	3/08			<5.0 J	**0.8 J**	<5.0	<4.0	<5.0	<500	<1.0	<5.0	**0.8**	<3.0
	8/08			**5.8**	**0.3 J**	<5.0	<4.0	<5.0	<500	<1.0	<5.7	<0.6	<3.0
MW-33	9/98	344.1	356.1	<10	<10	<10	<10	<10	<1,000	<10	**9 J**	**6 J**	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	**120**	**6 J**	<10
	7/99			**5 J**	**2 J**	**0.7 J**	<10	<10	<1,000	<10	**150**	**8 J**	<23
	3/00			<10 J	<10	<10	<10	<10	<1,000 J	<10	**51**	**7 J**	**11**
	9/00			**45 J**	**4 J**	**1 J**	<10 J	<10 J	<1,000	<10 J	**540 D**	**23**	**330 DJ**
	3/01			**17 J**	<20	<20	<20	<20	<1,000	<20	**1,300 D**	**16**	**370 B**
	9/01			**21**	**5 J**	<10	<10	<10	<1,000 J	<10	**1,900 D**	**12**	<18
	4/02			<18	**3 J**	<5	<5	<10	<1,000	<5	**2,780 D**	**21**	**19**
	10/02			**11 J**	**4 J**	<10	<10	<20	<1,000	<10	**290 D**	**3 J**	**4 J**
	5/03			**88**	**13**	<5	<5	<10	<1,000	<5	**2,000**	**35 J**	**2,800 D**
	10/03			**22**	**2 J**	<5	<5	<10	<1,000	<5	**1,900 D**	<6	<5
	6/04			**9 J**	**12 J**	<10 J	<10 J	<20 J	<1,000	<10 J	**2,700 D**	**5 J**	<10 J
	11/04			--	--	--	--	--	<1,000	--	**2,700 D**	**5 J**	--
	6/05			<5.0 J	**11**	**1.0 J**	<4.0	<5.0	<1,000	<1.0	**1,800**	<10	<3.0
	11/05			<5.0 J	**16**	**1.8 J**	<4.0	<5.0	<1,000	<1.0	**3,500**	<25 J	<3.0
	6/06			<5.0 J	**6.7 J**	**0.7 J**	<4.0 J	<5.0 J	<1,000 J	<1.0 J	**370 J**	**3.5 J**	<3.0 J
	9/06			NA	NA	NA	NA	NA	NA	NA	**940**	**8.0**	NA
	11/06			**17 J**	**8.6**	**0.7 J**	<4.0	<5.0	<500	<1.0	**84**	**2.9 J**	<3.0
	6/07			<5.0	**5.7**	**0.4 J**	<4.0	<5.0	<500	<1.0	**46**	**2.6**	<3.0
	8/07			NA	NA	NA	NA	NA	NA	NA	**46**	**4.2**	NA
	11/07			<5.0	**4.0**	<5.0	<4.0	<5.0	<500 J	<1.0	**0.1 J**	**3.5**	<3.0
	3/08			<5.0 J	**4.1**	<5.0	<4.0	<5.0	<500	<1.0	<5.0	**4.1**	<3.0
	8/08			<5.0	**3.2**	<5.0	<4.0	<5.0	<500	<1.0	<5.9	**2.8**	<3.0

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Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Screen Elev. (ft. AMSL) Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-34	9/98	362.7	354.7	<10	<10	<10	<10	<10	<1,000	<10	**83**	<10	<10
	7/99			**2 J**	**0.9 J**	**1 J**	<10	<10	<1,000	<10	**380 D**	**2 J**	<10
	3/00			<10 J	**1 J**	**2 J**	<10	<10	<1,000 J	<10	**200 D**	**3 J**	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000	<10 J	**320 D**	**4 J**	<10 J
	3/01			<10	<10	**2 J**	<10	**2 J**	<1,000	<10	**700 D**	**5 J**	<10
	9/01			**7 J**	**2 J**	**2 J**	<10	**2 J**	<1,000 J	<10	**76**	**3 J**	<10
	4/02			<32	<5	<5	<5	<10	<1,000	<5	**640 D**	**15**	<5
	10/02			**37 J**	<10	<10	<10	<20	<1,000	<10	**380 DJ**	**2 J**	<10
	5/03			**16**	<5	<5	<5	<10	<1,000	<5	**140**	**3 J**	<5
	10/03			**9 J**	<5	<5	<5	<10	<1,000	<5	**18**	<5	<5
	6/04			**24 J**	<10	<10	<10	<20	<1,000	<10	**30**	<5	<10
	11/04			<25	<10	<10	<10	<20	**180 J**	<10	**14**	<5	<10
	6/05			**5.6 J**	**0.7 J**	**0.9 J**	<4.0	**1.2 J**	<1,000	**0.4 J**	**16**	**2.5**	<3.0
	11/05			**20 J**	<0.3	**0.9**	<0.5	**1.1**	<1,000	<0.4	**12**	**2 J**	<0.5
	6/06			**6.4**	**0.6 J**	**0.5 J**	<4.0	<5.0	<1,000	<1.0	**16**	**2.3**	<3.0
	11/06			**49 J**	<1.0	**0.6 J**	<4.0	**0.6 J**	<500	<1.0	**9.9**	**1.2 J**	<3.0
	6/07			**22**	**0.9 J**	**0.5 J**	<4.0	**0.6 J**	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	**0.8 J**	**0.6 J**	<4.0	**1.1 J**	<500 J	<1.0	**0.3 J**	**1.5**	<3.0
	3/08			**16**	**1.0 J**	**0.5 J**	<4.0	**1.1 J**	<500	<1.0	**24**	**1.3**	<3.0
	8/08			**12**	**0.8 J**	**0.5 J**	<4.0	**1.1 J**	<500	<1.0	**0.6 J**	**1.6**	<3.0
MW-35	9/98	363	355	<10	<10	<10	<10	<10	<1,000	<10	**6 J**	**5 J**	<10
	7/99			<10	**0.7 J**	<10	<10	<10	<1,000	<10	**3 J**	**4 J**	<10
	3/00			<10 J	<10	<10	<10	<10	<1,000 J	<10	<10	**2 J**	<10
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000	<10 J	<10	**3 J**	<10 J
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			<10	<10	<10	<10	<10	<1,000 J	<10	<10	**2 J**	<10
	4/02			<13	<5	<5	<5	<10	<1,000	<5	**3 J**	**4 J**	<5
	10/02			<25	<10	<10	<10	<20	<1,000	<10	**2 J**	R	<10
	5/03			<12	<5	<5	<5	<10	<1,000	<5	**1,000**	<100	<5
	10/03			**5 J**	<5	<5	<5	<10	<1,000	<5	**4 J**	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	**30**	**4 J**	<10
	11/04			<25	<10	<10	<10	<20	**240 J**	<10	**82**	<5	<10
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	6/06			<5.0	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	**0.4 J**	<1.0	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	**1.1**	<1.0 J	<3.0
	6/07			**13**	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500 J	<1.0	<5.0	<0.5	<3.0
	3/08			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			**5.4**	<1.0	<5.0	<4.0	<5.0	<500	<1.0	**1.1 J**	<0.5	<3.0
MW-36[E]	9/98	363.6	355.6	<10	<10	<10	<10	<10	<1,000	<10	**290 D**	**6 J**	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	**860 D**	**4 J**	<10
	7/99			**8 J**	**0.8 J**	<10	<10	<10	<1,000	<10	**250**	<10	<10
	3/00			<10 J	<10	<10	<10	<10	<1,000 J	<10	**60**	**7 J**	<10
	9/00			**5 J**	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	**8 J**	**6 J**	<5
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	9/01			**54**	<10	<10	<10	<10	<1,000 J	<10	**350 D**	**5 J**	<10
	4/02			<20	<5	<5	<5	<10	<1,000	<5	**9**	**41**	<5
	10/02			**12 J**	<10	<10	<10	<20	<1,000	<10	**2 J**	**2 J**	<10

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Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
MW-36[E]	5/03			**9 J**	<5	<5	<5	<10	<1,000	<5	**67**	**4 J**	<5
	10/03			**580 D**	<5	<5	<5	<10	<1,000	<5	**100**	<5	<5
	6/04			**22 J**	<10 J	<10 J	<10 J	<20 J	<1,000	<10 J	**33**	**7**	<10 J
	11/04			**13 J**	<10	<10	<10	<20	<1,000	<10	**22**	<5	<10
	6/05			**24 J**	**2.1**	<5.0	<4.0	**1.0 J**	<1,000	<1.0	**1,200**	<5.4	<3.0
	11/05			**77 J**	**3.6**	**2.0 J**	**0.6 J**	**2.8 J**	<1,000	<1.0	**1,600**	<10 J	<3.0
	6/06			**25**	**1.6**	**0.7 J**	<4.0	**1.2 J**	<1,000	<1.0	**76**	**1.9**	<3.0
	9/06			NA	NA	NA	NA	NA	NA	NA	**3.5**	**1.2**	NA
	11/06			**130 J**	**3.6**	**1.2 J**	<4.0	**1.1 J**	<500	<1.0	**420**	**1.7 J**	<3.0
	6/07			**33**	**4.6**	**1.4 J**	**0.8 J**	**5.0**	<500	<1.0	**1,300**	<10	<3.0
	8/07			NA	NA	NA	NA	NA	NA	NA	**740**	<5.0	NA
	11/07			**10**	**4.5**	**1.7 J**	**0.9 J**	**5.3**	<500 J	<1.0	**480 J**	**3.4 J**	<3.0
	3/08			**8.0 J**	**4.2**	**1.5 J**	**0.8 J**	**5.5**	<500	<1.0	**130**	**3.0**	<3.0
	8/08			**27**	**3.7**	**1.4 J**	**0.6 J**	**5.7**	<500	<1.0	**4.5 J**	**3.2**	<3.0
TW-01	12/96	365.1	355.4	<10	**82**	**4 J**	**6 J**	**4 J**	<1,000	<10	**2,090 D**	**13**	**4 J**
	9/98			<10	**15**	<10	**4 J**	<10	<1,000	<10	**4,400 DEJ**	**4 J**	<10
	2/99			<10	**24**	**2 J**	**2 J**	**2 J**	<1,000	<10	**9,000 D**	**5 J**	<10
	7/99			<10	**16**	**1 J**	**3 J**	<10	<1,000	<10	**4,400 D**	**4 J**	<10
	3/00			<10	**16**	<10	<10	<10	<1,000 J	<10	**280 D**	**4 J**	<10
	9/00			<10 J	**11 J**	<10 J	<10 J	<10 J	<1,000	<10 J	**15**	**2 J**	<10 J
	3/01			<10	**5 J**	<10	<10	<10	<1,000	<10	<10	**3 J**	<10
	9/01			<10	**10**	<10	<10	<10	<1,000 J	<10	<10	**2 J**	<10
	4/02			<14	**3 J**	<5	<5	<10	<1,000	<5	**8**	**13**	<5
	10/02			<25	**7 J**	<10	<10	<20	<1,000	<10	<5	R	<10
	5/03			<12	**7**	<5	<5	<10	<1,000	<5	<5	**1 J**	<5
	10/03			<12	**6**	<5	<5	<10	<1,000	<5	**0.6 J**	<5	<5
	6/04			**6 J**	**3 J**	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			<25	**2 J**	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	**1.8**	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<1.3 J	**1.9**	<0.4	<0.5	<0.4	<1,000	<0.4	<1.0	<1.0 J	<0.5
	6/06			<5.0 J	**1 J**	<5.0 J	<4.0 J	<5.0 J	<1,000 J	<1.0 J	<1.0 J	**0.8 J**	<3.0 J
	11/06			R	**0.7 J**	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	6/07			**7.8**	**0.5 J**	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<1.0	<3.0
	11/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500 J	<1.0	**0.2 J**	**1.1**	<3.0
	3/08			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	**1.0**	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.6	<0.6	<3.0
TW-02[C]	12/96	363.3	353.3	**53**	**10**	**77**	**16**	**65**	<1,000	**585 D**	**15,900 JD**	**3,920 D**	**42,449 D**
(Replaced by TW-02R)[E]	9/98			<500 J	<500 J	<500 J	<500 J	**53,000**	**5,000**	**300 J**	**38,000 D**	**61,000 D**	**86,000 D**
	2/99			<1,000	<1,000	**190 J**	<1,000	**150 J**	**14,000JN**	<1,000	**83,000 D**	**7,900**	**14,000 B**
	7/99			**630**	**37**	**240 J**	**31**	**150**	<1,000	**55**	**100,000 D**	**3,500 J**	**9,700 D**
	3/00			<1,000 J	<1,000	**160 J**	<1,000	**240 J**	<1,000 J	<1,000	**64,000 D**	**3,900**	**13,000**
	9/00			**190 J**	**28 J**	**95 J**	**35 J**	**160 J**	<1,000	**6 J**	**79,000**	<10,000	**390 J**
	3/01			**81**	**19**	**68**	**28**	**130**	<1,000	<10	**67,000 D**	**650 J**	**400 D**
	9/01			**57**	**25**	**70**	**31**	**140**	<1,000 J	<20	**63,000 D**	**32**	**48 B**
	4/02			**240**	**19**	**65**	**23**	**96**	<1,000	<5	**1,090,000 D**	<5,300	**14**
	10/02			**110 J**	**15**	**19**	**23**	**65**	<1,000	<10	**80,000 D**	**10 J**	<10
	5/03			**240**	**30**	**130**	**49**	**226**	<1,000	<5	**160,000 D**	**230**	**97**
	10/03			**68**	**28**	**75 J**	<5	<10	<1,000	**2 J**	**92,000 D**	<260	**91**
	6/04			**140 J**	**19 J**	**39 J**	**31 J**	**111 J**	<1,000	<10 J	**82,000**	<5,200	**4 J**

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Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Screen Elev. (ft. AMSL) Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
TW-02RR[BE]	11/04	363.3	353.3	**18 J**	**4 J**	**8 J**	**4 J**	**16 J**	<1,000	<10	**7,100 D**	<5	<10
	6/05			**7.2 J**	**3.6**	**2.1 J**	**3.6 J**	**9.6**	<1,000	**0.3 J**	**8,400**	<50	<3.0
	11/05			**26 J**	**6**	**4.1**	**3.6**	**11**	<1,000	<0.4	**14,000**	<110 J	<0.5
	6/06			**16**	**4.4**	**1.3 J**	**2.7 J**	**6.7**	<1,000	<1.0	**10,000**	<100	<3.0
	9/06			NA	NA	NA	NA	NA	NA	NA	**7,600**	<52	NA
	11/06			**78 J**	**4.9**	**1.4 J**	**2.2 J**	**6.2**	<500	<1.0	**2,100**	<10 J	<3.0
	6/07			**17**	**5.5**	**1.3 J**	**4.0**	**8.8**	<500	<1.0	**6,800**	<100	<3.0
	8/07			NA	NA	NA	NA	NA	NA	NA	**4,000 J**	<20	NA
	11/07			**5.5**	**5.8**	**1.2 J**	**3.0 J**	**7.6**	<500 J	<1.0	**3,700**	<25	<3.0
	3/08			**6.4 [5.2]**	**4.5 J [2.3 J]**	**1.3 J [0.7 J]**	**3.8 J [1.9 J]**	**10 [4.8 J]**	<500 [<500]	<1.0 [<1.0]	**7,500 [5,400]**	<50 [<50]	<3.0 [<3.0]
	8/08			**9.0 [9.6]**	**4.4 [4.6]**	**1.0 J [1.1 J]**	**2.3 J [2.4 J]**	**6.7 [7.0]**	<500 [<500]	<1.0 [<1.0]	**9,600 [7,000]**	<71 [<56]	<3.0 [<3.0]
PZ-4D	11/89	350.8	345.9	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/90			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/92			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	**0.8 J**	<5
	10/95			NA	<5	<5	<5	<5	NA	<5	<5	<10	<5
	8/96			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<6	<12	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10 J
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	4/02			<10	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	5/03			<12	<5	<5	<5	<5	<1,000	<5	<5	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	6/06			<5.0	<1.0	**0.5 J**	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.5	<1.1	<3
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
PZ-4S	11/89	362.79	357.88	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/90			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/92			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	<5	<10	<18
	10/95			NA	<5	<5	<5	<5	NA	<5	NA	NA	<5
	8/96			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	8/97			<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/99			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	6/99			<10 J	<10	<10	<10	<10	<1,000 J	<10	<10 J	<10 J	<10 J
	3/00			<10	<10	<10	<10	<10	<1,000 J	<10	<5	<10	<10
	3/01			<10	<10	<10	<10	<10	<1,000	<10	<10	**3 J**	<10
	4/02			<14	<5	<5	<5	<10	<1,000	<5	**8** (<5)[F]	<5 (<5)[F]	<5
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	5/03			<12	<5	<5	<5	<5	<1,000	<5	<5	<5	<5
	6/04			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	6/06			<5.0	<1.0	**0.6 J**	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	6/07			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.5	<1.1	<3.0
	3/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0

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Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene[A]	Methanol	Trichloro-ethene	Aniline	N,N-Dimethyl-aniline	Methylene Chloride
NYSDEC Groundwater Quality Standards (Part 700)				50	1	5	5	5	NS	5	5	1	5
PZ-5D[L]	11/89	353.5	348.6	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	12/94			<10	<5	<5	<5	<5	<200	<5	<5	<10	<5
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	<10	<12
	7/99			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000	<10 J	<10	<10	<10 J
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	9/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	10/03			<12	<5	<5	<5	<10	<1,000	<5	**46**	<5	<5
	6/04 [J]			<25	<10	<10	<10	<20	<1,000	<10	<5	<5	<10
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0	<3.0
	11/05			<5.0 J	<1.0	**0.7 J**	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	11/07			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.1	<0.5	<3.0
	9/09			<10 J	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
PZ-5S[KL]	11/89	361.42	356.52	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
	12/94			<10	<5	<5	<5	<5	<200	<5	<5	<10	<5
	2/96			<1,000	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	2/97			**5 J**	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
	9/98			<10	<10	<10	<10	<10	<1,000	<10	<5[H]	<10	<12
	6/99			<10 J	<10	<10	<10	<10	<1,000	<10	<10 J	<10 J	<10 J
	7/99			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10	<10	<10 J
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
	9/01			**7 J**	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
	10/02			<25 J	<10	<10	<10	<20 J	<1,000	<10	<5[G]	<5[G]	<10
	10/03			<12	<5	<5	<5	<10	<1,000	<5	<5	<5	<5
	11/04			--	--	--	--	--	<1,000	--	<5	<5	--
	6/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.1	<1.1	<3.0
	11/05			<5.0 J	<1.0	<5.0	<4.0	<5.0	<1,000	<1.0	<1.0	<1.0 J	<3.0
	11/06			R	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<1.0	<1.0 J	<3.0
	11/07			<5.0 J	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.0	<0.5	<3.0
	8/08			<5.0	<1.0	<5.0	<4.0	<5.0	<500	<1.0	<5.3	<0.5	<3.0
	9/09			<10 J	<1.0	<1.0	<1.0	<3.0	<500	<1.0	<5.0	<1.0	<1.0
PZ-8S[I]	9/98	362.6	357.7	<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
PZ-11D[D]	11/89	352.09	347.19	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
PZ-11S[D]	11/89	359.09	354.19	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
PZ-12D[D]	11/89	350	345.1	<100	<1	<1	<1	<1	<1,000	<1	<53	<53	<1
	11/90			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<1	**3**	<1	<10	<10	<1
	11/92			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
PZ-12S[D]	11/89	360	355.1	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
	11/90			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
	11/91			<100	<1	<1	<1	<3	**6**	<1	<10	<10	**5**
	11/92			<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
PZ-13D[C]	11/89	349.4	344.4	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
PZ-13S[C]	11/89	359.5	354.5	<100	<1	2	<1	**2**	<1,000	<1	<11	<11	<1

See notes on page 18.

Table 2. Summary of Historical Groundwater Monitoring Data, March 1988 through August 2008
2013 Periodic Review Report, McKesson Envirosystems, Former Bear Street Facility, Syracuse, New York

General Notes:

1. Concentrations are presented in micrograms per liter, which is equivalent to parts per billion.
2. Compounds detected are indicated by bold-faced type.
3. Detections exceeding New York State Department of Environmental Conservation (NYSDEC) Groundwater Standards (Part 700) are indicated by shading.
4. Replacement wells for MW-6, MW-8, MW-9, MW-10, MW-11 and MW-12D were installed 8/95.
5. Replacement wells for MW-17, MW-24S, MW-24D and TW-02 were installed 11/97 - 12/97.
6. The laboratory analytical results for the duplicate sample collected from monitoring well MW-23S during the 7/99 sampling event indicated the presence of methanol at 5.1 milligrams per liter. Because methanol was not detected in the original sample, the duplicate results were determined, based on the results of the data validation process, to be unacceptable. Furthermore, methanol has not been previously detected in groundwater samples collected from this monitoring well. Accordingly, the detection of methanol appears to be the result of a laboratory error and not representative of actual groundwater quality in the vicinity of monitoring well MW-23S.
7. N,N-dimethylaniline data for 10/02 sampling event for MW-1, MW-3S, MW-28, MW-29, MW-32, MW-35 and TW-01 were rejected due to matrix spike and matrix spike duplicate recoveries below control limits. Aniline and N,N-dimethylaniline data for 10/02 sampling event for MW-30 were rejected due to matrix spike and matrix spike duplicate recoveries below control limits. These wells and piezometers are not perimeter monitoring locations and were not resampled.
8. Aniline and N,N-dimethylaniline results of nondetect for the 6/04 sampling event at MW-18 were rejected due to the deviation from a surrogate recovery that was below 10%. This well was not resampled.
9. Volatile organic compound (VOC) results for the 11/04 sampling event were inadvertently lost due to laboratory equipment failure for monitoring locations MW-1, MW-17R, MW-18, MW-23I, MW-23S, MW-24DR, MW-24SR, MW-25, MW-33, PZ-5D and PZ-5S. In addition, the initial VOC results were also irretrievable due to laboratory equipment failure for monitoring locations MW-27, MW-28, MW-29 and MW-30; however, results for subsequent dilutions of these groundwater samples were valid, but the detection limits were high. The duplicate sample VOC results for MW-27 and MW-28 have lower detection limits and are presented in parentheses. These wells were not resampled.

Superscript Notes:

[A] = Data presented is total xylenes (m- and p-xylenes and o-xylenes). For the 1995 data, the listed quantitation limit applies to the analyses conducted for m- and p-xylenes and o-xylenes.
[B] = Because aniline was detected at monitoring well MW-3S at a concentration of 690 ug/l during the September 2001 sampling event, this well was resampled for aniline on November 8, 2001. Aniline was detected in MW-3S during the November 8, 2001 resampling event at a concentration of 69 ug/l.
[C] = Wells/piezometers MW-5, MW-14D, MW-16D, MW-17, MW-20, MW-21, MW-24S, MW-24D, TW-02, PZ-13S, and PZ-13D were abandoned 11/97 - 1/98.
[D] = Wells/piezometers MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12D, PZ-11D, PZ-11S, PZ-12D, and PZ-12S were abandoned during OU No.1 soil remediation activities (1994).
[E] = Wells MW-8S, MW-8D, and TW-02R were abandoned in 8/04 and replacement wells MW-8SR and TW-02RR were installed in 8/04.
[F] = MW-17R, MW-18, and PZ-4S wells/piezometers were resampled for aniline and N,N-dimethylaniline on June 18, 2002 because N,N-dimethylaniline and/or aniline was detected during the April 2002 sampling event. The results of this additional sampling event are shown in parenthesis. MW-24SR and MW-24DR were also sampled for aniline and N,N-dimethylaniline on June 18, 2002, because N,N-dimethylaniline and/or aniline was detected at nearby perimeter monitoring locations during the April 2002 sampling event.
[G] = MW-17R, MW-18, MW-19, MW-23S, MW-23I, MW-24DR, MW-24SR, MW-25S, PZ-4S, PZ-5S and PZ-5D wells/piezometers were resampled for aniline and N,N-dimethylaniline during 1/03, because the 10/02 results were rejected due to matrix spike and matrix spike duplicate recoveries below control limits. These wells and piezometers are perimeter monitoring locations.
[H] = MW-18, MW-19, MW-23I, MW-23S, MW24DR, MW-24SR, MW-28, PZ-5S and PZ-5D wells/piezometers were resampled for aniline during 12/98, because the 9/98 results were rejected due to laboratory error.
[I] = Piezometer PZ-8S was decommissioned 8/00.
[J] = MW-24SR and PZ-5D well and piezometer were sampled during the June 2004 sampling event because N,N-dimethylaniline and/or aniline was detected at nearby perimeter monitoring locations during the October 2003 sampling event.
[K] = Wells/piezometers MW-1, MW-19, and PZ-5S were abandoned 11/10.
[L] = Wells/piezometers, MW-22, MW-24S, MW-24D, MW-25S, MW-25D, PZ-5S and PZ-5D were eliminated from the groundwater monitoring program after the 10/10 sampling event; therefore all data for these locations are presented in this table.

Abbreviations:

AMSL = Above mean sea level (NGVD of 1929).
NA = Parameter not analyzed for.
ND = Not detected.
NS = Standard not available.

Analytical Qualifiers:

D = Indicates the presence of a compound in a secondary dilution analysis.
J = The compound was positively identified; however, the numerical value is an estimated concentration only.
E = The compound was quantitated above the calibration range.
JN = The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
B = The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
< = Compound was not detected at the listed quantitation limit.
U = Undetected.
R = The sample results were rejected.
-- = Sample results are not available. (See Note 9.)

MW-35									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Benzene	<10	0.7 J	<10	<10 J	<10	<10	<5	<10	<5
Aniline	6 J	3 J	<10	<10	<10	<10	3 J	2 J	1,000
N,N-dimethylaniline	5 J	4 J	2 J	3 J	<10	2 J	4 J	R	<100
Acetone	<10	<10	<10 J	<10 J	<10	<10	<13	<25	<12

MW-36										
Date	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	<10	8 J	<10 J	5 J	<10	54	<20	12 J	9 J
Benzene	<10	<10	0.8 J	<10	<10 J	<10	<10	<5	<10	<5
Aniline	290 D	860 D	250	60	8 J	<10	350 D	9	2 J	67
N,N-dimethylaniline	6 J	4 J	<10	7 J	6 J	<10	5 J	41	2 J	4 J
Methylene Chloride	<10	<10	<10	<10	2 J	<10	<10	<5	<10	<5

TW-02R											
Date	12/96	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	53	<500 J	<1,000	630	<1,000 J	190 J	81	57	240	110 J	240
Benzene	10	<500 J	<1,000	37	<1,000	28 J	19	25	19	15	30
Toluene	77	<500 J	190 J	240 J	160 J	95 J	68	70	65	19	130
Ethylbenzene	16	<500 J	<1,000	31	<1,000	35 J	28	31	23	23	49
Xylene	65	140 J	150 J	150	240 J	160 J	130	140	96	65	226
Methanol	<1,000	5,000	14,000 JN	<1,000	<1,000 J	<1,000	<1,000	<1,000 J	<1,000	<1,000	<1,000
Trichloroethene	585 D	300 J	<1,000	55	<1,000	6 J	<10	<20	<5	<10	<5
Aniline	15,900 JD	38,000 D	83,000 D	100,000 D	64,000 D	79,000	67,000 D	63,000 D	1,090,000 D	80,000 D	160,000 D
N,N-dimethylaniline	3,920 D	61,000 D	7,900	3,500 J	3,900	<10,000	650 J	32	<5,300	10 J	230
Methylene Chloride	42,449 D	86,000 D	14,000 B	9,700 D	13,000	390 J	400 D	48 B	14	<10	97

MW-34									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	2 J	<10 J	<10 J	<10	7 J	<32	37 J	16
Benzene	<10	0.9 J	1 J	<10 J	<10	2 J	<5	<10	<5
Toluene	<10	1 J	2 J	<10 J	2 J	2 J	<5	<10	<5
Xylene	<10	<10	<10	<10 J	2 J	2 J	<10	<20	<10
Aniline	83	380 D	200 D	320 D	700 D	76	640 D	380 DJ	140
N,N-dimethylaniline	<10	2 J	3 J	4 J	5 J	3 J	15	2 J	3 J

TW-01											
Date	12/96	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Benzene	82	15	24	16	16	11 J	5 J	10	3 J	7 J	7
Toluene	4 J	<10	2 J	1 J	<10	<10 J	<10	<10	<5	<10	<5
Ethylbenzene	6 J	4 J	2 J	3 J	<10	<10 J	<10	<10	<5	<10	<5
Xylene	4 J	<10	2 J	<10	<10	<10 J	<10	<10	<10	<20	<10
Aniline	2,090 D	4,400 DEJ	9,000 D	4,400 D	280 D	15	<10	<10	8	<5	<5
N,N-dimethylaniline	13	4 J	5 J	4 J	4 J	2 J	3 J	2 J	13	R	1 J
Methylene Chloride	4 J	<10	<10	<10	<10	<10 J	<10	<10	<5	<10	<5
Acetone	<10	<10	<10	<10	<10	<10 J	<10	<10	<14	<25	<12

MW-31									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	<10	<10	<10 J	21	<10	<14	<25	<12
Benzene	12	16	16	12 J	11	14	9	11	9
Aniline	34	230 D	3 J	10	<10	91 D	804 D	560 D	0.9 J
N,N-dimethylaniline	4 J	3 J	4 J	6 J	5 J	3 J	21	1 J	3 J

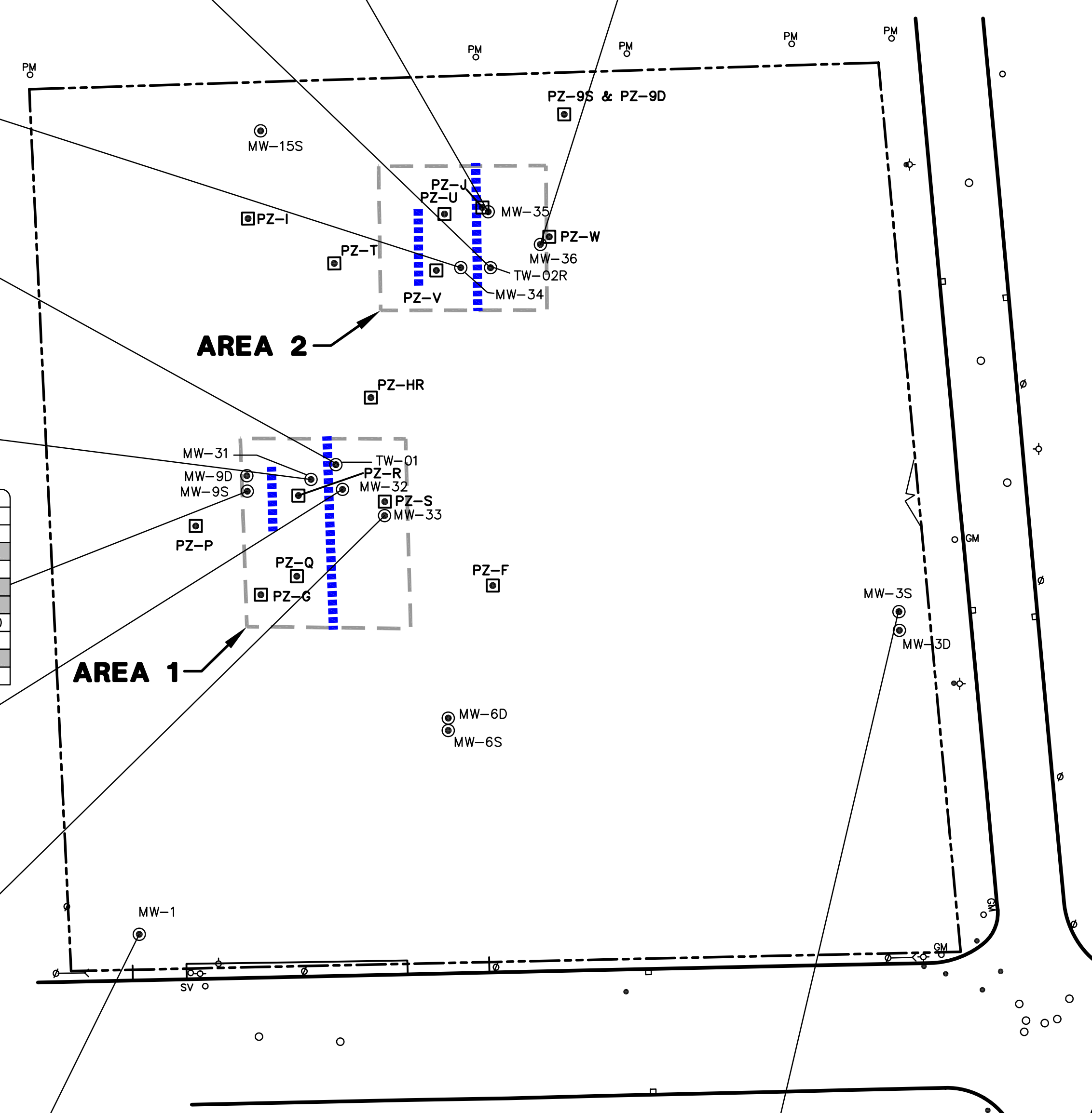
MW-9S												
Date	1/89	11/89	11/91	8/95	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	1,600	<1,000	<100	<1,000	<10	<10	<10 J	<10	<10	<23	16 J	<12
Benzene	NA	48	<10	11 JD	4 J	2 J	11 J	1 J	10	10	38	11
Toluene	64	25	9	26 JD	2 J	2 J	2 J	3 J	3 J	2 J	40	<5
Ethylbenzene	130	60	19	69 D	9 J	11	6 J	17	7 J	6	2 J	7
Xylene	270	60	30	226 JD	18	21	18 J	61	35	17 J	15 J	18
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J	<1,000	<1,000	<1,000 J	370 J	<1,000	<1,000
Aniline	660	670	95	50	<10	2 J	1 J	2 J	<10	9	<5	0.9 J
N,N-dimethylaniline	1,200	150	18	28	5 J	9 J	6 J	11	10	43	2 J	3 J
Methylene Chloride	1,500	<10	<1	110 D	<10	<10	<10 J	<10	<10	<5	<10	<5

MW-32									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	3 J	<10	<10 J	<10	<10	<15	<25	<12
Benzene	16	14	5 J	12 J	5 J	10	4 J	4 J	<5
Toluene	2 J	2 J	<10	<10 J	<10	<10	<5	<10	<5
Ethylbenzene	5 J	4 J	<10	<10 J	<10	<10	<5	<10	<5
Xylene	3 J	<10	<10	<10 J	<10	<10	<10	<20	<10
Trichloroethene	<10	56	<10	<10 J	<10	<10	<5	<10	<5
Aniline	6,300 D	<10	800 D	4,500 D	1,900 D	1,100 D	4,620 D	50	0.6 J
N,N-dimethylaniline	4 J	3 J	<10	<10	2 J	2 J	11	R	0.7 J

MW-33										
Date	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	<10	5 J	<10 J	45 J	17 J	21	<18	11 J	88
Benzene	<10	<10	2 J	<10	4 J	<20	5 J	3 J	4 J	13
Toluene	<10	<10	0.7 J	<10	1 J	<20	<10	<5	<10	<5
Aniline	9 J	120	150	51	540 D	1,300 D	1,900 D	2,780 D	290 D	2,000
N,N-dimethylaniline	6 J	6 J	8 J	7 J	23	16	12	21	3 J	35 J
Methylene Chloride	<10	<10	5 J	11	330 DJ	370 B	<18	19	4 J	2,800 D

MW-1																
Date	3/88	1/89	11/89	11/90	11/91	11/92	8/95	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<100	<100	<100	<100	<100	<100	<1,000	<10	0.7 JN	<10	8 J	<10	<10	<12	<25	<12
Toluene	<1	<1	<1	<1	<1	<1	<5	<10	<10	<10	3 J	<10	<10	<5	<10	<5
Xylene	<1	<1	<1	<3	<3	<3	<5	<10	<10	<10	5 J	<10	<10	<10	<20	<10
Methylene Chloride	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10 J	10	<10	<5	<10	<5
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J	<1,000	<1,000	<1,000 J	990 J	<1,000	<1,000
Aniline	<10	<11	<10	<10	<10	<10	<5	<10	<10	<5	<10 J	<10	<10	<5	<5	<5

MW-3S														
Date	3/88	1/89	11/89	11/91	8/95	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<100	<10,000	<10,000	2,900	<1,000	<10	<10	<10 J	<10 J	<10	<10	<12	<25	<12
Benzene	<1	<100	<100	10	<5	<10	1 J	<10	1 J	<10	3 J	<5	<10	<5
Toluene	<1	120	<100	10	<5	<10	0.7 J	<10	2 J	<10	8 J	<5	<10	<5
Ethylbenzene	<1	<100	<100	4	<5	<10	<10	<10	<10 J	<10	1 J	<5	<10	<5
Xylene	<1	<100	<100	31	<5	<10	<10	<10	<10 J	<10	2 J	<10	<20	<10
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J	<1,000	<1,000	<1,000 J	370 J	<1,000	<1,000
Trichloroethene	50	1,100	100	<10	<5	<10	<10	<10	<10 J	<10	<10	<5	<10	<5
Aniline	<10	<11	<52	790	15	<10	9 J	<10	2 J	<10	690 D (69*)	1.7 J	<5	<5
N,N-dimethylaniline	<10	5,570	440	170	2 J	<10	<10	<10	1 J	<10	4 J	<5	R	<5
Methylene Chloride	110	4,700	2,700	<10	<10	<10	<10	<10	<10 J	<10	<10	<5	<10	<5



LEGEND:

- UTILITY POLE
- CATCH BASIN
- PM — PETROLEUM PIPE LINE MARKER
- GM — GAS LINE MARKER
- SV — SEWER VENT
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- MW-19 — GROUNDWATER MONITORING WELL
- PZ-A — PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER INFILTRATION TRENCH

SAMPLE IDENTIFICATION

MW-35									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Benzene	<10	0.7 J	<10	<10 J	<10	<10	<5	<10	<5
Aniline	6 J	3 J	<10	<10	<10	<10	3 J	2 J	1,000
N,N-dimethylaniline	5 J	4 J	2 J	3 J	<10	2 J	4 J	R	<100
Acetone	<10	<10	<10 J	<10 J	<10	<10	<13	<25	<12

CONCENTRATION (ppb)

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY DETECTED COCs ARE PRESENTED ON THIS FIGURE.
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
8. D = CONCENTRATION IS BASED ON DILUTED SAMPLE ANALYSIS.
9. E = IDENTIFIES COMPOUNDS WHOSE CONCENTRATIONS EXCEED THE CALIBRATION RANGE OF THE INSTRUMENTS.
10. R = THE SAMPLE RESULT WAS REJECTED.
11. B = THE COMPOUND HAS BEEN FOUND IN THE SAMPLE AS WELL AS IN ITS ASSOCIATED BLANK; ITS PRESENCE IN THE SAMPLE MAY BE SUSPECT.
12. N = THIS ANALYSIS INDICATES THE PRESENCE OF A COMPOUND FOR WHICH THERE IS PRESUMPTIVE EVIDENCE TO MAKE AN TENTATIVE IDENTIFICATION.
13. DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.
14. *= MW-3S WAS RESAMPLED ON 11/8/01 DUE TO ANILINE DETECTION DURING 9/2001 SAMPLING EVENT AT A CONCENTRATION OF 690 PPB. ANILINE WAS DETECTED ON 11/8/01 AT A CONCENTRATION OF 69 PPB.
15. THE 10/02 SAMPLING EVENT N,N-DIMETHYLANILINE DATA FOR MW-1, MW-3S, MW-32, MW-35, AND TW-01 WERE REJECTED DUE TO MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES BELOW CONTROL LIMITS. THESE MONITORING WELLS WERE NOT RESAMPLED.

0 100' 200'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR 1988 - MAY 2003 AREAS 1 & 2

ARCADIS

FIGURE
1

GROUNDWATER MONITORING DATA SUMMARY FOR 1988 - MAY 2003 AREA 3

MW-27									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	23	<10 J	<10 J	<10 J	<10	<10	<18	9 J	<12
Benzene	3 J	4 J	6 J	4 J	5 J	5 J	7	3 J	8
Toluene	4 J	2 J	<10	<10	<10	<10	11	<10	11
Ethylbenzene	<10	3 J	8 J	3 J	5 J	2 J	12	<10	23
Xylene	3 J	8 J	2 J	1 J	2 J	<10	26	<20	51
Aniline	340 DJ	740 D	110 D	16 J	260 D	26	176,000 DJ	2,700 D	15,000 DJ
N,N-dimethylaniline	<10	<10	1 J	2 J	2 J	<10	19 J	100 J	11
Methylene Chloride	<10	<10	<10	1 J	<10	<10	<5	60 JN	43
Trichloroethene	<10	<10	<10	<10 J	<10	<10	<5	4 J	<5

PZ-5S										
Date	11/89	12/94	2/96	2/97	9/98	6/99	7/99	9/00	9/01	10/02
Acetone	<100	<10	<1,000	5 J	<10	<10 J	<10 J	<10 J	7 J	<25 J^

PZ-5D									
Date	11/89	12/94	2/96	2/97	9/98	7/99	9/00	9/01	10/02
Aniline	<10	<5	<5	<5	<5	<10	<10 J	<10	<5^

MW-19																	
Date	11/89	12/94	8/95	2/96	8/96	2/97	8/97	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
N,N-dimethylaniline	<10	<10	<10	<10	<10	<10	<10	5 J	<10	<10	<10	<10	<10	<10	<5	<5^	<5
Acetone	<100	<10	<1,000	<1,000	<10	<10	<10	<10	<10	<10 J	<10	<10 J	<10	<10	<10	<25 J	<12
Aniline	<10	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10 J	<10	<10	<5	<5	<5

PZ-4S														
Date	11/89	11/90	11/91	11/92	8/95	8/96	8/97	2/99	6/99	3/00	3/01	4/02	10/02	5/03
Aniline	<10	<10	<10	<10	<5	<5	<6	<10	<5	<5	<10	8 (<5)**	<5^	<5
N,N-dimethylaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10 J	<10	3 J	<5 (<5)**	<5^	<5

PZ-4D													
Date	11/89	11/90	11/91	11/92	8/95	10/95	8/96	8/97	2/99	3/00	9/00	3/01	4/02	5/03
N,N-dimethylaniline	<10	<10	<10	<10	0.8 J	<10	<10	<12	<10	<10	<10	<10	<5	<5

MW-24DR										
Date	12/94	8/95	2/96	2/97	9/98	7/99	9/00	9/01	6/02	10/02
Aniline	<5	<5	<5	<5	<5	<10	<10 J	<10	ND**	<5^

MW-24SR											
Date	12/94	8/95	2/96	2/97	9/98	6/99	7/99	3/00	9/01	6/02	10/02
Aniline	<5	<5	<5	<5	<5	<10 J	<10	<10 J	<10	ND**	<5^

MW-17R															
Date	11/90	11/91	11/92	8/95	10/95	8/96	8/97	2/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<100	<100	<100	<1,000	NA	11	<10	<10	<10	<10 J	<10	<10	<10	<25 J	<12
Benzene	<1	<1	<1	<5	<5	<10	<10	1 J	8 J	15 J	8 J	5 J	6	14	8
Trichloroethene	<1	<1	<1	<5	2J	<10	<10	<10	<10	<10 J	<10	<10	<5	<10	<5
Methanol	<1,000	<1,000	<1,000	<1,000	NA	1,000	1,000	1,000	<1,000 J	<1,000 J	<1,000	<1,000	620 J	<1,000	<1,000
Aniline	<10	<10	<10	<5	NA	<5	<5	<10	<5	24 J	<10	<10	150 (<5)**	<5^	<5
N,N-dimethylaniline	<10	<10	<10	<10	NA	<10	<10	<10	<10	4 J	<10	<10	110 (<5)**	<5^	<5
Methylene Chloride	<1	<1	<1	<11	<5	<10	<10	<10 J	<10	1 J	<10	<10	<5	<10	<5

MW-30										
Date	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	7 J	<10	<10	<10 J	<10	4 J	<10	<25 J	<62
Benzene	<10	<10	0.7 J	<10	<10 J	<10	2 J	<5	<10	<25
Trichloroethene	<10	<10	0.5 J	<10	<10 J	<10	<10	<5	<10	<25
Aniline	<10	<10	<10	18	9 J	8 J	8 J	250	R	18
N,N-dimethylaniline	<10	2 J	1 J	2 J	2 J	2 J	1 J	210	R	0.6 J
Methylene Chloride	<10	<10	<10	4 J	2 J	<10	<10	<5	<10	8 J

MW-18																			
Date	11/89	11/90	11/91	11/92	12/94	8/95	2/96	8/96	2/97	8/97	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Methanol	<1,000	<1,000	<1,000	<1,000	<200	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J	<1,000 J	<1,000	<1,000	720 J	<1,000	280 J
Aniline	<10	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10 J	<10	<10	280 D (<5)**	<5^	<5
N,N-Dimethylaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	200 D (<5)**	<5^	<5
Acetone	<100	<100	<100	<100	<10	<1,000	<1,000	<10	<10	<10	<10	<10	<10 J	<10	<10 J	<10	<10	<10	6 J	<12

MW-29										
Date	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	7 J	<10	<10	<10 J	<10	<10	<10	<25 J	<12
Xylene	2 J	1 J	<10	<10	<10 J	<10	<10	<10	<20	<10
Aniline	<10	5 J	2 J	450 D	24 J	30	7 J	3 J	8	19
N,N-dimethylaniline	13	4 J	4 J	6 J	4 J	4 J	2 J	9	R	1 J
Methylene Chloride	<10	<10	<10	<10	<10 J	<10	<10	<6	4 JN	<3

MW-23S																	
Date	12/94	8/95	2/96	8/96	2/97	8/97	9/98	2/99	6/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	<1,000	<1,000	<10	<10	12	<10	<10	<10 J	<10 J	<10	<10 J	<10	<10	<10	<25 J	<62
Aniline	<5	<5	<5	7	11	92	56	<10	<10 J	<10	<5	<10 J	<10	<10	<5	<5^	<5
N,N-dimethylaniline	<10	<10	<10	<10	<10	<10	7 J	10	2 J	<10	2 J	2 J	<10	<10	<5	<5^	<5
Methanol	<200	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J	<1,000	<1,000 J	<1000 J	<1,000	<1,000	<1,000	<1,000	380 J

MW-23I																
Date	12/94	8/95	2/96	8/96	2/97	8/97	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<10	<1,000	<1,000	<10	<10	<10	<10	<10	<10 J	<10	<10 J	<10	4 J	<10	<25 J	<12
Xylene	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10 J	<10	2 J	<10	<20 J	<5
Methylene Chloride	<5	<10	<10	<10	<10	<10	<10	<10 J	<10	<10	<10 J	<10	<10	2 J	<10	<5
Aniline	<5	<5	<5	<5	<5	<5	<5	<10	<10	<5	<10 J	<10	<10	<5	<5	<5

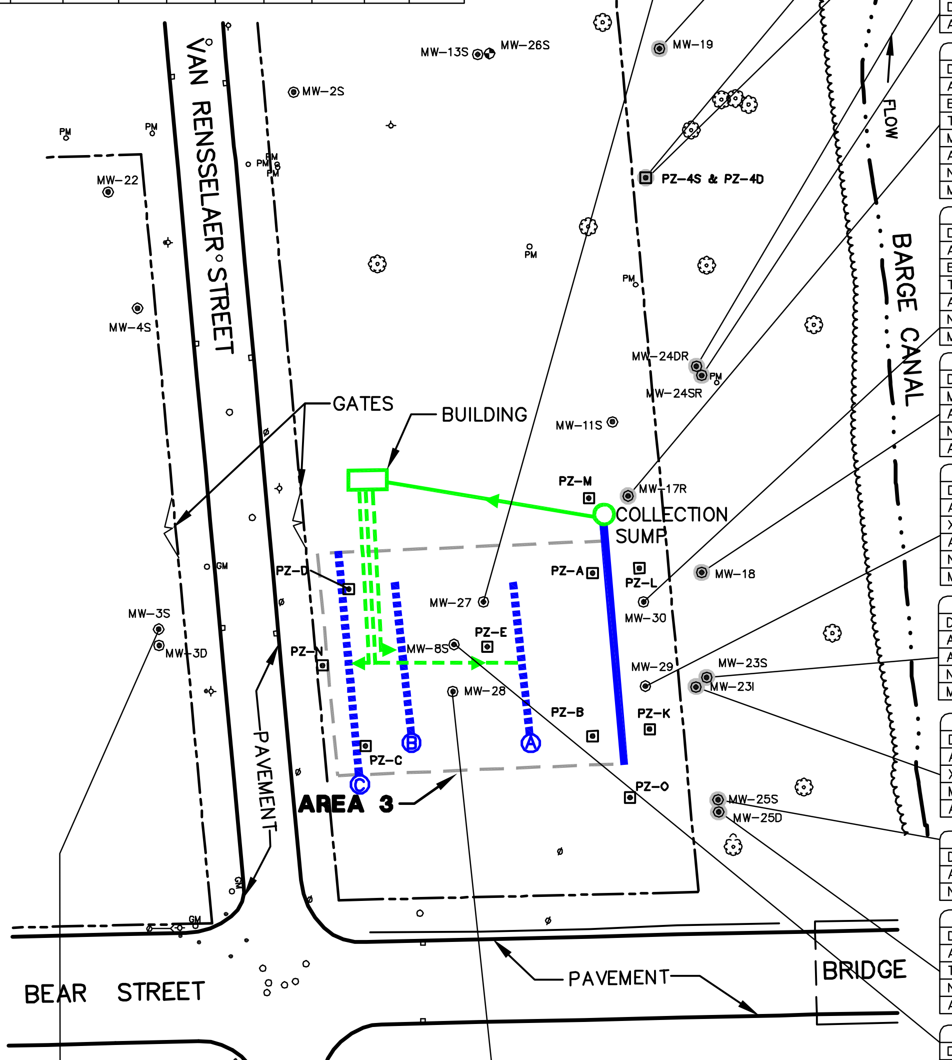
MW-25S														
Date	8/95	10/95	8/96	8/97	2/99	6/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Aniline	<5	<5	<5	<5	130	110 J	5 J	<5	<10 J	<10	<10	<5	<5^	<5
N,N-dimethylaniline	0.7 J	<10	<10	<10	<10	21 J	<10	<10	<10	<10	<10	<5	<5^	<5

MW-25D										
Date	8/95	10/95	8/96	8/97	2/99	3/00	9/00	3/01	4/02	5/03
Acetone	<1,000	NA	15	<10	<10	<10	<10	<10	<10	<12
Trichloroethene	<5	3 J	<10	<10	<10	<10	<10	<10	<5	<5
N,N-dimethylaniline	1 J	<10	<10	<11	<10	<10	<10	<10	<5	<5
Aniline	<5	<5	<5	<5	<5	<10	<5	5 J	<5	<5

MW-8S														
Date	1/89	11/89	11/91	8/95	9/98	2/99	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<1,000,000	470,000	<1,000,000	<1,000	<10,000 J	<20,000	10 J	<100,000	<50,000 J	<50,000	<400	2,100	120 J	<12
Benzene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	22 J	<100,000	<50,000 J	<50,000	<400	50 J	23	20 J
Toluene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	240 J	<100,000	<50,000 J	<50,000	430	410	310	600 D
Ethylbenzene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	58 J	<100,000	<50,000 J	<50,000	170 J	100 J	73	81
Xylene	<10,000	<10,000	<30,000	<250,000 D	<10,000	<20,000	220 J	<100,000	<50,000 J	<50,000	680	400	267	300
Methanol	430,000	300,000	150,000	22,000	7,900	16,000 JN	17,000	30,000 J	14,000 J	53,000	8,900 J	<1,000	<1,000	<1,000
Trichloroethene	<10,000	<10,000	<10,000	60,000 JD	3,300 J	11.000 J	11,000 J	<100,000	9,200 J	11,000 J	18,000 JD	9,600 J	3,100	6,700 D
Aniline	2,900	8,500	8,000	<25,000 D	1,200 J	30,000 D	24,000	62,000	42,000 J	90,000 D	21,000	793,000 D	80,000	79,000 D
N,N-dimethylaniline	24,000	52,000	33,000	380,000 D	26,000 D	120,000 D	77,000	270,000 D	59,000	120,000 D	29,000	773,000 D	21,000 J	29 J
Methylene Chloride	3,200,000	2,800,000	1,600,000	7,700,000 D	140,000	650,000 DB	450,000 D	1,300,000	540,000 BJ	990,000	440,000 BD	660,000 D	320,000	910,000 D

MW-28									
Date	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Benzene	<5,000	<500	<10,000	<1,000 J	<400	<400	8	8 J	4 J
Toluene	<5,000	<500	<10,000	<1,000 J	<400	<400	6	6 J	2 J
Ethylbenzene	<5,000	<500	<10,000	<1,000 J	<400	<400	9	11	2 J
Xylene	<5,000	<500	<10,000	<1,000 J	<400	<400	10 J	12 J	8 J
Methanol	2,200	<1,000	<1,000 J	<1,000 J	<1,000	<1,000 J	<1,000	<1,000	<1,000
Aniline	546 D	1,100 D	1,300 D	540 DJ	3,200 D	1,000 D	33,400 D	2,700 D	1,000 DJ
N,N-dimethylaniline	54	40	30	<10	7 J	<10	57	R	3 J
Methylene Chloride	64,000 J	39,000 D	130,000 J	8,100 BJ	5,900 B	4,700 B	4,600 D	<10	52
Acetone	<5,000 J	<500 J	<10,000	<1,000 J	<400	<400	<49	14 J	13

MW-3S														
Date	3/88	1/89	11/89	11/91	8/95	9/98	7/99	3/00	9/00	3/01	9/01	4/02	10/02	5/03
Acetone	<100	<10,000	<10,000	2,900	<1,000	<10	<10	<10 J	<10 J	<10	<10	<12	<25	<12
Benzene	<1	<100	<100	10	<5	<10	1 J	<10	1 J	<10	3 J	<5	<10	<5
Toluene	<1	120	<100	10	<5	<10	0.7 J	<10	2 J	<10	8 J	<5	<10	<5
Ethylbenzene	<1	<100	<100	4	<5	<10	<10	<10	<10 J	<10	1 J	<5	<10	<5
Xylene	<1	<100	<100	31	<5	<10	<10	<10	<10 J	<10	2 J	<10	<20	<10
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J	<1,000	<1,000	<1,000 J	370 J	<1,000	<1,000
Trichloroethene	50	1,100	100	<10	<5	<10	<10	<10	<10 J	<10	<10	<5	<10	<5
Aniline	<10	<11	<52	790	15	<10	9 J	<10	2 J	<10	690 D (69*)	1.7 J	<5	<5
N,N-dimethylaniline	<10	5,570	440	170	2 J	<10	<10	<10	1 J	<10	4 J	<5	R	<5
Methylene Chloride	110	4,700	2,700	<10	<10	<10	<10	<10	<10 J	<10	<10	<5	<10	<5



LEGEND:

- UTILITY POLE
- CATCH BASIN
- PM PETROLEUM PIPE LINE MARKER
- GM GAS LINE MARKER
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- EDGE OF WATER
- EDGE OF TREELINE
- TREE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- OR BIANNUAL DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- MW-26S PUMPING WELL
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER WITHDRAWAL TRENCH
- A GROUNDWATER INFILTRATION TRENCH
- PIPING TO BUILDING
- PIPING FROM BUILDING

SAMPLE IDENTIFICATION

MW-25		
Date	8/95	10/95
Acetone	<1,000	NA
Trichloroethene	<5	3 J
N,N-dimethylaniline	1 J	<10
Aniline	<5	<5

CONCENTRATION (ppb)

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY DETECTED COCs ARE PRESENTED ON THIS FIGURE.
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
8. D = CONCENTRATION IS BASED ON DILUTED SAMPLE ANALYSIS.
9. E = IDENTIFIES COMPOUNDS WHOSE CONCENTRATIONS EXCEED THE CALIBRATION RANGE OF THE INSTRUMENTS.
10. B = THE COMPOUND HAS BEEN FOUND IN THE SAMPLE AS WELL AS IN ITS ASSOCIATED BLANK; ITS PRESENCE IN THE SAMPLE MAY BE SUSPECT.
11. N = THIS ANALYSIS INDICATES THE PRESENCE OF A COMPOUND FOR WHICH THERE IS PRESUMPTIVE EVIDENCE TO MAKE AN TENTATIVE IDENTIFICATION.
12. R = THE SAMPLE RESULT WAS REJECTED.
13. DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.
14. THE ANILINE DATA FOR THE 9/98 SAMPLING EVENT FOR MW-18, MW-19, MW-23S, MW-23I, MW-24SR, MW-24DR, MW-28, PZ-5S AND PZ-5D WERE OBTAINED IN 12/98, BECAUSE THE 9/98 RESULTS WERE REJECTED DUE TO LABORATORY ERROR.
15. * = MW-3S WAS RESAMPLED ON 11/8/01 DUE TO ANILINE DETECTION DURING 9/2001 SAMPLING EVENT AT A CONCENTRATION OF 690 PPB. ANILINE WAS DETECTED ON 11/8/01 AT A CONCENTRATION OF 69 PPB.
16. ** = MONITORING WELLS MW-17R, MW-18, AND PZ-4S WERE RESAMPLED FOR ANILINE AND N,N-DIMETHYLANILINE ON JUNE 18, 2002 DUE TO N,N-DIMETHYLANILINE AND/ OR ANILINE DETECTION AT THESE PERIMETER MONITORING LOCATIONS DURING THE APRIL 2002 SAMPLING EVENT. THE RESULTS OF THIS RESAMPLING EVENT ARE SHOWN IN PARENTHESIS. MONITORING WELLS MW-24SR AND MW-24DR WERE ALSO SAMPLED ON JUNE 18, 2002 FOR ANALYSIS OF ANILINE AND N,N-DIMETHYLANILINE. THESE COMPOUNDS WERE NOT DETECTED.
17. ^ = THE ANILINE AND N,N-DIMETHYLANILINE DATA FOR THE 10/02 SAMPLING EVENT FOR MW-17R, MW-18, MW-19, MW-23S, MW-23I, MW-24SR, MW-24DR, MW-25S, PZ-4S, PZ-5S, AND PZ-5D WERE OBTAINED IN 1/03, BECAUSE THE 10/02 RESULTS WERE REJECTED DUE TO MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES BELOW CONTROL LIMITS.
18. THE 10/02 SAMPLING EVENT N,N-DIMETHYLANILINE DATA FOR MW-3S, MW-28 AND MW-29 AND THE 10/02 SAMPLING EVENT ANILINE AND N,N-DIMETHYLANILINE DATA FOR MW-30 WERE REJECTED DUE TO MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES BELOW CONTROL LIMITS. THESE MONITORING WELLS WERE NOT RESAMPLED.

0 120' 240'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR 1988 - MAY 2003 AREA 3

ARCADIS

FIGURE
2

TW-02R

Date	10/03	6/04
Acetone	68	140 J
Benzene	28	19 J
Toluene	75 J	39 J
Ethylbenzene	<5	31 J
Xylene	<10	111 J
Methanol	<1,000	<1,000
Trichloroethene	2 J	<10 J
Aniline	92,000 D	82,000
N,N-dimethylaniline	<260	<5,200
Methylene Chloride	91	4 J

TW-02RR

Date	11/04	6/05	11/05	6/06
Acetone	18 J	7.2 J	26 J	16
Benzene	4 J	3.6	6	4.4
Toluene	8 J	2.1 J	4.1	1.3 J
Ethylbenzene	4 J	3.6 J	3.6	2.7 J
Xylene	16 J	9.6	11	6.7
Methanol	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<10	0.3 J	<0.4	<1.0
Aniline	7,100 D	8,400	14,000	10,000
N,N-dimethylaniline	<5.0	<50	<110 J	<100
Methylene Chloride	<10	<3.0	<0.5	<3.0

MW-35

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	5 J	<25	<25	<5.0 J	<5.0 J	<5.0
Benzene	<5.0	<10	<10	<1.0	<1.0	<1.0
Toluene	<5.0	<10	<10	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	<10	<4.0	<4.0	<4.0
Xylene	<10	<20	<20	<5.0	<5.0	<5.0
Methanol	<1000	<1000	240 J	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<10	<1.0	<1.0	<1.0
Aniline	4 J	30	82	<1.0	<1.0	0.4 J
N,N-dimethylaniline	<5.0	4 J	<5.0	<1.0	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	<10	<3.0	<3.0	<3.0

MW-36

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	580 D	22 J	13 J	24 J	77 J	25
Benzene	<5.0	<10 J	<10	2.1	3.6	1.6
Toluene	<5.0	<10 J	<10	<5.0	2.0 J	0.7 J
Ethylbenzene	<5.0	<10 J	<10	<4.0	0.6 J	<4.0
Xylene	<10	<20 J	<20	1.0 J	2.8 J	1.2 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10 J	<10	<1.0	<1.0	<1.0
Aniline	100	33	22	1,200	1,600	76
N,N-dimethylaniline	<5.0	7	<5.0	<5.4	<10 J	1.9
Methylene Chloride	<5.0	<10 J	<10	<3.0	<3.0	<3.0

MW-34

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	9 J	24 J	<25	5.6 J	20 J	6.4
Benzene	<5.0	<10	<10	0.7 J	<0.3	0.6 J
Toluene	<5.0	<10	<10	0.9 J	0.9	0.5 J
Ethylbenzene	<5	<10	<10	<4.0	<0.5	<4.0
Xylene	<10	<20	<20	1.2 J	1.1	<5.0
Methanol	<1000	<1000	180 J	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<10	0.4 J	<0.4	<1.0
Aniline	18	30	14	16	12	16
N,N-dimethylaniline	<5.0	<5.0	<5.0	2.5	2 J	2.3
Methylene Chloride	<5.0	<10	<10	<3.0	<0.5	<3.0

TW-01

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	6 J	<25	<5.0 J	<1.3 J	<5.0 J
Benzene	6	3 J	2 J	1.8	1.9	1 J
Toluene	<5.0	<10	<10	<5.0	<0.4	<5.0 J
Ethylbenzene	<5.0	<10	<10	<4.0	<0.5	<4.0 J
Xylene	<10	<20	<20	<5.0	<0.4	<5.0 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J
Trichloroethene	<5.0	<10	<10	<1.0	<0.4	<1.0 J
Aniline	0.6 J	<5.0	<5.0	<1.0	<1.0	<1.0 J
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	0.8 J
Methylene Chloride	<5.0	<10	<10	<3.0	<0.5	<3.0 J

MW-31

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	1,200 D	15 J	<25	<5.0 J	<1.3 J	<5.0 J
Benzene	13	12	9 J	11	6.7	11 J
Toluene	<5.0	<10	<10	<5.0	<0.4	0.6 J
Ethylbenzene	<5.0	<10	<10	<4.0	<0.5	<4.0 J
Xylene	<5.0	<20	<20	1.3 J	0.6	1.7 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J
Trichloroethene	<5.0	<10	<10	<1.0	<0.4	<1.0 J
Aniline	88	3 J	<5.0	3.2	16	<1.0 J
N,N-dimethylaniline	<5.0	<5.0	<5.0	2.7	<1.0 J	2.4 J
Methylene Chloride	<5.0	<10	<10	<3.0	<0.5	3.4

MW-9S

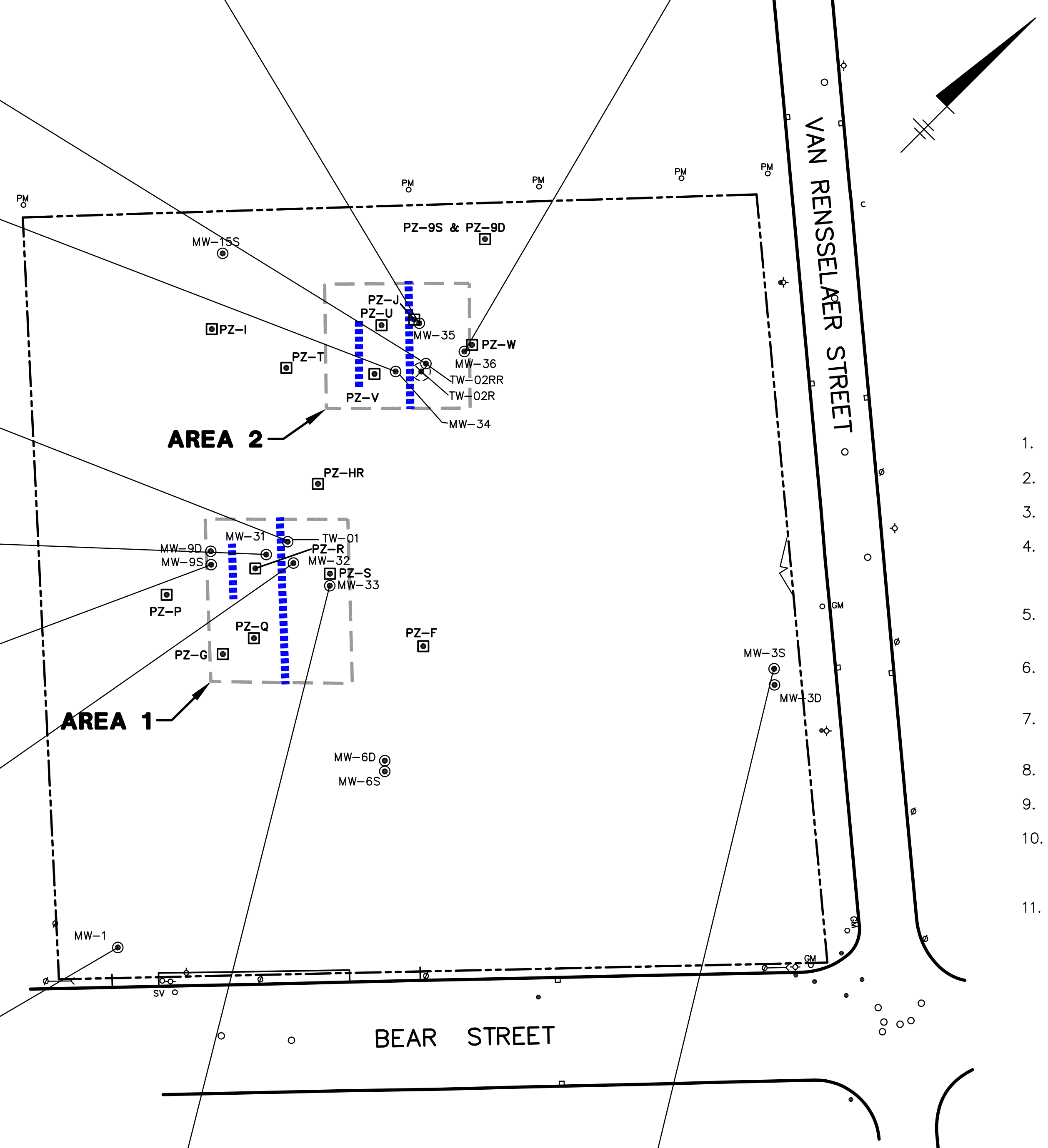
Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	14 J	<25	44 J	<1.3 J	<5.0 J
Benzene	2 J	6 J	4 J	1.9	3.5	1.1 J
Toluene	<5	2 J	2 J	3.2 J	3.8	2.3 J
Ethylbenzene	5	8 J	9 J	24	11	25 J
Xylene	19	19 J	30 J	64	33	60 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J
Trichloroethene	<5.0	<10	<10	<1.0	<0.4	<1.0 J
Aniline	1 J	<5.0	<5.0	2.6	1.4	<1.1 J
N,N-dimethylaniline	<5.0	<5.0	<5.0	1.9	6.1 J	3.8 J
Methylene Chloride	<5.0	<10	<10	<3.0	<0.5	<3.0 J

MW-32

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	20	6 J	<25	<5.0 J	<5.0 J	<5.0 J
Benzene	2 J	1 J	<10	1	<1.0	<1.0 J
Toluene	<5.0	<10	<10	<5.0	<5.0	<5.0 J
Ethylbenzene	<5.0	<10	<10	<4.0	<4.0	<4.0 J
Xylene	<10	<20	<20	<5.0	<5.0	<5.0 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J
Trichloroethene	<5.0	<10	<10	<1.0	<1.0	<1.0 J
Aniline	<5.0	1 J	<5.0	0.4 J	<1.0	<1.0 J
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.0 J
Methylene Chloride	<5.0	<10	<10	<3.0	<3.0	<3.0 J

MW-1

Date	10/03	8/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	–	<5.0 J	<1.3 J	<5.0 J
Benzene	<5.0	<10	–	<1.0	<0.3	<1.0 J
Toluene	<5.0	<10	–	<5.0	<0.4	<5.0 J
Ethylbenzene	<5.0	<10	–	<4.0	<0.5	<4.0 J
Xylene	<10	<20	–	<0.5	<0.5	<5.0 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J
Trichloroethene	<5.0	<10	–	<1.0	<0.4	<1.0 J
Aniline	2 J	<5.0	<5.0	0.2 J	<1.0	<1.0 J
N,N-Dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.0 J
Methylene Chloride	<5.0	<10	–	<3.0	<0.5	<3.0 J



MW-33

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	22	9 J	–	<5.0 J	<5.0 J	<5.0 J
Benzene	2 J	12 J	–	11	16	6.7 J
Toluene	<5.0	<10 J	–	1.0 J	1.8 J	0.7 J
Ethylbenzene	<5.0	<10 J	–	<4.0	<4.0	<4.0 J
Xylene	<10	<20 J	–	<5.0	<5.0	<5.0 J
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 J
Trichloroethene	<5.0	<10 J	–	<1.0	<1.0	<1.0 J
Aniline	1,900 D	2,700 D	2,700 D	1,800	3,500	370 J
N,N-dimethylaniline	<6.0	5 J	5 J	<10	<25 J	3.5 J
Methylene Chloride	<5.0	<10 J	–	<3.0	<3.0	<3.0 J

MW-3S

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	6 J	<25	<5.0 J	<1.3 J	<5.0
Benzene	<5.0	<10	<10	<1.0	<0.3	<1.0
Toluene	<5.0	<10	<10	<5.0	<0.4	<5.0
Ethylbenzene	<5.0	<10	<10	<4.0	<0.5	<4.0
Xylene	<10	<20	<20	<5.0	<0.4	<5.0
Methanol	<1,000	<1,000	150 J	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<10	<1.0	<0.4	<1.0
Aniline	4 J	0.8 J	4 J	15	<1.0	<1.0
N,N-dimethylaniline	<5.0	<6.0	<5.0	<1.0	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	<10	<3.0	<0.5	<3.0

LEGEND:

- UTILITY POLE
- CATCH BASIN
- PM PETROLEUM PIPE LINE MARKER
- GM GAS LINE MARKER
- SV SEWER VENT
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- TW-02R REMOVED GROUNDWATER MONITORING WELL
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER INFILTRATION TRENCH

SAMPLE IDENTIFICATION

MW-35

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	5 J	<25	<25	<5.0 J	<5.0 J	<5.0
Benzene	<5.0	<10	<10	<1.0	<1.0	<1.0
Toluene	<5.0	<10	<10	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	<10	<4.0	<4.0	<4.0
Xylene	<10	<20	<20	<5.0	<5.0	<5.0
Methanol	<1000	<1000	240 J	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<10	<1.0	<1.0	<1.0
Aniline	4 J	30	82	<1.0	<1.0	0.4 J
N,N-dimethylaniline	<5.0	4 J	<5.0	<1.0	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	<10	<3.0	<3.0	<3.0

CONCENTRATION (ppb)

DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY COC CONCENTRATIONS DETECTED OR THAT HAVE BEEN DETECTED ARE PRESENTED ON THIS FIGURE (SEE ATTACHMENT A FIGURE 1).
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
8. D = CONCENTRATION IS BASED ON DILUTED SAMPLE ANALYSIS.
9. R = THE SAMPLE RESULT WAS REJECTED.
10. DURING THE AUGUST 2004 SUPPLEMENTAL REMEDIAL ACTIVITIES, MONITORING WELL TW-02R WAS REMOVED AND TW-02RR WAS CONSTRUCTED OUTSIDE THE SOIL REMOVAL AREA IN THE VICINITY OF TW-02R.
11. THE 11/04 SAMPLING EVENT VOLATILE ORGANIC COMPOUND (VOC) DATA FOR MW-33 AND MW-1 WERE INADVERTENTLY LOST DUE TO LABORATORY EQUIPMENT FAILURE. AS DETAILED IN THE BIANNUAL REPORT, THESE MONITORING WELLS WERE NOT RESAMPLED.

0 100' 200'
GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR OCTOBER 2003 - JUNE 2006 AREAS 1 & 2

ARCADIS

FIGURE
3

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: N.SMITHGALL L.FORAKER LD: PIC: D.ULM PM: D.PENNIMAN TM: D.PENNIMAN LYR: ON=*;OFF=*REF
G:\ENVCAD\SYRACUSE\ACT\B0026003\0000\00190\DWG\MARCH09\26003C02.DWG LAYOUT: 4 SAVED: 8/4/2011 2:36 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/4/2011 2:53 PM BY: JONES, WENDY
XREFS: 26003X01 26003XBL IMAGES: PROJECTNAME: ----

MW-27

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	170	23 J	<120 (28)	31 J	35 J (37 J)	5.3 J (5.8 J)
Benzene	5	5 J	<50 (4 J)	6.1	11 (12)	9.5 J (8.9 J)
Toluene	<5.0	4 J	<50 (2 J)	15	77 (78)	50 J (48 J)
Ethylbenzene	<5.0	2 J	<50 (<10)	5.8	26 (26)	25 J (25 J)
Xylene	3 J	6 J	<100 (<20)	15	86 (88)	66 J (63 J)
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000 (<1,000)	<1,000 J (<1,000 J)
Trichloroethene	<5.0	<10	<50 (<10)	<1.0	<1.0 (<1.0)	<1.0 J (<1.0 J)
Aniline	3,700 D	3,700 D	1,100 D J	5,200	37,000 (38,000)	14,000 J (12,000 J)
N,N-dimethylaniline	<5.0	20 J	<5.0	<23	<270 J (<260 J)	<100 J (<100 J)
Methylene Chloride	240 D	<10	310 (490 D)	<3.0	<3.0 (<3.0)	<3.0 J (<3.0 J)

MW-19

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<11	<25	<25	<5.0 J	<5.0 J	<5.0
Benzene	<5.0	<10	<10	<1.0	<1.0	<1.0
Toluene	<5.0	<10	<10	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	<10	<4.0	<4.0	<4.0
Xylene	<10	<20	<20	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<10	<1.0	<1.0	<1.0
Aniline	51 J	<5.0	<5.0	<1.1	<1.0	<1.0
N,N-dimethylaniline	16 J	<5.0	<5.0	<1.1	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	<10	<3.0	<3.0	<3.0

MW-24DR

Date	10/03	11/04	6/05	11/05
Acetone	<12	–	<5.0 J	<5.0 J
Benzene	<5.0	–	<1.0	<1.0
Toluene	<5.0	–	<5.0	<5.0
Ethylbenzene	<5.0	–	<4.0	<4.0
Xylene	<10	–	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	–	<1.0	<1.0
Aniline	0.5 J	<5.0	<1.0	<1.1
N,N-Dimethylaniline	<5.0	<5.0	<1.0	<1.1 J
Methylene Chloride	<5.0	–	<3.0	<3.0

PZ-5D

Date	10/03	6/04	11/04	6/05	11/05
Aniline	46	<5.0	<5.0	<1.0	<1.0

PZ-5S

Date	10/03	11/04	6/05	11/05
Acetone	<12	–	<5.0 J	<5.0 J

PZ-4S

Date	6/04	6/05	6/06
Aniline	<5.0	<1.0	<1.0
N,N-dimethylaniline	<5.0	<1.0	<1.0
Toluene	<10	<5.0	0.6 J

PZ-4D

Date	6/04	6/05	6/06
N,N-dimethylaniline	<5.0	<1.0	<1.0
Toluene	<10	<5.0	0.5 J

MW-24SR

Date	10/03	6/04	11/04	6/05	11/05
Acetone	<12	<25	–	<5.0 J	<5.0 J
Benzene	<5.0	<10	–	<1.0	<1.0
Toluene	<5.0	<10	–	<5.0	<5.0
Ethylbenzene	<5.0	<10	–	<4.0	<4.0
Xylene	<10	<20	–	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	–	<1.0	<1.0
Aniline	16	<5.0	<5.0	<1.0	<1.0
N,N-Dimethylaniline	<6.0	<5.0	<5.0	<1.0	<1.0 J
Methylene Chloride	<5.0	<10	–	<3.0	<3.0

MW-17R

Date	11/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	–	<5.0 J	<5.0 J	<5.0
Benzene	7	5 J	–	<1.0	<1.0	0.8 J
Toluene	<5.0	<10	–	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	–	<4.0	<4.0	<4.0
Xylene	<10	<20	–	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	200 J	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	–	<1.0	<1.0	<1.0
Aniline	<5.0	<5.0	<5.0	<1.0	<1.0	<1.1
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.1
Methylene Chloride	<5.0	<10	–	<3.0	<3.0	<3.0

MW-18

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	–	<5.0 J	<5.0 J	<5.0
Benzene	<5.0	<10	–	<1.0	<1.0	<1.0
Toluene	<5.0	<10	–	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	–	<4.0	<4.0	<4.0
Xylene	<10	<20	–	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	–	<1.0	<1.0	<1.0
Aniline	0.7 J	R	<5.0	<1.0	<1.1	<1.0
N,N-Dimethylaniline	<5.0	R	<5.0	<1.0	<1.1 J	<1.0
Methylene Chloride	<5.0	<10	–	<3.0	<3.0	<3.0

MW-30

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	<120	<5.0 J	<5.0 J	<5.0
Benzene	<5.0	<10	<50	0.3 J	0.7 J	0.6 J
Toluene	<5.0	<10	<50	<5.0	0.6 J	0.4 J
Ethylbenzene	<5.0	<10	<50	<4.0	<4.0	<4.0
Xylene	<10	<20	<100	<5.0	0.5 J	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<50	<1.0	<1.0	<1.0
Aniline	4 J	<5.0	<5.0	<1.0	240	29
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	<50	<3.0	<3.0	<3.0

MW-8S

Date	10/03	6/04
Acetone	21	<25
Benzene	25	40
Toluene	330 D	330 EJ
Ethylbenzene	93	110
Xylene	360	400
Methanol	1,200 J	<1,000
Trichloroethene	3,100 D	5,900 D
Aniline	67,000 D	56,000
N,N-dimethylaniline	24,000 D	51,000
Methylene Chloride	400,000 D	1,200,000 D

MW-8SR

Date	11/04	6/05	11/05	6/06
Acetone	<1,200	81 J	15 J	48
Benzene	<500	13	13	15
Toluene	100 DJ	100	130	120
Ethylbenzene	<500	53	66	79
Xylene	164 DJ	180	260	260
Methanol	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<500	<1.0	<1.0	<1.0
Aniline	35,000 D	30,000	32,000	23,000
N,N-dimethylaniline	5,300 D	<200	<260 J	<200
Methylene Chloride	10,000 D	<3.0	<3.0	<3.0

MW-23S

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	–	<5.0 J	<5.0 J	<5.0 J
Benzene	<5.0	<10	–	<1.0	<1.0	<1.0
Toluene	<5.0	<10	–	<5.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	–	<4.0	<4.0	<4.0
Xylene	<10	<20	–	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	–	<1.0	<1.0	<1.0
Aniline	60	<5.0	<5.0	<1.0	<1.0	<1.2
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.2
Methylene Chloride	<5.0	<10	–	<3.0	<3.0	<3.0

MW-23I

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	–	<5.0 J	<5.0 J	<5.0 J
Benzene	<5.0	<10	–	<1.0	<1.0	<1.0
Toluene	<5.0	<10	–	<5.0	<5.0	0.6 J
Ethylbenzene	<5.0	<10	–	<4.0	<4.0	<4.0
Xylene	<10	<20	–	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	–	<1.0	<1.0	<1.0
Aniline	<5.0	1 J	<5.0	<1.0	<1.0	<1.0
N,N-Dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	–	<3.0	<3.0	<3.0

MW-25D

Date	6/04	6/05	6/06
Acetone	<25	<5.0 J	<5.0
Trichloroethene	<10	<1.0	<1.0
Aniline	<5.0	<1.0	<1.0
N,N-dimethylaniline	<5.0	<1.0	<1.0

MW-28

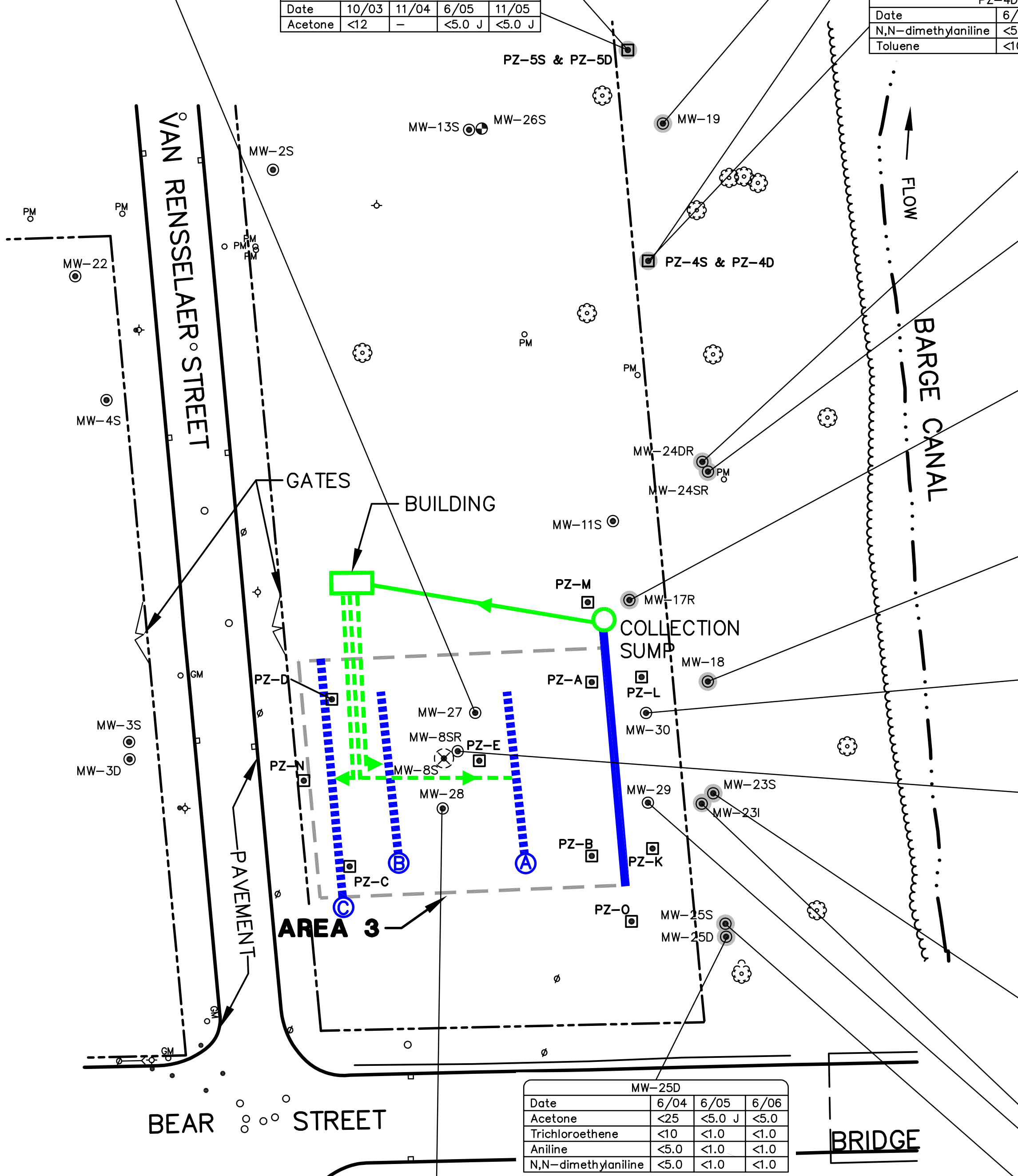
Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	24	20 J	<120 (<25)	5.2 J	6.8 J (7.8 J)	<5.0J (<5.0 J)
Benzene	11	4 J	<50 (4 J)	4.5	6.1 (5.8)	6.0J (6.3 J)
Toluene	6	2 J	<50 (<10)	1.2 J	<5.0 (<5.0)	1.2 J (1.3 J)
Ethylbenzene	12	5 J	<50 (5 J)	4.6	4.7 (4.7)	5.3J (5.4 J)
Xylene	13 J	4 J	<100 (3 J)	3.9 J	<5.0 (<5.0)	4.2 J (4.3 J)
Methanol	<1,000	<1,000	190 J	<1,000	<1,000 (<1,000)	<500J(<1,000 J)
Trichloroethene	<5	<10	<50 (<10)	<1.0	<1.0 (<1.0)	<1.0J (<1.0 J)
Aniline	1,900 D	910 D	640 D J	630	380 (350)	430J (530 J)
N,N-dimethylaniline	<5.0	<5.0	<5.0	<5.0	<2.2 J (<2.1 J)	<2.1J (<5.0 J)
Methylene Chloride	<5.0	<10	<50 (<10)	<3.0	<3.0 (<3.0)	<3.0J (<3.0 J)

MW-25S

Date	11/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	–	<5.0 J	<5.0 J	<5.0 J
Benzene	<5.0	<10	–	<1.0	<1.0	<1.0
Toluene	<5.0	<10	–	<4.0	<5.0	<5.0
Ethylbenzene	<5.0	<10	–	<4.0	<4.0	<4.0
Xylene	<10	<20	–	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	–	<1.0	<1.0	<1.0
Aniline	<5.0	<5.0	<5	<1.1	<1.0	<1.0
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.1	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	–	<3.0	<3.0	<3.0

MW-29

Date	10/03	6/04	11/04	6/05	11/05	6/06
Acetone	<12	<25	<120	<5.0 J	<5.0 J	<5.0
Benzene	<5.0	<10	<50	<1.0	<1.0	<1.0
Toluene	<5.0	<10	<50	<5.0	<5.0	<5.0
Ethylbenzene	<5	<10	<50	<4.0	<4.0	<4.0
Xylene	<10	<20	<100	<5.0	<5.0	<5.0
Methanol	<1,000	<1,000	420 J	<1,000	<1,000	<1,000
Trichloroethene	<5.0	<10	<50	<1.0	<1.0	<1.0
Aniline	2 J	3 J	<5.0	<1.0	<1.0	<1.0
N,N-dimethylaniline	<5.0	<5.0	<5.0	<1.0	<1.0 J	<1.0
Methylene Chloride	<5.0	<10	<50	<3.0	<3.0	<3.0



LEGEND:

- UTILITY POLE
- CATCH BASIN
- PMO PETROLEUM PIPE LINE MARKER
- GMO GAS LINE MARKER
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- EDGE OF WATER
- EDGE OF TREELINE
- TREE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- OR BIANNUAL DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- MW-26S PUMPING WELL
- MW-8S REMOVED GROUNDWATER MONITORING WELL
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER WITHDRAWAL TRENCH
- A GROUNDWATER INFILTRATION TRENCH
- PIPING TO BUILDING
- PIPING FROM BUILDING

SAMPLE IDENTIFICATION

CONCENTRATION (ppb)

MW-8S

Date	10/03	6/04
Acetone	21	<25
Benzene	25	40
Toluene	330 D	330 EJ
Ethylbenzene	93	110
Xylene	360	400
Methanol	1,200 J	<1,000
Trichloroethene	3,100 D	5,900 D
Aniline	67,000 D	56,000
N,N-dimethylaniline	24,000 D	51,000
Methylene Chloride	400,000 D	1,200,000 D

DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY COC CONCENTRATIONS DETECTED OR HAVE BEEN DETECTED ARE PRESENTED ON THIS FIGURE (SEE ATTACHMENT A FIGURE 2).
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
8. D = CONCENTRATION IS BASED ON DILUTED SAMPLE ANALYSIS.
9. R = THE SAMPLE RESULT WAS REJECTED.
10. E = THE COMPOUND WAS QUANTITATED ABOVE THE CALIBRATION RANGE.
11. THE 6/04 SAMPLING EVENT ANILINE AND N,N-DIMETHYLANILINE DATA FOR MW-18 WERE REJECTED DUE TO THE DEVIATION FROM A SURROGATE RECOVERY BELOW 10 PERCENT. THIS MONITORING WELL WAS NOT RESAMPLED.
12. DURING THE AUGUST 2004 SUPPLEMENTAL REMEDIAL ACTIVITIES, MONITORING WELL MW-8S WAS REMOVED AND MW-8SR WAS CONSTRUCTED DOWNGRADIENT OF THE SOIL REMOVAL AREA IN THE VICINITY OF MW-8S.
13. THE 11/04 SAMPLING EVENT VOLATILE ORGANIC COMPOUND (VOC) DATA FOR MW-17R, MW-18, MW-23I, MW-23S, MW-24DR, MW-24SR, MW-25S, PZ-5D, AND PZ-5S WERE INADVERTENTLY LOST DUE TO LABORATORY EQUIPMENT FAILURE. AS DETAILED IN THE BIANNUAL REPORT, THESE MONITORING WELLS WERE NOT RESAMPLED.
14. THE 11/04 SAMPLING EVENT VOC INITIAL DATA FOR MW-27, MW-28, MW-29, AND MW-30 WERE INADVERTENTLY LOST DUE TO LABORATORY EQUIPMENT FAILURE. HOWEVER, VALID DATA WAS OBTAINED FROM SUBSEQUENT DILUTIONS OF THESE SAMPLES, RESULTING IN HIGHER DETECTION LIMITS. THE VOC RESULTS OBTAINED FROM THE DUPLICATE SAMPLES COLLECTED AT MW-27 AND MW-28 HAVE LOWER DETECTION LIMITS AND ARE PRESENTED ON THIS FIGURE IN PARENTHESES.

0 100' 200'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK

PERIODIC REVIEW REPORT

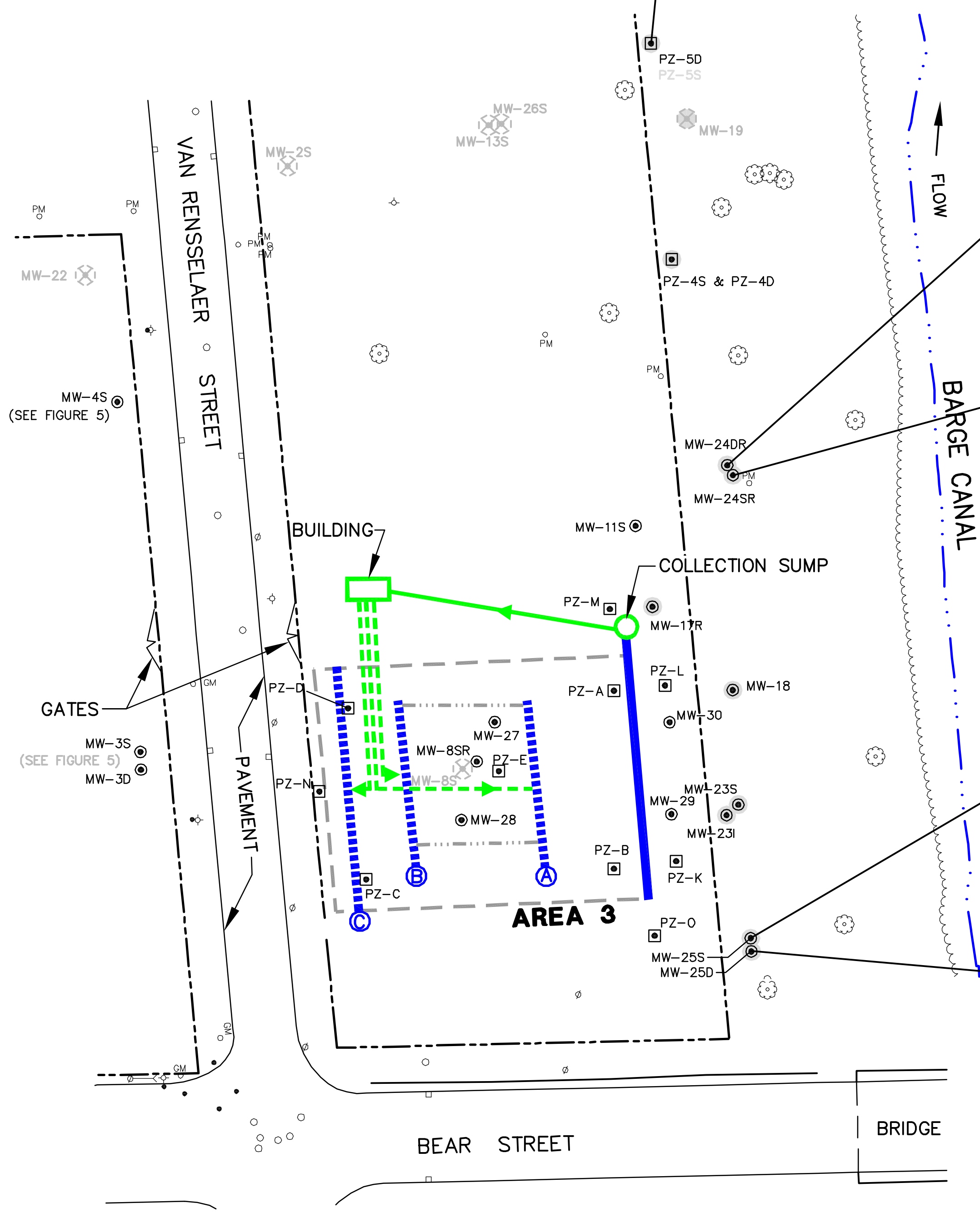
GROUNDWATER MONITORING DATA SUMMARY FOR OCTOBER 2003 - JUNE 2006 AREA 3

ARCADIS

FIGURE

4

PZ-5D				
Date	11/1/2006	11/13/2007	8/26/2008	9/17/2009
Acetone	R	<5.0 J	<5.0	<10 J
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.1	<5.0
N,N-Dimethylaniline	<1.0 J	<0.50	<0.50	<1.0
Methanol	<500	<500	<500	<500



MW-24DR				
Date	11/1/2006	11/14/2007	8/26/2008	9/18/2009
Acetone	R	<5.0	<5.0	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.7	<5.0
N,N-Dimethylaniline	<1.0 J	<0.50	<0.60	<1.0
Methanol	<500	<500	<500	<500

MW-24SR				
Date	11/1/2006	11/14/2007	8/26/2008	9/18/2009
Acetone	R	<5.0	<5.0	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.7	<5.0
N,N-Dimethylaniline	<1.0 J	<0.50	<0.60	<1.0
Methanol	<500	<500	<500	<500

MW-25S								
Date	11/1/2006	6/7/2007	11/14/2007	3/27/2008	8/26/2008	3/25/2009	9/17/2009	4/29/2010
Acetone	R	<5.0	<5.0	<5.0	<5.0	<10	<10 J	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0	<1.0	<1.0	<1.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0
Aniline	<1.0	<5.0	<5.0	<5.0	<5.2	<5.0	<5.0	<5.0
N,N-Dimethylaniline	<1.0 J	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0
Methanol	<500	<500	<500	<500	<500	<500	<500	<500

MW-25D				
Date	6/7/2007	3/27/2008	3/25/2009	4/29/2010
Acetone	12 J	<5.0	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<1.0	<1.0
Toluene	<5.0	<5.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<3.0	<3.0
Aniline	<5.0	<5.0	<5.0	<5.0
N,N-Dimethylaniline	<1.0	<0.50	<0.50	<1.0
Methanol	<500	<500	<500	<500

LEGEND:

- UTILITY POLE
- CATCH BASIN
- PM○ PETROLEUM PIPE LINE MARKER
- GM○ GAS LINE MARKER
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY
- LINE EDGE OF WATER
- EDGE OF TREELINE
- TREE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- OR BIANNUAL DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- MW-26S PUMPING WELL
- MW-8S REMOVED/DECOMMISSIONED GROUNDWATER MONITORING WELL/PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER WITHDRAWAL TRENCH
- A GROUNDWATER INFILTRATION TRENCH AND IDENTIFICATION
- PIPING TO BUILDING
- PIPING FROM BUILDING

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY COC CONCENTRATIONS DETECTED OR HAVE BEEN DETECTED ARE PRESENTED ON THIS FIGURE (SEE ATTACHMENT A FIGURES 2 AND 4).
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. NA = COMPOUND WAS NOT ANALYZED FOR IN THE SAMPLE.
8. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
9. R = THE SAMPLE RESULT WAS REJECTED.
10. B = COMPOUND WAS FOUND IN ASSOCIATED METHOD BLANK.
11. THE 9/06, 8/07 AND 6/09 SAMPLING EVENTS WERE INTERIM SAMPLING EVENTS, ANALYZING FOR ANILINE & N,N-DIMETHYLANILINE ONLY. THE 6/10 SAMPLING EVENT WAS AN INTERIM SAMPLING EVENT ANALYZING FOR VOLATILE ORGANIC COMPOUNDS ONLY.
12. SAMPLE DATA ARE COMPARED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) GROUNDWATER QUALITY STANDARDS (GQS) (TECHNICAL AND OPERATIONAL GUIDANCE SERIES 1.1.1).
13. NS – STANDARD NOT AVAILABLE.

SAMPLE IDENTIFICATION

PZ-##							
Date	Jun-06	Jun-07	Mar-08	Mar-09	Apr-10	Jun-10	Apr-11
Acetone	<5.0	<5.0	<5.0	<10	<10	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0	5.3 J	<1.0	<1.0
Toluene	0.50 J	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0
Aniline	<1.0	<5.5	<5.0	<5.0	<5.0	NA	<5.3
N,N-Dimethylaniline	<1.0	<1.1	<0.50	<0.50	<1.0	NA	<1.1
Methanol	<1000	<500	NA	NA	<500	NA	NA

CONCENTRATION (ppb)

DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.

NYSDEC GQS	
Acetone	50
Benzene	1
Ethylbenzene	5
Methylene Chloride	5
Toluene	5
Trichloroethene	5
Xylenes (total)	5
Aniline	5
N,N-dimethylaniline	1
Methanol	NS

0 100' 200'

GRAPHIC SCALE

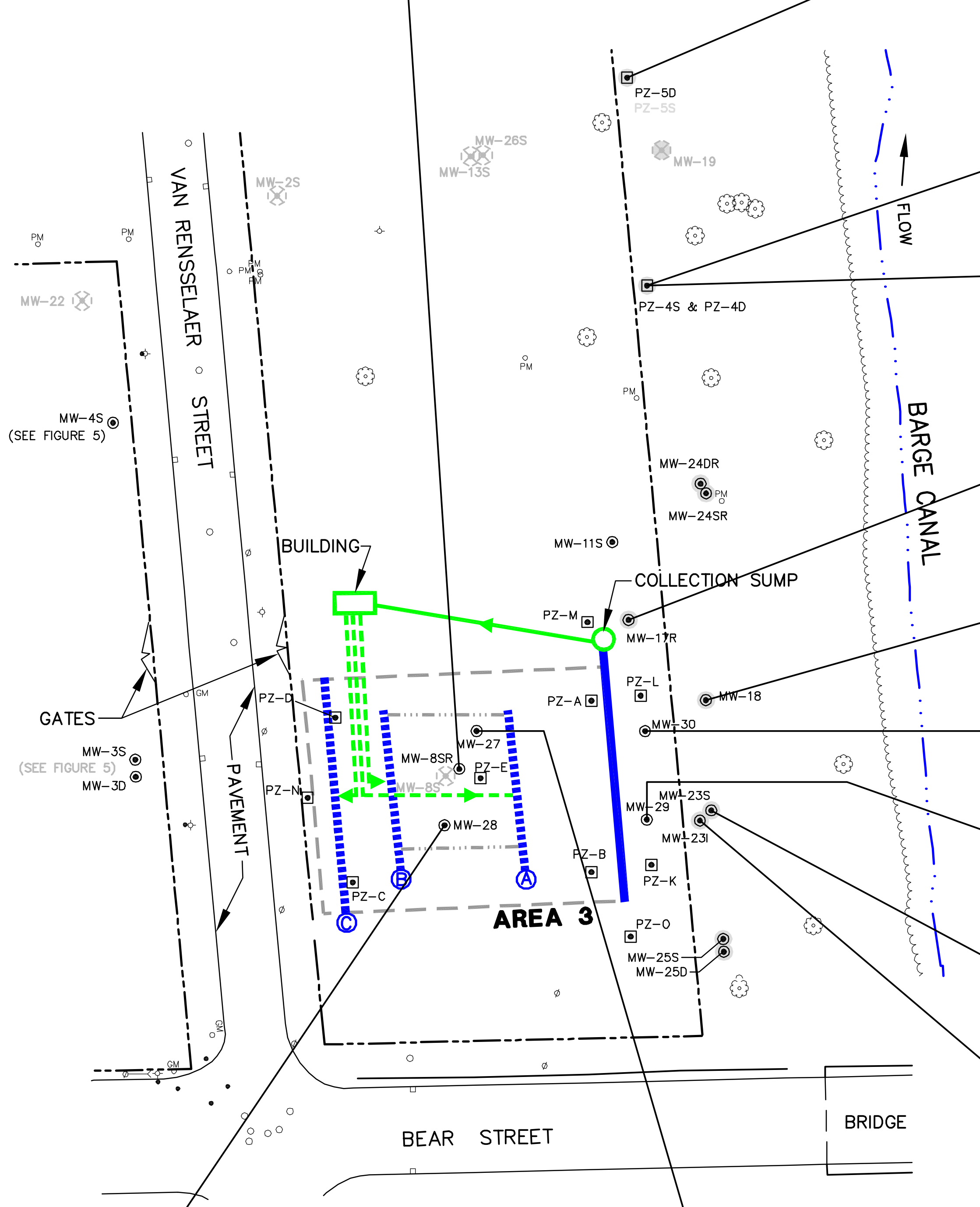
McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR SEPTEMBER 2006 - AUGUST 2009 AREA 3 (AEROBIC TREATMENT)

ARCADIS

FIGURE 5

CITY: SYRACUSE, N.Y. DIV/GROUP: ENVCAD-141 DB: N.SMITHGALL, L.FORAKER, W.JONES LD: PIC: D. ULM PM: D. PENNIMAN TM: D. PENNIMAN LYR: ON=*;OFF=*REF
G:\ENVCAD\SYRACUSE\ACT\B0026003\0000\00190\DWG\OCT2011\26003C03.DWG LAYOUT: 5SAVED: 12/13/2011 2:10 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/13/2011 2:13 PM BY: POSENAUER, LISA
XREFS: 26003X01 26003X00



MW-8SR							
Date	9/6/2006	11/1/2006	6/7/2007	8/2/2007	11/12/2007	3/27/2008	8/28/2008
Acetone	NA	28	58	NA	<5.0 J	<10 [9.6 J]	8.2 J [<10]
Benzene	NA	16	14	NA	12	5.5 [5.7]	11 [11]
Ethylbenzene	NA	84	83	NA	73	70 [68]	70 [70]
Methylene Chloride	NA	<3.0	<6.0	NA	<3.0	<6.0 [<6.0]	<6.0 [<6.0]
Toluene	NA	100	110	NA	22	22 [22]	24 [22]
Trichloroethene	NA	<1.0	<2.0	NA	<1.0	<2.0 [<2.0]	<2.0 [<2.0]
Xylenes (total)	NA	270	250	NA	210	160 [160]	190 [190]
Aniline	52000 [51000]	28000	2700	17000	22000 J	5800 [5200]	32000 [25000]
N,N-Dimethylaniline	<520 [<520]	<200	<22	<100	<100 J	<25 [<50]	<250 [<250]
Methanol	NA	<500	<500	NA	<500	<500 [<500]	<500 [<500]

PZ-5D			
Date	11/1/2006	11/13/2007	8/26/2008
Acetone	R	<5.0 J	<5.0
Benzene	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0
Methylene Chloride	<3.0	<3.0	<3.0
Toluene	<5.0	<5.0	<5.0
Trichloroethene	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0
Aniline	<1.0	<5.0	<5.1
N,N-Dimethylaniline	<1.0 J	<0.50	<0.50
Methanol	<500	<500	<500

PZ-4S		
Date	6/7/2007	3/27/2008
Acetone	<5.0	<5.0
Benzene	<1.0	<1.0
Ethylbenzene	<4.0	<4.0
Methylene Chloride	<3.0	<3.0
Toluene	<5.0	<5.0
Trichloroethene	<1.0	<1.0
Xylenes (total)	<5.0	<5.0
Aniline	<5.5	<5.0
N,N-Dimethylaniline	<1.1	<0.50
Methanol	<500	<500

PZ-4D		
Date	6/7/2007	3/27/2008
Acetone	<5.0	<5.0
Benzene	<1.0	<1.0
Ethylbenzene	<4.0	<4.0
Methylene Chloride	<3.0	<3.0
Toluene	<5.0	<5.0
Trichloroethene	<1.0	<1.0
Xylenes (total)	<5.0	<5.0
Aniline	<5.5	<5.0
N,N-Dimethylaniline	<1.1	<0.50
Methanol	<500	<500

MW-17R						
Date	11/1/2006	6/7/2007	11/16/2007	3/26/2008	8/28/2008	
Acetone	R	<5.0	<5.0	<5.0	2.3 J	<10
Benzene	<1.0	0.70 J	<1.0	<1.0	1.8	2.3
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0
N,N-Dimethylaniline	<1.0 J	<1.0	<0.50	<0.50	<0.50	<0.50
Methanol	<500	<500	<500 J	<500	<500	<500

MW-18					
Date	11/1/2006	6/7/2007	11/14/2007	3/27/2008	8/26/2008
Acetone	R	<5.0	<5.0	<5.0	5.5
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0
Aniline	<1.0	<5.0	<5.0	<5.0	<5.6
N,N-Dimethylaniline	<1.0 J	<1.0	<0.50	<0.50	<0.60
Methanol	<500	<500	<500	<500	<500

MW-30					
Date	11/1/2006	6/7/2007	11/13/2007	3/26/2008	8/28/2008
Acetone	11	<5.0	<5.0 J	<5.0	<5.0
Benzene	1.0	<1.0	0.80 J	0.60 J	0.70 J
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	0.20 J	<5.0
Aniline	200	30	49	3.0 J	31
N,N-Dimethylaniline	<1.0	<1.1	<0.50	0.70	<0.50
Methanol	<500	<500	<500	<500	<500

MW-29					
Date	11/1/2006	6/7/2007	11/13/2007	3/26/2008	8/28/2008
Acetone	5.4	<5.0	<5.0 J	<5.0	<5.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	0.50 J	<5.0	<5.0	<5.0
Aniline	0.40 J	<5.5	<5.0 J	<5.0	<5.0
N,N-Dimethylaniline	<1.0	<1.1	<0.50 J	<0.50	<0.50
Methanol	<500	<500	<500	<500	<500

MW-23S					
Date	11/1/2006	6/7/2007	11/14/2007	3/27/2008	8/26/2008
Acetone	R	<5.0	<5.0	<5.0	<5.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0
Aniline	<1.0	<5.0	<5.0	<5.0	<5.6
N,N-Dimethylaniline	<1.0 J	<1.0	<0.50	<0.50	<0.60
Methanol	<500	<500	<500	<500	<500

MW-23I					
Date	11/1/2006	6/7/2007	11/14/2007	3/27/2008	8/28/2008
Acetone	R	<5.0	<5.0	<5.0	<5.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0
Aniline	<1.0	<5.0	<5.0	<5.0	<5.0
N,N-Dimethylaniline	<1.0 J	<1.0	<0.50	<0.50	<0.50
Methanol	<500	<500	<500	<500	<500

MW-28							
Date	9/12/2006	11/1/2006	6/7/2007	8/2/2007	11/13/2007	3/26/2008	8/28/2008
Acetone	NA	12	13	NA	<5.0 J	<5.0	<5.0
Benzene	NA	8.2	4.6	NA	4.5	4.0	3.8
Ethylbenzene	NA	5.6	0.80 J	NA	1.4 J	1.6 J	<4.0
Methylene Chloride	NA	<3.0	<3.0	NA	<3.0	<3.0	<3.0
Toluene	NA	1.4 J	0.40 J	NA	0.50 J	0.50 J	<5.0
Trichloroethene	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0
Xylenes (total)	NA	4.4 J	0.60 J	NA	0.80 J	1.3 J	<5.0
Aniline	280	1000	60	40	29 J	81	0.70 J
N,N-Dimethylaniline	<2.2	<5.2	<1.0	<1.0	<0.50 J	0.90	<0.50
Methanol	NA	<500	<500	NA	<500	<500	<500

MW-27							
Date	9/12/2006	11/1/2006	6/7/2007	8/2/2007	11/13/2007	3/27/2008	8/28/2008
Acetone	NA	31 [24]	21	NA	<5.0 J [<5.0]	21	3.8 J
Benzene	NA	14 [14]	8.4	NA	6.6 [5.9]	9.4	5.0
Ethylbenzene	NA	42 [45]	14	NA	8.6 [7.2]	43	1.8 J
Methylene Chloride	NA	<3.0 [<3.0]	<3.0	NA	<3.0 [<3.0]	<6.0	<3.0
Toluene	NA	71 [71]	9.5	NA	4.7 J [4.1 J]	23	2.2 J
Trichloroethene	NA	<1.0 [<1.0]	<1.0	NA	<1.0 [<1.0]	<2.0	<1.0
Xylenes (total)	NA	91 [110]	24	NA	24 [21]	68	10
Aniline	1700	33000 [33000]	1100	<10 J [4300 J]	3000 J [3800 J]	13000	2400
N,N-Dimethylaniline	<10	<210 [<200]	<10	<1.0 [<20]	<25 J [<25 J]	<100	<25
Methanol	NA	<500 [<500]	<500	NA	<500 [<500]	<500	<500

LEGEND:

- UTILITY POLE
- CATCH BASIN
- PMO PETROLEUM PIPE LINE MARKER
- GMO GAS LINE MARKER
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY
- LINE EDGE OF WATER
- EDGE OF TREELINE
- TREE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- OR BIANNUAL DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- MW-26S PUMPING WELL
- MW-8S REMOVED/DECOMMISSIONED GROUNDWATER MONITORING WELL/PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER WITHDRAWAL TRENCH
- A GROUNDWATER INFILTRATION TRENCH AND IDENTIFICATION
- PIPING TO BUILDING
- PIPING FROM BUILDING

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
5. ONLY COC CONCENTRATIONS DETECTED OR HAVE BEEN DETECTED ARE PRESENTED ON THIS FIGURE (SEE ATTACHMENT A FIGURES 2 AND 4).
6. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
7. NA = COMPOUND WAS NOT ANALYZED FOR IN THE SAMPLE.
8. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
9. R = THE SAMPLE RESULT WAS REJECTED.
10. B = COMPOUND WAS FOUND IN ASSOCIATED METHOD BLANK.
11. THE 9/06, 8/07 AND 6/09 SAMPLING EVENTS WERE INTERIM SAMPLING EVENTS, ANALYZING FOR ANILINE & N,N-DIMETHYLANILINE ONLY. THE 6/10 SAMPLING EVENT WAS AN INTERIM SAMPLING EVENT ANALYZING FOR VOLATILE ORGANIC COMPOUNDS ONLY.
12. SAMPLE DATA ARE COMPARED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) GROUNDWATER QUALITY STANDARDS (GQS) (TECHNICAL AND OPERATIONAL GUIDANCE SERIES 1.1.1).
13. NS – STANDARD NOT AVAILABLE.

SAMPLE IDENTIFICATION

PZ-##							
Date	Jun-06	Jun-07	Mar-08	Mar-09	Apr-10	Jun-10	Apr-11
Acetone	<5.0	<5.0	<5.0	<10	<10	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0	5.3 J	<1.0	<1.0
Toluene	0.50 J	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0
Aniline	<1.0	<5.5	<5.0	<5.0	<5.0	NA	<5.3
N,N-Dimethylaniline	<1.0	<1.1	<0.50	<0.50	<1.0	NA	<1.1
Methanol	<1000	<500	NA	NA	<500	NA	NA

CONCENTRATION (ppb)

DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.

NYSDEC GQS	
Acetone	50
Benzene	1
Ethylbenzene	5
Methylene Chloride	5
Toluene	5
Trichloroethene	5
Xylenes (total)	5
Aniline	5
N,N-dimethylaniline	1
Methanol	NS

0 100' 200'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK

PERIODIC REVIEW REPORT

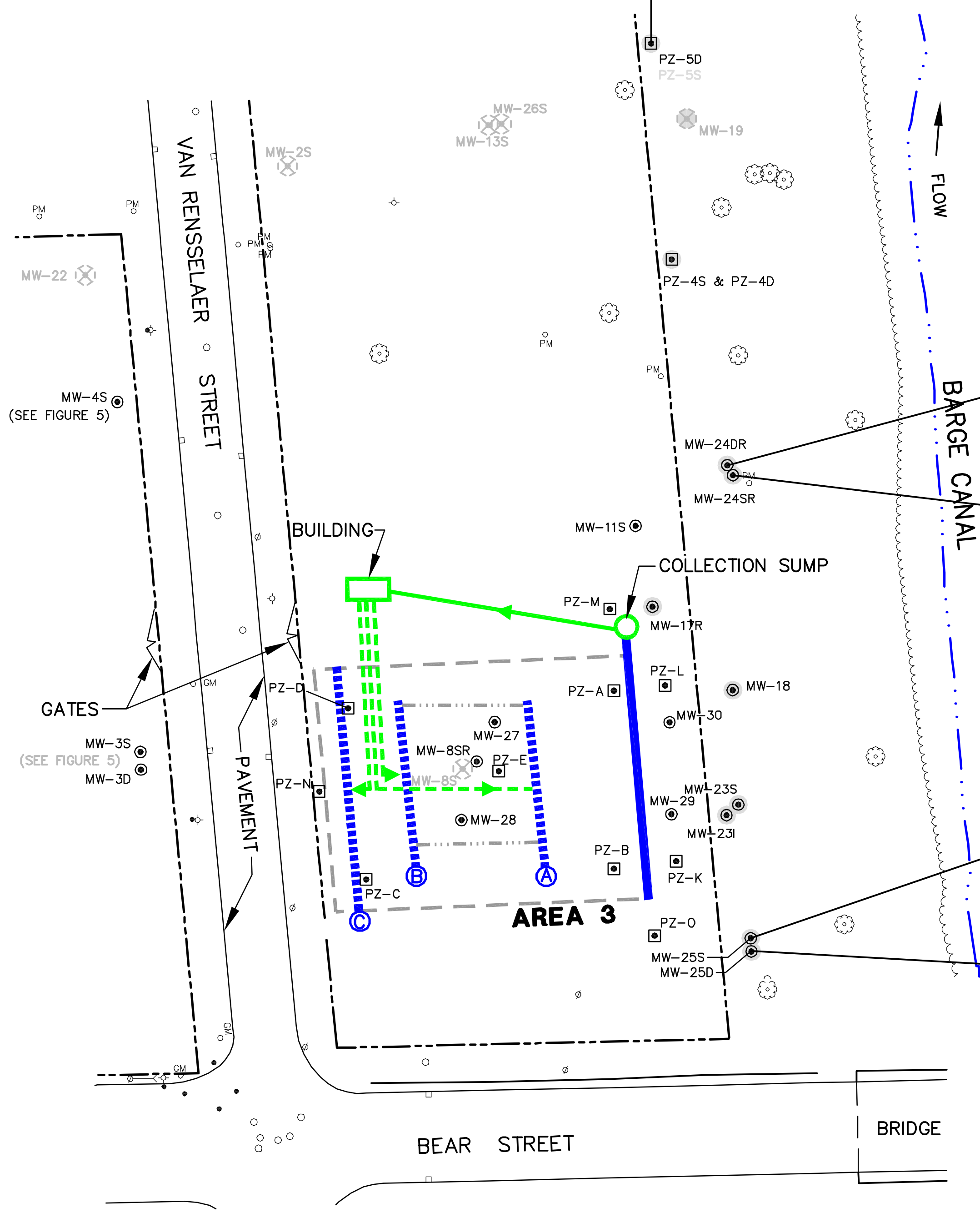
GROUNDWATER MONITORING DATA SUMMARY FOR SEPTEMBER 2006 - AUGUST 2009 AREA 3 (AEROBIC TREATMENT)

ARCADIS

FIGURE
6

CITY: SYRACUSE, N.Y. DIV/GROUP: ENVCAD-141 DB: N.SMITHGALL, L.FORAKER, W.JONES LD: PIC: D. ULM PM: D. PENNIMAN TM: D. PENNIMAN LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0026003\0000\00190\DWG\OCT2011\26003C04.DWG LAYOUT: 6SAVED: 12/13/2011 2:04 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/13/2011 2:10 PM BY: POSENAUER, LISA
XREFS: 26003X01 26003X00

PZ-5D				
Date	11/1/2006	11/13/2007	8/26/2008	9/17/2009
Acetone	R	<5.0 J	<5.0	<10 J
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.1	<5.0
N,N-Dimethylaniline	<1.0 J	<0.50	<0.50	<1.0
Methanol	<500	<500	<500	<500



MW-24DR				
Date	11/1/2006	11/14/2007	8/26/2008	9/18/2009
Acetone	R	<5.0	<5.0	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.7	<5.0
N,N-Dimethylaniline	<1.0 J	<0.50	<0.60	<1.0
Methanol	<500	<500	<500	<500

MW-24SR				
Date	11/1/2006	11/14/2007	8/26/2008	9/18/2009
Acetone	R	<5.0	<5.0	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0
Toluene	<5.0	<5.0	<5.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0
Aniline	<1.0	<5.0	<5.7	<5.0
N,N-Dimethylaniline	<1.0 J	<0.50	<0.60	<1.0
Methanol	<500	<500	<500	<500

MW-25S								
Date	11/1/2006	6/7/2007	11/14/2007	3/27/2008	8/26/2008	3/25/2009	9/17/2009	4/29/2010
Acetone	R	<5.0	<5.0	<5.0	<5.0	<10	<10 J	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<3.0	<3.0	<1.0	<1.0	<1.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0
Aniline	<1.0	<5.0	<5.0	<5.0	<5.2	<5.0	<5.0	<5.0
N,N-Dimethylaniline	<1.0 J	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0
Methanol	<500	<500	<500	<500	<500	<500	<500	<500

MW-25D				
Date	6/7/2007	3/27/2008	3/25/2009	4/29/2010
Acetone	12 J	<5.0	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<1.0	<1.0
Toluene	<5.0	<5.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<3.0	<3.0
Aniline	<5.0	<5.0	<5.0	<5.0
N,N-Dimethylaniline	<1.0	<0.50	<0.50	<1.0
Methanol	<500	<500	<500	<500

LEGEND:

- UTILITY POLE
- CATCH BASIN
- PMo PETROLEUM PIPE LINE MARKER
- GMo GAS LINE MARKER
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY
- LINE EDGE OF WATER
- EDGE OF TREELINE
- TREE
- MW-19 GROUNDWATER MONITORING WELL
- PZ-A PIEZOMETER
- OR BIANNUAL DOWNGRADIENT PERIMETER GROUNDWATER MONITORING LOCATION
- MW-26S PUMPING WELL
- MW-8S REMOVED/DECOMMISSIONED GROUNDWATER MONITORING WELL/PIEZOMETER
- APPROXIMATE BOUNDARY OF AREA
- GROUNDWATER WITHDRAWAL TRENCH
- A GROUNDWATER INFILTRATION TRENCH AND IDENTIFICATION
- PIPING TO BUILDING
- PIPING FROM BUILDING

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.
4. FIGURE ONLY SHOWS COC CONCENTRATIONS AT MONITORING LOCATIONS WITHIN THE IMPACTED AREAS AND THE CHEMICAL PROCESS CONTROL MONITORING LOCATIONS.
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9. R = THE SAMPLE RESULT WAS REJECTED.
10. B = COMPOUND WAS FOUND IN ASSOCIATED METHOD BLANK.
11. THE 9/06, 8/07 AND 6/09 SAMPLING EVENTS WERE INTERIM SAMPLING EVENTS, ANALYZING FOR ANILINE & N,N-DIMETHYLANILINE ONLY. THE 6/10 SAMPLING EVENT WAS AN INTERIM SAMPLING EVENT ANALYZING FOR VOLATILE ORGANIC COMPOUNDS ONLY.
12. SAMPLE DATA ARE COMPARED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) GROUNDWATER QUALITY STANDARDS (GQS) (TECHNICAL AND OPERATIONAL GUIDANCE SERIES 1.1.1).
13. NS – STANDARD NOT AVAILABLE.

SAMPLE IDENTIFICATION

PZ-##							
Date	Jun-06	Jun-07	Mar-08	Mar-09	Apr-10	Jun-10	Apr-11
Acetone	<5.0	<5.0	<5.0	<10	<10	<10	<10
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<4.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	<3.0	<3.0	<3.0	<1.0	5.3 J	<1.0	<1.0
Toluene	0.50 J	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0
Aniline	<1.0	<5.5	<5.0	<5.0	<5.0	NA	<5.3
N,N-Dimethylaniline	<1.0	<1.1	<0.50	<0.50	<1.0	NA	<1.1
Methanol	<1000	<500	NA	NA	<500	NA	NA

CONCENTRATION (ppb)

DETECTIONS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS ARE INDICATED BY SHADING.

NYSDEC GQS	
Acetone	50
Benzene	1
Ethylbenzene	5
Methylene Chloride	5
Toluene	5
Trichloroethene	5
Xylenes (total)	5
Aniline	5
N,N-dimethylaniline	1
Methanol	NS

0 100' 200'

GRAPHIC SCALE

McKESSON ENVIROSYSTEMS
FORMER BEAR STREET FACILITY
SYRACUSE, NEW YORK
PERIODIC REVIEW REPORT

GROUNDWATER MONITORING DATA SUMMARY FOR SEPTEMBER 2006 - AUGUST 2009 FOR ELIMINATED MONITORING WELLS

ARCADIS

FIGURE 7

CITY: SYRACUSE, N.Y. DIV/GROUP: ENVCAD-141 DB: N.SMITHGALL, L.FORAKER, W.JONES LD: PIC: D. ULM PM: D. PENNIMAN TM: D. PENNIMAN LYR: ON=*;OFF=*REF
G:\ENVCAD\SYRACUSE\ACT\B0026003\0000\00190\DWG\OCT2011\26003C05.DWG LAYOUT: 7SAVED: 12/13/2011 2:07 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/13/2011 2:09 PM BY: POSENAUER, LISA
XREFS: 26003X01 26003X00

ARCADIS

Attachment B

Validated Analytical Laboratory Report

Imagine the result

McKesson Bear Street

Data Usability Summary Report (DUSR)

SYRACUSE, NEW YORK

Volatile and Semivolatile Organic Compounds
(VOCs and SVOCs) and Methanol Analyses

SDG #s: 460-53441, 460-53547 and 460-53818

Analyses Performed By:
TestAmerica Laboratories
Edison, New York

Report #: 19148R
Review Level: Tier III
Project: B0026003.0000.00010

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 460-53441, 460-53547 and 460-53818 for samples collected in association with the McKesson Bear Street site in Syracuse, New York. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	METH	MISC
460-53441	TB040213	460-53441-1	Water	3/26/2013		X				
	PZ-4D	460-53441-2	Water	4/2/2013		X	X			
	PZ-4S	460-53441-3	Water	4/2/2013		X	X			
460-53547	TB040313	460-53547-1	Water	3/26/2013		X				
	MW-23S	460-53547-2	Water	4/3/2013		X	X			X
	MW-23I	460-53547-3	Water	4/3/2013		X	X			X
	MW-18	460-53547-4	Water	4/3/2013		X	X			X
	MW-17R	460-53547-5	Water	4/3/2013		X	X			X
460-53818	TB040813	460-53818-1	Water	4/3/2013		X				
	BD040813	460-53818-2	Water	4/8/2013	TW-02RRR	X	X			X
	MW-9S	460-53818-3	Water	4/8/2013		X	X			X
	MW-36R	460-53818-4	Water	4/8/2013		X	X			
	MW-34	460-53818-5	Water	4/8/2013		X	X			X
	TW-02RRR	460-53818-6	Water	4/8/2013		X	X			X

Note: Miscellaneous analysis includes methanol. Sample location MW-17R was used in the MS/MSD analyses.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8015B, 8260B, and 8270C as referenced in NYSDEC-ASP. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and USEPA Region II SOPs associated with USEPA SW-846 Validating Volatile Organic Compounds by GC/MS SW-846 Method 8260B (SOP HW-24 Revision 2, October 2006) and Validating Semivolatile Organic Compounds by GC/MS SW-846 Method 8270C (SOP HW-22 Revision 3, October 2006).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis	Cool to 4±2 °C; pH < 2 with HCl
	Soil	48 hours from collection to extraction and 14 days from collection to analysis	Cool to 4±2 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99, and a RRF value greater than control limit (0.05).

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial/Continuing	Compound	Criteria
BD040813 MW-9S MW-36R MW-34 TW-02RRR	CCV %D	Acetone	23.7%
		Methylene chloride	22.0%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF < 0.05	Non-detect	R
		Detect	J
	RRF < 0.01[1]	Non-detect	R
		Detect	J
	RRF > 0.05 or RRF > 0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient < 0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D > 20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D > 20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

1 RRF of 0.01 only applies to typically poor responding compounds (e.g. ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard area counts were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

All compounds associated with the LCS analyses exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for the difference between the results of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TW-02RRR/ BD040813	Benzene	1.4	1.3	AC
	Toluene	0.36 J	0.38 J	AC
	Ethylbenzene	0.60 J	0.64 J	AC
	Total Xylenes	1.5 J	1.5 J	AC

AC Acceptable

The field duplicate sample results are acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference
%RSD Relative standard deviation
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to 4±2 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4±2 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution are acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits, and that all SVOC surrogate recoveries be greater than ten percent.

All associated surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established or analytical method-referenced acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit recoveries and relative percent differences (RPDs) between the LCS and LCSD results within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for the difference between the results of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TW-02RRR/ BD040813	Aniline	700	620	12.1%
	n,n-Dimethylaniline	3.4 J	3.5 J	AC

AC Acceptable

The field duplicate sample results are acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding Times		X		X	
Reporting Limits (units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment/Field Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System Performance and Column Resolution		X		X	
Initial Calibration %RSDs		X		X	
Continuing Calibration RRFs		X		X	
Continuing Calibration %Ds		X		X	
Instrument Tune and Performance Check		X		X	
Ion Abundance Criteria for Each Instrument Used		X		X	
Internal Standards		X		X	
Compound Identification and Quantitation					
A. Reconstructed Ion Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of Sample Compounds Within the Established RT Windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting Limits Adjusted for Sample Dilutions		X		X	

%R Percent Recovery
RPD Relative Percent Difference
%RSD Relative Standard Deviation
%D Percent Difference

METHANOL ANALYSIS

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Methanol SW-846 8015B	Soil	14 days from collection to analysis	Cool to 4±2 °C
	Water	14 days from collection to analysis	Cool to 4±2 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Methanol was not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

A maximum RSD of 20% or a correlation coefficient of greater than 0.99 is allowed.

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked analytes used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the analyte concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for the difference between the results of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TW-02RRR/ BD040813	Methanol	1.0 U	1.0 U	AC

AC Acceptable
U Not detected

The field duplicate sample results are acceptable.

9. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified analytes met the specified criteria.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METHANOL

Methanol: SW-846 8015B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding Times		X		X	
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment Blanks					X
C. Trip Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial Calibration %RSDs		X		X	
Continuing Calibration %Ds		X		X	
System Performance and Column Resolution		X		X	
Compound Identification and Quantitation					
A. Quantitation Reports		X		X	
B. RT of Sample Compounds Within Established RT Windows		X		X	
C. Pattern Identification		X		X	
D. Transcription/Calculation Errors Present		X		X	
E. Reporting Limits adjusted for Sample Dilutions		X		X	

%R Percent Recovery
RPD Relative Percent Difference
%RSD Relative Standard Deviation
%D Percent Difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	METH	MISC	
460-53441	3/26/2013	SW846	TB040213	Water	Yes	--	--	--	--	
	4/2/2013	SW846	PZ-4D	Water	Yes	Yes	--	--	--	
	4/2/2013	SW846	PZ-4S	Water	Yes	Yes	--	--	--	
460-53547	3/26/2013	SW846	TB040313	Water	Yes	--	--	--	--	
	4/3/2013	SW846	MW-23S	Water	Yes	Yes	--	--	Yes	
	4/3/2013	SW846	MW-23I	Water	Yes	Yes	--	--	Yes	
	4/3/2013	SW846	MW-18	Water	Yes	Yes	--	--	Yes	
	4/3/2013	SW846	MW-17R	Water	Yes	Yes	--	--	Yes	
460-53818	4/3/2013	SW846	TB040813	Water	Yes	--	--	--	--	
	4/8/2013	SW846	BD040813	Water	Yes	Yes	--	--	Yes	
	4/8/2013	SW846	MW-9S	Water	No	Yes	--	--	Yes	VOC: CCV % difference
	4/8/2013	SW846	MW-36R	Water	Yes	Yes	--	--	--	
	4/8/2013	SW846	MW-34	Water	No	Yes	--	--	Yes	VOC: CCV % difference
	4/8/2013	SW846	TW-02RRR	Water	Yes	Yes	--	--	Yes	

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

Validation Performed By: Jeffrey L. Davin

Signature:

Date: April 26, 2013

Peer Review: Dennis Capria

Date: May 12, 2013

CHAIN OF CUSTODY /
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Analytical Data

Client: ARCADIS U.S. Inc   Job Number: 460-53441-1

Client Sample ID: **TB040213**

Lab Sample ID:	460-53441-1TB	Date Sampled:	03/26/2013 1200
Client Matrix:	Water	Date Received:	04/03/2013 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00807.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1020			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1020				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 130
Bromofluorobenzene	94		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53441-1

Client Sample ID: **PZ-4D**

Lab Sample ID: 460-53441-2 Date Sampled: 04/02/2013 1315
Client Matrix: Water Date Received: 04/03/2013 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00809.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1111			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1111				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 130
Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 460-53441-1

Client Sample ID: **PZ-4S**

Lab Sample ID:	460-53441-3	Date Sampled:	04/02/2013 1610
Client Matrix:	Water	Date Received:	04/03/2013 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154546	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00829.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/07/2013 1821			Final Weight/Volume:	5 mL
Prep Date:	04/07/2013 1821				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	129		70 - 130
Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53441-1

Client Sample ID: PZ-4D

Lab Sample ID:	460-53441-2	Date Sampled:	04/02/2013 1315
Client Matrix:	Water	Date Received:	04/03/2013 0915

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20950.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	04/12/2013 1919			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	4.8	U	1.7	4.8
n,n'-Dimethylaniline	0.95	U	0.20	0.95

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	85		53 - 108
2-Fluorophenol	37		10 - 65
Nitrobenzene-d5	82		56 - 112
Phenol-d5	22		10 - 48
Terphenyl-d14	68		50 - 122
2,4,6-Tribromophenol	86		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53441-1

Client Sample ID: **PZ-4S**

Lab Sample ID:	460-53441-3	Date Sampled:	04/02/2013 1610
Client Matrix:	Water	Date Received:	04/03/2013 0915

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20951.d
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/12/2013 1940			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.2	U	1.9	5.2
n,n'-Dimethylaniline	1.0	U	0.22	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	84		53 - 108
2-Fluorophenol	38		10 - 65
Nitrobenzene-d5	80		56 - 112
Phenol-d5	25		10 - 48
Terphenyl-d14	72		50 - 122
2,4,6-Tribromophenol	87		46 - 122

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: K.Roe/A.Schaffer	Lab PM: Chang, Grace	Carrier Tracking No(s):	COC No: 460-32893-21548.2
Client Contact: Ms. Dawn Penniman	Phone: 315.382.4934	E-Mail: grace.chang@testamericainc.com		Page: Page ~~2 of 5~~ 1 of 1
Company: ARCADIS U.S. Inc				Job #: 53441
Address: 6723 Towpath Road PO BOX 66	Due Date Requested: Standard TAT			
City: Syracuse	TAT Requested (days): Standard TAT			
State, Zip: NY, 13214				
Phone: 315.671.9229	PO #: Purchase Order Requested			
Email: Dawn.Penniman@arcadis-us.com	WO #:			
Project Name: McKesson Former Bear Street Facility	Project #: ~~46003506~~ B0026003.0000.00010			
Site: Bear St., Syracuse, NY	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) 8260-Special Compound List	8270C - (MOD) 8270-Special Compound List	8015B_DAI - (MOD) Methanol	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N		
TB040213	3/26/13	1200	G	Water			X			2	-1
PZ-4D	4/2/13	1315	G	Water			X	X		5	-2
PZ-4S	4/2/13	1610	G	Water			X	X		5	-3
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For ____ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Per project contract

Special Instructions/QC Requirements:

Empty Kit Relinquished by: TestAmerica/Syracuse NY	Date: 4/1/13	Time: 0900	Method of Shipment: Pick-up @ Svc Ctr

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/2/13 1815	ARCADIS	REnglish	4-2-13, 18:15	Syr
REnglish	4-2-13, 19:00	Syr	Fed Ex		
Fed Ex			[signature]	4/3/13 9:15	TA

Custody Seals Intact: ☒ Yes △ No	Custody Seal No.: 706004	Cooler Temperature(s) °C and Other Remarks: 4/5.1° IR4

Client: ARCADIS U.S. Inc Job Number: 460-53547-1

Client Sample ID: TB040313

Lab Sample ID:	460-53547-1TB	Date Sampled:	03/26/2013 1200
Client Matrix:	Water	Date Received:	04/04/2013 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00808.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1046			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1046				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 130
Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	100		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-23S**

Lab Sample ID:	460-53547-2	Date Sampled:	04/03/2013 1230
Client Matrix:	Water	Date Received:	04/04/2013 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00812.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1531			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1531				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121		70 - 130
Bromofluorobenzene	99		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-23I**

Lab Sample ID:	460-53547-3	Date Sampled:	04/03/2013 1240
Client Matrix:	Water	Date Received:	04/04/2013 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00813.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1557			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1557				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	125		70 - 130
Bromofluorobenzene	103		70 - 130
Toluene-d8 (Surr)	100		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53547-1

Client Sample ID: **MW-18**

Lab Sample ID: 460-53547-4 Date Sampled: 04/03/2013 1640
Client Matrix: Water Date Received: 04/04/2013 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00814.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1622			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1622				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	0.60	J	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	130		70 - 130
Bromofluorobenzene	100		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-17R**

Lab Sample ID: 460-53547-5 | Date Sampled: 04/03/2013 1600

Client Matrix: Water | Date Received: 04/04/2013 0930

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154379	Instrument ID:	VOAMS10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	r00815.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1648			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1648				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.0	U	0.080	1.0
Toluene	1.0	U	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		70 - 130
Bromofluorobenzene	92		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-23S**

Lab Sample ID:	460-53547-2	Date Sampled:	04/03/2013 1230
Client Matrix:	Water	Date Received:	04/04/2013 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20949.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 1858			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.0	U	0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	83		53 - 108
2-Fluorophenol	41		10 - 65
Nitrobenzene-d5	84		56 - 112
Phenol-d5	26		10 - 48
Terphenyl-d14	70		50 - 122
2,4,6-Tribromophenol	88		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-23I**

Lab Sample ID: 460-53547-3 | Date Sampled: 04/03/2013 1240
Client Matrix: Water | Date Received: 04/04/2013 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20948.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	04/12/2013 1837			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	4.8	U	1.7	4.8
n,n'-Dimethylaniline	0.95	U	0.20	0.95

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	87		53 - 108
2-Fluorophenol	46		10 - 65
Nitrobenzene-d5	86		56 - 112
Phenol-d5	30		10 - 48
Terphenyl-d14	67		50 - 122
2,4,6-Tribromophenol	95		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-18**

Lab Sample ID:	460-53547-4	Date Sampled:	04/03/2013 1640
Client Matrix:	Water	Date Received:	04/04/2013 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20947.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	04/12/2013 1816			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	4.8	U	1.7	4.8
n,n'-Dimethylaniline	0.95	U	0.20	0.95

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	82		53 - 108
2-Fluorophenol	60		10 - 65
Nitrobenzene-d5	85		56 - 112
Phenol-d5	45		10 - 48
Terphenyl-d14	63		50 - 122
2,4,6-Tribromophenol	97		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 460-53547-1

Client Sample ID: **MW-17R**

Lab Sample ID:	460-53547-5	Date Sampled:	04/03/2013 1600
Client Matrix:	Water	Date Received:	04/04/2013 0930

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155105	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20899.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/11/2013 1307			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.0	U	0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	84		53 - 108
2-Fluorophenol	37		10 - 65
Nitrobenzene-d5	80		56 - 112
Phenol-d5	22		10 - 48
Terphenyl-d14	72		50 - 122
2,4,6-Tribromophenol	90		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc	Job Number: 460-53547-1

Client Sample ID: **MW-23S**

Lab Sample ID:	460-53547-2	Date Sampled: 04/03/2013 1230
Client Matrix:	Water	Date Received: 04/04/2013 0930

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111309	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/06/2013 1121			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	85		63 - 124

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-23I**

Lab Sample ID:	460-53547-3	Date Sampled:	04/03/2013 1240
Client Matrix:	Water	Date Received:	04/04/2013 0930

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111309	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/06/2013 1130			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	96		63 - 124

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-18**

Lab Sample ID:	460-53547-4	Date Sampled:	04/03/2013 1640
Client Matrix:	Water	Date Received:	04/04/2013 0930

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111309	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/06/2013 1140			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	95		63 - 124

Client: ARCADIS U.S. Inc | Job Number: 460-53547-1

Client Sample ID: **MW-17R**

Lab Sample ID:	460-53547-5	Date Sampled:	04/03/2013 1600
Client Matrix:	Water	Date Received:	04/04/2013 0930

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111309	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/06/2013 1149			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	95		63 - 124

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: K.Roe/A.Schaffer	Lab PM: Chang, Grace	Carrier Tracking No(s):	COC No: 460-32893-21548.1
Client Contact: Ms. Dawn Penniman	Phone: 315.382.4934	E-Mail: grace.chang@testamericainc.com		Page: Page ~~1 of 5~~ 1 of 1
Company: ARCADIS U.S. Inc				Job #: 53541
Address: 6723 Towpath Road PO BOX 66	Due Date Requested: Standard TAT			
City: Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13214				
Phone: 315-446-9120	PO #: Purchase Order Requested			
Email: Dawn.Penniman@arcadis-us.com	WO #:			
Project Name: McKesson Former Bear Street Facility	Project #: ~~46003506~~ B0026003.0000.00010			
Site: McKesson/Bear St, Syr NY	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) 8260-Special Compound List	8270C - (MOD) 8270-Special Compound List	8015B_DAI - (MOD) Methanol	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N		
TB040313	3/26/13	1200	G	Water			X			2	1
MW-23S	4/3/13	1230	G	Water			X	X	X	8	2
MW-23I	4/3/13	1240	G	Water			X	X	X	8	3
MW-18	4/3/13	1640	G	Water			X	X	X	8	4
MW-17R	4/3/13	1600	G	Water		Y	X	X	X	8	5
MW-17R(MS)	4/3/13	1600	G	Water		Y	X	X	X	8	~~6~~ 5
MW-17R (MSD)	4/3/13	1600	G	Water		Y	X	X	X	8	~~7~~ 5
				Water							
				Water							
				Water							
				Water							

Sub Work

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples ... r than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ... *r* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Per Project Contract

Special Instructions/QC Requirements:

Empty Kit Relinquished by: TestAmerica/Syr, NY	Date: 4/1/13		Time: 0900	Method of Shipment: Pick-up	
Relinquished by: K. Roe	Date/Time: 4/3/13 1820	Company: ARCADIS	Received by: R Enalich	Date/Time: 4-3-13, 18:20	Company: SyR
Relinquished by: FedEx	Date/Time: 4/4/13 9:30	Company:	Received by:	Date/Time: 4/4/13 9:30	Company: TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: X Yes Δ No	Custody Seal No.: 706011, 587315	Cooler Temperature(s) °C and Other Remarks: 2/3-1 1/2-1 IR4

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **TB040813**

Lab Sample ID:	460-53818-1TB	Date Sampled:	04/03/2013 1200
Client Matrix:	Water	Date Received:	04/09/2013 0935

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11804.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1155			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1155				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	124		70 - 130
Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **BD040813**

Lab Sample ID:	460-53818-2	Date Sampled:	04/08/2013 1200
Client Matrix:	Water	Date Received:	04/09/2013 0935

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11816.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1645			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1645				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.3		0.080	1.0
Toluene	0.38	J	0.15	1.0
Ethylbenzene	0.64	J	0.10	1.0
Xylenes, Total	1.5	J	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	125		70 - 130
Bromofluorobenzene	99		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc — Job Number: 460-53818-1

Client Sample ID:	**MW-9S**		
Lab Sample ID:	460-53818-3	Date Sampled:	04/08/2013 1045
Client Matrix:	Water	Date Received:	04/09/2013 0935

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11817.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1709			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1709				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	12	J	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	0.95	J	0.080	1.0
Toluene	1.6		0.15	1.0
Ethylbenzene	19		0.10	1.0
Xylenes, Total	62		0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		70 - 130
Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53818-1

Client Sample ID: **MW-36R**

Lab Sample ID: 460-53818-4 Date Sampled: 04/08/2013 1055
Client Matrix: Water Date Received: 04/09/2013 0935

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11813.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1533			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1533				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.8		0.080	1.0
Toluene	0.53	J	0.15	1.0
Ethylbenzene	0.14	J	0.10	1.0
Xylenes, Total	2.9	J	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	126		70 - 130
Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **MW-34**

Lab Sample ID:	460-53818-5	Date Sampled:	04/08/2013 1320
Client Matrix:	Water	Date Received:	04/09/2013 0935

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11814.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1556			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1556				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	26	J	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.3		0.080	1.0
Toluene	0.60	J	0.15	1.0
Ethylbenzene	1.0	U	0.10	1.0
Xylenes, Total	2.3	J	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	127		70 - 130
Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Client: ARCADIS U.S. Inc

Job Number: 460-53818-1

Client Sample ID: **TW-02RRR**

Lab Sample ID:	460-53818-6	Date Sampled:	04/08/2013 1245
Client Matrix:	Water	Date Received:	04/09/2013 0935

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11815.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1620			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1620				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Methylene Chloride	1.0	U	0.18	1.0
Acetone	10	U	2.7	10
Trichloroethene	1.0	U	0.090	1.0
Benzene	1.4		0.080	1.0
Toluene	0.36	J	0.15	1.0
Ethylbenzene	0.60	J	0.10	1.0
Xylenes, Total	1.5	J	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	124		70 - 130
Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: BD040813

Lab Sample ID:	460-53818-2	Date Sampled:	04/08/2013 1200
Client Matrix:	Water	Date Received:	04/09/2013 0935

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155763	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154856	Lab File ID:	z21018.d
Dilution:	5.0			Initial Weight/Volume:	1050 mL
Analysis Date:	04/14/2013 1403			Final Weight/Volume:	2 mL
Prep Date:	04/10/2013 0953			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	700		8.6	24
n,n'-Dimethylaniline	3.4	J	1.0	4.8

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	91		53 - 108
2-Fluorophenol	39		10 - 65
Nitrobenzene-d5	80		56 - 112
Phenol-d5	23		10 - 48
Terphenyl-d14	74		50 - 122
2,4,6-Tribromophenol	73		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: MW-9S

Lab Sample ID:	460-53818-3	Date Sampled:	04/08/2013 1045
Client Matrix:	Water	Date Received:	04/09/2013 0935

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155532	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154856	Lab File ID:	z20987.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/13/2013 2328			Final Weight/Volume:	2 mL
Prep Date:	04/10/2013 0953			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	5.9		0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	94		53 - 108
2-Fluorophenol	51		10 - 65
Nitrobenzene-d5	86		56 - 112
Phenol-d5	31		10 - 48
Terphenyl-d14	68		50 - 122
2,4,6-Tribromophenol	97		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **MW-36R**

Lab Sample ID: 460-53818-4 | Date Sampled: 04/08/2013 1055
Client Matrix: Water | Date Received: 04/09/2013 0935

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155532	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154856	Lab File ID:	z20988.d
Dilution:	1.0			Initial Weight/Volume:	990 mL
Analysis Date:	04/13/2013 2349			Final Weight/Volume:	2 mL
Prep Date:	04/10/2013 0953			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	150		1.8	5.1
n,n'-Dimethylaniline	4.0		0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	93		53 - 108
2-Fluorophenol	38		10 - 65
Nitrobenzene-d5	89		56 - 112
Phenol-d5	22		10 - 48
Terphenyl-d14	67		50 - 122
2,4,6-Tribromophenol	80		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **MW-34**

Lab Sample ID: 460-53818-5
Client Matrix: Water

Date Sampled: 04/08/2013 1320
Date Received: 04/09/2013 0935

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155532	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154856	Lab File ID:	z20989.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	04/14/2013 0010			Final Weight/Volume:	2 mL
Prep Date:	04/10/2013 0953			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	4.8	U	1.7	4.8
n,n'-Dimethylaniline	1.7		0.20	0.95

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	92		53 - 108
2-Fluorophenol	39		10 - 65
Nitrobenzene-d5	87		56 - 112
Phenol-d5	23		10 - 48
Terphenyl-d14	73		50 - 122
2,4,6-Tribromophenol	85		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **TW-02RRR**

Lab Sample ID:	460-53818-6	Date Sampled:	04/08/2013 1245
Client Matrix:	Water	Date Received:	04/09/2013 0935

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155763	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154856	Lab File ID:	z21019.d
Dilution:	5.0			Initial Weight/Volume:	1020 mL
Analysis Date:	04/14/2013 1424			Final Weight/Volume:	2 mL
Prep Date:	04/10/2013 0953			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	620		8.8	25
n,n'-Dimethylaniline	3.5	J	1.0	4.9

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	98		53 - 108
2-Fluorophenol	36		10 - 65
Nitrobenzene-d5	91		56 - 112
Phenol-d5	23		10 - 48
Terphenyl-d14	79		50 - 122
2,4,6-Tribromophenol	75		46 - 122

Client: ARCADIS U.S. Inc — Job Number: 460-53818-1

Client Sample ID: **BD040813**

Lab Sample ID:	460-53818-2	Date Sampled:	04/08/2013 1200
Client Matrix:	Water	Date Received:	04/09/2013 0935

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-112120	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/11/2013 0845			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	91		63 - 124

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID:	**MW-9S**		
Lab Sample ID:	460-53818-3	Date Sampled:	04/08/2013 1045
Client Matrix:	Water	Date Received:	04/09/2013 0935

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-112120	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/11/2013 0913			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	95		63 - 124

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **MW-34**

Lab Sample ID:	460-53818-5	Date Sampled:	04/08/2013 1320
Client Matrix:	Water	Date Received:	04/09/2013 0935

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-112120	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/11/2013 0922			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	93		63 - 124

Client: ARCADIS U.S. Inc | Job Number: 460-53818-1

Client Sample ID: **TW-02RRR**

Lab Sample ID:	460-53818-6	Date Sampled:	04/08/2013 1245
Client Matrix:	Water	Date Received:	04/09/2013 0935

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-112120	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/11/2013 0931			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	92		63 - 124

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: K. Roe, A. Schaffer	Lab PM: Chang, Grace	Carrier Tracking No(s):	COC No: 460-32893-21548.5
Client Contact: Ms. Dawn Penniman	Phone: 315.382.4934	E-Mail: grace.chang@testamericainc.com		Page: ~~Page 5 of 5~~ Page 1 of 1
Company: ARCADIS U.S. Inc		**Analysis Requested**		Job #: 53818
Address: 6723 Towpath Road PO BOX 66	Due Date Requested: Standard			
City: Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13214				
Phone: 315.446.9120	PO #: Purchase Order Requested			
Email: Dawn.Penniman@arcadis-us.com	WO #:			
Project Name: McKesson Former Bear Street Facility	Project #: ~~46003506~~ B0026003.0000.00010			
Site: McKesson/Bear St., Syr., NY	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) 8260-Special Compound List	8270C - (MOD) 8270-Special Compound List	8015B_DAI - (MOD) Methanol	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N		
TB040813	4/8/13	1200	G	Water			X			2	1
BD040813	4/8/13	1200	G	Water			X	X	X	8	2
MW-9S	4/8/13	1045	G	Water			X	X	X	8	3
MW-36R	4/8/13	1055	G	Water			X	X		5	4
MW-34	4/8/13	1320	G	Water			X	X	X	8	5
TW-02RRR	4/8/13	1245	G	Water			X	X	X	8	6
				Water							
				Water							

Sub Work

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify) Per project contract

Special Instructions/QC Requirements:

Empty Kit Relinquished by: TestAmerica/Syr	Date: 4/1-4/4/13	Time: —	Method of Shipment: Pick-up @ Syr Svc Ctr/TA

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Kathy Roe	4/8/13, 1600	ARCADIS	[signature]	4-08-13, 1600	Syr
[signature]	4-8-13, 19:00	Syr			
Fedex	4/9/13 9:35		Ken [signature]	4/9/13 9:35	TA Ed

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 706034, 706064	Cooler Temperature(s) °C and Other Remarks: IR #4 1/2.1°C 0/1.1°C

Imagine the result

McKesson Bear Street

Data Usability Summary Report (DUSR)

SYRACUSE, NEW YORK

Volatile and Semivolatile Organic Compounds
(VOCs and SVOCs) and Methanol Analyses

SDG #s: 460-53640 and 460-53760

Analyses Performed By:
TestAmerica Laboratories
Edison, New York

Report #: 19149R
Review Level: Tier III
Project: B0026003.0000.00010

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 460-53640 and 460-53760 for samples collected in association with the McKesson Bear Street site in Syracuse, New York. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	METH	MISC
460-53640	TB040413	460-53640-1	Water	3/26/2013		X				
	MW-30	460-53640-2	Water	4/4/2013		X	X			
	MW-3S	460-53640-3	Water	4/4/2013		X	X			
	MW-35	460-53640-4	Water	4/4/2013		X	X			X
	MW-33	460-53640-5	Water	4/4/2013		X	X			
	TW-01	460-53640-6	Water	4/4/2013		X	X			X
460-53760	TB040513	460-53760-1	Water	4/3/2013		X				
	BD040513	460-53760-2	Water	4/5/2013	MW-8SR	X	X			
	MW-29	460-53760-3	Water	4/5/2013		X	X			
	MW-28	460-53760-4	Water	4/5/2013		X	X			X
	MW-27	460-53760-5	Water	4/5/2013		X	X			
	MW-8SR	460-53760-6	Water	4/5/2013		X	X			
	MW-32	460-53760-7	Water	4/5/2013		X	X			X
	MW-31	460-53760-8	Water	4/5/2013		X	X			X

Note: Miscellaneous analysis includes methanol. Sample location MW-35 was used in the MS/MSD analyses.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8015B, 8260B, and 8270C as referenced in NYSDEC-ASP. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and USEPA Region II SOPs associated with USEPA SW-846 Validating Volatile Organic Compounds by GC/MS SW-846 Method 8260B (SOP HW-24 Revision 2, October 2006) and Validating Semivolatile Organic Compounds by GC/MS SW-846 Method 8270C (SOP HW-22 Revision 3, October 2006).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis	Cool to 4±2 °C; pH < 2 with HCl
	Soil	48 hours from collection to extraction and 14 days from collection to analysis	Cool to 4±2 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99, and a RRF value greater than control limit (0.05).

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial/Continuing	Compound	Criteria
TB040513 BD040513 MW-29 MW-28 MW-27 MW-8SR MW-32 MW-31	CCV %D	Acetone	23.7%
		Methylene chloride	22.0%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF < 0.05	Non-detect	R
		Detect	J
	RRF < 0.01[1]	Non-detect	R
		Detect	J
	RRF > 0.05 or RRF > 0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient < 0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D > 20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D > 20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

1 RRF of 0.01 only applies to typically poor responding compounds (e.g. ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard area counts were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
MW-35	Methylene chloride	AC	>UL

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
TB040413 MW-30 MW-3S MW-35 MW-33 TW-01	Methylene chloride	>UL

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for the difference between the results of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8SR/ BD040513	Benzene	1.1	1.1	AC
	Toluene	0.67 J	0.68 J	AC
	Ethylbenzene	0.32 J	0.28 J	AC
	Total Xylenes	7.7	8.0	AC

AC Acceptable

The field duplicate sample results are acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks					X
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) Accuracy (%R)		X	X		
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference
%RSD Relative standard deviation
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to 4±2 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4±2 °C

The analyses that exceeded the holding are presented in the following table.

Sample Locations	Holding Time	Criteria
MW-33	Extraction Completed in 11 Days	7 Days

Sample results associated with sample locations analyzed by analytical method SW-846 8260 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

The original extraction of MW-33 yielded low surrogate recoveries. The sample was re-extracted outside of holding time exhibiting acceptable surrogate recoveries; therefore, the results associated with the re-extract are reported and qualified as estimated.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.
System performance and column resolution are acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits, and that all SVOC surrogate recoveries be greater than ten percent.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-28	Phenol-d6	AC
	2-Fluorophenol	AC
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	AC
	2-Fluorobiphenyl	AC
	Terphenyl-d14	<LL but > 10%

Sample Locations	Surrogate	Recovery
MW-31	Phenol-d6	AC
	2-Fluorophenol	AC
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	<LL but > 10%
	2-Fluorobiphenyl	AC
	Terphenyl-d14	AC

LL Lower control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established or analytical method-referenced acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit recoveries and relative percent differences (RPDs) between the LCS and LCSD results within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
MW-33 RE	n,n-Dimethylaniline	AC	<LL but >10%

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for the difference between the results of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results (in µg/L) for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-8SR/ BD040513	Aniline	5.1 U	5.1 U	AC
	n,n-Dimethylaniline	1.4	1.7	AC

AC Acceptable

The field duplicate sample results are acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding Times		X	X		
Reporting Limits (units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment/Field Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System Performance and Column Resolution		X		X	
Initial Calibration %RSDs		X		X	
Continuing Calibration RRFs		X		X	
Continuing Calibration %Ds		X		X	
Instrument Tune and Performance Check		X		X	
Ion Abundance Criteria for Each Instrument Used		X		X	
Internal Standards		X		X	
Compound Identification and Quantitation					
A. Reconstructed Ion Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of Sample Compounds Within the Established RT Windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting Limits Adjusted for Sample Dilutions		X		X	

%R Percent Recovery
RPD Relative Percent Difference
%RSD Relative Standard Deviation
%D Percent Difference

METHANOL ANALYSIS

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Methanol SW-846 8015B	Soil	14 days from collection to analysis	Cool to 4±2 °C
	Water	14 days from collection to analysis	Cool to 4±2 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Methanol was not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

A maximum RSD of 20% or a correlation coefficient of greater than 0.99 is allowed.

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked analytes used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the analyte concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for the difference between the results of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included for this parameter.

9. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified analytes met the specified criteria.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METHANOL

Methanol: SW-846 8015B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding Times		X		X	
Reporting Limits (Units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment Blanks					X
C. Trip Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial Calibration %RSDs		X		X	
Continuing Calibration %Ds		X		X	
System Performance and Column Resolution		X		X	
Compound Identification and Quantitation					
A. Quantitation Reports		X		X	
B. RT of Sample Compounds Within Established RT Windows		X		X	
C. Pattern Identification		X		X	
D. Transcription/Calculation Errors Present		X		X	
E. Reporting Limits adjusted for Sample Dilutions		X		X	

%R Percent Recovery
RPD Relative Percent Difference
%RSD Relative Standard Deviation
%D Percent Difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	METH	MISC	
460-53640	3/26/2013	SW846	TB040413	Water	Yes	--	--	--	--	
	4/4/2013	SW846	MW-30	Water	Yes	Yes	--	--	--	
	4/4/2013	SW846	MW-3S	Water	Yes	Yes	--	--	--	
	4/4/2013	SW846	MW-35	Water	Yes	Yes	--	--	Yes	
	4/4/2013	SW846	MW-33	Water	Yes	No	--	--	--	SVOC: Holding Time, LCSD %R
	4/4/2013	SW846	TW-01	Water	Yes	Yes	--	--	Yes	
460-53760	4/3/2013	SW846	TB040513	Water	Yes	--	--	--	--	
	4/5/2013	SW846	BD040513	Water	Yes	Yes	--	--	--	
	4/5/2013	SW846	MW-29	Water	Yes	Yes	--	--	--	
	4/5/2013	SW846	MW-28	Water	Yes	Yes	--	--	Yes	
	4/5/2013	SW846	MW-27	Water	Yes	Yes	--	--	--	
	4/5/2013	SW846	MW-8SR	Water	Yes	Yes	--	--	--	
	4/5/2013	SW846	MW-32	Water	Yes	Yes	--	--	Yes	
	4/5/2013	SW846	MW-31	Water	Yes	Yes	--	--	Yes	

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

Validation Performed By: Jeffrey L. Davin

Signature:

Date: April 26, 2013

Peer Review: Dennis Capria

Date: May 13, 2013

CHAIN OF CUSTODY /
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: TB040413

Lab Sample ID:	460-53640-1	Date Sampled: 03/26/2013 1200
Client Matrix:	Water	Date Received: 04/05/2013 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154518	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11762.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1901			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1901				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U *	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 130
Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53640-1

Client Sample ID: **MW-30**

Lab Sample ID: 460-53640-2 Date Sampled: 04/04/2013 1040

Client Matrix: Water Date Received: 04/05/2013 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154518	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11767.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 2101			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 2101				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U~~*~~	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 130
Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **MW-3S**

Lab Sample ID: 460-53640-3 | Date Sampled: 04/04/2013 1230
Client Matrix: Water | Date Received: 04/05/2013 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154518	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11763.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1925			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1925				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U~~*~~	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		70 - 130
Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: MW-35

Lab Sample ID: 460-53640-4 | Date Sampled: 04/04/2013 1305

Client Matrix: Water | Date Received: 04/05/2013 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154518	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11764.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 1949			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 1949				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U~~*~~	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		70 - 130
Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **MW-33**

Lab Sample ID: 460-53640-5 | Date Sampled: 04/04/2013 1620
Client Matrix: Water | Date Received: 04/05/2013 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154518	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11765.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 2013			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 2013				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.1		0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U~~*~~	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 130
Bromofluorobenzene	94		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **TW-01**

Lab Sample ID: 460-53640-6 | Date Sampled: 04/04/2013 1615
Client Matrix: Water | Date Received: 04/05/2013 1000

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154518	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11766.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/06/2013 2037			Final Weight/Volume:	5 mL
Prep Date:	04/06/2013 2037				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	0.090	J	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U*	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 130
Bromofluorobenzene	95		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **MW-30**

Lab Sample ID: 460-53640-2 | Date Sampled: 04/04/2013 1040
Client Matrix: Water | Date Received: 04/05/2013 1000

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20952.d
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/12/2013 2001			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.2	U	1.9	5.2
n,n'-Dimethylaniline	1.0	U	0.22	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	83		53 - 108
2-Fluorophenol	39		10 - 65
Nitrobenzene-d5	81		56 - 112
Phenol-d5	24		10 - 48
Terphenyl-d14	69		50 - 122
2,4,6-Tribromophenol	84		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: MW-3S

Lab Sample ID:	460-53640-3	Date Sampled:	04/04/2013 1230
Client Matrix:	Water	Date Received:	04/05/2013 1000

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20953.d
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/12/2013 2023			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.2	U	1.9	5.2
n,n'-Dimethylaniline	1.0	U	0.22	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	89		53 - 108
2-Fluorophenol	36		10 - 65
Nitrobenzene-d5	87		56 - 112
Phenol-d5	23		10 - 48
Terphenyl-d14	70		50 - 122
2,4,6-Tribromophenol	93		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **MW-35**

Lab Sample ID:	460-53640-4	Date Sampled:	04/04/2013 1305
Client Matrix:	Water	Date Received:	04/05/2013 1000

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155105	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154719	Lab File ID:	z20879.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/11/2013 0556			Final Weight/Volume:	2 mL
Prep Date:	04/09/2013 1035			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.0	U	0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	88		53 - 108
2-Fluorophenol	34		10 - 65
Nitrobenzene-d5	89		56 - 112
Phenol-d5	21		10 - 48
Terphenyl-d14	78		50 - 122
2,4,6-Tribromophenol	109		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **MW-33**

Lab Sample ID: 460-53640-5 | Date Sampled: 04/04/2013 1620
Client Matrix: Water | Date Received: 04/05/2013 1000

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20954.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 2044			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.0		0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	49	X	53 - 108
2-Fluorophenol	23		10 - 65
Nitrobenzene-d5	45	X	56 - 112
Phenol-d5	15		10 - 48
Terphenyl-d14	41	X	50 - 122
2,4,6-Tribromophenol	43	X	46 - 122

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53640-1

Client Sample ID: **MW-33**

Lab Sample ID: 460-53640-5 Date Sampled: 04/04/2013 1620

Client Matrix: Water Date Received: 04/05/2013 1000

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155774	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-155457	Lab File ID:	z21054.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Analysis Date:	04/16/2013 0500	Run Type:	RE	Final Weight/Volume:	2 mL
Prep Date:	04/15/2013 0835			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	4.8	U ~~H~~ J	1.7	4.8
n,n'-Dimethylaniline	2.1	~~H *~~ J	0.20	0.95

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	93		53 - 108
2-Fluorophenol	45		10 - 65
Nitrobenzene-d5	92		56 - 112
Phenol-d5	26		10 - 48
Terphenyl-d14	74		50 - 122
2,4,6-Tribromophenol	94		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **TW-01**

Lab Sample ID:	460-53640-6	Date Sampled:	04/04/2013 1615
Client Matrix:	Water	Date Received:	04/05/2013 1000

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20955.d
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/12/2013 2105			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.2	U	1.9	5.2
n,n'-Dimethylaniline	0.98	J	0.22	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	93		53 - 108
2-Fluorophenol	40		10 - 65
Nitrobenzene-d5	90		56 - 112
Phenol-d5	23		10 - 48
Terphenyl-d14	70		50 - 122
2,4,6-Tribromophenol	94		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **MW-35**

Lab Sample ID:	460-53640-4	Date Sampled:	04/04/2013 1305
Client Matrix:	Water	Date Received:	04/05/2013 1000

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111665	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/09/2013 0950			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	0.47	J	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	101		63 - 124

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53640-1

Client Sample ID: **TW-01**

Lab Sample ID:	460-53640-6	Date Sampled:	04/04/2013 1615
Client Matrix:	Water	Date Received:	04/05/2013 1000

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111665	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/09/2013 1010			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	97		63 - 124

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: K. Roe / A. Schaffer	Lab PM: Chang, Grace	Carrier Tracking No(s):	COC No: 460-32893-21548.3
Client Contact: Ms. Dawn Penniman	Phone: 315.382.4934	E-Mail: grace.chang@testamericainc.com		Page: ~~Page 3 of 5~~ 1 of 1
Company: ARCADIS U.S. Inc		Analysis Requested		Job #: 53640
Address: 6723 Towpath Road PO BOX 66	Due Date Requested: Standard TAT			Preservation Codes:
City: Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13214				
Phone: 315.446.9120	PO #: Purchase Order Requested			
Email: Dawn.Penniman@arcadis-us.com	WO #:			
Project Name: McKesson Former Bear Street Facility	Project #: ~~46003506~~ B0026003.0000.00010			
Site: McKesson / Bear St. Syr. NY	SSOW#:			Other:

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) 8260-Special Compound List	8270C - (MOD) 8270-Special Compound List	8015B_DAI - (MOD) Methanol	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N		
TB040413	3/26/13	1200	G	Water			X			1	-1
MW-30	4/4/13	1040	G	Water			X	X		5	-2
MW-38	4/4/13	1230	G	Water			X	X		5	-3
MW-35	4/4/13	1305	G	Water			X	X	X	8	-4
MW-35 (MS)	4/4/13	1305	G	Water			X	X	X	8	-4
MW-35 (MSD	4/4/13	1305	G	Water			X	X	X	8	-4
MW-33	4/4/13	1620	G	Water			X	X		5	-5
TW-01	4/4/13	1615	G	Water			X	X	X	5	-6
				Water							
				Water							
				Water							

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Per project contract

Special Instructions/QC Requirements:

Empty Kit Relinquished by: TestAmerica Syr. NY	Date: 4/1/13	Time: ~~1000~~ 4/1/13 0900	Method of Shipment: Pick-up

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/4/13	ARCADIS	[signature]	4-4-13, 18:25	Syr
[signature]	4-4-13, 1910	Syr	FedEx		
FedEx			[signature]	4/5/13 10:00	TA

Custody Seals Intact: ☒ Yes △ No	Custody Seal No.: 706057, 706047, 706037	Cooler Temperature(s) °C and Other Remarks: 2/3,1, 1/2,1, 4/5,1 IR4

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **TB040513**

Lab Sample ID:	460-53760-1TB	Date Sampled:	04/03/2013 1200
Client Matrix:	Water	Date Received:	04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11805.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1220			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1220				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121		70 - 130
Bromofluorobenzene	94		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc — Job Number: 460-53760-1

Client Sample ID:	**BD040513**		
Lab Sample ID:	460-53760-2	Date Sampled:	04/05/2013 1200
Client Matrix:	Water	Date Received:	04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11812.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1508			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1508				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.1		0.080	1.0
Ethylbenzene	0.28	J	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	0.68	J	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	8.0		0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		70 - 130
Bromofluorobenzene	96		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-29**

Lab Sample ID:	460-53760-3	Date Sampled:	04/05/2013 1045
Client Matrix:	Water	Date Received:	04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11806.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1243			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1243				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.0	U	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121		70 - 130
Bromofluorobenzene	98		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: MW-28

Lab Sample ID:	460-53760-4	Date Sampled:	04/05/2013 0930
Client Matrix:	Water	Date Received:	04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11808.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1332			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1332				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.7		0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	124		70 - 130
Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID:	**MW-27**		
Lab Sample ID:	460-53760-5	Date Sampled:	04/05/2013 1205
Client Matrix:	Water	Date Received:	04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11809.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1356			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1356				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.1		0.080	1.0
Ethylbenzene	0.88	J	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	0.34	J	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	1.4	J	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		70 - 130
Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-8SR**

Lab Sample ID: 460-53760-6 | Date Sampled: 04/05/2013 1230
Client Matrix: Water | Date Received: 04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11810.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1421			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1421				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	1.1		0.080	1.0
Ethylbenzene	0.32	J	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	0.67	J	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	7.7		0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	122		70 - 130
Bromofluorobenzene	94		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID:	**MW-32**		
Lab Sample ID:	460-53760-7	Date Sampled:	04/05/2013 1510
Client Matrix:	Water	Date Received:	04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11811.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1444			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1444				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	0.098	J	0.080	1.0
Ethylbenzene	1.0	U	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	1.0	U	0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	3.0	U	0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		70 - 130
Bromofluorobenzene	97		70 - 130
Toluene-d8 (Surr)	96		70 - 130

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53760-1

Client Sample ID: MW-31

Lab Sample ID: 460-53760-8 Date Sampled: 04/05/2013 1530
Client Matrix: Water Date Received: 04/06/2013 1145

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	460-154733	Instrument ID:	VOAMS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	k11807.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/09/2013 1307			Final Weight/Volume:	5 mL
Prep Date:	04/09/2013 1307				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	2.7	10
Benzene	12		0.080	1.0
Ethylbenzene	0.21	J	0.10	1.0
Methylene Chloride	1.0	U	0.18	1.0
Toluene	1.3		0.15	1.0
Trichloroethene	1.0	U	0.090	1.0
Xylenes, Total	5.6		0.36	3.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		70 - 130
Bromofluorobenzene	99		70 - 130
Toluene-d8 (Surr)	96		70 - 130

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **BD040513**

Lab Sample ID:	460-53760-2	Date Sampled:	04/05/2013 1200
Client Matrix:	Water	Date Received:	04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20956.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 2126			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.4		0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	86		53 - 108
2-Fluorophenol	43		10 - 65
Nitrobenzene-d5	77		56 - 112
Phenol-d5	27		10 - 48
Terphenyl-d14	69		50 - 122
2,4,6-Tribromophenol	82		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-29**

Lab Sample ID:	460-53760-3	Date Sampled:	04/05/2013 1045
Client Matrix:	Water	Date Received:	04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20957.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 2147			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.0	U	0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	88		53 - 108
2-Fluorophenol	50		10 - 65
Nitrobenzene-d5	84		56 - 112
Phenol-d5	33		10 - 48
Terphenyl-d14	71		50 - 122
2,4,6-Tribromophenol	89		46 - 122

Client: ARCADIS U.S. Inc Job Number: 460-53760-1

Client Sample ID: **MW-28**

Lab Sample ID: 460-53760-4 Date Sampled: 04/05/2013 0930
Client Matrix: Water Date Received: 04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20958.d
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/12/2013 2208			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.2	U	1.9	5.2
n,n'-Dimethylaniline	0.32	J	0.22	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	61		53 - 108
2-Fluorophenol	25		10 - 65
Nitrobenzene-d5	57		56 - 112
Phenol-d5	16		10 - 48
Terphenyl-d14	46	X	50 - 122
2,4,6-Tribromophenol	57		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-27**

Lab Sample ID: 460-53760-5 | Date Sampled: 04/05/2013 1205
Client Matrix: Water | Date Received: 04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20959.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 2230			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	11		1.8	5.1
n,n'-Dimethylaniline	2.4		0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	99		53 - 108
2-Fluorophenol	40		10 - 65
Nitrobenzene-d5	93		56 - 112
Phenol-d5	22		10 - 48
Terphenyl-d14	70		50 - 122
2,4,6-Tribromophenol	92		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-8SR**

Lab Sample ID:	460-53760-6	Date Sampled:	04/05/2013 1230
Client Matrix:	Water	Date Received:	04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20960.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 2251			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	1.7		0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	93		53 - 108
2-Fluorophenol	40		10 - 65
Nitrobenzene-d5	90		56 - 112
Phenol-d5	24		10 - 48
Terphenyl-d14	70		50 - 122
2,4,6-Tribromophenol	85		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc Job Number: 460-53760-1

Client Sample ID: **MW-32**

Lab Sample ID:	460-53760-7	Date Sampled:	04/05/2013 1510
Client Matrix:	Water	Date Received:	04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155486	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z20961.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Analysis Date:	04/12/2013 2312			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.1	U	1.8	5.1
n,n'-Dimethylaniline	0.91	J	0.21	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	85		53 - 108
2-Fluorophenol	39		10 - 65
Nitrobenzene-d5	84		56 - 112
Phenol-d5	24		10 - 48
Terphenyl-d14	74		50 - 122
2,4,6-Tribromophenol	89		46 - 122

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-31**

Lab Sample ID: 460-53760-8 | Date Sampled: 04/05/2013 1530

Client Matrix: Water | Date Received: 04/06/2013 1145

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	460-155763	Instrument ID:	BNAMS11
Prep Method:	3510C	Prep Batch:	460-154507	Lab File ID:	z21026.d
Dilution:	1.0			Initial Weight/Volume:	960 mL
Analysis Date:	04/14/2013 1651			Final Weight/Volume:	2 mL
Prep Date:	04/08/2013 0809			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aniline	5.2	U	1.9	5.2
n,n'-Dimethylaniline	1.1		0.22	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	61		53 - 108
2-Fluorophenol	20		10 - 65
Nitrobenzene-d5	54	X	56 - 112
Phenol-d5	14		10 - 48
Terphenyl-d14	51		50 - 122
2,4,6-Tribromophenol	57		46 - 122

Analytical Data

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-28**

Lab Sample ID:	460-53760-4	Date Sampled:	04/05/2013 0930
Client Matrix:	Water	Date Received:	04/06/2013 1145

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111883	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/10/2013 1011			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	0.41	J	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	98		63 - 124

Client: ARCADIS U.S. Inc Job Number: 460-53760-1

Client Sample ID: **MW-32**

Lab Sample ID:	460-53760-7	Date Sampled:	04/05/2013 1510
Client Matrix:	Water	Date Received:	04/06/2013 1145

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111883	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/10/2013 1020			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	92		63 - 124

Client: ARCADIS U.S. Inc | Job Number: 460-53760-1

Client Sample ID: **MW-31**

Lab Sample ID:	460-53760-8	Date Sampled:	04/05/2013 1530
Client Matrix:	Water	Date Received:	04/06/2013 1145

8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

Analysis Method:	8015B	Analysis Batch:	480-111883	Instrument ID:	HP5890-4
	N/A		N/A	Initial Weight/Volume:	1 mL
Dilution:	1.0			Final Weight/Volume:	
Analysis Date:	04/10/2013 1029			Injection Volume:	1 uL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Methanol	1.0	U	0.41	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Hexanone	97		63 - 124

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: K. Roe / A. Schaffer	Lab PM: Chang, Grace	Carrier Tracking No(s):	COC No: 460-32893-21548.4
Client Contact: Ms. Dawn Penniman	Phone: 315.382.4934	E-Mail: grace.chang@testamericainc.com		Page: Page ~~4 of 5~~ 1 of
Company: ARCADIS U.S. Inc		Analysis Requested		Job #: 53760
Address: 6723 Towpath Road PO BOX 66	Due Date Requested: Standard			Preservation Codes:
City: Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13214				
Phone: 315-446-9120	PO #: Purchase Order Requested			
Email: Dawn.Penniman@arcadis-us.com	WO #:			
Project Name: McKesson Former Bear Street Facility	Project #: ~~46003606~~ B0036003.0000.00010			
Site: McKesson/Bear St., Syr., NY	SSOW#:			Other:

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - (MOD) 8260-Special Compound List	8270C - (MOD) 8270-Special Compound List	8015B_DAI - (MOD) Methanol	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N		
TB040513	4/3/13	1200	G	Water			X			2	-1
BD040513	4/5/13	1200	G	Water			X	X		5	-2
MW-29	4/5/13	1045	G	Water			X	X		5	-3
MW-28	4/5/13	0930	G	Water			X	X	X	8	-4
MW-27	4/5/13	1205	G	Water			X	X		5	-5
MW-8SR	4/5/13	1230	G	Water			X	X		5	-6
MW-32	4/5/13	1510	G	Water			X	X	X	8	-7
MW-31	4/5/13	1530	G	Water			X	X	X	8	-8
				Water							
				Water							
				Water							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify) Per project contract

Special Instructions/QC Requirements:

Empty Kit Relinquished by: TestAmerica	Date: 4/1—4/4/13	Time: —	Method of Shipment: Pickup

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/5/13 17:00	ARCADIS	[signature]	4-5-13 17:00	Syr
[signature]	4-5-13 19:00	Syr	Kim Rumm (FedEx)	4/6/13 11:45	TAEd

Custody Seals Intact: ⊠ Yes △ No	Custody Seal No.: 706050, 706072, 706062	Cooler Temperature(s) °C and Other Remarks: IR#4 -1/0.1°C, 3/4.1°C, 1/2.1°C

Attachment C

Institutional and Engineering Controls Certification Form

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **734020**

Site Name **McKesson Envirosystems (Inland Site)**

Site Address: 400 Bear Street West Zip Code: 13204
City/Town: Syracuse
County: Onondaga
Site Acreage: 8.6

Reporting Period: August 1, 2012 ~~2010~~ to July 31, 2013

		YES	NO
1.	Is the information above correct?	X	☐
	If NO, include handwritten above or on a separate sheet.		
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3.	Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
	If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5.	Is the site currently undergoing development?	☐	X

Box 2

		YES	NO
6.	Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	☐
7.	Are all ICs/ECs in place and functioning as designed?	☐	X

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

9/30/13
Date

SITE NO. 734020 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
029-300-380	MCKESSON CORP	
		Monitoring Plan Site Management Plan O&M Plan
		Monitoring Plan O&M Plan
		Ground Water Use Restriction Site Management Plan

A Long Term Monitoring Plan is in place to define the groundwater samples required, laboratory analysis required, and the period at which the sampling events occur; and an O and M Plan is in place to define Operations and Maintenance required onsite through out the year;

ROD- 1994 (soils), 1997 (groundwater)

029-300-390	MCKESSON,CORP	
		Ground Water Use Restriction Site Management Plan
		~~Soil Management Plan~~ Monitoring Plan Site Management Plan O&M Plan
		Monitoring Plan Site Management Plan O&M Plan

Decision Document-OU-1 ROD was signed March 18, 1994.
~~As referenced in the ROD Soil Management Plan needs to be in place due to the 12 inches of clean soil graded onsite.~~

Groundwater use restriction is called out in the ROD OU-1.

Site Management Plan Needs to contain a Long Term Monitoring Plan to define the Ground water samples required, Laboratory analysis required, and the Period at which the sampling events occur; O and M Plan to define Operations and Maintenance Required onsite throughout the year; IC/EC Plan to list IC and EC onsite and method for checking protectiveness.

~~Ground Water Containment is maintained through collection trenches~~
~~Fencing/Access control-A perimeter fence is onsite to restrict access~~

Box 4

Description of Engineering Controls

Parcel	Engineering Control
029-300-380	
	Fencing/Access Control Groundwater Containment Fencing/Access Control Groundwater Containment ~~Cover System~~

Parcel	Engineering Control
the site.	
Ground Water Containment-Groundwater collection trenches contain the migration of contaminated groundwater	
Fencing/Access control-A perimeter fence is onsite to restrict access	
029-300-390	
	~~Cover System~~
	~~Cover System~~
	Groundwater Containment
	Groundwater Containment
	Fencing/Access Control
	Groundwater Containment
	Fencing/Access Control

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☐	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☐	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

____ __________________

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS
SITE NO. 734020

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ________________________ at ____________________________________,
print name print business address

am certifying as ____________________________________(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

____________________________________ ________________
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ______________________________ at ____,
print name print business address

am certifying as a Professional Engineer for the ________________________________
(Owner or Remedial Party)

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification	Stamp (Required for PE)	Date

Corrective Measures Work Plan
McKesson Envirosystems – Former Bear Street Facility
Reporting Period: August 1, 2012 – July 31, 2013
Syracuse, New York
Site No. 7-34-020

Deed Restrictions

As per the March 1994 Record of Decision (ROD) of Operable Unit No. 1 (OU1) of the McKesson Envirosystems Former Bear Street Facility, deed restrictions for the two parcels of the Site need to be placed to prevent future use of and potential human exposure to site groundwater. The deed restrictions will serve as an institutional control. As per DER-33 (NYSDEC 2010c), a deed restriction is required (rather than an environmental easement or environmental notice) because the Site is a Class 2 Site and the ROD was issued prior to October 7, 2003. As of September 2013, the deed restrictions are not in place.

Draft deed restrictions (Declaration of Covenants and Restrictions) have been submitted to NYSDEC with this Periodic Review Report as an appendix to the enclosed draft Site Management Plan. Upon approval of the language, the deed restriction process will be completed as outlined in Section V.2.a.b.7 of DEC-33 (Institutional Controls: A Guide to Drafting and Recording Institutional Controls).

Cover System

The Institutional and Engineering Controls (IC/EC) Certification Form for this reporting period identities a "cover system" as an engineering control for both parcels in Box 4. This is the first time that a cover system is identified on the IC/EC Certification Form in Box 4, and neither the OU1 nor the OU2 RODs define a cover system as an engineering control for the Site. As stated in the OU1 ROD, one of the elements of the selected remedy for OU1 was "final contouring with a minimum of 12 inches of clean soil, grading, and seeding of the Site to promote surface water runoff and limit the infiltration of rain and surface water into remediated areas" (NYSDEC 1994; BBL 1995). The minimum 12 inches of clean fill material is not deemed to be an engineering control.

Groundwater Containment

The groundwater containment engineering control was shut down on April 10, 2013 upon approval of NYSDEC and a post-shutdown process control monitoring program was implemented. As stated in NYSDEC's April 11, 2013 letter, the purpose of that monitoring program is to determine the continued effectiveness of the remedial action and to evaluate the need to re-start the remedial processes (i.e., the *in-situ* bioremediation treatment and closed loop hydraulic systems).

Attachment D

Draft Site Management Plan

ARCADIS

Attachment E

Clean Copy of the Draft Site Management Plan Text and Draft Excavation Work Plan Text

DRAFT

McKesson Envirosystems Former Bear Street Facility

ONONDAGA COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 7-34-020

Prepared for:

McKesson Corporation
One Post Street, 34th Floor, San Francisco, California 94104

Prepared by:

ARCADIS of New York, Inc.
6723 Towpath Road, Syracuse, New York 13214-0066
(315) 446 9120

I ___________certify that I am currently a NYS registered professional engineer as and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the *DER Technical Guidance for Site Investigation and Remediation* (DER-10) and that all activities were performed in accordance with the DER-approved work plans and any DER-approved modifications.

______________________________ Signature   ___________ Date

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

SEPTEMBER 2013

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SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document has been prepared at the request of the New York State Department of Environmental Conservation (NYSDEC) to be an element of the remedial program at the McKesson Envirosystems Former Bear Street Facility (the Site) under the New York State Inactive Hazardous Waste Disposal Site Remedial Program administered by the NYSDEC. The Site was remediated in accordance with the Consent Order (Case # R7-07660-84-03, Site #7-34-020) entered into between McKesson Corporation of San Francisco, California; Safety-Kleen Envirosystems Company of Elgin, Illinois; and NYSDEC. The Consent Order was executed on June 10, 1987 and amended on June 20, 1990 (NYSDEC 1987, 1990). Since 1998, following the completion of remedial construction activities for Operable Unit 2 (OU-2), operation, maintenance, and monitoring activities have been performed in accordance with the *Site Operation and Maintenance Plan* (Site O&M Plan; Blasland, Bouck & Lee, Inc. [BBL] 1999a) and subsequent NYSDEC-approved addenda to the Site O&M Plan in 1999 and 2010 (BBL 1999b, ARCADIS 2010a, and NYSDEC 2010a). This Site Management Plan (SMP) supersedes the Site O&M Plan for management of the Site.

1.1.1 General

As identified above, a Consent Order was executed to remediate an 8.6-acre property located in Syracuse, New York. This Consent Order required the Remedial Parties, McKesson Corporation and Safety-Kleen Envirosystems Company, to investigate and remediate contaminated media at the Site. The site location and boundaries are shown on Figures 1 and 2, and the boundaries of the Site are more fully described in the metes and bounds site description that is part of the Deed Restrictions (Appendix A).

NYSDEC divided the Site into two operable units to facilitate remediation of the Site. NYSDEC defined OU-1 as unsaturated soils (i.e., soils above the groundwater table) and Operable Unit 2 (OU-2) as saturated soils and groundwater. A Record of Decision (ROD) for OU-1 was issued by the NYSDEC in March 1994, identifying four Remedial Action Objectives (RAOs) and specifying *in-situ* bioremediation as the remedy for OU-1. The establishment of Deed Restrictions was also identified in the OU-1 ROD to prevent future use of and potential human exposure to Site groundwater (NYSDEC 1994a). The OU-1 RAOs are as follows:

- Reduce, control, or eliminate the contamination present within the unsaturated soils on site.
- Eliminate a threat to surface waters by eliminating any future contaminated surface runoff from the contaminated soils on site.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Monitor the impacts of contaminated groundwater to the environment.

Upon completion of the OU-1 remedial work, a *Remedial Design/Remedial Action (RD/RA) Report for OU-1 – Unsaturated Soils* ([BBL 1995) was prepared and submitted to the NYSDEC in September 1995. The OU-1 RD/RA Report was approved by the NYSDEC in a September 28, 1995 letter from Robert W. Schick, P.E. of the NYSDEC, to David J. Ulm of BBL. That letter also stated that the NYSDEC considered remediation of OU-1 complete, and did not require the establishment of institutional controls (ICs) or engineering controls (ECs) as a condition of completion (NYSDEC 1995).

In March 1997, the NYSDEC issued a ROD for OU-2 saturated soils and groundwater, which established three RAOs for OU-2 and specified *in-situ* anaerobic bioremediation as the remedy to attain the RAOs. In addition, the OU-2 ROD stated that the Site will be reclassified to a Class 4 site once the remedy is in place (indicating that the remedial action is in place and only operation and maintenance is required) and that the Site will be considered for delisting from the New York State Registry of Inactive Hazardous Waste Disposal Sites (Registry) upon completion of the remediation, as demonstrated by the monitoring programs (NYSDEC 1997a). The OU-2 RAOs are as follows:

- Reduce, control, or eliminate the concentrations of constituents of concern (COCs) present within the saturated soils at the Site.
- Attain the NYSDEC Class GA Groundwater Quality Standards (NYSDEC 1998), to the extent practicable, for the COCs present in on-site groundwater.
- Mitigate the potential for migration beyond the Site boundary of groundwater that contains concentrations of COCs in excess of their respective NYSDEC Class GA Groundwater Quality Standard.

Remedial construction activities for OU-2, as described in the *Remedial Design/Remedial Action Report for OU-2* (BBL 1999c), were completed in 1998. The OU-2 RD/RA Report provided a description of the *in-situ* anaerobic bioremediation system and summarized the treatment and monitoring activities conducted during the first year (i.e., July 1998 through July 1999). The OU-2 RD/RA Report was approved by the NYSDEC in a February 22, 2000 letter to Jean A. Mescher of McKesson from Robert W. Schick, P.E. of NYSDEC (NYSDEC 2000). The OU-2 remedial and monitoring activities are ongoing, and the remedy has continued to remain protective of public health and the environment.

A comprehensive evaluation of the monitoring data from 1998 to October 2012 was conducted and the results were presented in the January 2013 Periodic Review Report (PRR; ARCADIS 2013). As detailed in that PRR, the RAOs for OU-2 have been attained (ARCADIS 2013), and NYSDEC guidance for initiating remedial process closure identified in NYSDEC's *Technical Guidance for Site Investigation and Remediation DER-10,* Section 6.4(a) (NYSDEC 2010b) have been met because:

- the remedy has achieved the bulk reduction of groundwater contamination
- the remedy has been properly implemented and optimized to its fullest extent

- public health and the environment are protected

NYSDEC verbally approved the shutdown of the *in-situ* bioremediation treatment system (hydrogen peroxide amendments and oxygen diffusion) and closed loop hydraulic system on April 9, 2013, and required a post-shutdown process control monitoring program to determine the continued effectiveness of the remedial action on the remaining contamination and to evaluate the need to re-start remedial processes (i.e., the *in-situ* bioremediation treatment system and the closed loop hydraulic system). Accordingly, the systems were shutdown on April 10, 2013. The NYSDEC approved the shutdown of the systems in writing on April 11, 2013 (NYSDEC 2013a). The required monitoring program is outlined in Section 3.0 of this SMP and is referred to as the "post-shutdown process control monitoring program."

The monitoring results from the post-shutdown process control monitoring program will be evaluated to determine the continued effectiveness of the remedial action and to evaluate the need (if any) to re-start the remedial processes. The remedial action will be considered to have "continued effectiveness" if the post-shutdown groundwater COC concentrations continue to attain the RAOs identified in the OU-2 ROD (NYSDEC 1997a) and remain consistent with NYSDEC guidance for initiating remedial process closure, as set forth in DER-10, Section 6.4 (NYSDEC 2010b).

When it has been demonstrated that the remedial action continues to maintain its effectiveness, and upon approval by the NYSDEC and New York State Department of Health (NYSDOH) that monitoring is no longer required, the OU-2 remedial activities will be considered complete and site closeout activities will commence, including (but not limited to) the following activities:

- Deconstructing and removing the *in-situ* bioremediation treatment system, existing structures, and equipment
- Decommissioning monitoring wells and piezometers.

Additionally, delisting of the Site from the Registry is anticipated after completing the monitoring program. The Site may be delisted upon completion of the remediation, as specified in the OU-2 ROD (NYSDEC 1997a), and when a certificate of completion has been issued (6NYCRR Part 375-2.7(e)(4); NYSDEC 2006). A work plan for site closeout activities will be developed and submitted to the NYSDEC for approval when appropriate.

This SMP was prepared to manage remaining contamination at the Site until the Deed Restrictions are extinguished in accordance with Environmental Conservation Law Article 71, Title 36 (New York State 2013). All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

1.1.2 Purpose

The Site contains some remaining contamination consistent with the OU-1 and OU-2 RODs issued by the NYSDEC for the Site (NYSDEC 1994a, 1997a). Deed Restrictions, to be recorded with the Onondaga County Clerk upon final approval by the NYSDEC, will require compliance with this SMP and any ICs placed on the Site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring, and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Deed Restrictions for the remaining contamination at the Site. Upon the NYSDEC's approval of this SMP, compliance with this plan is required by the grantor of the Deed Restrictions and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of the procedures required to manage the remaining contamination at the Site, including: (1) implementation and management of all ECs and ICs; (2) groundwater monitoring; (3) operation and maintenance (O&M) of the Site; (4) O&M of the treatment system in the event that OU-2 remedial processes must be re-started; (5) performance of periodic inspections, certification of results, and submittal of PRRs; and (6) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan (EC/IC Plan) for implementation and management of ECs and ICs; (2) a Monitoring Plan for implementation of a post-shutdown process control monitoring program; and (3) an Operation and Maintenance Plan for the implementation of post-remedial activities during the shutdown of treatment and closed loop hydraulic systems, as well as the O&M of these systems in the event that OU-2 remedial processes must re-commence. This plan also includes a description of PRRs for the periodic submittal of data, information, recommendations, and certifications to the NYSDEC.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's Project Manager. In accordance with the Deed Restrictions for the Site, the NYSDEC will provide a notice of any approved changes to the SMP and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

This section describes the site location, history, and nature and extent of contamination at the Site, both before and after the remedy.

1.2.1 Site Location and Description

The Site is located at 400 Bear Street West in the City of Syracuse, County of Onondaga, New York and is divided into two parcels, identified as Block 115-03-07 (801 Van Rensselaer Street) and Block 116-01-09 (800 Van Rensselaer Street) on the City of Syracuse, Onondaga Tax Maps (Figure 1). The Site is an approximately 8.6-acre area and the two parcels are separated by Van Rensselaer Street. The parcel north of Van Rensselaer Street is within 150 feet of the Barge Canal, and the entire Site is bordered by Bear Street West to the east and other properties to the west and south (Figure 2). The boundaries of the Site are more fully described in Schedule A and shown on Schedule B of the Deed Restrictions for each of the two parcels (Appendix A).

Historically, the Site was zoned for commercial and industrial use. The Site has since been re-zoned as a Lakefront Zoning District (T5) as part of the City of Syracuse Lakefront Master Plan[1], which was adopted in March 1999. This zoning designation permits mixed uses of the Site as an urban center, including commercial and residential uses (City of Syracuse 2013).

The Site is currently classified as a Class 2 Inactive Hazardous Waste Disposal Site, representing a significant threat to public health and/or the environment and

[1] The City of Syracuse zoning map is available online at: http://www.syracuse.ny.us/ZoningAtlas/Map06.pdf.

requiring action. Upon approval of the Deed Restrictions (Appendix A), the Site is anticipated to be reclassified to Class 4, which is assigned to a site that has been properly closed, but requires continued site management consisting of operation, maintenance, and monitoring (6NYCRR Part 375-2.7(b)(3)(iv); NYSDEC 2006, 2013b). As specified in the OU-2 ROD, the Site will be considered for delisting upon completion of the remediation (NYSDEC 1997a). Groundwater underlying the Site and downgradient of the Site has historically not been used, nor is currently being used, as a drinking water source. The Deed Restrictions prohibit the use of groundwater underlying the Site without necessary water quality treatment rendering it safe for intended use and approval to do so from the NYSDEC.

1.2.2 Site History

Past uses of the Site, ownership, and remedial activities that have been completed at the Site are listed below. This information has been detailed in numerous site-related documents, including the *Final Remedial Investigation Report* (Blasland & Bouck Engineers, P.C. [BBEPC] 1990) for information prior to 1990. Other references are cited below, and a complete list is provided in Section 6.0.

<u>Operational/Disposal History</u>

<u>Prior to 1920s</u>

- The Site was a low-lying swamp with Onondaga Creek flowing through the center from east to west.

<u>Late 1920s</u>

- The land was made suitable for commercial use by the placement of fill material and was occupied by various salt companies.

<u>1922</u>

- The Barge Canal and barge loading terminal were constructed along the east side of the Site.
- Onondaga Creek was routed away from the Site to the southern end of the canal.

<u>1928-1973</u>

- Various oil companies, including Atlantic Richfield Company and its predecessors and BP Oil Corporation, used the Site for the storage and distribution of petroleum and petroleum products.

1973-1981

- Inland Chemical Corporation (ICC) purchased the Site in 1973 and used it for the storage of a variety of chemical waste streams and recycled chemicals, including methanol, methylene chloride, and other solvents, until December 1981.

December 1981

- ICC merged into Safety-Kleen Envirosystems Company (later named McKesson Envirosystems Company), which became the owner/operator of the Site.
- Safety-Kleen Envirosystems discontinued operations at the facility.

Remedial History

1980

- ICC filed a Part A Permit Application for interim status as a hazardous waste storage facility under the Resource Conservation Recovery Act (RCRA).

1981-1983

- Aboveground storage tanks and associated piping were decontaminated and the underground storage tanks used for storing petroleum products for truck refueling were removed (BBEPC 1990).

1987

- Site ownership was transferred to McKesson Corporation, which has since carried out the remedial program.
- A Revised Part A Application for closure was submitted to the NYSDEC.
- McKesson Corporation signed a Consent Order (Case # R7-07660-84-03) with the NYSDEC, which was executed on June 10, 1987.

1988-1990

- A NYSDEC-approved RCRA closure program for the facility was conducted. The closure program included verifying decontamination of 11 aboveground storage tanks, removing distribution piping associated with the aboveground tanks, and removing the aboveground tanks.
- A Remedial Investigation (RI), consisting of a Hydrogeologic Investigation, an Interim Remedial Soils Investigation, and a Risk Assessment, was conducted in 1988

and 1989 to define the nature and extent of contamination resulting from previous activities at the Site.

- Notification from the NYSDEC was received by McKesson Corporation that the facility was officially closed and that corrective actions would proceed under the Consent Order (NYSDEC1987, 1990).
- A *Final Remedial Investigation Report* was issued describing the field activities and findings of the RI (BBEPC 1990).
- McKesson Corporation signed a Consent Order Amendment (Case #: R7-07660-84-03) with Safety-Kleen Envirosystems Company and NYSDEC that went into effect on June 20, 1990.

<u>1991-1996</u>

- A Soil Bioremediation Pilot Study was conducted at the Site using both *in-situ* and *ex-situ* techniques in 1993. A Feasibility Study (FS) and results of the Soil Bioremediation Pilot Study were completed for unsaturated soils in November 1993 (BBEPC 1993).
- The Site was separated by NYSDEC into two OUs – OU-1: unsaturated soils and OU-2: saturated soils and groundwater.
- A remedy was selected for unsaturated soils at the Site, which was presented in NYSDEC's ROD for OU-1 (NYSDEC 1994a).
- A *Remedial Design/Remedial Action (RD/RA) Work Plan for OU-1* (BBL 1994) was approved by the NYSDEC in May 1994, and the selected remedy for unsaturated soils – *in-situ* bioremediation – was implemented.
- OU-1 remedial activities were completed in May 1995 and documented in the OU-1 RD/RA Report (BBL 1995).
- The OU-1 RD/RA Report was approved by the NYSDEC in a September 28, 1995 letter from Robert W. Schick, P.E., NYSDEC, to David J. Ulm, BBL.
- A Supplemental Saturated Soil and Groundwater Investigation (BBL 1996b) was conducted in 1995 to update existing data regarding the distribution of COCs in the saturated soil and groundwater and as a preliminary component of the FS for OU-2 (BBL 1996a).

- The FS Report for OU-2 was completed in September 1996 (BBL 1996a) and subsequently approved by NYSDEC in December 1996 (NYSDEC 1996).

1997-1998

- NYSDEC issued a ROD for OU-2 in March 1997 for saturated soils and groundwater (NYSDEC 1997a).
- A RD/RA Work Plan for OU-2 was approved by the NYSDEC in September 1997 (NYSDEC 1997b) and design/construction of the selected remedy – *in-situ* anaerobic bioremediation treatment (including establishment of a closed loop hydraulic system) – was completed in 1997 and 1998.
- Remedial construction activities were documented in the OU-2 RD/RA Report (BBL 1999c), which was approved by the NYSDEC in a February 22, 2000 letter to Jean A. Mescher of McKesson from Robert W. Schick, P.E. of NYSDEC (NYSDEC 2000).

1998-April 8, 2013

- *In-situ* bioremediation treatment was conducted and hydraulic control was maintained.
- The progress of the OU-2 remedial activities was monitored and the results were evaluated periodically to determine if the remedy met the objectives of the 1997 ROD for OU-2.
- The results from initiation of the OU-2 remedial activities in 1998 through October 2012 indicated that the remedy had attained the RAOs specified in the OU-2 ROD, and that the Site was ready for shutdown of the *in-situ* bioremediation treatment and closed loop hydraulic systems.

April 9, 2013-Present

- On April 9, 2013, the NYSDEC approved the shutdown of the OU-2 *in-situ* bioremediation treatment and closed loop hydraulic systems. The systems were shutdown on April 10, 2013.
- A post-shutdown process control monitoring program will be used to determine the continued effectiveness of the remedial action on the remaining contamination and evaluate the need (if any) to re-start the remedial processes.

1.2.3 Geologic Conditions

Stratigraphy

OU-2 consists of two relatively permeable hydrogeologic units sandwiched between three fine-grained confining units. From shallowest to deepest, these units are as follows:

- *Upper Silt and Clay* – a fine-grained, poorly permeable deposit that ranges from approximately 8 to 15 feet below ground surface (bgs)
- *Fine Sand* – moderately permeable fine sand that ranges from approximately 15 to 22 feet bgs
- *Middle Silt and Clay* – a relatively thin deposit of silt and clay that that ranges from approximately 20 to 22 feet bgs
- *Sand and Gravel* – a relatively coarse-grained, permeable deposit that ranges from approximately 24 to 61 feet bgs
- *Lower Silt and Clay* – a fine-grained, poorly permeable deposit with an average thickness of 20 to 30 feet

The upper silt and clay unit is overlain by a surficial layer of clean sand and gravel fill that was graded over the Site during the OU-1 remediation (BBEPC 1990; BBL 1999c). A geologic cross-section is shown on Figure 3.

Hydrogeology

Based on the above stratigraphy, two hydrogeologic flow systems were identified at the Site: (1) a deep hydrogeologic unit consisting of the sand and gravel unit, and (2) a shallow hydrogeologic unit that extends from the water table to the base of the fine sand unit. The water table typically occurs near the top of the upper silt and clay; except in the northeastern portion of the Site, where it dips into the fine sand unit near the Barge Canal. The water table during the April 2013 hydraulic monitoring event is shown on Figure 3. The two hydrogeologic units are hydraulically separated by the middle silt and clay unit, and the deep hydrogeologic unit is further separated into a shallow freshwater zone and a deeper saltwater zone (Figure 3). Groundwater moving through both hydrogeologic units discharges into the Barge Canal.

One component of the OU-2 site remedy involved withdrawing groundwater, amending it with nutrients or a source of oxygen, and re-injecting it, forming a closed loop hydraulic system. That component is described in Section 1.4, but generally consisted of a withdrawal trench and a series of parallel infiltration trenches that bracketed a region of the upper hydrogeologic unit where groundwater required remediation. Groundwater withdrawn from the withdrawal trench was amended (as necessary) and routed to the infiltration trenches. When operating, the groundwater in the shallow hydrogeologic unit near the trenches was recirculated, instead of discharging to the Barge Canal as it would have if the system was not operating. Groundwater in the underlying deep hydrogeologic unit was essentially unaffected by the closed loop hydraulic system. Figure 4 depicts the potentiometric surface of the shallow hydrogeologic unit at the Site using the data from the April 2013 hydraulic monitoring event. Note that the closed loop hydraulic system was operating at that time.

A regional groundwater flow system underlies the local flow system described above. Although not a concern at the Site, the groundwater in that deeper, regional system moves northwestward and discharges to Onondaga Lake (see Figure 1).

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

An RI was performed in 1988 and 1989 to characterize the nature and extent of contamination at the Site. To update RI data regarding the distribution of COCs in the saturated soil and groundwater, a supplemental investigation of saturated soil and groundwater was performed in 1995. This work was conducted as a preliminary component of the FS for OU-2. The results of the RI and Supplemental Investigation (SI) are described in detail in the following reports:

BBEPC. 1990. Final Remedial Investigation Report McKesson Corporation Bear Street Facility. Vol. 1 – 3. April.

BBL. 1996b. Supplemental Saturated Soil and Groundwater Sampling Investigation Report, Operable Unit No. 2- Saturated Soil and Groundwater. February, Revised September.

The COCs detected at the Site are associated with past storage activities and include various volatile and semivolatile organic compounds (VOCs and SVOCs). Specifically, the investigations identified the following COCs for the Site (NYSDEC 1997a):

- VOCs: benzene, toluene, ethylbenzene, xylenes, trichloroethene, methylene chloride, acetone, and methanol
- SVOCs: aniline and N,N-dimethylaniline

Below is a summary of site conditions from the RI and SI (BBEPC 1990; NYSDEC 1997a):

Unsaturated Soil

The unsaturated soils at this Site (prior to the OU-1 remedial activities) were approximately 4 feet bgs. COCs were detected in soils located at and adjacent to past material handling locations, in the diked areas at former aboveground storage tanks, and near the location of former underground storage tanks. Maximum concentrations of the COCs detected in unsaturated soil during the RI and identification of the borings from which the samples were taken are presented in Table 1. These soil boring locations are shown on Figure 5.

Site-Related Groundwater

Groundwater contamination was also identified beneath the Site. The RI and SI determined that COCs were not being transported off site with groundwater flow (NYSDEC 1997a). Maximum concentrations of COCs observed in groundwater during the RI and SI are presented in Table 1. Groundwater sample locations are shown on Figure 2. The investigations identified that the highest concentration and areal distribution of COCs in groundwater (and saturated soils) at the Site were associated with three distinct on-site areas within the shallow hydrogeologic unit; these are designated as Areas 1, 2, and 3, as shown on Figure 2.

Site-Related Soil Vapor Intrusion

No site-related soil vapor intrusion samples have been collected. The Site has been unoccupied since facility operations were discontinued in December 1981 and

COCs have not been detected in groundwater at concentrations exceeding the NYSDEC Groundwater Quality Standards beyond the site boundary. According to the NYSDEC's Environmental Site Remediation Database, the potential for soil vapor intrusion is eliminated under existing Site conditions (NYSDEC 2013c).

1.4 SUMMARY OF REMEDIAL ACTIONS

The Site has undergone remedial activities in accordance with the NYSDEC-approved *RD/RA Work Plan Operable Unit No. 1- Unsaturated Site Soils* and *RD/RA Work Plan Operable Unit No. 2 - Saturated Soils and Groundwate*r (BBL 1994, 1997). Ongoing O&M activities and supplemental remedial activities were performed in accordance with the Site O&M Plan, (BBL 1999a), NYSDEC-approved addendums to the Site O&M Plan (BBL 1999b, ARCADIS 2010a, NYSDEC 2010a), and NYSDEC-approved recommendations proposed in various Biannual Process Control Monitoring Reports (BBL 2004, 2007; ARCADIS 2010b, 2010c).

The Site is divided into three areas (Areas 1, 2, and 3), as shown on Figure 2, and consists of two parcels. Additionally, the Site is divided vertically into two OUs: OU-1 – Unsaturated Soils, and OU-2 – Saturated Soils and Groundwater. Remedial activities for OU-1 involved *in-situ* aerobic bioremediation of unsaturated soils (i.e., soils above the groundwater table using actual groundwater elevations to govern the treatment depths), and remedial activities for OU-2 involved *in-situ* anaerobic and aerobic bioremediation of groundwater and saturated soils and establishment of a closed loop hydraulic system.

The following is a summary of the remedial actions performed at the Site for each operable unit. Detailed descriptions of remedial activities can be found in the NYSDEC-approved OU-1 RD/RA Report (BBL 1995; NYSDEC 1995) and NYSDEC-approved OU-2 RD/RA Report (BBL 1999c; NYSDEC 2000). Descriptions of remedial activities performed subsequent to those described in these RD/RA reports are provided in the reports cited below.

OU-1 Remedial Activities

1. Biological treatment was implemented using *in-situ* soil blending of the unsaturated soils at the Site that contained COCs at concentrations greater than or equal to 5 parts per million (ppm).

2. Post-remediation soil verification sampling determined that ROD-specified soil cleanup objectives had been achieved.

3. A minimum of 12 inches of clean fill was installed, graded, and seeded to promote surface water runoff and limit infiltration of rain and surface water into the remediated areas.

4. Additional groundwater monitoring wells were installed to supplement the existing Site perimeter groundwater monitoring network and were monitored and sampled to verify that the COCs were not migrating beyond the property boundary.

Remedial activities for OU-1 were completed at the Site in December 1994/May 1995. The OU-1 RD/RA Report was approved by the NYSDEC in September 1995 and the NYSDEC considered remediation of OU-1 complete (NYSDEC 1995).

OU-2 Remedial Activities: 1998-Present

The components of the OU-2 remedy are summarized below. These components were installed/initiated in 1998 and have remained in place to the present. Since 1998, the remedial components and ongoing O&M activities have been periodically modified with approval from the NYSDEC. The initial remedial components are summarized below, followed by descriptions of the modifications, which are summarized by the affected time period. Locations and detailed diagrams of the various treatment system components are shown on Figure 2 and in Appendix B, respectively. A more detailed discussion of the treatment and closed loop hydraulic systems is provided in Section 1.4.2.

- A groundwater infiltration trench and withdrawal trench (including a 4-foot diameter collection sump) were installed upgradient and downgradient, respectively, of Area 3 as a means to introduce groundwater amended with Revised Anaerobic Mineral Media- (RAMM-) into the shallow hydrogeologic unit and maintain hydraulic control. RAMM consists of specific chemicals that supply macronutrients and micronutrients to enhance naturally occurring anaerobic biodegradation of COCs.

- Two additional infiltration trenches were installed in Area 3 to increase the distribution of RAMM-amended groundwater within this area.
- An *in-situ* anaerobic bioremediation treatment system was constructed and contained in a 12-by-24 foot treatment building, located northwest of the main infiltration trench. The treatment building consists of a process room containing all process control equipment and secondary containment diking, and a separate electrical room.
- Two infiltration trenches were installed in Areas 1 and 2. RAMM-amended groundwater was periodically introduced into these trenches by manually filling standpipes screened within the filter pack of these trenches (i.e., within the shallow hydrogeologic unit).
- RAMM was introduced into the shallow hydrogeologic unit within each of the three areas at discrete locations throughout each area using a truck-mounted vertical injection mast. Two discrete RAMM injection events were conducted in August 1998 and August 2000.
- A process control monitoring program was initiated in 1998 to monitor the effectiveness of the *in-situ* anaerobic bioremediation treatment system. The program included hydraulic, biological, and COC monitoring.

2004-2005

In 2004, the periodic review of the data obtained from the process control monitoring program suggested that concentrations of aniline and N,N-dimethylaniline near MW-8S, MW-27, and MW-28 in Area 3, TW-02R in Area 2, and MW-33 in Area 1 were not being reduced as successfully as in other areas of the Site (BBL 2004). As a result, the following remedial activities were performed:

1. Approximately 65, 1, and 6 cubic yards of soil were removed to an estimated depth of 20 feet bgs from the areas surrounding MW-8S, MW-27, and TW-02R, respectively, to reduce concentrations of aniline and N,N-dimethylaniline. Locations of the excavation areas are shown on Figure 5. The excavation areas surrounding MW-27

and TW-02R were backfilled with bentonite and imported clean fill material (pea stone), which was amended with RAMM (in addition to Suga-Lik™ [Blackstrap Molasses] at MW-27). The excavation area surrounding MW-8S was backfilled with stockpiled clean soil from the top 6 feet of soil bgs (this material is the clean fill installed during the OU-1 remedial activities), RAMM-amended clean material (pea stone), and bentonite.

2. Eight well points were installed around monitoring wells MW-27, MW-28, and MW-33 for monthly additions of RAMM and Suga-Lik™.

3. The biological portion of the monitoring program was eliminated in 2005 after collecting 6 years of data that consistently verified that saturated soils/groundwater in the shallow hydrogeologic unit were conducive to bioremediation.

2006-2009

In 2006, the periodic review of the COC data suggested that the *in-situ* anaerobic treatment program was effectively reducing the concentrations of VOCs, but concentrations of SVOCs (aniline and N,N-dimethylaniline) were not being reduced in a timely manner. The OU-2 *in-situ* anaerobic bioremediation treatment program was modified to an *in-situ* aerobic bioremediation treatment program in August 2006 (BBL 2007). The following remedial activities were performed between August 2006 and January 2009:

1. The RAMM amendment was replaced in each of the three areas by the introduction of groundwater amendments with an oxygen source (i.e., hydrogen peroxide) and macronutrients (i.e., Miracle Gro®).

2. The *in-situ* aerobic bioremediation treatment program was modified in October 2008 to provide a new and continuous source of oxygen to Areas 2 and 3. Hydrogen peroxide continued to be added to Area 1. The modifications included the following:

- Constructing an oxygen gas infusion system in both Areas 2 and 3 (Figures 6 and 7)

- Installing an aerator stone in the equalization tank of the Area 3 treatment system in January 2009 to add oxygen gas to the groundwater before it was pumped into the infiltration trenches

3. Macronutrient amendments were discontinued in Areas 1, 2, and 3 in October 2008.

2010-2011

In 2010, the periodic review of the data obtained as part of the monitoring program suggested that concentrations of aniline in the area between TW-02RR and MW-36 were not being reduced as successfully as in other areas of the Site (ARCADIS 2010b, 2010c; NYSDEC 2010a). The following remedial activities were performed:

1. Approximately 117 tons of soil were excavated from Area 2 to an estimated depth of 10 feet bgs and disposed off site in November 2010.

2. The excavated area in Area 2 was backfilled with pea stone amended with Oxygen Release Compound (ORC®) and stockpiled clean soil from the upper soil interval (0 to 6 feet bgs) within the excavation area. This upper soil interval is the clean fill installed during the OU-1 remedial activities.

3. The process control monitoring program was modified beginning in October 2010 as follows (ARCADIS 2010a; NYSDEC 2010a):

· Discontinued methanol analyses of data from wells/piezometers MW-3S, MW-4S, MW-33, MW-36R, MW-8SR, MW-27, MW-29, MW-30, PZ-4S, and PZ-4D based on a demonstrated history of not being detected

· Decommissioned and abandoned monitoring wells/piezometers MW-1, MW-2S, MW-6S, MW-13S, MW-15S, MW-19, MW-26S, PZ-5S, PZ-9S, and PZ-9D as they were no longer included in the COC and/or hydraulic monitoring program and they were located outside of the estimated groundwater flow path of site-related contaminants

· Removed deep monitoring wells/piezometers MW-3D, MW-6D, MW-9D, MW-11D, MW-18, MW-23I, MW-24DR, and MW-25D from the hydraulic monitoring program due to the consistency of data from the deep hydrogeologic unit and the lack of upconing

4. The *in-situ* aerobic bioremediation treatment program was modified in June 2011 to include monthly injections of ORC®-amended groundwater into 5 standpipes that

were installed in the Area 2 excavation area. Monthly injections ended in December 2011.

2012-Present

Remedial activities for OU-2, which included hydrogen peroxide amendments (Area 1), oxygen diffusion (Areas 2 and 3), and closed loop hydraulic activities (Area 3) continued through April 10, 2013. NYSDEC verbally approved the shutdown of the *in-situ* bioremediation treatment and closed loop hydraulic systems on April 9, 2013. NYSDEC approved this in writing on April 11, 2013 (NYSDEC 2013a).

1.4.1 Removal of Contaminated Materials from the Site

OU-1

During the OU-1 remedial activities conducted in 1994/1995, the following contaminated materials were removed from the Site:

- A former distribution piping network and an underground storage tank were uncovered during site preparation activities in the unsaturated soil zone and decontaminated using a high pressure hot water wash. The liquids present within the distribution piping and the wash water from the piping and underground tank decontamination were collected, stored in 55-gallon drums, and characterized for disposal. The liquids collected from the piping network were disposed at Ensco, Inc., El Dorado, Arkansas. The piping and underground storage tank were subsequently disposed at Roth Steel, Syracuse, New York as scrap metal (BBL 1995).
- Concrete grade rings and a 6-inch thick concrete slab (approximately 100 feet in diameter) were removed from the former tank areas. The concrete grade rings and slab were treated by scarifying the concrete surfaces to remove 0.6 centimeters of the concrete surface to provide a clean debris free surface. The residue generated from the scarification activities was collected, characterized, and disposed of at Wayne Disposal, Inc., Bellville, Michigan in accordance with applicable rules and regulations (BBL 1995).

OU-2

Following the completion of the trench installation activities associated with the *in-situ* anaerobic treatment systems for OU-2, approximately 2,100 tons of non-hazardous soils and miscellaneous debris (e.g., low permeability liners) were transported and disposed off site at CWM Chemical Services, Inc.'s High Acres facility located in Fairport, New York (BBL 1999c).

In 2004, an excavation program was designed and implemented for the removal of approximately 65 cubic yards of saturated soil near MW-8S (in Area 3), 1 cubic yard of saturated soil near MW-27 (Area 3) and approximately 6 cubic yards of saturated soil around TW-02R (in Area 2). Areas where excavation was performed are shown on Figure 5. To facilitate soil removal activities, monitoring wells MW-8S and TW-02R were removed and subsequently replaced. Drill cuttings and excavated soil were containerized in lined roll-offs, characterized, and disposed off site at CWM Chemical Services, LLC in Model City, New York as non-hazardous soil (BBL 2004).

In 2010, an excavation program was designed and implemented for the removal of approximately 117 tons of saturated soil from Area 2, as shown on Figure 5. The excavated soil was containerized in lined roll-offs, characterized, and disposed off site as non-hazardous waste at Casella's Ontario County Landfill in Stanley, New York (ARCADIS 2010b).

1.4.2 Site-Related Treatment Systems

The following subsections describe the components of the *in-situ* bioremediation treatment and closed loop hydraulic systems that were installed on site during OU-2 remedial activities (BBL 1999a; ARCADIS 2013). The operation and maintenance procedures for the treatment systems are presented in the Operation and Maintenance Plan of this SMP (Section 4.0). Both of these systems were shut down on April 10, 2013 with the approval of the NYSDEC.

1.4.2.1 Area 3 *In-Situ* Bioremediation System

The *in-situ* bioremediation system at Area 3 withdraws groundwater from the shallow hydrogeologic unit downgradient of Area 3, transports the collected groundwater to a treatment building for amendment, and conveys the amended groundwater into the infiltration trench in Area 3.

Since the initiation of OU-2 remedial activities in 1998, a closed loop hydraulic system has been incorporated into the Area 3 *in-situ* bioremediation system as an EC. The closed loop hydraulic cell is created by withdrawing groundwater to induce a hydraulic gradient in Area 3 from the perimeter monitoring wells toward the withdrawal trench (see Figure 4).

The major components of the Area 3 treatment and closed loop hydraulic system are listed below and are shown on the figures included in Appendix B.

- A 140-foot withdrawal trench installed into the upper portion of the sand layer of the shallow hydrogeologic unit in Area 3. The withdrawal trench consists of two high density polyethylene (HDPE) drain pipes embedded within a filter pack (i.e., New York State Department of Transportation [NYSDOT] No. 1 crushed stone) that is wrapped with a geotextile, and drains to a 4-foot diameter and approximately 15-foot deep concrete collection sump. The collection sump contains a submersible pump and associated level controls. The pump is connected to piping that transports recovered groundwater to the treatment building.
- Three infiltration trenches (140 feet, 95 feet, and 95 feet in length) installed in the middle/lower portion of the sand layer of the shallow hydrogeologic unit in Area 3 consisting of a single HDPE drain pipe embedded in NYSDOT No. 1 crushed stone.
- A wood framed treatment building containing all process control equipment and a separate electrical room. The main process control equipment installed in the treatment building include the following:
    - 1,000-gallon equalization tank manufactured of one-piece, seamless, linear polyethylene
    - Aerator stone installed in the equalization tank
    - 1,000-gallon mix tank with a hinged cover, agitator, and metering pump
    - Building sump

- Submersible pump located in the building collection sump
- Transfer pump
- Influent and three effluent flow meters
- Odor control system consisting of a blower, vapor phase carbon unit, and pressure switches
- Pump and associated control panels in the separate electrical room
- Autodialer phone system located in the separate electrical room

· An oxygen infusion system that delivers a continuous source of oxygen gas to groundwater via iSOC® units and eight infusion wells (Figure 7)

1.4.2.2 Areas 1 and 2 *In-Situ* Bioremediation System

Two infiltration trenches were installed in both Areas 1 and 2 (see Figure 2 for locations and the figures included in Appendix B for construction details). An infiltration trench was installed upgradient of the portion of Areas 1 and 2 observed to contain relatively higher concentrations of COCs based on results of the RI (BBEPC 1990) and Supplemental Groundwater Investigation (BBL 1996b). A second infiltration trench was installed along the length of each area, toward the downgradient portion.

These trenches were constructed the same as the infiltration trenches described above for Area 3 with the exception of the horizontal drain piping. Instead, vertical polyvinyl chloride (PVC) standpipes screened in the crushed gravel were installed within each of these infiltration trenches. The standpipes are manually filled (as needed) with amended groundwater.

Area 2 also has an oxygen infusion system to provide a continuous source of oxygen gas to groundwater via iSOC® units and 5 oxygen infusion wells (Figure 6).

1.4.3 Remaining Contamination

<u>Unsaturated Soils (OU-1)</u>

During remedial activities for OU-1, unsaturated soils within the four Treatment Areas delineated on Figure 5 were treated using *in-situ* soil blending. These Treatment

Areas represent the actual soil areas subjected to treatment. These areas were expanded beyond the limits of unsaturated soils containing COCs at concentrations greater than or equal to 5 ppm and the treatment limits identified in the OU-1 ROD (BBL 1995). Unsaturated soils were treated to different depths based on actual groundwater elevations in each of the four Treatment Areas. Unsaturated soils in Treatment Areas 1 and 4 were treated to a minimum depth of 365 feet above mean sea level (AMSL), and unsaturated soils in Treatment Areas 2 and 3 were treated to a minimum depth of 366 feet AMSL (see Figure 5 for the Treatment Area locations).

At the completion of the OU-1 remedial activities, results of the soil verification sampling indicated that the unsaturated soils in the Treatment Areas were successfully treated using the *in-situ* bioremediation remedy. These results are provided in Appendix C and summarized in Table 2. The data indicate that the residual concentrations of COCs present in the unsaturated treated soils were significantly less than the NYSDEC-specified cleanup levels of 10 ppm (NYSDEC 1994a).

Prior to the OU-1 remedial activities in Treatment Areas 1, 2, 3, and 4, a pilot study was conducted in 1993 to test the *in-situ* soil blending technology (see Figure 5 for the pilot study area location). During the study, this area was extensively sampled. In a letter dated November 14, 1994 from the NYSDEC to BBL, NYSDEC approved the use of analytical data generated during the pilot study as final soil verification data for this area (NYSDEC 1994b). COC concentrations in pilot study samples were below the NYSDEC-specified cleanup level of 10 ppm specified in the 1994 ROD for OU-1 (NYSDEC 1994a). Analytical results from the pilot study are provided in Appendix C.

Outside of the OU-1 and pilot study Treatment Areas, COC concentrations in RI soils samples were all non-detect, except for seven locations where one to three COCs were detected with concentrations ranging from 0.006 to 2.3 ppm, which were below the OU-1 ROD cleanup level of 10 ppm (BBEPC 1990). The RI soil sample locations and the COC concentrations detected outside of the Treatment Areas are shown on Figure 5. Upon completion of the OU-1 remediation activities, the Site was covered with clean fill and graded to promote surface water runoff and limit infiltration into the remediated areas. NYSDEC approved the RD/RA Report for OU-1 and considered the remediation of OU-1 to be complete (NYSDEC 1995). No further action for OU-1 was required.

Saturated Soils and Groundwater (OU-2)

In-situ bioremediation treatment programs have successfully reduced a majority of COC concentrations to below their respective NYSDEC Class GA Groundwater Quality Standard (NYSDEC 1998) in each of the three areas. However, a few COCs continue to be present in specific wells at concentrations greater than their respective NYSDEC Groundwater Quality Standard, as shown on Figures 8 and 9. Since initiation of OU-2 remedial activities, COCs have not been detected in groundwater at concentrations exceeding the NYSDEC Groundwater Quality Standards beyond the Site boundary.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

This EC/IC Plan describes the procedures for the implementation and management of all ECs and ICs at the Site upon discontinuation of the *in-situ* bioremediation treatment and closed loop hydraulic systems. This Plan also describes the ECs and ICs that will be implemented and managed in the event that these systems must be re-started following evaluation of the post-shutdown process control monitoring data. The EC/IC Plan is one component of the SMP and is subject to revision by the NYSDEC.

2.1.2 Purpose

This plan describes the following:

- All ECs and ICs on the Site
- Basic implementation and intended role of each ECs and IC
- Key components of the ICs set forth in the Deed Restrictions
- Features to be evaluated during each required inspection and periodic review
- Plans and procedures to be followed for implementation of ECs and ICs, such as the implementation of the Excavation Work Plan (EWP) for the proper handling of remaining contamination that may be disturbed prior to completion of the OU-2 remedial activities
- Any other provisions necessary to identify or establish methods for implementing the ECs and ICs required by the site remedy, as determined by the NYSDEC

2.2 ENGINEERING CONTROLS

Two ECs have been established at the Site: (1) fencing/access control and (2) groundwater containment. The groundwater containment EC is not in effect when the closed loop hydraulic system is shutdown, as approved by NYSDEC. As noted previously, this system has been operating since 1998 and NYSDEC approved a shutdown in April 2013.

2.2.1 Engineering Control Systems

2.2.1.1 Fencing/Access Control

Access to the Site is restricted by a fence with locked gates located around the perimeter of the Site. The fence was erected around the former storage areas of the Site prior to the initiation of the RI and was expanded to the entire Site perimeter following the completion of OU-1 remedial activities. Although the fence was not identified in the OU-1 ROD as a component of the remedy, the property owner agreed to place fencing around the Site. Signs placed along the fence on either side of Van Rensselaer Street and Bear Street West notify the public about restricted access to the Site. Fencing and access control measures will be routinely monitored during site-wide inspections, as described in the Site Monitoring Plan (see Section 3.0). Procedures for maintaining and, at the appropriate time, removal of the fencing and signage are documented in the Operation and Maintenance Plan (see Section 4.0). Maintenance procedures will be implemented until OU-2 remedial activities are considered complete. At the completion of the OU-2 remedial activities, a written request will be submitted to the NYSDEC (via a PRR) for removal of this EC from the Site (NYSDEC 2010b).

2.2.1.2 Groundwater Containment

The groundwater containment EC (i.e., closed loop hydraulic system) installed as part of OU-2 remedial activities is part of the *in-situ* bioremediation treatment system in Area 3 and was installed to prevent the potential migration of COCs beyond the Site boundary towards the Barge Canal. The closed loop hydraulic system consists of a withdrawal trench upgradient of Area 3, a collection sump, process control equipment and piping, and infiltration trenches to provide active hydraulic control within this area. The components of the system are described in Section 1.4.2 of this SMP.

On April 10, 2013, the *in-situ* bioremediation treatment system and closed loop hydraulic system were discontinued at the Site with NYSDEC's approval since it is believed that the *in-situ* bioremediation remedy has been effective in satisfying the goals of the OU-2 ROD. In the event that the remedial action does not demonstrate continued effectiveness and the treatment system must be re-started, the components of the closed loop hydraulic system will be monitored, operated, and maintained following the procedures outlined in the Operation and Maintenance Plan (Section 4.0). At the completion of OU-2 remedial activities, a written request will be submitted to the NYSDEC (via a PRR) for removal of this EC from the Site (NYSDEC 2010b).

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

The remedial systems for the Site are associated with OU-2. Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the RAOs identified by the decision document (i.e., OU-2 ROD, NYSDEC 1997a). The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10 (NYSDEC 2010b).

Post-shutdown process control monitoring data will be evaluated after each monitoring event, as described in the Site Monitoring Plan (Section 3.0), to determine the continued effectiveness of the remedial action and the need (if any) to re-start the remedial processes. Post-shutdown monitoring activities will continue, as determined by the NYSDEC, until it is demonstrated that post-shutdown groundwater COC concentrations continue to attain RAOs as stated in the OU-2 ROD (NYSDEC 1997a) and remain consistent with NYSDEC guidance for initiating remedial process closure, as set forth in DER-10 Section 6.4 (NYSDEC 2010b). Upon satisfying these conditions, the OU-2 remedial activities will be considered complete and the Site can be delisted from the Registry.

2.3 INSTITUTIONAL CONTROLS

The Site has a series of ICs in the form of Site restrictions. Adherence to these ICs is required by the Deed Restrictions and will be implemented under this SMP. These ICs are as follows:

- Compliance with the Deed Restrictions and this SMP by the Grantor and the Grantor's successors and assigns.
- All ECs must be operated and maintained as specified in this SMP.
- All ECs on the Site must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater monitoring must be performed as defined in this SMP.
- Data and information pertinent to management of the Site must be reported at the frequency and in a manner defined in this SMP.

ICs identified in the Deed Restrictions may not be discontinued without an amendment to or extinguishment of the Deed Restrictions. If it is necessary to replace, modify, or extinguish ICs due to changes in Site conditions over time or changes to the ICs themselves, the current property owner must submit a written request to the NYSDEC for approval that the IC be modified or removed (NYSDEC 2010c). Upon delisting the Site from the Registry, the only ICs that will remain in effect are the land use and groundwater use restrictions, as stated in the Deed Restrictions (6NYCRR Part 375-2.7(e); NYSDEC 2006). Site restrictions that apply to the Site, as stated in the Deed Restrictions (Appendix A) are:

- The property may only be used for restricted residential and commercial use provided that the ECs and ICs included in this SMP are employed. Future use of the Site is dependent on zoning and future site owners.
- The property may not be used for a higher level of use, such as unrestricted residential use, without the express written waiver of such prohibition by the NYSDEC.

- All future activities on the property that will result in the disturbance or excavation of the Site that threatens the integrity of the ECs or which results in unacceptable human exposure to remaining contamination must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment, as determined by the NYSDOH or the Onondaga County Department of Health, to render it safe for intended use.
- Vegetable gardens and farming on the property are prohibited.
- The site owner or remedial party will submit to the NYSDEC a written statement certifying, under penalty of perjury, that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. This certification will be submitted annually, or an alternate period of time that the NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

Any future intrusive (i.e., excavation) work conducted prior to completion of the OU-2 remedial activities that will encounter or disturb remaining contamination will be performed in compliance with the EWP that is attached as Appendix D to this SMP.

Any work conducted pursuant to the EWP must also be conducted consistent with the procedures defined in a Health and Safety Plan (HASP) to be prepared for the future intrusive work. The HASP currently employed at the Site is attached as Appendix E to this SMP, and is in current compliance with DER-10, 29 CFR 1910, 29 CFR 1926, and other applicable Federal, State and local regulations. This HASP will be updated (as necessary) based on future changes to state and federal health and safety requirements. Additionally, based on specific methods employed by future contractors, a new work-specific HASP will be developed and submitted with the notification to the NYSDEC described in Section 2 of the EWP. Any intrusive construction work will be performed in compliance with the EWP and HASP, and will be included in the periodic inspection and certification reports submitted under the PRR (see Section 5.3).

The site owner, associated parties preparing the remedial documents submitted to the State, and parties performing this work are responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the ECs described in this SMP.

The EWP, as part of the SMP, will remain in effect until OU-2 remedial activities are considered complete and the Site is delisted. At the completion of OU-2 remedial activities, a written request will be submitted to the NYSDEC for approval that the EWP be removed from the SMP (NYSDEC 2010c).

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the Site will be conducted at the frequency specified in the Monitoring/Inspection Schedule (Table 5; Section 3.1.2). A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the PRR. The inspections will be used to determine and document the following:

- Whether ECs continue to perform as designed
- If these controls continue to be protective of human health and the environment
- Compliance with requirements of this SMP and the Deed Restrictions
- Achievement of remedial performance criteria when the treatment and closed loop hydraulic systems are operating
- Sampling and analysis of appropriate media during monitoring events
- If site records are complete and up to date

- Changes, or needed changes, to the remedial or monitoring system

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (see Section 3.0). The reporting requirements are outlined in the PRR section of this plan (see Section 5.3).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the ECs and ICs implemented at the Site by a qualified environmental professional, as determined by the NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Consent Order (NYSDEC 1987, 1990), 6 NYCRR Part 375 (NYSDEC 2006), and/or Environmental Conservation Law (New York State 2013).
- 15-day advance notice of any proposed ground-intrusive activities pursuant to the EWP.
- Notice within 48-hours of any damage or defect to ECs that reduces or has the potential to reduce the effectiveness of an EC and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action will be submitted to the NYSDEC within 45 days and will describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Consent Order, and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

This Contingency Plan outlines response activities to be implemented in the event of an emergency. Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally-related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact lists in Tables 4 and 5 below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the McKesson Corporation Project Manager. These emergency contact lists must be maintained in an easily accessible location at the Site.

Table 3: Emergency Contact Numbers

LOCAL EMERGENCY Medical, Fire, and Police	911
HOSPITAL-EMERGENCY St. Joseph's Hospital	(315) 448-5111
One Call Center	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center	(800) 222-1222

Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
National Response Center	(800) 424-8802 or (202) 267-2675
CHEMTREC-Chemical emergencies	(800) 262-8200

Table 4: Additional Contact Numbers

Jean Mescher, McKesson Corporation Project Manager	(608) 848-4134
Dawn Penniman, ARCADIS Project Manager	(315) 671-9229
Payson Long, NYSDEC Project Manager	(518) 402-9814
Richard Jones, NYSDOH Project Manager	(315) 477-8148

Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 400 Bear Street West, Syracuse, NY 13204

Nearest Hospital Name: St. Joseph's Hospital

Hospital Location: N. Townsend St., Syracuse, NY 13203

Hospital Telephone: (315) 448-5111

Directions to the Hospital (see Figure 10):

1. Head **northeast** on Bear St. W. toward Solar St.
2. Take the **3rd right** onto Genant Dr.
3. Turn **left** onto Spencer St.
4. Take the **1st right** onto N. State St.
5. Take the **3rd left** onto Butternut St.
6. Take the **3rd right** onto N. Townsend St.

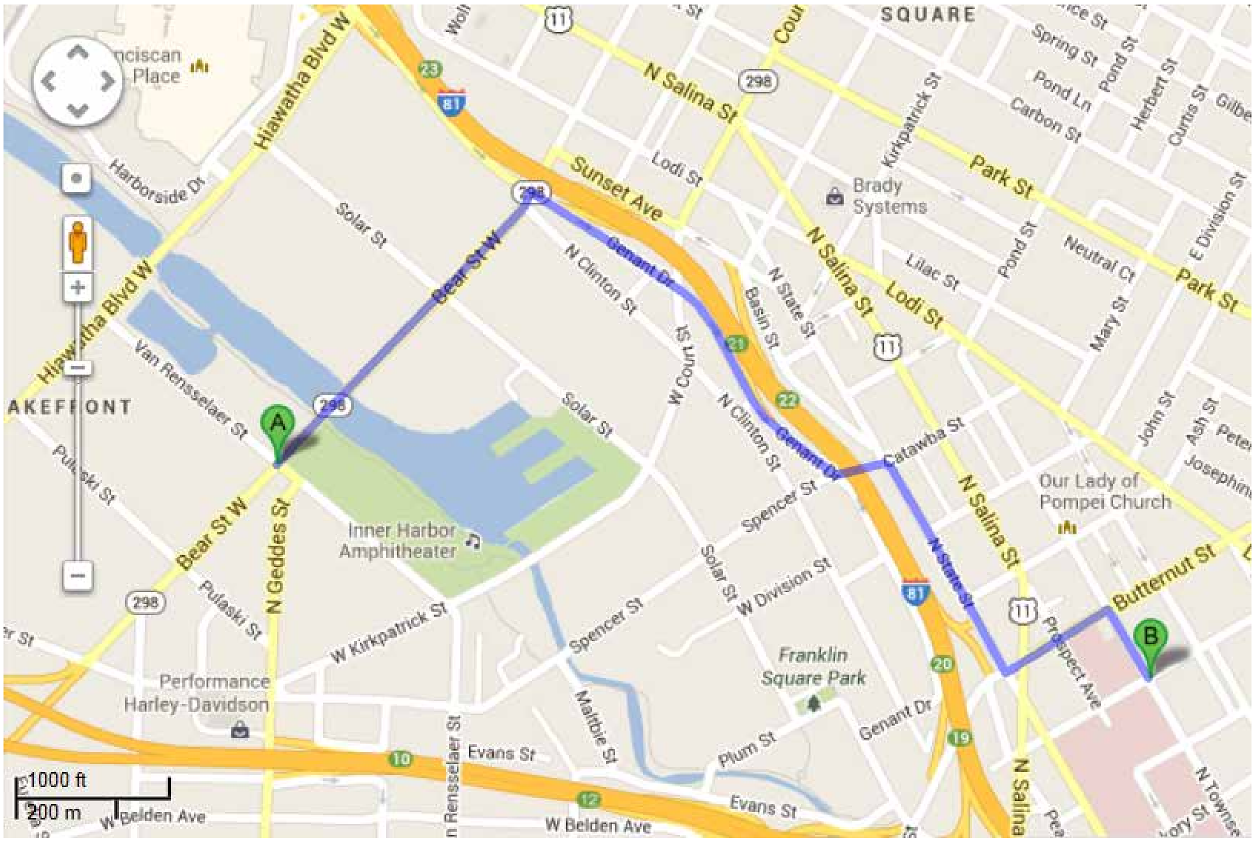
   The Emergency Department will be on the **right**.

Total Distance: 1.5 miles

Total Estimated Time: 5 minutes

Figure 10: Map Showing Route from the Site to the Hospital

Directions to N Townsend St
1.5 mi – about **5 minutes**



2.5.3 Spill Control and Response Procedures

Spill control and response procedures have been developed for responding to unplanned releases of oil, products, materials, hazardous wastes and other similar materials to soil, surface water, or groundwater. All spills of such materials at the Site will be reported immediately to the McKesson Corporation Project Manager (Table 4). In addition, reportable spills will be called in to the NYSDEC spills hotline within 2 hours of discovery (Table 3). Spill notifications and reporting to the necessary agencies will be coordinated by ARCADIS and/or McKesson Corporation.

As appropriate, the fire department and other emergency response group will be notified immediately by telephone. The emergency telephone number list is provided in Table 3. The list will also be posted prominently at the Site and made readily available to all personnel at all times.

Properly trained personnel will implement the following general response procedures (when possible):

- Stop/Isolate Source: As conditions allow, attempt to stop or isolate the source of the spill by closing valves and/or shutting down affected vehicles or equipment.
- Containment: If the spilled material is floating on a water surface, spill-absorbent pads/booms will be placed across the path of the floating spill. If the spilled material sinks below the water surface, a dam, weir, or other containment method will be used to stop the flow of the spilled material. If the spill occurs on land, a containment unit will be constructed to stop the flow of the spilled material and sorbents will be applied as necessary.
- Cleanup: Spills in water will be recovered using pumps and sorbents as necessary until the spilled material is recovered and no sheen or other evidence of the spill is observed on the water surface. Spills on land will be recovered using pumps, sorbents, and heavy equipment, as necessary until the spilled material is recovered. Construction vehicles and equipment used in the clean-up, or otherwise affected by the spill will also cleaned/decontaminated.
- Collection, Storage, and Disposal: Impacted materials, sorbents, and other wastes will be collected and stored in NYSDOT-approved containers. The containers will be labeled with the waste type and date of accumulation, and will be transported off site for disposal at a permitted facility in accordance with all applicable laws and regulations.
- Post-Spill Maintenance: Following the clean-up of the spill, verify that impacted materials, vehicles, and equipment have either been transported off site for disposal, or decontaminated, as appropriate. The vehicle or piece of equipment that may have

caused the spill will also be repaired. If the vehicle or piece of equipment cannot be repaired, it will be removed from the Site and replaced.

In the event that the release is of sufficient magnitude and cannot be controlled by diking, damming, absorbing, or other method(s), the local fire department, NYSDEC, and the National Response Center will notified.

2.5.4 Evacuation Plan

In the event of an emergency that requires site evacuation, on-site personnel will vacate the Site as directed by on-site fire/police/rescue responders. In the event of an injury to site personnel, emergency procedures outlined in the HASP will be followed.

2.5.5 Amendments to the Contingency Plan

With NYSDEC notification, this Contingency Plan and/or emergency contact list will be periodically updated to reflect changes in contacts or site information.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for implementing the post-shutdown process control monitoring program. This monitoring program is a continuation of the COC and hydraulic process control monitoring program that has been conducted since treatment activities commenced in 1998. Monitoring of ECs is described in Section 4.2 of this Plan. This Monitoring Plan may only be revised with the approval of the NYSDEC.

3.1.2 Purpose and Schedule

Groundwater monitoring will be performed on a periodic basis to assess the continued effectiveness of the OU-2 remedial action and to confirm that no further remedial action and monitoring are necessary (beyond what is proposed). Following each monitoring event, groundwater COC concentrations and groundwater elevation data will be evaluated to determine if the remedy continues to be effective in achieving the OU-2 RAOs (NYSDEC 1997a) and remains consistent with NYSDEC DER-10 Section 6.4 guidance for initiating remedial process closure (NYSDEC 2010b). A summary of results, conclusions regarding site contamination, the status of the remedial treatment and closed loop hydraulic systems, and recommendations for any necessary changes to the monitoring program and/or remedial activities will be presented in a PRR or monitoring memo to the NYSDEC. Based on these results and recommendations, the duration and/or the frequency of monitoring may be modified, subject to approval from the NYSDEC and NYSDOH.

This Monitoring Plan describes the methods to be used for the following:

- Sampling and analysis of groundwater

· Assessing compliance with applicable NYSDEC standards, criteria, and guidance, particularly NYSDEC Groundwater Quality Standards (NYSDEC 1998)

· Assessing the continued achievement of the OU-2 RAOs (NYSDEC 1997a) and consistency with NYSDEC DER-10 Section 6.4 guidance for initiating remedial process closure (NYSDEC 2010b)

· Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment

· Preparing the necessary reports for the various monitoring activities

To adequately address these issues, this Monitoring Plan provides information on:

· Sampling locations, protocol, and frequency

· Information on all designed monitoring systems (e.g., well logs)

· Analytical sampling program requirements

· Reporting requirements

· Quality Assurance/Quality Control (QA/QC) requirements

· Inspection and maintenance requirements for monitoring wells/piezometers

· Monitoring well/piezometer repair, replacement, and decommissioning procedures

· Annual inspection and periodic certification

Post-shutdown process control monitoring of the continued effectiveness of the remedial action will be conducted for 2 years (from July 2013 to July 2015). Quarterly monitoring will occur the first year (2013 to 2014), and biannual monitoring will occur the second year (2014 to 2015). The sampling frequency may be modified with approval from the NYSDEC and NYSDOH. Monitoring and inspection programs are summarized in Table 5 and outlined in detail in Sections 3.2 and 3.3, respectively.

Table 5: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Post-Shutdown Process Control Monitoring	Quarterly (2013-2014)	Groundwater	· Groundwater Elevations · Barge Canal Surface Water Elevation · COCs
Post-Shutdown Process Control Monitoring	Biannually (2014-2015)	Groundwater	· Groundwater Elevations · Barge Canal Surface Water Elevation · COCs
Site-wide Inspection	Annually	Site	· Conduct a visual inspection of ECs and overall site conditions until OU-2 remedial activities are considered complete · Conduct visual inspections for compliance with ICs (i.e., land and groundwater use)

* Note: The frequency of events will be conducted as specified until otherwise approved by the NYSDEC and NYSDOH.

3.2 POST-SHUTDOWN PROCESS CONTROL MONITORING PROGRAM

A network of groundwater monitoring wells and piezometers was installed to monitor both upgradient and downgradient groundwater conditions at the Site via implementation of a COC and hydraulic process control monitoring program. Figure 2 shows the network of groundwater monitoring wells and piezometers for the Site. Monitoring well boring and construction logs are included in Appendix F.

Monitoring wells and piezometers have been monitored biannually as part of the process control monitoring program since 1998 and prior to the April 2013 shutdown of the bioremediation treatment and closed loop hydraulic systems. These wells and piezometers will continue to be sampled during the post-shutdown process control program. Monitoring wells/piezometers currently used for groundwater COC monitoring are listed in Table 6 and presented below by location:

- Area 1 (MW-9S, MW-31, MW-32, MW-33, and TW-01)
- Area 2 (MW-34, MW-35, MW-36R, and TW-02RRR)
- Area 3 (MW-8SR, MW-27, MW-28, MW-29, and MW-30)
- Sentinel (MW-3S and MW-4S)
- Downgradient perimeter (MW-17R, MW-18, MW-23I, MW-23S, PZ-4S, and PZ-4D)

Monitoring wells/piezometers and other features currently used for hydraulic monitoring are listed in Table 6 and presented below by location:

- Area 1 (PZ-F, PZ-G, PZ-HR, PZ-P, PZ-Q, PZ-R, and PZ-S)
- Area 2 (PZ-I, PZ-J, PZ-T, PZ-U, and PZ-V)
- Area 3 (MW-11S, PZ-A, PZ-B, PZ-C, PZ-D, PZ-E, PZ-K, PZ-M, PZ-N, PZ-L, PZ-O, and the Collection Sump)
- Downgradient perimeter (MW-23S, MW-24SR, MW-25S, PZ-4D, PZ-5D, and the Barge Canal)

Groundwater monitoring data for April 2010 to April 2013 (prior to the shutdown of the *in-situ* bioremediation treatment and closed loop hydraulic systems) are shown on Figures 8 and 9. Pre-shutdown groundwater hydrologic conditions are shown on Figure 4. Collectively, these data represent groundwater conditions during the operation of the *in-situ* bioremediation treatment and closed loop hydraulic systems, and will form a basis of comparison during the post-remedial process control monitoring data evaluations.

The SMP will be modified to reflect changes in sampling plans approved by the NYSDEC. Deliverables for the groundwater monitoring program are specified in Section 3.5 and Table 7.

3.2.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field notebook and/or Groundwater-Monitoring Well Sampling Log, as presented in the Field Sampling Plan (FSP; Appendix G). Other observations (e.g., well integrity, etc.) will be documented as detailed in the FSP.

Post-shutdown process control monitoring consists of measuring groundwater or surface water elevations at the locations identified with an “H” in Table 6 and collecting groundwater samples from the monitoring wells and piezometers identified with a “C” in Table 6.

Groundwater levels will be measured and groundwater samples will be collected using the Water Level Measurement procedures and Low-flow Groundwater Sampling procedures, as specified in the FSP (Appendix G). The surface water level of the Barge Canal will be measured from a reference point demarcated along the center of the Bear Street Bridge, which crosses over the canal. Field QA/QC samples (trip blanks, field duplicate samples, and matrix spike/matrix spike duplicate samples) will be collected during each groundwater sampling event, as detailed in Section 3.4. Groundwater samples and all field QA/QC samples will be sent to a qualified NYSDOH Environmental Laboratory Approval Program-certified laboratory for analysis.

Detailed information on groundwater sampling procedures and analytical methodology are presented in the FSP (Appendix G) and Quality Assurance Project Plan (QAPP; Appendix H).

3.2.2 Monitoring Well Repairs, Replacement, and Decommissioning

Monitoring wells will be repaired, replaced, and decommissioned as needed. When damage is observed, an assessment will be made as to whether the well can be repaired or must be replaced, based on structural integrity and overall performance. If determined to be repairable, the necessary repairs will be made. Included under the general term of “monitoring well repairs” is well redevelopment. Any well/piezometer included in the post-shutdown process control monitoring program will be redeveloped if:

1. Its yield is observed to decrease over time during successive sampling events. Specifically, if the pumping rate used at a given well/piezometer must be decreased by more than 50 percent in order to maintain the same level of drawdown achieved during the previous sampling event.

2. More than 20 percent of the total length of the well/piezometer screen is occupied by accumulated sediment.

Decreases in yield are most-often associated with biofouling or excessive siltation of the well screen.

If a damaged monitoring well/piezometer is judged to be irreparable, it will be properly decommissioned and replaced (as per the FSP) at the nearest available location, unless otherwise approved by the NYSDEC. NYSDEC will be notified prior to any repair, replacement, or decommissioning of monitoring wells/piezometers, and the repair or replacement process will be documented in the subsequent PRR. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC and will be performed in accordance with the NYSDEC's CP-43 Groundwater Monitoring Well Decommissioning Policy (NYSDEC 2009).

Monitoring wells/piezometers will be visually inspected for damage during the annual site-wide inspection, as described in the following section.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year (Table 5). Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring wells/piezometers. During these inspections, a Site-wide Inspection Form will be completed (Appendix I). The form will compile sufficient information to document an assessment of compliance with the SMP, potentially including the following:

- Compliance with all ICs, including site usage
- An evaluation of the condition and continued effectiveness of ECs
- General site conditions at the time of the inspection
- An evaluation of the above-grade conditions of monitoring wells/piezometers
- The site management activities being conducted
- Compliance with monitoring and maintenance schedules included in the Operation and Maintenance Plan

- Site records are up-to-date

3.4 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the QAPP prepared for the Site (Appendix H). Main components of the QAPP include:

- QA/QC objectives for data measurement
- Sampling program
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the NYSDEC Analytical Services Protocol (ASP) requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample tracking and custody
- Calibration procedures
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 (USEPA 2007) and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical procedures
- Preparation of a Data Usability Summary Report, which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and Chain-of-Custody procedures, and a summary assessment of

precision, accuracy, representativeness, comparability, and completeness for each analytical method

- Internal QC and checks
- QA performance and system audits
- Preventative maintenance procedures and schedules
- Corrective action measures

3.5 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file. Forms used during the annual site-wide inspections will be: (1) subject to approval by the NYSDEC and (2) submitted at the time of the PRR, as specified in Section 5.3 of this SMP.

All monitoring results will be reported to the NYSDEC annually in the PRR and periodically in monitoring memos. The annual PRR will include the following monitoring reporting requirements as stated in Section 5.3 of this SMP:

- Date of events
- Personnel conducting sampling
- Description of the activities performed
- Type of samples collected (i.e., groundwater)
- Copies of field forms (as detailed in the FSP and QAPP)
- Copies of the completed Site-wide Inspection Form and IC/EC certification forms
- Sampling results in comparison to appropriate standards/criteria
- A figure illustrating sample type and sampling locations
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format)

- Any observations, conclusions, or recommendations
- A determination as to whether groundwater conditions have changed since the last reporting event

Monitoring memos will be submitted to the NYSDEC following post-shutdown process control monitoring events that do not coincide with the annual PRR submittal. The main objective of the monitoring memos is to provide timely updates of groundwater conditions. Memos will include, at a minimum:

- Description of the activities performed
- Type of samples collected
- Sampling results in comparison to appropriate standards/criteria
- A figure illustrating sample type and sampling locations
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format)
- Any observations, conclusions, or recommendations
- A determination as to whether groundwater conditions have changed since the last reporting event
- An evaluation to determine the continued effectiveness of the remedial action

Data will be reported in hard copy or digital format as determined by the NYSDEC. A summary of the monitoring program deliverables are summarized in Table 7 below.

Table 7: Schedule of Monitoring/Inspection Reports

Post-Shutdown Process Control Monitoring Frequency	Deliverable	Reporting Frequency*
Quarterly (2013-2014)	PRR	The annual PRR will be submitted after the following post-shutdown process control monitoring event: · Monitoring Year 1: April 2014
	Monitoring Memo	A Monitoring Memo will be submitted quarterly after the following post-shutdown process control monitoring events: · Monitoring Year 1: July 2013, October 2013, and January 2014
Biannually (2014-2015)	PRR	The annual PRR will be submitted after the following post-shutdown process control monitoring events: · Monitoring Year 2: April 2015
	Monitoring Memo	A Monitoring Memo will be submitted after the following post-shutdown process control monitoring events: · Monitoring Year 2: October 2014
--	Site-wide Inspection Form	Annually

* Note: The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor, and maintain the mechanical components of the OU-2 remedy. The *in-situ* bioremediation treatment and closed loop hydraulic systems were shutdown in April 2013. Operation and maintenance of these systems is not applicable when shut down; however, in the event that the remedial processes must be re-started, the measures necessary to operate and maintain the mechanical components are described in this Plan.

This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the Site to operate and maintain the ECs and *in-situ* bioremediation treatment systems
- Includes an operation and maintenance contingency plan
- Will be updated periodically to reflect changes in site conditions or the manner in which the systems are operated and maintained

The monitoring programs for ECs and *in-situ* bioremediation treatment and closed loop hydraulic systems are summarized in Table 8 and outlined in detail in the following sections. Additionally, the on-site building, shed, and landscape will be maintained, including (but not limited to), mowing the grass and trimming the vegetation along the fence.

Table 8: Monitoring Schedule for ECs and *In-Situ* Bioremediation Treatment and Closed Loop Hydraulic Systems

*Notes: The frequency of monitoring events will be conducted as specified until the OU-2 remedial

Monitoring Program	Frequency*	Matrix	Analysis
Engineering Control Monitoring	Annually	Fence/Access Control	· Fence · Signs · Fence Gate Locks
	During each process control monitoring event	Groundwater Containment	· Groundwater Elevations · Barge Canal Surface Water Elevation
In-Situ Bioremediation System Monitoring	Weekly	Area 3 *In-Situ* Bioremediation Treatment System	· Treatment System Components · Conductivity Measurements · Aerator Stone
	Monthly	Groundwater	· Dissolved Oxygen Concentrations (Areas 1, 2, and 3)
	Monthly	Area 2 and 3 Oxygen Infusion System	· iSOC© Unit Inspections

activities are considered complete or otherwise approved by the NYSDEC and NYSDOH.

A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the Site and in the project files. This Operation and Maintenance Plan is not to be used as a stand-alone document, but rather as a component document of the SMP.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

This section describes the procedures required for O&M of the ECs established at the Site.

4.2.1 Fencing/Access Control

4.2.1.1 Scope

A fence is erected around the entire perimeter of the Site to restrict public access to the Site. In addition, signs are located along the fence to clearly notify the public of restricted access. The fence/access control measures will be routinely monitored (as detailed below) and maintained such that they remain intact and effectively restrict public access to the Site until OU-2 remedial activities are considered complete.

4.2.1.2 Routine Engineering Control Monitoring and Maintenance Procedures

Routine monitoring and maintenance includes visual inspections to confirm that the fence, gate locks, and signage around the Site are intact. Visual inspections of this EC will be conducted during annual site-wide inspections, as described in the Monitoring Plan (Section 3.3). If the fence and/or signage are in need of repair or replacement, the appropriate personnel (see Table 4) will be notified immediately and the necessary repairs will be made in a timely manner.

4.2.2 Groundwater Containment

4.2.2.1 Scope

Groundwater containment was included in the OU-2 remedial activities as an EC in Area 3 to prevent the potential migration of groundwater COCs beyond the Site boundary. Groundwater containment involves the establishment of a closed loop hydraulic cell in Area 3 between the upgradient infiltration trenches and the downgradient withdrawal trench (see Figure 2 for the locations of the infiltration and withdrawal trenches). In April 2013, this EC was removed following the shutdown of the Area 3 remedial processes. In the event that the remedial processes are re-started, based on evaluation of the post-shutdown process control monitoring data, groundwater containment will be re-established.

4.2.2.2 Routine Engineering Control Operation and Maintenance Procedures

The groundwater containment system in Area 3 is designed to withdraw groundwater from the shallow hydrogeologic unit downgradient of Area 3, transport the collected groundwater to the treatment building, and convey the treated groundwater upgradient of Area 3. The system has been consistently demonstrated to operate automatically and require only periodic monitoring and maintenance. O&M procedures for the mechanical components of this EC are included as part of the O&M procedures for the Area 3 *in-situ* bioremediation treatment system, which is described below in Section 4.3.

4.2.2.3 Engineering Control Performance Monitoring

The performance of the groundwater containment EC will be monitored during each hydraulic process control monitoring event and results will be summarized in the subsequent PRR and/or monitoring memo. This monitoring program was established to: (1) confirm that groundwater containment has been established, and

(2) verify that groundwater withdrawal rates in Area 3 do not cause the freshwater/saltwater interface (see Figure 3) to upcone to the bottom of the withdrawal trench

During the hydraulic process control monitoring program, groundwater elevations are measured from select monitoring wells/piezometers (see Monitoring Plan Section 3.2.1) that are screened entirely within the sand layer of the hydrogeologic unit and located in and around Areas 1, 2, and 3. Additionally, the Barge Canal surface water elevation is obtained from measurements made from a reference point on the Bear Street Bridge, which passes over the canal. The groundwater elevation measurements are used to create a potentiometric map of the Site's shallow hydrogeologic unit to confirm that a closed loop hydraulic cell is maintained in Area 3.

Weekly conductivity measurements of groundwater pumped from the withdrawal trench in Area 3 are also recorded and compared to conductivity measured in the deep unit to verify that the Area 3 treatment system has not caused the freshwater/saltwater interface to upcone to the base of the withdrawal trench.

4.3 *IN-SITU* BIOREMEDIATION TREATMENT SYSTEM OPERATION AND MAINTENANCE

In April 2013, the NYSDEC approved the discontinuation of the *in-situ* bioremediation treatment system in Areas 1, 2, and 3, including discontinuation of hydrogen peroxide amendments in Area 1, oxygen diffusion in Areas 2 and 3, and the closed loop hydraulic system in Area 3 (NYSDEC 2013a). In the event that remedial processes must be re-started, this section describes the O&M activities for the *in-situ* aerobic bioremediation treatment system, including the following:

- Starting up the Area 3 *in-situ* bioremediation treatment system
- Performing routine operation, monitoring, and maintenance of the Area 3 *in-situ* bioremediation treatment system
- Introducing hydrogen peroxide amendments to Area 1
- Performing routine operation and maintenance of the Areas 2 and 3 oxygen infusion system

4.3.1 Area 3 *In-Situ* Bioremediation Treatment System Start-Up Procedures

The following steps will be taken to start-up the Area 3 *in-situ* bioremediation treatment system:

1. Observe that all manually-actuated valves associated with water flow through the system and air flow through the carbon treatment system are in the correct position based on the desired operating conditions.
2. Proceed to the blower manual motor start switch on the wall of the process room and place the switch in the "On" position.
3. Energize the pump control panel in the electrical room and place the collection sump pump and transfer pump manual/off/auto switches in the "Auto" position. If the level of water within the collection sump is sufficient, the collection sump pump will start.
4. Check the pump operation by observing the influent flow meter.

5. During the operation of the collection sump pump, adjust the ball valve accordingly to achieve a flow rate less than 10 gallons per minute.

6. Observe that the "Start" level probe in the equalization tank turns the transfer pump on.

7. Adjust the ball valves for each effluent infiltration line and the influent line accordingly based on the desired operating conditions.

8. Turn on the autodialer.

4.3.2 Area 3 *In-Situ* Bioremediation Treatment System Operation: Operation and Monitoring Procedures

In order to verify that the Area 3 *in-situ* bioremediation treatment system is operating satisfactory, O&M personnel will conduct weekly observations of the system. An *In-Situ* Bioremediation System Operation and Maintenance Log Sheet (Appendix J) will be completed during each weekly observation event. Non-routine monitoring of the system will be conducted, as needed, particularly following activation of the alarm system or severe weather conditions. The following provides a description of the main treatment system components and activities that will be conducted as part of the weekly system monitoring. If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair will be performed as outlined in Section 4.3.3.

Collection Sump

The collection sump is located approximately 150 feet northeast of the treatment building as shown on Figure 2. The collection sump consists of a 4-foot-diameter, approximately 15-foot-deep concrete manhole containing one submersible pump and associated level controls. The pump is connected to a 2-inch-diameter PVC discharge pipe; the pipe converts to a 2-inch-diameter HDPE pipeline, which transports recovered groundwater to the 1,000-gallon equalization tank located inside the treatment building.

The groundwater recovered from the collection sump is measured by a disc flow meter located within the treatment building. This flow meter is equipped with a totalizer and rate indicator. The collection sump is governed by a control panel containing a main breaker switch, manual/off/auto switches for the collection pump, and an alarm light.

The submersible pump is controlled by three float-type level-control and associated alarm switches that are supported within the collection sump by a weighted chain. The three floats (start, stop, and high) and their corresponding control/alarm depths are determined based on field hydraulic conditions and the RAOs for OU-2.

Collection Sump Monitoring Procedures

· Open the access way and visually observe the collection sump interior without entering the collection sump.
· Check the floats to observe if they are hanging properly and are free from obstruction.
· Observe the groundwater contained in the collection sump. Make note of unusual odors, floating debris, water clarity, etc.
· If the collection sump pump is running, listen for unusual sounds and observe the discharge piping (if possible) within the manhole for leaks.

Treatment Building: Equalization Tank and Transfer Pump

Groundwater recovered from the collection sump is pumped into the 1,000-gallon equalization tank located inside the treatment building, and is subsequently conveyed to the infiltration trenches via a transfer pump. A manually operated sampling port and flow meter were installed in-line and just prior to the equalization tank to allow influent water samples to be collected and the influent flow rate to be documented. Water level probes were installed in the equalization tank to prevent overflow and maintain equalization between the groundwater recovered from the collection sump and the infiltration rate from the equalization tank into the infiltration trenches.

Flow meters were installed in-line of each of the three effluent pipes to the infiltration trenches in order to monitor and document the flow into each infiltration trench.

An aerator stone (i.e., Oxygen Edge Unit) located inside the equalization tank provides a continuous source of oxygen gas to groundwater before it is discharged to the infiltration trenches.

Treatment Building Monitoring Procedures

- Observe the transfer pump and listen for unusual sounds if the pump is running. Also check to confirm that the pump is properly secured to the floor.
- Check the floats in the equalization tank to observe whether they are hanging properly and are free from obstruction. Also observe the groundwater contained in the equalization tank. Make note of any unusual observations such as odors, floating debris, water clarity, or the amount of solids on the bottom of the tank.
- Observe the flow meters for proper operation by checking the instantaneous flow measurement. If the flow meters appear to be inoperable, clean the flow meter in accordance with the manufacturer's recommendations.
- For all four flow meters, record the current meter reading in total gallons. Compare this reading with the previous reading and calculate the total volume (gallons) measured since the previous reading and gallons per minute.
- Visually observe and clean, as necessary, the influent y-strainer.
- Observe and clean (weekly) the aerator stone in the equalization tank for proper operation in accordance with the manufacture's recommendations.
- Measure and record the influent conductivity (periodically) of the groundwater.
- Observe the blower for proper operation.
- Record the pressure readings for the following (if applicable):
    - The collection sump influent discharge
    - The effluent discharge from the equalization tank
    - The effluent discharge to Infiltration Trench A
    - The effluent discharge to Infiltration Trench B
    - The effluent discharge to Infiltration Trench C
- Record the pressure reading associated with the vapor phase activated carbon unit in inches of water.

- Observe the treatment building piping for signs of leaks.
- Exercise all valves (once per month) by opening and then closing them.
- Check that the heating, ventilation, and lighting systems are operational.
- Record the electric meter reading.

4.3.2.1 System Alarms and Warning Devices

The collection sump and equalization tank are equipped with alarm systems to regulate the amount of groundwater flowing through the system at any given time. The alarm systems operate as follows:

Collection Sump

As groundwater enters the collection sump, the submersible pump will start up when the "start" level probe is activated at the designated elevation. The pump will run until the water level is lowered and activates the "stop" level probe. If the water level within the collection sump reaches the "high" level alarm elevation, the alarm will be activated and will activate the autodialer which will notify O&M personnel by telephone of the alarm. The following presents a brief description of the alarm conditions associated with the collection sump operations:

- High Level – high water level in the collection sump will activate the autodialer as described above
- Treatment Building Equalization Tank High Level – high water level in the equalization tank located in the treatment building will shut off the collection sump pump and activate the autodialer
- Treatment Building Sump High Level – high water level in the treatment building sump will shut off the collection sump pump and activate the autodialer

Equalization Tank

As groundwater enters the equalization tank, the transfer pump will start when the "start" level probe is triggered. The transfer pump will run until the water level is lowered and activates the "stop" level probe. Similar to the collection sump, a high water "alarm" level probe has been installed in the equalization tank and connected to the autodialer which will notify O&M personnel by telephone if this alarm is activated. This "alarm" level probe is also connected to a switch that will automatically shut off the collection sump pump if the "alarm" level probe is activated. As an additional precaution, a sump is located in the concrete floor of the process room with a sump pump and "alarm" level probe. The "alarm" level probe is connected to a control switch that automatically activates the sump pump, shuts off the collection sump pump, and activates the autodialer, which will notify O&M personnel by telephone of the alarm.

<u>Autodialer</u>

The collection sump, equalization tank, treatment building sump, and vapor control system are interfaced with a Verbatim™ autodialer manufactured by RACO Manufacturing and Engineering Company, Inc. When an alarm is activated, the autodialer calls a preprogramed telephone number and relays voice grade alarm messages upon connection to a local Syracuse area answering service, which is staffed with an operator 24 hours-per-day. The answering service will then immediately contact the O&M personnel by placing a call to the appropriate personnel.

Upon receipt of the alarm message, the O&M personnel will call into the autodialer to confirm the alarm condition.

Once the alarm is confirmed, the O&M personnel will mobilize to the Site and take appropriate action to rectify the operating condition causing the alarm. O&M personnel will only respond to the high water level in the treatment building sump alarm during non-business hours and will use the "buddy" system. All other alarms that occur during non-business hours will be addressed during normal business hours. Alarms and associated corrective actions (if necessary) will be noted in the subsequent PRR.

4.3.3 Area 3 *In-Situ* Bioremediation Treatment System Operation: Equipment Maintenance

If system repairs and/or replacement of Area 3 *in-situ* bioremediation treatment system components are necessary based on O&M personnel observations, O&M personnel will conduct the appropriate system maintenance/repair activities. Manufacturer’s specifications and/or operation manuals for the treatment system components are maintained in the project file. In the instance(s) that O&M personnel need to conduct system shutdown or maintenance/removal of the collection sump pump, the following procedures are followed.

System Shutdown

The system is designed to run continuously except during planned equipment maintenance/cleaning shutdowns. In the event that a system shutdown becomes necessary, the following steps should be followed:

1. Shut off the autodialer.
2. Shut down both water pumps (collection sump pump and transfer pump).
3. Shut down the blower by placing the manual motor start switch to the "Off' position.
4. Shut off and lock out the power at the main disconnect switch on the control panel if more than a temporary shutdown is anticipated.

Collection Sump Pump Removal and Replacement

The collection sump is designed so that pump removal/replacement can be accomplished without entering the collection sump. Two people are required to remove/replace the pump using the following procedures:

- Tum off and lock out the power to the treatment building.
- Close the ball valve in the collection sump to the pump to be removed.
- Uncouple the union in the collection sump on the line to the pump to be removed.
- Unfasten the end of the pump removal chain from the chain support eyehook and pull the pump, along with the discharge piping, out of the collection sump (as the pump is pulled up, it will be necessary to clip each plastic cable tie that secures the power cable to the discharge pipe).
- Disconnect the electrical power cable from the removed pump and reinstall the power cable on the new pump.
- Unscrew the discharge piping from the pulled pump and reinstall the piping on the new pump.

- Unbolt the pump removal chain from the pulled pump and install it on the new pump.
- Lower the new pump into position (secure the power cable to the pump discharge pipe with plastic cable ties as the pump is being lowered into the collection sump) and secure the end of the pump removal chain to the chain support eyehook.
- Couple the pump discharge pipe union together and open the ball valve.
- Tum on the power to the system.
- With the pump running, check it for proper operation, and check the piping in the collection sump for leaks.

4.3.4 Hydrogen Peroxide Amendments: Routine Operation Procedures

Hydrogen peroxide amendments are added to Area 1 piezometers and standpipes once a month. To apply the hydrogen peroxide amendments, the following procedures are followed:

- Pump groundwater from the Area 2 infiltration trenches into 55-gallon stainless steel drums.
- Add hydrogen peroxide to the groundwater stored in the drums.
- Pump the hydrogen peroxide-amended groundwater into the piezometers and standpipes located in Area 1.

4.3.5 Area 2 and 3 Oxygen Infusion System: Routine Monitoring and Maintenance Procedures

A continuous source of oxygen gas is added to groundwater in Areas 2 and 3 via iSOC® units. To maintain proper functioning, the iSOC® units are removed for monthly inspections and cleaning, as necessary.

Dissolved oxygen concentrations are recorded in all Areas once a month from monitoring wells MW-33 in Area 1, MW-36R and TW-02RRR in Area 2, and MW-27, MW-28, and MW-8SR in Area 3.

4.4 MAINTENANCE REPORTING REQUIREMENTS

Maintenance reports and other pertinent information generated during regular operations at the Site will be kept on file. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and pertinent information about maintenance activities will be summarized and included as part of the PRR, as specified in the Section 5.3 of this SMP.

A maintenance form (*In-Situ* Bioremediation System Operation and Maintenance Log Sheet; Appendix J) will be completed for the O&M of the various components of the *in-situ* bioremediation systems performed at the Site. The form includes, but is not limited to the following information:

- Date
- Name, company, and position of person(s) conducting maintenance activities
- Maintenance activities conducted
- Any modifications to the system
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet)

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in the Monitoring Plan (Section 3.0) and the Operation and Maintenance Plan (Section 4.0) of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of operating mechanical remedial components will also be conducted when an alarm has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections, monitoring events, and maintenance activities during the post-shutdown process control monitoring program and annual site-wide inspections will be recorded on the appropriate forms, which are contained in Appendix I (Site-wide Inspection Form) and the FSP (Appendix G; Groundwater Monitoring Well Sampling Log Form). In the event that the remedial processes are re-started, inspections and maintenance activities of ECs and the *in-situ* bioremediation treatment system will also be recorded on the Site-wide Inspection Form and *In-Situ* Bioremediation System Operation and Maintenance Log Sheet included in Appendices I and J, respectively. These forms are subject to NYSDEC revision.

The Site-wide Inspection Form completed during the annual site-wide inspection will be provided in electronic format in the PRR. All other applicable inspection forms and other records, including groundwater monitoring well sampling log forms and bioremediation treatment system maintenance log sheets, generated for the Site during the reporting period will be kept in the project file.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the IC/EC certification to confirm that the:

- IC/ECs are in place, are performing properly, and remain effective
- The SMP is being implemented
- O&M activities are being conducted properly; and, based on the above items
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RD/RA Work Plan for OU-2 (BBL 1997) and OU-2 RD/RA Report (BBL 1999c)

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

A qualified environmental professional will prepare the following certification annually after the site-wide inspection is completed:

For each IC or EC identified for the Site, I certify that all of the following statements are true:

- The inspection of the Site to confirm the effectiveness of the ICs and ECs controls required by the remedial program was performed under my direction.
- The ECs and/or ICs employed at this Site are unchanged from the date the control was put in place, or last approved by the NYSDEC.
- Nothing has occurred that would impair the ability of the control to protect the public health and environment.
- Nothing has occurred that would constitute a violation or failure to comply with the SMP for this control.
- Access to the Site will continue to be provided to the NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.
- Use of the Site is compliant with the Deed Restrictions.
- The EC systems are performing as designed and are effective.

- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices.
- The information presented in this report is accurate and complete.

In addition, the certification of ICs/ECs will include the following NYSDEC-required certification statement:

- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner’s Designated Site Representative] [I have been authorized and designated by all Site owners to sign this certification] for the Site.

The signed certification will be included in the PRR described below.

5.3 PERIODIC REVIEW REPORT

A PRR will be submitted to the NYSDEC every year in accordance with the schedule described in Table 7 (see Section 3.0). The PRR will be prepared in accordance with NYSDEC DER-10 (NYSDEC 2010b) and submitted within 30 days of the end of each IC/EC certification period. The PRR will include the information identified below that is necessary to document the basis for the IC/EC certification:

- Identification, assessment, and certification of all ECs/ICs required by the remedy for the Site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- Description of pertinent maintenance activities performed on site, if applicable.
- An electronic copy of the annual Site-wide Inspection Form generated for the Site.
- List of groundwater level measurements and a potentiometric map of the shallow hydrogeologic unit generated for the reporting period.

- Data summary tables and graphical representations of COCs in groundwater, which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format.
- A Site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the OU-2 ROD (NYSDEC 1997a).
  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the groundwater being monitored.
  - Recommendations regarding any necessary changes to the remedy, Monitoring Plan, and/or O&M activities.
  - A determination as to whether groundwater conditions have changed since the last reporting event.
  - The overall performance and effectiveness of the remedy.
- Performance summary for treatment systems at the Site that were operating during the reporting period (if any), including information such as:
  - The number of days the system(s) was run for the reporting period
  - Total volume of water pumped from the withdrawal trench and introduced into the Area 3 infiltration trenches
  - Operation details of the treatment system(s)
  - A description of breakdowns and/or repairs along with an explanation for any significant downtime
  - A description of the resolution of performance problems

- A summary of the EC (i.e., groundwater containment) performance monitoring
- Comments, conclusions, and recommendations based on data evaluation

The PRRs will be submitted, in electronic format, to the NYSDEC Central Office, NYSDEC Region 7 Office, and NYSDOH.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an IC or EC, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

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DRAFT

Excavation Work Plan

McKesson Envirosystems
Former Bear Street Facility
Syracuse, New York

NYSDEC Site Number: 7-34-020

September 2013

Excavation Work Plan

McKesson Envirosystems
Former Bear Street Facility
Syracuse, New York

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Our Ref.:
B0026003

Date:
September 2013

Table of Contents

1. Introduction

This Excavation Work Plan (EWP) has been prepared as part of the Site Management Plan (SMP) for the McKesson Envirosystems Former Bear Street Facility (the Site). Any future intrusive (i.e., excavation) work that will encounter or disturb the remaining contamination will be performed in compliance with the requirements provided in this EWP until OU-2 remedial activities are considered complete.

1.1 Site Description

The Site encompasses approximately 8.6 acres and is located at 400 Bear Street West in the City of Syracuse, Onondaga County, New York. The Site is divided into two parcels separated by Van Rensselaer Street. The parcel north of Van Rensselaer Street is located within 150 feet of the Barge Canal, and the entire Site is bordered by Bear Street West to the east and other properties to the west and south. The Site is divided into three areas (Areas 1, 2, and 3) and is divided vertically into two operable units (OUs): OU-1 – Unsaturated Soil and OU-2 – Saturated Soil and Groundwater. The Site was formerly used for bulk storage of petroleum products, and in later years, for a variety of chemical waste streams. For detailed information on the past owners and uses of the Site, refer to the SMP.

1.2 Overview of Remedial Actions

The Site was remediated in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved *Remedial Design/Remedial Action (RD/RA) Work Plan for OU-1* (Blasland, Bouck & Lee [BBL] 1994) and *RD/RA Work Plan for OU-2* (BBL 1997). Remedial activities for OU-1 were conducted in 1994 and 1995 and involved the following:

- *In-situ* aerobic bioremediation of unsaturated soils via soil blending
- Installation of a minimum of 12 inches of clean fill over the remediated areas, which was graded and seeded to promote surface water runoff and to limit the infiltration of surface water into remediated areas
- Implementation of a groundwater monitoring program to verify that constituents of concern (COCs) were not migrating off site

The COCs at the Site are benzene, toluene, ethylbenzene, xylenes, trichloroethene, methylene chloride, acetone, methanol, aniline, and N,N-dimethylaniline. Remedial activities for OU-2 have included the following:

- *In-situ* anaerobic and aerobic bioremediation treatment of groundwater and saturated soils
- Operation and maintenance of a closed loop hydraulic system in Area 3
- Implementation of a groundwater monitoring program

Remedial activities for OU-2 began in 1998 and continued through April 10, 2013. On April 9, 2013, NYSDEC verbally approved the shutdown of the *in-situ* bioremediation treatment system in Areas 1, 2, and 3, which includes the hydrogen peroxide amendments (Area 1), oxygen diffusion (Areas 2 and 3), and the closed loop hydraulic system (Area 3). NYSDEC approved this in writing on April 11, 2013 (NYSDEC 2013). Accordingly, the systems were shut down on April 10, 2013 and a post-shutdown process control monitoring program began in July 2013.

The remaining contamination at the Site are COCs detected in unsaturated soil at a maximum concentration of 8.6 parts per million and COCs in groundwater at select locations at concentrations greater than their respective NYSDEC Class GA Groundwater Quality Standard (NYSDEC 1998). COCs have not been detected in groundwater at concentrations exceeding NYSDEC Groundwater Quality Standards beyond the site boundary. Additional details on past remedial activities, remaining contamination, and management of remaining contamination are provided in the SMP.

2. Notification Requirements

When performing intrusive (i.e., excavation) work at the Site, the site Owner or representative is required to notify the NYSDEC at least 15 days prior to the start of any ground-intrusive activity that is anticipated to encounter or disturb the remaining contamination. Notification of these activities will be made to:

Mr. Payson Long – NYSDEC Project Manager
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7013
(518) 402-9814; pdlong@gw.dec.state.ny.us

When providing notification, include the following:

- Detailed description of the work to be performed, including the location and areal extent, plans for managing groundwater (if encountered), plans for site re-grading, intrusive elements or utilities to be installed below the clean fill layer, estimated volumes of soil to be excavated, and any work that may impact an engineering control
- Summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of COCs and plans for any pre-construction sampling
- Schedule for the work, detailing the start and completion of all intrusive work
- Summary of the applicable components of this EWP
- Statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120 (U.S. Department of Labor 2013)
- Copy of the Contractor's task-specific Health and Safety Plan in electronic format
- Identification of disposal facilities for potential waste streams
- Identification of sources of any anticipated backfill, along with all required chemical testing results

3. Soil Screening Methods

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during excavations into known or potentially contaminated material.

Soils will be segregated (based on previous environmental data and the screening results) into material that requires off-site disposal, material that requires testing, material that can be potentially returned to the subsurface, and material that can be used as cover soil. Soil/fill material potentially suitable for re-use is subject to the procedures defined in Section 8.

4. Stockpile Methods

Stockpiles of excavated material will, at minimum, be placed on top of polyethylene sheeting. Additionally, hay bales will be used as needed near catch basins, surface waters, and other discharge points, and surface water diversion methods and protection will be implemented/used as necessary to minimize the amount of surface water that enters areas actively under construction. Water diversion methods and/or controls may include, but may not be limited to, using hay bales/silt fence or channeling potential surface flow around the active area by placing a temporary berm (e.g., soil berm, jersey barriers).

Stockpiles will be kept covered at all times with appropriately anchored impermeable cover(s) to prevent precipitation from entering into the stockpile areas when not in use. Appropriate temporary erosion control measures (e.g., berms, silt fence, hay bales) will be implemented and maintained around contaminated and potentially contaminated material stockpiles and non-vegetated soil surfaces. Stockpiles will be routinely inspected, at a minimum of once each week and after every storm event, and damaged impermeable cover(s) will be promptly replaced. Results of inspections will be recorded in a logbook that will be maintained at the Site and available for inspection by NYSDEC. Results of the inspections will be summarized in the subsequent Periodic Review Report (PRR) prepared for the Site in accordance with the SMP.

5. Materials Excavation and Load-out

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its contractors are responsible for safe execution of all excavation and other work performed under this EWP.

Prior to beginning excavation work, the presence of utilities and easements on the Site will be investigated by the qualified environmental professional to determine whether utilities or easements pose a risk or impediment to the planned work under the SMP. Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate federal, state, local, and New York State Department of Transportation requirements (and all other applicable transportation requirements).

When necessary, a truck wash will be operated on site. The qualified environmental professional will monitor that all outbound trucks are washed (as necessary) at the truck wash before leaving the Site until the activities performed under this section are complete. Truck wash waters will be collected and disposed in an appropriate manner. Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-site soil tracking. The qualified environmental professional will monitor that all egress points for truck and equipment transport from the Site are clean of visible dirt and other materials derived from the Site during excavation activities. If needed, the adjacent streets will be cleaned to maintain them free of dirt, mud, stone, and other hauled site-derived materials.

6. Materials Transport off Site

Materials that are removed for off-site disposal will be transported by licensed haulers in accordance with appropriate local, state, and federal regulations, including 6 NYCRR Part 364 (NYSDEC 2006a). Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

As indicated in Section 5.0, trucks will be washed (as necessary) prior to leaving the Site and truck wash waters will be collected and disposed in an appropriate manner.

All trucks loaded with COC-impacted site materials will exit the vicinity of the Site using only truck routes approved by the NYSDEC. Proposed route(s) will take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) limiting total distance to major highways; (d) promoting safety in access to highways; (e) overall safety in transport; and (f) community input (where necessary).

Egress points for truck and equipment transport from the Site will be kept clean of visible dirt and other site-derived materials during site excavation, restoration, and development.

7. Materials Disposal off Site

COC-impacted material that is excavated and removed from the Site will be treated as regulated material (unless chemical testing suggests otherwise). This material will be transported and disposed in accordance with all local, state (including 6 NYCRR Part 360; NYSDEC 1999a) and federal regulations.

The estimated quantities of material to be disposed off site need to be provided in the pre-excavation notification (see Section 2). In addition, off-site disposal locations for excavated material will be identified in the pre-excavation notification. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the subsequent PRR. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading, and facility receipts.

Non-hazardous contaminated soils taken off site will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2 (NYSDEC 2006b). Material that does not meet Track 1 unrestricted Soil Cleanup Objectives is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility; NYSDEC 1999b).

8. Materials Re-Use on Site

The clean fill layer installed over OU-1 may be re-used on site. Other on-site soil may be re-used on site with prior NYSDEC approval. The qualified environmental professional will ensure that procedures defined for materials re-use are followed and that unacceptable material re-use does not occur.

9. Fluids Management

Efforts will be made to minimize the amount of water that could enter an excavation. All liquids to be removed from the Site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge, and development fluids will not be recharged back to the land surface or subsurface of the Site, but will be containerized and disposed off site unless analytical data verify that the fluid is not impacted with COCs and alternate handling is approved by the NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (e.g., a local stream) may be performed under a State Pollutant Discharge Elimination System (SPDES) permit.

10. Backfill from Off-site Sources

All materials proposed for import onto the Site will be approved by the qualified environmental professional and will be in compliance with provisions in the SMP prior to receipt at the Site. The following materials will not be imported onto the Site: material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites.

Imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d) (NYSDEC 2006c). Based on land use and protection of groundwater criteria, the off-site materials must meet the restricted residential use soil cleanup objectives set forth in 6 NYCRR Part 375 and included in Appendix 5 of DER-10 (NYSDEC 2006c; NYSDEC 2010a). Imported material will be sampled in accordance with the frequency requirements presented in Section 5.4(e) of DER-10. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360 (NYSDEC 1999a), but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight-fitting covers. Imported soils will be stockpiled separately from excavated materials.

11. Stormwater Pollution Prevention

Stormwater pollution prevention methods will include the following practices:

- Barriers and/or hay bale check dams will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site, and available for inspection by NYSDEC. All necessary repairs will be made immediately.

- Accumulated sediments will be removed as required to keep the barriers and hay bale check dams functional.

- All undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials.

- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

- Where discharge locations or points are accessible, erosion and control measures will be inspected to ascertain whether they are effective in preventing significant impacts to receiving waters.

- Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

12. Site Restoration

After excavation work has been performed at the Site, the Site must be restored so as to maintain the minimum of 12 inches of clean fill that was installed over remediated areas as part of the OU-1 remedy. As required by the OU-1 Record of Decision (NYSDEC 1994) and detailed in the NYSDEC-approved *Remedial Design/Remedial Action Report Operable Unit No. 1 – Unsaturated Soils* (BBL 1995), a minimum of 12 inches of clean fill was placed over remediated areas to promote surface water runoff and limit infiltration into remediated areas. This requirement is in effect until OU-2 remedial activities are considered complete. In any remediated areas where the clean fill layer is disturbed during construction and/or excavation activities, a minimum of 12 inches of clean fill must be restored, graded, and seeded to promote proper site drainage and limit surface water infiltration. Materials used for the clean fill layer must be consistent with the conditions established in Sections 8 and 10 of this EWP. If the clean fill layer changes from that which exists prior to the excavation (e.g., vegetated clean fill is replaced by asphalt), this will constitute a modification of the upper surface of OU-1. A figure showing the modified surface will be included in the subsequent PRR and in any updates to the SMP.

13. Contingency Plan

The objective of a Contingency Plan is to minimize uncertainties by establishing the provisions and procedures for responding to certain circumstances, including the discovery of an unknown source of constituents that may require remediation, accidental spills, and discharges that may occur during excavation work. Prior to beginning an excavation activity below the clean fill layer, task- or work-specific contingency procedures will be developed and included in the notification as described in Section 2 and in the SMP. Additionally, the following procedures will be implemented, as applicable:

- If previously unidentified contaminant sources are found during post-remedial subsurface excavations or development-related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

- Sampling will be performed on product and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (Target Analyte List metals; Target Compound List (TCL) volatiles and semivolatiles, TCL pesticides and polychlorinated biphenyls), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

- Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager Mr. Payson Long (518-402-9814). Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline (800-457-7362). These findings will be also included in the subsequent PRR prepared pursuant to Section 5 of the SMP.

14. Dust Control Plan

A dust suppression plan will address dust management during on-site excavation work below the clean fill layer and will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck, as necessary, for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas, including excavations and stockpiles.

- Clearing and grubbing of larger areas will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.

- Gravel will be used on roadways to provide a clean road surface with minimal dust.

- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

15. Other Nuisances

A plan will be developed and utilized by the contractor, as necessary, for future excavation work on site to ensure compliance with local noise control ordinances.

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