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Transmitted Via Federal Express

August 9, 2001

Mr. Gerald J. Rider, Jr., P.E.
Chief, Operation, Maintenance and Support Section
Bureau of Hazardous Site Control
New York State Department of Environmental Conservation
50 Wolf Road
Room 260A
Albany, New York 12233-7010

Re: McKesson HBOC, Inc.
Bear Street Facility
Syracuse, New York
Site No. 07-34-020
Project #: 0260.26003 #2

Dear Mr. Rider:

This letter presents the third *Biannual Process Control Monitoring Report (Biannual Report)* for the McKesson Envirosystems (McKesson), Bear Street facility (the site), located at 400 Bear Street in Syracuse, New York. This *Biannual Report* has been prepared by Blasland, Bouck & Lee, Inc. (BBL) on behalf of McKesson HBOC, Inc. to present a description of the operation and maintenance (O&M) activities conducted and the monitoring results obtained during the period from January 2001 through June 2001. This report has been prepared in accordance with the requirements of the NYSDEC-approved *Site Operation and Maintenance Plan* (BBL, Revised August 1999) and a December 29, 1999 letter from David J. Ulm of BBL to Michael J. Ryan, P.E. of the NYSDEC, presenting the long-term process control monitoring program as an addendum to the *O&M Plan*. The *Site Operation and Maintenance Plan* and the addendum are collectively referred to herein as the *O&M Plan*.

The site is divided into two operable units: Operable Unit No. 1 (OU No. 1) - Unsaturated Soil and Operable Unit No. 2 (OU No. 2) - Saturated Soils and Groundwater. As a part of the New York State Department of Environmental Conservation- (NYSDEC-) selected remedy for both of these operable units, there has been and continues to be ongoing O&M activities. Since completing the OU No. 1 remedial activities in 1994/1995 and commencing the OU No. 2 in-situ anaerobic bioremediation treatment activities in July 1998, the details regarding the O&M activities and the results of the process control monitoring program have been provided in Biannual Reports. In those reports, including the most recent one which covered the period from July 2000 through December 2000, a site description and history were provided, along with a description of the remedial actions completed and the ongoing O&M activities being conducted. That information has not changed and is not repeated herein.

During this reporting period (January 2001 through June 2001), no substantial system repairs were required and no unusual observations were made regarding system operations. The Area 3 in-situ anaerobic bioremediation treatment system has operated satisfactorily without interruption and approximately 830,000 gallons of water were pumped from the withdrawal trench and introduced into the infiltration trenches as detailed herein.

The process control monitoring activities that were conducted included hydraulic, biological, and chemicals of concern (COC) monitoring using existing monitoring wells and piezometers. In addition, non-aqueous phase liquid (NAPL) assessment activities were conducted to determine the presence and thickness of NAPL, if any, in existing monitoring wells and piezometers. The locations of these monitoring wells and piezometers are shown on Figure 1. Table 1 provides a listing of the existing monitoring wells and piezometers that are used to conduct the long-term process control monitoring program, and a schedule for implementing this program. As identified in that table, a process control monitoring event was conducted during March 2001. Prior to conducting that event, the NYSDEC was notified (M. Cathy Geraci, BBL, March 14, 2001 personal communication with John Strang, NYSDEC).

The results of the process control monitoring activities conducted between January 2001 and June 2001 are presented below, followed by a discussion of the recommendations for continued implementation of the in-situ anaerobic bioremediation treatment activities.

I. Hydraulic Process Control Monitoring

As part of the hydraulic process control monitoring activities conducted during January 2001 through June 2001, groundwater level measurements were obtained on March 19, 2001 at existing monitoring wells and piezometers that are screened entirely within the sand layer of the shallow hydrogeologic unit and located sidegradient, downgradient, and upgradient of and within each of the three areas. Groundwater level measurements were also obtained from select monitoring wells (MW-6D located upgradient of Area 3 and MW-8D located within Area 3) screened entirely within the deep hydrogeologic unit. Additionally, a water level measurement was obtained from a staff gauge located in the Barge Canal and adjacent to the site. The results of the water level measurements are summarized in Table 2, and shown on the potentiometric surface map provided as Figure 3.

The results and corresponding conclusions from the March 2001 hydraulic monitoring event are summarized below.

- A closed-loop hydraulic cell continues to be maintained in Area 3, as shown on the potentiometric surface map provided as Figure 3.

- The groundwater withdrawal rate in Area 3 ranged from approximately 1.4 gallons per minute (gpm) to 5.6 gpm. These rates continue to induce a higher hydraulic gradient across the area of relatively higher concentrations of COCs within Area 3 (relative to baseline conditions), while maintaining hydraulic containment in Area 3.

- The introduction of approximately 75 percent of the recovered groundwater to the secondary infiltration trench "B" and the remaining 25 percent to the secondary infiltration trench "A" continues to induce a hydraulic gradient in Area 3 from perimeter monitoring well MW-23S toward the withdrawal trench and hydraulically influencing monitoring wells MW-25S and MW-17R. COCs have historically been detected in groundwater samples collected from these wells at concentrations in excess of Groundwater Quality Standards (see Figure 2). COCs at concentrations in excess of Groundwater Quality Standards have not been detected in perimeter monitoring wells MW-23S and MW-25S since the July 1999 sampling event. MW-17R is located on-site and within the capture zone of the withdrawal trench.

- No discernable hydraulic effects were identified within or in the vicinity of Areas 1 and 2 as a result of introducing approximately 100 gallons of RAMM into these areas on a monthly basis using the standpipes located within the infiltration trenches.

- The groundwater elevations measured at select monitoring wells screened entirely within the deep hydrogeologic unit indicate that the operation of the Area 3 system is continuing to have no discernable affect on the hydraulic head of this unit.

Also during the hydraulic process control monitoring, weekly conductivity measurements were obtained from the influent groundwater samples recovered from the withdrawal trench in Area 3. These measurements were collected from the sampling port located before the equalization tank and inside the building. The conductivity of groundwater pumped from the withdrawal trench ranged from approximately 1.3 millisiemens per centimeter (mS/cm) to approximately 1.8 mS/cm, which is within the range of the conductivity levels measured prior to system operation (1 mS/cm 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 has not caused the freshwater/saltwater interface to upcone to the base of the withdrawal trench.

II. Biological Process Control Monitoring

As detailed in Table 1, the biological process control monitoring includes collecting groundwater samples for laboratory analysis of phospholipid fatty acids (PLFA) and poly-b-hydroxy alkanoate (PHA), common biological indicators in both oxidized and reduced states (e.g., electron acceptors: nitrate, manganese, iron, sulfate, and carbon dioxide), and permanent gases (nitrogen, carbon dioxide, and methane). In addition, the following groundwater quality parameters were measured in the field during the biological sampling events: pH, temperature, conductivity, dissolved oxygen, and oxidation/reduction potential (ORP).

The results of the March 2001 biological process control monitoring activities are presented in Table 3 and shown on the Figures 4 through 12. These biological process control monitoring results are summarized below.

- The previous process control monitoring results for Area 1 showed an overall increase in the biomass level within this Area (see Figure 4), particularly during the September 2000 sampling event, which was conducted after the August 2000 discrete RAMM injection event. The March 2001 PLFA data indicate a decrease in the total biomass level at Area 1 monitoring locations, with select PLFA data suggesting that aerobic bacteria is more prevalent than anaerobic bacteria. The PHA and common biological indicators data suggest that there are sufficient quantities of electron acceptors which are required for balanced growth of the anaerobic community. The low concentrations of COCs (i.e., low levels of electron donors) present within the Area 1, however, may not provide a level of carbon sufficient to sustain enhanced microbial growth, thus may be limiting biological activity within this Area. The PLFA data used to monitor environmental stress and turnover rate indicate that the microbial community within Area 1 is undergoing limited stress and continues to have high turnover rates (see Figures 5 and 6).

- Within Area 2, the anaerobic bacteria comprise a significant portion of microbial community. The PLFA and PHA results combined with the common biological indicators results indicate that sufficient amounts of nutrients continue to be available to maintain cell division and balanced growth within the microbial community. As shown on Figures 8 and 9, the PLFA data used to monitor environmental stress and turnover rate suggest that the microbial community within Area 2 is undergoing limited stress and continues to have high turnover rates.

- The March 2001 sampling results for Area 3 indicate an overall decrease in PLFA level since the September 2000 sampling event (see Figure 10). However, the biomass level at monitoring location MW-8S is still more than three times higher than before commencement of the in-situ anaerobic bioremediation treatment activities (January 1998). The select PLFA results obtained from Area 3 monitoring locations continue to indicate that the anaerobic community is more prevalent than the aerobic community, and the results of the PHA analyses and the common biological indicators data suggest that sufficient nutrients are available to maintain cell division and balance growth of the microbial community. As shown on Figures 11 and 12, the PLFA data used to monitor environmental stress and turnover rate suggest that the microbial community in Area 3 is undergoing limited stress and continues to have high turnover rates with the exception of MW-28, where turnover rate data indicate that the microbial community may have entered a stationary growth phase.

- Dissolved gases results, together with dissolved oxygen and ORP data, indicate that conditions in the saturated soils/groundwater of the shallow hydrogeologic unit within each area are reduced, thus conducive to anaerobic bioremediation processes.

- Common biological indicators were measured in groundwater samples collected from the four "sentinel" monitoring wells (see Table 1 and Figure 1). These results are consistent with previous sampling events and indicate no appreciable increase in RAMM constituents downgradient of each area.

III. COC Process Control and Biannual Groundwater Monitoring Program

The COC process control biannual groundwater monitoring activities were conducted on March 19 through March 23, 2001, in accordance with the long-term process control monitoring program presented in the *O&M Plan*. A summary of the COC groundwater monitoring data is presented in Table 4 and shown on Figure 2. A copy of the validated analytical laboratory report associated with the March 2001 groundwater sampling is provided under separate cover. A summary of the results is provided below.

- The concentrations of COCs detected in the groundwater samples collected from all of the monitoring wells within Area 1 have decreased during implementation of the in-situ anaerobic bioremediation program. For example, the concentrations of COCs detected at monitoring well TW-01 are all less than Groundwater Quality Standards, whereas in February 1999 the aniline concentration was 9,000 ppb (see Figure 2).

- Groundwater from monitoring well MW-33, located downgradient of Area 1, was sampled and analyzed for COCs during the March 2001 sampling event. Consistent with the previous sampling events, methylene chloride, aniline, and N,N-dimethylaniline were detected in excess of their respective Groundwater Quality Standards in the groundwater sample collected from this well. The concentrations of aniline and methylene chloride, however, were the highest concentrations detected at this location. No exceedences of Groundwater Quality Standards were detected in the March 2001 groundwater sample collected from downgradient monitoring well MW-3S.

- The March 2001 groundwater sample collected from monitoring well MW-1, located upgradient of Area 1, contained 10 ppb of methylene chloride, slightly exceeding the Groundwater Quality Standard of 5 ppb. Methylene chloride has not been detected at this upgradient monitoring location during the previous sampling events. Methylene chloride, however, is a common laboratory contaminant.

- A comparison of the March 2001 COC data to the data collected during the previous sampling events indicate that COC concentrations within Area 2 have decreased or remained relatively the same during implementation of the in-situ anaerobic treatment program.

- No COCs were detected in the groundwater sample collected from monitoring well MW-36, located downgradient of Area 2 during the March 2001 sampling event. Aniline and N,N-dimethylaniline were detected at the concentrations exceeding their respective Groundwater Quality Standards during the previous sampling event at this location.

- The concentrations of COCs detected in Area 3 monitoring wells are similar to or less than those previously detected in groundwater samples collected from the Area 3 monitoring wells.

- Only aniline was detected in excess of Groundwater Quality Standard in groundwater samples collected from monitoring wells MW-29 and MW-30, located between the Area 3 withdrawal trench and site boundary. The concentrations of aniline detected in these wells (30 ppb and 8 ppb, respectively) have decreased since March 2000 (see Figure 2).

- The results of the March 2001 biannual groundwater sampling and analysis program indicate that COCs at concentrations in excess of the Groundwater Quality Standards have not migrated beyond the site boundary. Benzene was detected in the groundwater samples collected from monitoring well MW-17R at an estimated concentration of 8 ppb. Benzene was also detected at this location during the previous sampling events (see Figure 11) at a maximum concentration of 15 ppb. Although monitoring well MW-17R is sampled as a perimeter groundwater monitoring location, this well is located on-site and within the capture zone of the Area 3 withdrawal trench (see Figure 1).

- NAPL was not identified in any of the monitoring wells and piezometers used during the process control monitoring program.

IV. Recommendations

Based on the process control monitoring data obtained to date and the conclusions summarized above, the in-situ anaerobic bioremediation treatment process is meeting the remedial goals for OU No. 2 presented in the Record of Decision (ROD). Accordingly, the in-situ anaerobic bioremediation treatment activities will continue consistent with the operation procedures followed since commencement in mid-December 1998. However, to further stimulate the biodegradation rate within the three areas, completion of an additional discrete RAMM injection event is recommended.

This event will be conducted in accordance with the procedures presented in the NYSDEC-approved *O&M Plan*, with the addition of Suga-Lik™ (Blackstrap Molasses) that will be injected at discrete locations within Area 1 and immediately downgradient of this Area, in the vicinity of monitoring well MW-33. At this well location, aniline and methylene chloride were detected at 1,300 ppb and 370 ppb, respectively, in the March 2001 sample. Because these concentrations are relatively low, they do not provide a level of carbon sufficient to sustain enhanced microbial growth.

Adding Suga-Lik™ (Blackstrap Molasses) will provide a source of carbon to stimulate biological activity resulting in increased biomass and consequent decreases in aniline and methylene chloride concentrations. Information regarding Suga-Lik™ (Blackstrap Molasses), including the typical composition is provided as Attachment 1. The addition of an easily metabolized carbon source, such as Suga-Lik™ (Blackstrap Molasses), with the purpose of enhancing biological activity is consistent with the rational for adding RAMM, instead of adding only nutrients and electron acceptors, Suga-Lik™ (Blackstrap Molasses) will provide electron donors. The Suga-Lik™ (Blackstrap Molasses) substitutes for the aniline and methylene chloride as a source of electron donors when concentrations exceed several ppm. However, at the current concentrations measured within/immediately downgradient of Area 1 (approximately 1 ppm), aniline and methylene chloride levels may be limiting biological activity and an additional source of electron donors is recommended.

The amount of Suga-Lik™ (Blackstrap Molasses) to be added will be proportional to the levels of aniline and methylene chloride, at the ratio of 1000:1, on a molar basis. At this 1000:1 proportion the concentration of Suga-Lik™ (Blackstrap Molasses) provided in the amended water will be approximately 3,600 ppm. At this concentration the Suga-Lik™ (Blackstrap Molasses), in conjunction with the nutrients and electron acceptors contained in the RAMM, should quickly stimulate biological growth, thus providing a polishing step to reduce the relatively low levels of aniline and methylene chloride present in and immediately downgradient of Area 1.

The RAMM and Suga-Lik™ (Blackstrap Molasses) injection activities are tentatively scheduled to be conducted during August 2001, prior to the September 2001 sampling event The schedule for the monitoring activities is summarized in Table 3. As identified in Table 3, the hydraulic, biological and COC monitoring activities of the long-term process control monitoring program are being conducted on a biannual basis. In addition to the monitoring locations that are scheduled to be sampled in September 2001, a groundwater sample from monitoring well MW-17R will also be collected during the upcoming sampling event. This well will be sampled due to the detection of benzene above the Groundwater Quality Standard of 1 ppb in the groundwater sample collected from this monitoring well during the previous sampling events (including March 2001). As identified in Table 3, MW-17R was not scheduled to be sampled again until the first quarter of 2002.

The progress of the in-situ anaerobic bioremediation treatment activities will continue to be monitored and the results evaluated to determine if modifications are necessary to meet the objectives of the ROD. As detailed in the *O&M Plan,* a summary of the O&M activities and the results of the process control monitoring activities will continue to be presented to the NYSDEC on a biannual basis. These biannual reports will also present any new recommendations or conclusions regarding the operation, maintenance, and monitoring of the in-situ anaerobic bioremediation treatment activities and achieving the NYSDEC-specified remedial goals for OU No. 2, as identified in the ROD.

If you have any questions or require additional information, please do not hesitate to contact me at (315) 446-2570, ext. 210.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

David J. Ulm | mbg

David J. Ulm
Senior Vice President

MS/mbg
41810842.WPD

cc: Mr. Richard Brazell, New York State Department of Environmental Conservation
Ms. Henriette Hamel, R.S., New York State Department of Health
Ms. Jean A. Mescher, McKesson HBOC, Inc.
Ms. Becky Converse, Bristol-Myers Squibb Co.
Ms. Bonnie Boylan, de maximis, inc.

Tables

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TABLE 1

LONG-TERM HYDRAULIC, BIOLOGICAL AND COC PROCESS CONTROL MONITORING SCHEDULE

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Location	Sampling Schedule			
	First Quarter	Second Quarter*	Third Quarter	Fourth Quarter*
Upgradient				
MW-1	B1, B2, C		B1, B2, C	
MW-3S	B1, B2, C		B1, B2, C	
MW-3D	H	H	H	H
Area 1				
TW-01	B1, B2, C		B1, B2, C	
MW-6D	H	H	H	H
MW-9S	B1, B2, C		B1, B2, C	
MW-9D	H	H	H	H
MW-31	B1, B2, C		B1, B2, C	
MW-32	B1, B2, C		B1, B2, C	
MW-33	B2, C		B2, C	
PZ-F	H	H	H	H
PZ-G	H	H	H	H
PZ-HR	H	H	H	H
PZ-P	H	H	H	H
PZ-Q	H	H	H	H
PZ-R	H	H	H	H
PZ-S	H	H	H	H
Area 2				
TW-02R	B1, B2, C		B1, B2, C	
PZ-9D	H	H	H	H
MW-34	B1, B2, C		B1, B2, C	
MW-35	B1, B2, C		B1, B2, C	
MW-36	B2, C		B2, C	
PZ-I	H	H	H	H
PZ-J	H	H	H	H
PZ-T	H	H	H	H
PZ-U	H	H	H	H
PZ-V	H	H	H	H
PZ-W	H	H	H	H

TABLE 1

LONG-TERM HYDRAULIC, BIOLOGICAL AND COC PROCESS CONTROL MONITORING SCHEDULE

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Location	Sampling Schedule			
	First Quarter	Second Quarter*	Third Quarter	Fourth Quarter*
Area 3				
MW-8S	B1, B2, C		B1, B2, C	
MW-8D	H	H	H	H
MW-27	B1, B2, C		B1, B2, C	
MW-28	B1, B2, C		B1, B2, C	
MW-29	B2, C		B2, C	
MW-30	B2, C		B2, C	
PZ-A	H	H	H	H
PZ-B	H	H	H	H
PZ-C	H	H	H	H
PZ-D	H	H	H	H
PZ-E	H	H	H	H
PZ-K	H	H	H	H
PZ-L	H	H	H	H
PZ-M	H	H	H	H
PZ-N	H	H	H	H
PZ-O	H	H	H	H
MW-11S	H	H	H	H
MW-11D	H	H	H	H
Downgradient Perimeter Monitoring Locations				
MW-17R	C		C**	
MW-18	C, H	H	C, H	H
MW-19	C, H	H	C, H	H
MW-23I	C, H	H	C, H	H
MW-23S	C, H	H	C, H	H
MW-24SR	H	H	C, H	H
MW-24DR	H	H	C, H	H
MW-25S	C, H	H	C, H	H
MW-25D	C, H	H	H	H
PZ-4S	C			
PZ-4D	C, H	H	H	H

TABLE 1

LONG-TERM HYDRAULIC, BIOLOGICAL AND COC PROCESS CONTROL MONITORING SCHEDULE

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Location	Sampling Schedule			
	First Quarter	Second Quarter*	Third Quarter	Fourth Quarter*
PZ-5S			C	
PZ-5D	H	H	C, H	H

Notes:

1. H = Hydraulic Monitoring (Groundwater Level Measurements).

2. B1 = Biological Monitoring for Poly-b-hydroxy alkanoate (PHA) and Phospholipid Fatty Acid (PLFA).

3. B2 = Biological Monitoring for Common Biological Indicators and permanent gases including nitrate, total/dissolved iron, total/dissolved manganese, sulfate/sulfide, nitrogen, carbon dioxide, and methane.

4. C = Monitoring for the Chemicals of Concern (COCs).

5. * = The hydraulic monitoring (water level measurement locations) identified in this table was conducted on a quarterly basis for the first year of the long-term process control monitoring program, and will be conducted on a semi-annual basis thereafter. The hydraulic monitoring also includes measuring the conductivity of groundwater recovered from Area 3 from a sampling port located before the equalization tank.

6. Field groundwater parameters including pH, temperature, conductivity, dissolved oxygen, and oxidation/reduction potential (ORP) are measured during each biological sampling event.

7. Each of the monitoring wells and piezometers used for hydraulic, biological and COC monitoring during the semi-annual monitoring event are checked for the presence of NAPL.

8. Based on the results obtained, the scope and/or the frequency for the hydraulic, biological, and/or COC components of the long-term process control monitoring program, as detailed herein, may be modified. Any modifications would be made in consultation with the NYSDEC.

9. This table is based on the NYSDEC-approved *O&M Plan* (BBL, Revised August 1999), including the NYSDEC-approved December 29, 1999 Addendum.

10. Piezometers PZ-8S/PZ-8D were identified in the *O&M Plan* to be sampled during the long-term process control monitoring program; however, as presented in the August 2000 *Biannual Process Control Monitoring Report*, these piezometers were damaged and no longer needed for the process control monitoring program. These piezometers were abandoned in August 2000.

11. ** = As presented in the August 2000 *Biannual Process Control Monitoring Report*, monitoring well MW-17R was identified in the *O&M Plan* to be sampled only during the first biannual monitoring event; however, because of the March 2000 detection of benzene at a concentration slightly exceeding the NYSDEC Groundwater Quality Standard, this well was also sampled during the second biannual monitoring event of the year 2000 (i.e., September 2000).

TABLE 2

SUMMARY OF SELECT GROUNDWATER LEVEL MEASUREMENTS

MCKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Location	Reference Elevation (feet AMSL)	6/10/98	6/22/98	7/6/98	7/20/98	7/27/98	8/5/98	8/10/98 (morning)	8/10/98 (afternoon)	8/11/98 (morning)	8/11/98 (afternoon)	8/12/98 (morning)	8/12/98 (afternoon)	10/16/98	11/17/98	12/16/98	12/22/98	1/6/99	1/13/99	4/14/99	6/3/99	7/13/99	3/27/00	6/1/00	9/18/00	11/14/00	3/19/01
		Static			Week 1	Week 2	Week 3	Week 4	Week 4	Week 4	Week 4	Week 4	Week 4	Week 13	Week 18	Week 22	Week 23	Week 25	Week 26	Week 39	Week 46	Week 52					
Canal	393.39**	362.91	363.37	363.72	363.08	363.08	362.94		362.78	362.94			362.84	363.27		363.14	362.21	363.11			363.22	362.78	363.73	363.75	362.75*	363.24	363.01
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	361.75	363.09	361.93	361.73	363.17	362.45	361.87	362.99	361.48	361.69	361.66	361.59
MW-3S	376.54	365.93	366.26	367.82	366.20			365.29							365.25	365.67	366.81	365.67	365.25		365.26		357.10				
MW-3D	375.56	365.63	365.87	366.16			364.97	364.85						365.08	365.00	365.04		365.04	364.91	365.41	364.92	364.57	355.64	365.57	364.81	355.16	365.40
MW-6D	377.07	365.75	366.01	366.29										365.25	365.15	365.23	365.36	365.23	365.06	365.62	365.12	364.79	365.85	365.77	364.97	365.34	365.64
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	364.86		364.88	364.74	365.22	364.77	364.35	365.42	365.36	364.62	364.94	365.18
MW-9D	376.88	365.78					365.14	365.10						365.25	365.16	365.22	365.36	365.26	365.08	365.65	365.17	364.83	365.88	365.80	365.01	365.36	365.68
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	364.73		364.73	364.57	365.02	364.60	364.18	365.24	365.18	364.46	364.81	364.96
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	363.69	364.27	363.79	363.61	364.50	363.88	363.39	364.72	364.35	363.55	363.86	364.48
MW-18	372.57	362.64													361.90	361.93	362.05	362.05	361.84	362.18	361.79	361.38	362.43	361.77	361.71	362.08	362.17
MW-19	376.00	362.42													361.78	361.84	361.98	361.87	361.89	362.15	361.80	361.46	362.58	361.88	361.90	362.25	362.44
MW-23I	372.77	365.04	365.34	365.72			364.34		364.45	364.16			364.43	364.43	364.34	364.36		364.47	364.26	364.69	364.28	363.83	364.99	364.93	364.25	364.58	364.73
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	362.52	363.35	362.66	362.46	363.64	362.94	362.42	363.85	363.17	362.64	362.87	363.59
MW-24DR	375.14	365.41													364.63	364.67	364.81	364.69	364.54	364.96	364.49	364.09	365.19	364.60	364.39	364.77	364.91
MW-24SR	375.55	365.15	365.32	365.66	364.91	364.45	364.27		364.20				364.36	364.47	364.37	364.44	364.66	364.50	364.33	364.87	364.41	363.95	365.12	365.55	364.30	364.60	364.86
MW-25D	373.67	365.43													364.74	364.76		364.77	364.64	365.07	364.64	364.20	365.28	365.20	364.51	364.84	364.97
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	362.87	363.48	362.96	362.79	363.89	363.20	364.75	364.12	363.69	362.94	363.23	364.14
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	364.73	364.87	364.72	364.55	365.02	364.60	364.22	365.28	365.21	364.49	364.82	365.03
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	364.93	365.09	364.94	364.78	365.28	364.86	364.47	365.57	365.48	364.71	365.10	365.36
PZ-8D	375.83	365.90	366.11	366.35			365.25	365.13	365.83					365.35	365.27	365.33	365.48	365.33	365.19	365.78	365.08	365.00					
PZ-9D	377.29	365.73					365.47	365.28						365.12	365.03	365.08	365.24		364.94	365.50	365.04	364.68	365.70	365.72	364.87	365.16	365.55
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	362.60	364.04	362.72	362.56	363.81	363.12	362.61	363.95	363.15	362.75	362.91	363.56
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	362.51	364.27	362.62	363.45	363.91	363.19	362.67	364.08	363.32	362.79	362.94	363.94
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	365.52	365.97	365.18	365.02	365.79	365.10	364.75	366.04	366.04	365.03	365.35	366.39
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	365.53	366.06	365.25	365.12	365.79	365.18	364.89	366.09	366.10	365.10	365.46	366.36
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	363.53	366.41	363.57	363.52	364.93	364.20	363.81	365.16	365.03	363.92	364.40	365.90
PZ-F	377.06	366.17					365.56	365.50						365.37	365.27	365.52	365.73	365.62	365.27	366.36	365.53	365.11	366.89	366.72	365.27	365.70	367.06
PZ-G	377.16	366.21					365.66	365.60						365.46	365.36	365.60	365.76	365.71	365.44	366.44	365.61	365.17	366.89	366.80	365.36	365.75	367.11
PZ-HR	376.99	366.16					365.54							365.44	365.34	365.54	365.84	365.60	365.39	366.34	365.55	365.11	366.80	366.68	365.33	365.66	367.02
PZ-I	375.15	366.56					365.86	365.64						365.88	365.57	365.90	366.59	366.05	365.76	366.93	365.79	365.23	367.30	367.23	365.55	366.08	367.81
PZ-J	374.89	366.15					365.53	365.40						365.53	365.39	365.55	365.93	365.59	365.47	366.21	365.53	365.14	366.55	366.50	365.32	365.64	366.69
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	362.66	363.70	362.78	362.58	363.87	363.13	362.59	363.97	363.19	362.69	362.86	363.53
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	362.51	363.59	362.65	362.45	363.69	363.00	362.47	363.84	363.03	362.61	362.68	363.42
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	363.01	364.07	363.13	362.94	364.06	363.40	362.90	364.22	363.54	363.05	363.24	363.86
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	365.56	366.09	365.31	365.12	365.87	365.19	364.87	366.17	366.12	NM	365.35	366.43
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	362.75	363.74	362.87	362.68	364.01	363.25	362.73	364.22	363.57	362.86	363.06	364.22
PZ-P	376.89	366.25					365.65	365.60						365.52	365.39	365.61	365.78	365.73	365.44	366.43	365.59	365.18	366.85	366.73	365.34	365.77	367.02
PZ-Q	377.61	366.23					365.64	365.57						365.45	365.35	365.59	365.70	365.71	365.42	366.44	365.60	365.16	366.93	366.78	365.26	365.76	367.21
PZ-R	377.05	366.23		366.94			365.65	365.57						365.50	365.38	365.61	365.81	365.67	365.47	366.46	365.61	365.20	366.89	366.81	365.37	365.72	367.21
PZ-S	378.13	366.19					365.57	365.52						365.43	365.35	365.57	365.94	365.65	365.40	366.39	365.56	365.15	366.84	366.73	365.32	365.71	367.12
PZ-T	376.25	366.14					365.54	365.43						365.52	365.38	365.58	365.96	365.64	365.47	366.34	365.53	365.10	366.71	366.65	365.29	375.70	366.90
PZ-U	375.35	365.99		366.81			365.50	365.33						365.37	365.30	365.49	365.91	365.55	365.40	366.17	365.46	365.08	366.55	366.49	365.22	365.60	366.75
PZ-V	375.78	366.07					365.48	365.35						365.43	365.29	365.47	365.90	365.52	365.37	366.20	365.44	365.06	366.54	366.50	365.25	365.58	366.76
PZ-W	375.78	366.07					365.46	365.31						365.41	365.28	365.44	365.78	365.53	365.33	366.15	365.41	365.02	366.49	366.41	365.20	365.59	366.63

Notes:

1. Weeks 1, 2, 3, 4, 13, 18, 22, 23, 25, 26, 39, 46, and 52 are weeks after the initial introduction of 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 ground-water level in PZ-8D was not measured on 3/27/00 and 6/1/00 because this piezometer was damaged. This piezometer was 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. *** = 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.

TABLE 3

BIOLOGICAL MONITORING DATA
3/19 - 3/21/2001

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

	Biological Parameters																	
Monitoring Location	PLFA (Pmol/mL)	PHA (Pmol/mL)	Turnover Rate	Environmental Stress	Nitrate (mg/L)	Nitrogen (mg/L)	Total Fe (mg/L)	Dissolved Fe (mg/L)	Total Mn (mg/L)	Dissolved Mn (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Carbon Dioxide (mg/L)	Methane (mg/L)	pH	D.O. (mg/L)	Temp. (C)	ORP (mV)	Cond. (mS/cm)
AREA 1																			
MW-1	1.1	<0.05	0.21	0.00	0.59	20	0.17	<0.10	<0.005	<0.005	84.7	<1.0	24	0.0016	7.69	6.06	4.87	136	1.36
TW-01	5	<0.05	0.11	0.06	<0.05	16	3.6	1.1	0.78	0.78	392.0	<1.0	180	3.9	7.05	0.52	9.31	-76	2.61
MW-31	0.8	<0.05	0.00	0.00	0.05	14	11	4.6	1.3	1.2	55.6	<1.0	240	6.8	6.74	1.45	8.58	-39	2.74
MW-32	3	<0.05	1.54	0.01	<0.05	18	4.2	2.8	1.5	1.4	446.0	1.1	180	3.0	6.96	0.61	8.73	-99	2.53
MW-9S	0.1	<0.05	0.00	0.00	0.13	13	14	12	1.7	1.6	7.54	1.6	200	4.4	7.11	0.31	8.29	-114	1.81
MW-33	--	--	--	--	<0.05	6.7	1.5	0.58	0.71	0.67	72.0	3.4	340	12.0	6.97	0.28	8.97	-279	5.06
AREA 2																			
TW-02R	49	<0.05	0.87	0.10	<0.05	9.8	7.3	4.8	7.5	6.7	15.4	1.9	270	8.6	6.89	1.40	9.98	-179	4.96
MW-34	1	<0.05	1.23	0.16	<0.05	13	11	4.3	1.5	1.2	21.7	<1.0	230	4.0	6.88	1.16	9.28	-162	2.71
MW-35	13	<0.05	0.00	0.07	0.08	18	0.93	0.71	0.38	0.35	59.8	<1.0	64	0.0087	7.13	0.15	5.60	-6	0.875
MW-36	--	--	--	--	<0.05	11	1.5	<0.10	3.6	3.4	72.9	3.7	270	4.4	6.95	1.02	9.28	-230	3.98
AREA 3																			
MW-3S	0.8	<0.05	0.68	0.00	<0.05	21	4.2	3.2	3.5	3.4	11.7	<1.0	67	0.42	7.29	0.49	7.41	-72	0.663
MW-8S	27	<0.05	0.37	0.04	<0.05	3.2	180	180	4.9	4.8	16.3	<1.0	780	7.3	6.27	0.35	8.60	-72	8.50
MW-27	0.5	<0.05	0.06	0.00	0.13	7.6	30	29	1.3	1.3	19.6	2.6	350	12.0	6.80	0.24	8.57	-100	2.95
MW-28	3	<0.05	7.59	0.18	<0.05	3.8	130	110	4.8	4.2	13.1	<1.0	500	14.0	6.65	0.39	9.03	-96	6.92
MW-29	--	--	--	--	<0.05	14	0.11	<0.10	0.3	0.34	64.5	<1.0	93	5.1	7.25	0.40	10.62	-270	2.52
MW-30	--	--	--	--	<0.05	16	1.0	<0.10	0.48	0.38	146.0	13.6	120	3.0	7.21	0.27	10.68	-270	2.61

Notes:

1. Pmol/mL = Picomoles per milliliter
2. mg/L = Milligrams per liter
3. C = Degrees Celcius
4. mV = Millivolts
5. mS/cm = Millisiemens per centimeter
6. -- = Not measured
7. < = Parameter was not detected at the listed limit.
8. Fe = Iron
9. Mn = Manganese
10. D.O. = Dissolved oxygen
11. Temp. = Temperature
12. ORP = Oxidation/reduction potential
13. Cond. = Conductivity
14. PLFA = Phospholipid fatty acids
15. Turnover Rate = The summation of cy17:0/16:1w7c plus cy19:0/18:1w7c.
16. Environmental Stress = The summation of 16:1w7t/16:1w7c plus 18:1w7t/18:1w7c.

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
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*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
Monitoring Well	Sampling Date	Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
MW-1	3/88	370.30	355.30	<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 J	<1,000	<10 J	<10 J	<10	<10 J
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	10
MW-2S	3/88	368.10	353.10	<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	365.10	350.10	<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	31	<1,000	<10	790	170	<10
	8/95			<1,000	<5	<5	<5	<5	<1,000	<5	15	2 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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
MW-3D	8/95	343.80	339.00	<1,000	<25 D	<25 D	<25 D	<25 D	<1,000	<25 D	1 J	5 J	200 D
MW-4S	3/88	365.50	350.50	<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***	3/88	363.30	348.30	<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**	1/89	365.50	355.90	<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**	1/89	367.00	357.40	<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**	1/89	364.70	355.10	<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)	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
	03/01			<50,000	<50,000	<50,000	<50,000	<50,000	53,000	11,000 J	90,000 D	120,000 D	990,000

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
MW-9**	1/89	365.60	356.00	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	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 J	<10
	3/00			<10	2 J	2 J	11	21	<1,000 J	<10	2 J	9 J	<10
	9/00			<10 J	11 J	2 J	6 J	18 J	<1,000	<10 J	1 J	6 J	<10 J
	03/01			<10	1 J	3 J	17	61	<1,000	<10	2 J	11	<10
MW-10	1/89	355.50	345.90	<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	2	<3	<1,000	<1	230	<10	41
	8/95			<1,000	<25 UD	<25 UD	<25 UD	<25 UD	<1,000	<25 UD	<5	<10	350 D
	1/89	355.10	345.50	<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
MW-11S	12/94	359.90	354.90	<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	349.80	344.80	<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**	1/89	354.80	345.20	<100,000	<1,000	<1,000	<1,000	<1,000	12,000	<1,000	67	410	120,000
(Replaced MW-8D)	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 J	<5	<10	40
MW-13S	11/89	368.70	359.10	<100	3	<1	<1	<1	<1,000	<1	<52	<52	<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-14D***	1/89	359.00	349.40	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
	11/89			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-15S	1/89	370.00	360.25	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
	11/89			<100	<1	<1	<1	<1	<1,000	<1	<52	<52	<1
MW-16D***	1/89	350.80	341.20	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
	11/89			<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-17***	11/90	365.70	356.10	<100	<1	<1	<1	<3	<1,000	<1	<10	<10	<1
(Replaced by MW-17R)	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	<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	<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
	03/01			<10	8 J	<10	<10	<10	<1,000	<10	<10	<10	<10

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
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	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
MW-19	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	**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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
MW-20***	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***	11/89	323.65	314.65	<100	<5	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-22	11/89	368.55	359.55	<100	<1	<1	<1	<1	<1,000	<1	<10	<10	<1
MW-23S	12/94	364.10	354.10	<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	**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**	**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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10

TABLE 2

SUMMARY OF SELECT GROUNDWATER LEVEL MEASUREMENTS

MCKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Location	Reference Elevation (feet AMSL)	6/10/98	6/22/98	7/6/98	7/20/98	7/27/98	8/5/98	8/10/98 (morning)	8/10/98 (afternoon)	8/11/98 (morning)	8/11/98 (afternoon)	8/12/98 (morning)	8/12/98 (afternoon)	10/16/98	11/17/98	12/16/98	12/22/98	1/6/99	1/13/99	4/14/99	6/3/99	7/13/99	3/27/00	6/1/00	9/18/00	11/14/00	3/19/01
		Static			Week 1	Week 2	Week 3	Week 4	Week 4	Week 4	Week 4	Week 4	Week 4	Week 13	Week 18	Week 22	Week 23	Week 25	Week 26	Week 39	Week 46	Week 52					
Canal	393.39**	362.91	363.37	363.72	363.08	363.08	362.94		362.78	362.94			362.84	363.27		363.14	362.21	363.11			363.22	362.78	363.73	363.75	362.75*	363.24	363.01
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	361.75	363.09	361.93	361.73	363.17	362.45	361.87	362.99	361.48	361.69	361.66	361.59
MW-3S	376.54	365.93	366.26	367.82	366.20			365.29							365.25	365.67	366.81	365.67	365.25		365.26		357.10				
MW-3D	375.56	365.63	365.87	366.16			364.97	364.85						365.08	365.00	365.04		365.04	364.91	365.41	364.92	364.57	355.64	365.57	364.81	355.16	365.40
MW-6D	377.07	365.75	366.01	366.29										365.25	365.15	365.23	365.36	365.23	365.06	365.62	365.12	364.79	365.85	365.77	364.97	365.34	365.64
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	364.86		364.88	364.74	365.22	364.77	364.35	365.42	365.36	364.62	364.94	365.18
MW-9D	376.88	365.78					365.14	365.10						365.25	365.16	365.22	365.36	365.26	365.08	365.65	365.17	364.83	365.88	365.80	365.01	365.36	365.68
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	364.73		364.73	364.57	365.02	364.60	364.18	365.24	365.18	364.46	364.81	364.96
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	363.69	364.27	363.79	363.61	364.50	363.88	363.39	364.72	364.35	363.55	363.86	364.48
MW-18	372.57	362.64													361.90	361.93	362.05	362.05	361.84	362.18	361.79	361.38	362.43	361.77	361.71	362.08	362.17
MW-19	376.00	362.42													361.78	361.84	361.98	361.87	361.89	362.15	361.80	361.46	362.58	361.88	361.90	362.25	362.44
MW-23I	372.77	365.04	365.34	365.72			364.34		364.45	364.16			364.43	364.43	364.34	364.36		364.47	364.26	364.69	364.28	363.83	364.99	364.93	364.25	364.58	364.73
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	362.52	363.35	362.66	362.46	363.64	362.94	362.42	363.85	363.17	362.64	362.87	363.59
MW-24DR	375.14	365.41													364.63	364.67	364.81	364.69	364.54	364.96	364.49	364.09	365.19	364.60	364.39	364.77	364.91
MW-24SR	375.55	365.15	365.32	365.66	364.91	364.45	364.27		364.20				364.36	364.47	364.37	364.44	364.66	364.50	364.33	364.87	364.41	363.95	365.12	365.55	364.30	364.60	364.86
MW-25D	373.67	365.43													364.74	364.76		364.77	364.64	365.07	364.64	364.20	365.28	365.20	364.51	364.84	364.97
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	362.87	363.48	362.96	362.79	363.89	363.20	364.75	364.12	363.69	362.94	363.23	364.14
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	364.73	364.87	364.72	364.55	365.02	364.60	364.22	365.28	365.21	364.49	364.82	365.03
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	364.93	365.09	364.94	364.78	365.28	364.86	364.47	365.57	365.48	364.71	365.10	365.36
PZ-8D	375.83	365.90	366.11	366.35			365.25	365.13	365.83					365.35	365.27	365.33	365.48	365.33	365.19	365.78	365.08	365.00					
PZ-9D	377.29	365.73					365.47	365.28						365.12	365.03	365.08	365.24		364.94	365.50	365.04	364.68	365.70	365.72	364.87	365.16	365.55
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	362.60	364.04	362.72	362.56	363.81	363.12	362.61	363.95	363.15	362.75	362.91	363.56
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	362.51	364.27	362.62	363.45	363.91	363.19	362.67	364.08	363.32	362.79	362.94	363.94
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	365.52	365.97	365.18	365.02	365.79	365.10	364.75	366.04	366.04	365.03	365.35	366.39
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	365.53	366.06	365.25	365.12	365.79	365.18	364.89	366.09	366.10	365.10	365.46	366.36
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	363.53	366.41	363.57	363.52	364.93	364.20	363.81	365.16	365.03	363.92	364.40	365.90
PZ-F	377.06	366.17					365.56	365.50						365.37	365.27	365.52	365.73	365.62	365.27	366.36	365.53	365.11	366.89	366.72	365.27	365.70	367.06
PZ-G	377.16	366.21					365.66	365.60						365.46	365.36	365.60	365.76	365.71	365.44	366.44	365.61	365.17	366.89	366.80	365.36	365.75	367.11
PZ-HR	376.99	366.16					365.54							365.44	365.34	365.54	365.84	365.60	365.39	366.34	365.55	365.11	366.80	366.68	365.33	365.66	367.02
PZ-I	375.15	366.56					365.86	365.64						365.88	365.57	365.90	366.59	366.05	365.76	366.93	365.79	365.23	367.30	367.23	365.55	366.08	367.81
PZ-J	374.89	366.15					365.53	365.40						365.53	365.39	365.55	365.93	365.59	365.47	366.21	365.53	365.14	366.55	366.50	365.32	365.64	366.69
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	362.66	363.70	362.78	362.58	363.87	363.13	362.59	363.97	363.19	362.69	362.86	363.53
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	362.51	363.59	362.65	362.45	363.69	363.00	362.47	363.84	363.03	362.61	362.68	363.42
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	363.01	364.07	363.13	362.94	364.06	363.40	362.90	364.22	363.54	363.05	363.24	363.86
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	365.56	366.09	365.31	365.12	365.87	365.19	364.87	366.17	366.12	NM	365.35	366.43
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	362.75	363.74	362.87	362.68	364.01	363.25	362.73	364.22	363.57	362.86	363.06	364.22
PZ-P	376.89	366.25					365.65	365.60						365.52	365.39	365.61	365.78	365.73	365.44	366.43	365.59	365.18	366.85	366.73	365.34	365.77	367.02
PZ-Q	377.61	366.23					365.64	365.57						365.45	365.35	365.59	365.70	365.71	365.42	366.44	365.60	365.16	366.93	366.78	365.26	365.76	367.21
PZ-R	377.05	366.23		366.94			365.65	365.57						365.50	365.38	365.61	365.81	365.67	365.47	366.46	365.61	365.20	366.89	366.81	365.37	365.72	367.21
PZ-S	378.13	366.19					365.57	365.52						365.43	365.35	365.57	365.94	365.65	365.40	366.39	365.56	365.15	366.84	366.73	365.32	365.71	367.12
PZ-T	376.25	366.14					365.54	365.43						365.52	365.38	365.58	365.96	365.64	365.47	366.34	365.53	365.10	366.71	366.65	365.29	375.70	366.90
PZ-U	375.35	365.99		366.81			365.50	365.33						365.37	365.30	365.49	365.91	365.55	365.40	366.17	365.46	365.08	366.55	366.49	365.22	365.60	366.75
PZ-V	375.78	366.07					365.48	365.35						365.43	365.29	365.47	365.90	365.52	365.37	366.20	365.44	365.06	366.54	366.50	365.25	365.58	366.76
PZ-W	375.78	366.07					365.46	365.31						365.41	365.28	365.44	365.78	365.53	365.33	366.15	365.41	365.02	366.49	366.41	365.20	365.59	366.63

Notes:

1. Weeks 1, 2, 3, 4, 13, 18, 22, 23, 25, 26, 39, 46, and 52 are weeks after the initial introduction of 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 ground-water level in PZ-8D was not measured on 3/27/00 and 6/1/00 because this piezometer was damaged. This piezometer was 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. *** = 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.

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
MW-23I	12/94	341.20	336.20	<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	<11	<10
	9/98^			<10	<10	<10	<10	<10	<1,000	<10	<5	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
MW-24S*** (Replaced by MW-24SR)	12/94	358.40	352.40	<10	<5	<5	<5	<5	<1,000	<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
	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	<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
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
MW-24D*** (Replaced by MW-24DR)	12/94	334.40	341.20	<10	<5	<5	<5	<5	<1,000	<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
	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	<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
MW-25S	8/95	361.20	356.20	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	**5 J**	<10	<10
MW-25D	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
	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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	**5 J**	<10	<10

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
MW-23I	12/94	341.20	336.20	<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	<11	<10
	9/98^			<10	<10	<10	<10	<10	<1,000	<10	<5	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
MW-24S*** (Replaced by MW-24SR)	12/94	358.40	352.40	<10	<5	<5	<5	<5	<1,000	<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
	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	<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
	9/00			<10 J	<10 J	<10 J	<10 J	<10 J	<1,000 J	<10 J	<10 J	<10	<10 J
MW-24D*** (Replaced by MW-24DR)	12/94	334.40	341.20	<10	<5	<5	<5	<5	<1,000	<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
	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	<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
MW-25S	8/95	361.20	356.20	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	**5 J**	<10	<10
MW-25D	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
	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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	**5 J**	<10	<10

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl aniline	Methylene Chloride
MW-26	12/96	365.00	355.30	<10	<10	<10	<10	<10	<1,000	<10	<5	<10	<10
MW-27	9/98	362.50	354.50	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
	03/01			<10	5 J	<10	5 J	2 J	<1,000	<10	260 D	2 J	<10
MW-28	9/98^	363.60	355.60	<5,000 J	<5,000	<5,000	<5,000	<5,000	2,200	<5,000	546 D	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
	03/01			<400	<400	<400	<400	<400	<1,000	<400	3,200 D	7 J	5,900 B
MW-29	9/98	362.90	345.90	<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	8 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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	30	4 J	<10
MW-30	9/98	363.50	355.50	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	8 J	2 J	<10
MW-31	9/98	363.70	355.40	<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
	03/01			21	11	<10	<10	<10	<1,000	<10	<10	5 J	<10
MW-32	9/98	364.00	356.00	<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
	9/00			<10 J	12 J	<10 J	<10 J	<10 J	<1,000	<10 J	4,500 D	<10	<10 J
	03/01			<10	5 J	<10	<10	<10	<1,000	<10	1,900 D	2 J	<10
MW-33	9/98	344.10	356.10	<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
	03/01			17 J	<20	<20	<20	<20	<1,000	<20	1,300 D	16	370 B
MW-34	9/98	362.70	354.70	<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
	03/01			<10	<10	2 J	<10	2 J	<1,000	<10	700 D	5 J	<10
MW-35	9/98	363.00	355.00	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
MW-36	9/98	363.60	355.60	<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	2 J
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
TW-01	12/96	365.10	355.40	<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
	03/01			<10	5 J	<10	<10	<10	<1,000	<10	<10	3 J	<10
TW-02*** (Replaced by TW-02R)	12/96	363.30	353.30	53	10	77	16	65	<1,000	585 D	15,900 JD	3,920 D	42,449 D
	9/98			<500 J	<500 J	<500 J	<500 J	140 J	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
	03/01			81	19	68	28	130	<1,000	<10	67,000 D	650 J	400 D
PZ-4D	11/89	350.80	345.90	<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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
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
	03/01			<10	<10	<10	<10	<10	<1,000	<10	<10	3 J	<10
PZ-5D	11/89	353.50	348.60	<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	<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

TABLE 4

SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK

Monitoring Well	Sampling Date	Screen Elev. (ft. AMSL) Top	Bottom	Acetone	Benzene	Toluene	Ethyl-benzene	Xylene*	Methanol	Trichloro-ethene	Aniline	N,N-dimethyl-aniline	Methylene Chloride
PZ-5S	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	<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
PZ-8S ****	9/98	362.60	357.70	<10	<10	<10	<10	<10	<1,000	<10	<10	<10	<10
PZ-11D**	11/89	352.09	347.19	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
PZ-11S**	11/89	359.09	354.19	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
PZ-12D**	11/89	350.00	345.10	<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**	11/89	360.00	355.10	<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***	11/89	349.40	344.40	<100	<1	<1	<1	<1	<1,000	<1	<11	<11	<1
PZ-13S***	11/89	359.50	354.50	<100	<1	**2**	<1	**2**	<1,000	<1	<11	<11	<1
NYSDEC Ground-Water Standards (Part 700)				50	1*	5	5	5	NA	5	5	5	5

Notes:

1. Concentrations are reported as ug/L (parts per billion).
2. * = 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.
3. ** = 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).
4. *** = 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.
5. **** = Piezometer PZ-8S was decomissioned 8/2000.
6. ^ = MW-18, MW-19, MW-23I, MW-23S, MW24DR, MW-24SR, MW-28, PZ-5S, and PZ-5D wells/piezometers were resampled for aniline on 12/8/98 and 12/9/98, because the 9/98 results were rejected due to laboratory error.
7. < = Compound was not detected at the listed quantitation limit
8. D = Indicates the presence of a compound in a secondary dilution analysis.
9. J = The compound was positively identified; however, the numerical value is an estimated concentration only.
10. E = The compound was quantitated above the calibration range.
11. 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.
12. B = The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
13. NA = Not available.
14. Compounds detected are indicated by bold-faced type.
15. Detections exceeding NYSDEC Groundwater Standards (Part 700) are indicated by shading.
16. Replacement wells for MW-6, MW-8, MW-9, MW-10, MW-11, and MW-12D were installed 8/95.
17. Replacement wells for MW-17, MW-24S, MW-24D, and TW-02 were installed 11/97 - 12/97.
18. 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 mg/l. 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 ground-water quality in the vicinity of monitoring well MW-23S.

Figures

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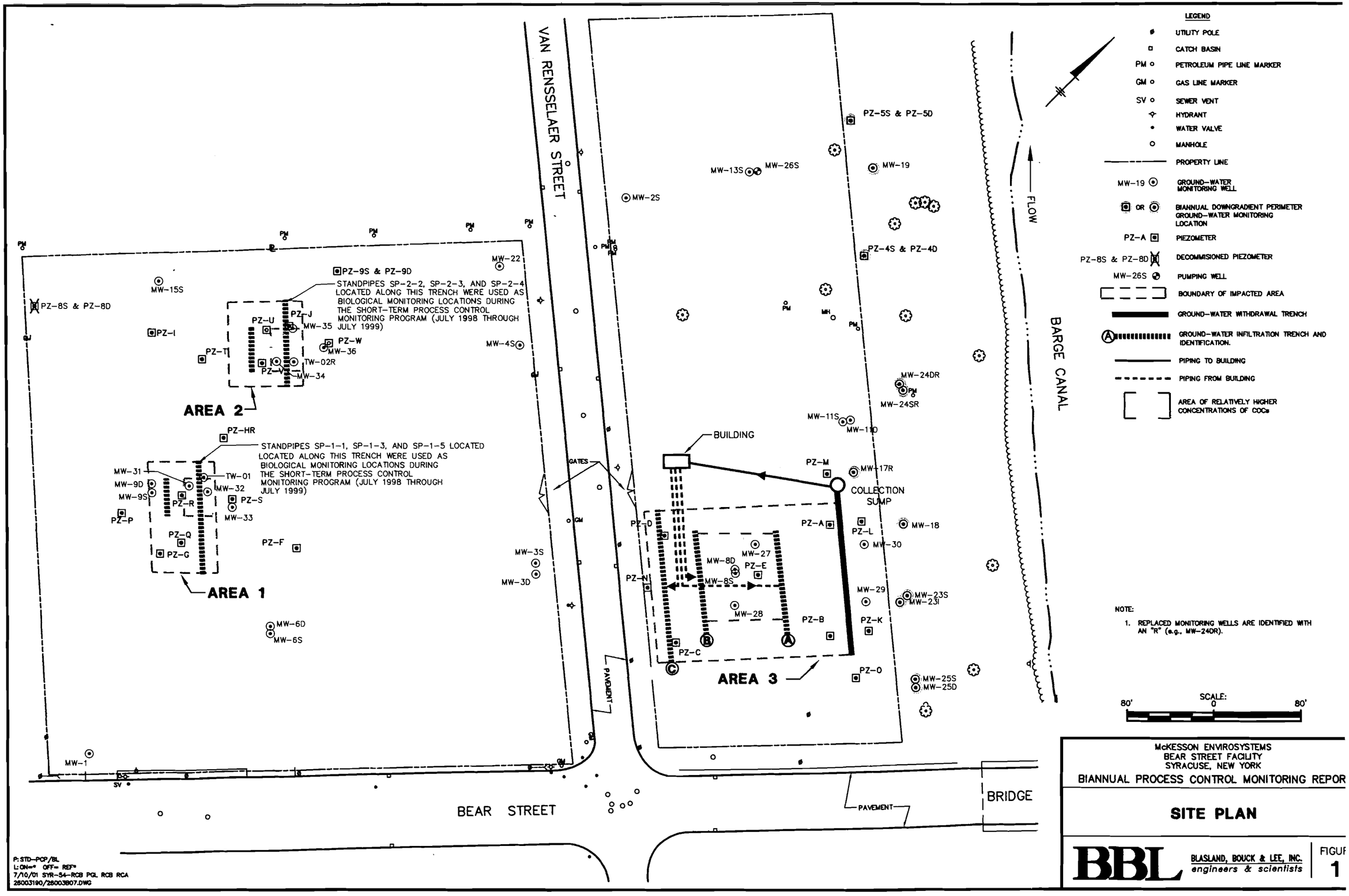

P:STD-PCP/BL
L:ON=* OFF= REF*
7/10/01 SYR-54-RCB PGL RCB RCA
28003190/28003B07.DWG

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK
BIANNUAL PROCESS CONTROL MONITORING REPOR

SITE PLAN

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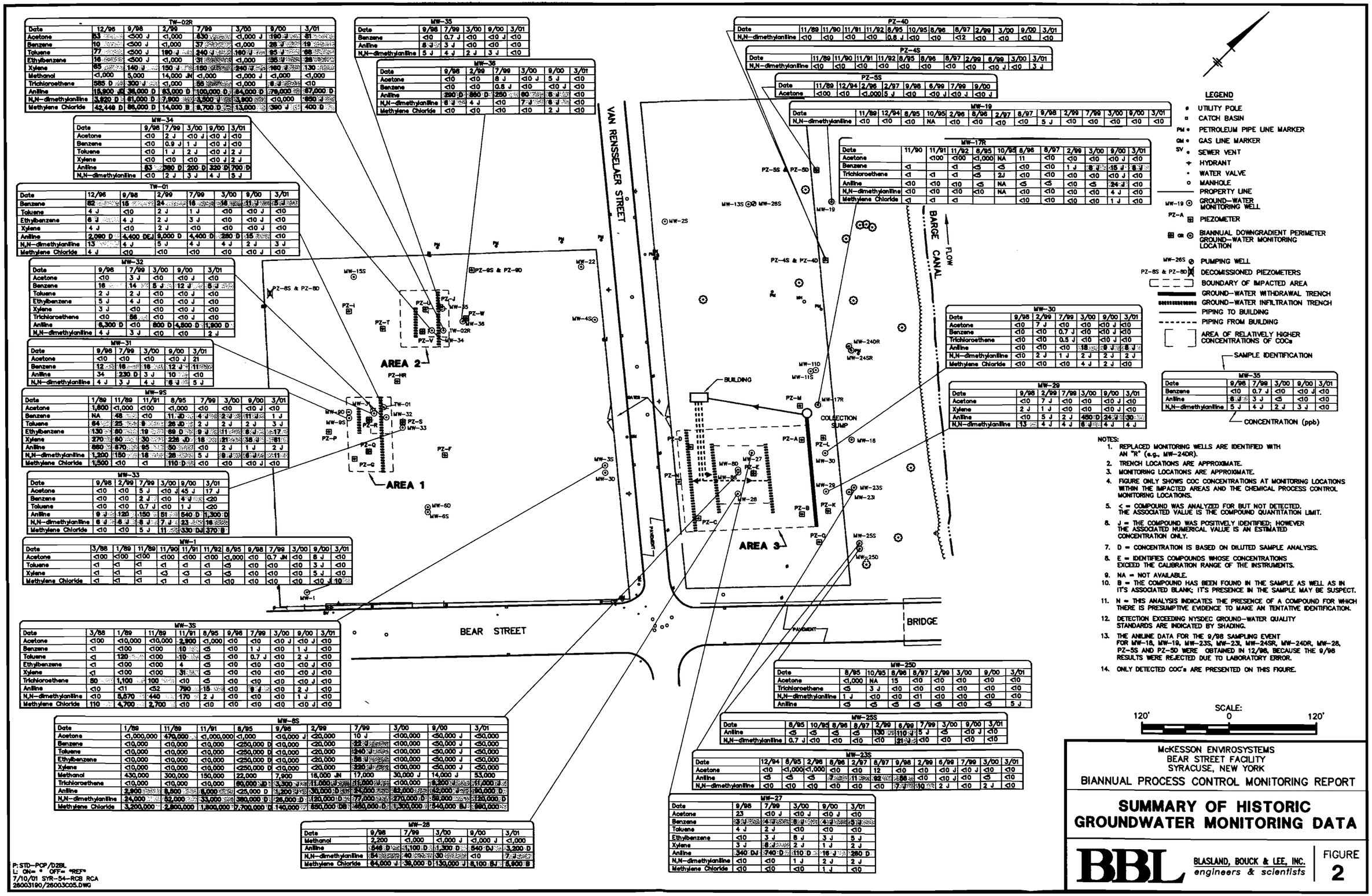
FIGUR 1



TW-02R

Date	12/96	9/98	2/99	7/99	3/00	9/00	3/01
Acetone	83	<500 J	<1,000	630	<1,000 J	190 J	61
Benzene	10	<500 J	<1,000	37	<1,000	28 J	19
Toluene	77	<500 J	190 J	240 J	160 J	85 J	68
Ethylbenzene	16	<500 J	<1,000	31	<1,000	35 J	28
Xylene	85	140 J	150 J	150	240 J	160 J	130
Methanol	<1,000	5,000	14,000 JN	<1,000	<1,000 J	<1,000	<1,000
Trichloroethene	585 D	300 J	<1,000	86	<1,000	8 J	<10
Aniline	15,900 JD	36,000 D	63,000 D	100,000 D	84,000 D	78,000	67,000 D
N,N–dimethylaniline	3,920 D	61,000 D	7,900	3,500 J	3,900	<10,000	950 J
Methylene Chloride	42,440 D	86,000 D	14,000 B	9,700 D	13,000	380 J	400 D

MW-35

Date	9/98	7/99	3/00	9/00	3/01
Benzene	<10	0.7 J	<10	<10 J	<10
Aniline	6 J	3 J	<10	<10	<10
N,N–dimethylaniline	5 J	4 J	2 J	3 J	<10

MW-36

Date	9/98	2/99	7/99	3/00	9/00	3/01
Acetone	<10	<10	8 J	<10 J	5 J	<10
Benzene	<10	<10	0.8 J	<10	<10 J	<10
Aniline	290 D	860 D	250	90	6 J	<10
N,N–dimethylaniline	6 J	4 J	<10	7	6 J	<10
Methylene Chloride	<10	<10	<10	<10	2 J	<10

MW-34

Date	9/98	7/99	3/00	9/00	3/01
Acetone	<10	2 J	<10 J	<10 J	<10
Benzene	<10	0.9 J	1 J	<10 J	<10
Toluene	<10	1 J	2 J	<10 J	2 J
Xylene	<10	<10	<10	<10 J	2 J
Aniline	63	380 D	200 D	320 D	700 D
N,N–dimethylaniline	<10	2 J	3 J	4 J	5 J

TW-01

Date	12/96	9/98	2/99	7/99	3/00	9/00	3/01
Benzene	82	16	24	16	16	11 J	5 J
Toluene	4 J	<10	2 J	1 J	<10	<10 J	<10
Ethylbenzene	6 J	4 J	2 J	3 J	<10	<10 J	<10
Xylene	4 J	<10	2 J	<10	<10	<10 J	<10
Aniline	2,080 D	4,400 DEJ	9,000 D	4,400 D	280 D	15	<10
N,N–dimethylaniline	13	4 J	5 J	4 J	4 J	2 J	3 J
Methylene Chloride	4 J	<10	<10	<10	<10	<10 J	<10

MW-32

Date	9/98	7/99	3/00	9/00	3/01
Acetone	<10	3 J	<10	<10 J	<10
Benzene	16	14	5 J	12 J	5 J
Toluene	2 J	2 J	<10	<10 J	<10
Ethylbenzene	5 J	4 J	<10	<10 J	<10
Xylene	3 J	<10	<10	<10 J	<10
Trichloroethene	<10	56	<10	<10 J	<10
Aniline	6,300 D	<10	800 D	4,500 D	1,900 D
N,N–dimethylaniline	4 J	3 J	<10	<10	2 J

MW-31

Date	9/98	7/99	3/00	9/00	3/01
Acetone	<10	<10	<10	<10 J	21
Benzene	12	16	16	12 J	11
Aniline	34	230 D	3 J	10	<10
N,N–dimethylaniline	4 J	3 J	4 J	6 J	5 J

MW-9S

Date	1/89	11/89	11/91	8/95	7/99	3/00	9/00	3/01
Acetone	1,800	<1,000	<100	<1,000	<10	<10	<10 J	<10
Benzene	NA	48	<10	11 JD	4 J	2 J	11 J	1 J
Toluene	64	25	8	26 JD	2 J	2 J	2 J	3 J
Ethylbenzene	130	80	19	68 D	9 J	11	6 J	17
Xylene	270	80	30	226 JD	16	21	18 J	61
Aniline	660	670	95	50	<10	2 J	1 J	2 J
N,N–dimethylaniline	1,200	150	16	28	5 J	8 J	6 J	11
Methylene Chloride	1,500	<10	<1	110 D	<10	<10	<10 J	<10

MW-33

Date	9/98	2/99	7/99	3/00	9/00	3/01
Acetone	<10	<10	5 J	<10 J	45 J	17 J
Benzene	<10	<10	2 J	<10	4 J	<20
Toluene	<10	<10	0.7 J	<10	1 J	<20
Aniline	9 J	120	150	51	540 D	1,300 D
N,N–dimethylaniline	6 J	6 J	8 J	7 J	33	16
Methylene Chloride	<10	<10	5 J	11	330 DJ	370 B

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
Acetone	<100	<100	<100	<100	<100	<100	<1,000	<10	0.7 JN	<10	6 J	<10
Toluene	<1	<1	<1	<1	<1	<1	<5	<10	<10	<10	3 J	<10
Xylene	<1	<1	<1	<3	<3	<3	<5	<10	<10	<10	5 J	<10
Methylene Chloride	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10 J	10

MW-3S

Date	3/88	1/89	11/89	11/91	8/95	9/98	7/99	3/00	9/00	3/01
Acetone	<100	<10,000	<10,000	2,900	<1,000	<10	<10	<10 J	<10 J	<10
Benzene	<1	<100	<100	10	<5	<10	1 J	<10	1 J	<10
Toluene	<1	120	<100	10	<5	<10	0.7 J	<10	2 J	<10
Ethylbenzene	<1	<100	<100	4	<5	<10	<10	<10	<10 J	<10
Xylene	<1	<100	<100	31	<5	<10	<10	<10	<10 J	<10
Trichloroethene	80	1,100	100	<10	<5	<10	<10	<10	<10 J	<10
Aniline	<10	<11	<52	790	15	<10	9 J	<10	2 J	<10
N,N–dimethylaniline	<10	5,870	440	170	2 J	<10	<10	<10	1 J	<10
Methylene Chloride	110	4,700	2,700	<10	<10	<10	<10	<10	<10 J	<10

MW-8S

Date	1/89	11/89	11/91	8/95	9/98	2/99	7/99	3/00	9/00	3/01
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
Benzene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	22 J	<100,000	<50,000 J	<50,000
Toluene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	240 J	<100,000	<50,000 J	<50,000
Ethylbenzene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	88 J	<100,000	<50,000 J	<50,000
Xylene	<10,000	<10,000	<10,000	<250,000 D	<10,000	<20,000	320 J	<100,000	<50,000 J	<50,000
Methanol	430,000	300,000	150,000	22,000	7,900	16,000 JN	17,000	30,000 J	14,000 J	53,000
Trichloroethene	<10,000	<10,000	<10,000	60,000 D	3,300 J	11,000 J	11,000 J	<100,000	8,200 J	11,000 J
Aniline	2,900	8,500	8,000	<25,000 D	1,200 J	30,000 D	24,000	62,000 J	42,000 J	90,000 D
N,N–dimethylaniline	24,000	52,000	33,000	380,000 D	26,000 D	120,000 D	77,000	270,000 D	80,000	120,000 D
Methylene Chloride	3,200,000	2,800,000	1,800,000	7,700,000 D	140,000	650,000 DB	460,000 D	1,300,000	540,000 BJ	980,000

MW-28

Date	9/98	7/99	3/00	9/00	3/01
Methanol	2,200	<1,000	<1,000 J	<1,000 J	<1,000
Aniline	846 D	1,100 D	1,300 D	540 DJ	3,200 D
N,N–dimethylaniline	84	40	30	<10	7 J
Methylene Chloride	84,000 J	36,000 D	130,000 J	8,100 BJ	5,900 B

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
N,N–dimethylaniline	<10	<10	<10	<10	0.8 J	<10	<10	<12	<10	<10	<10	<10

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
N,N–dimethylaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10 J	<10	3 J

PZ-5S

Date	11/89	12/94	2/96	2/97	9/98	6/99	7/99	9/00
Acetone	<100	<10	<1,000	5 J	<10	<10 J	<10 J	<10 J

MW-19

Date	11/89	12/94	8/95	10/95	2/96	8/96	2/97	8/97	9/98	2/99	7/99	3/00	9/00	3/01
N,N–dimethylaniline	<10	<10	<10	NA	<10	<10	<10	<10	5 J	<10	<10	<10	<10	<10

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
Acetone		<100	<100	<1,000	NA	11	<10	<10	<10	<10 J	<10
Benzene	<1		<1	<5	<5	<10	<10	1 J	8 J	15 J	8 J
Trichloroethene	<1	<1	<1	<5	2J	<10	<10	<10	<10	<10 J	<10
Aniline	<10	<10	<10	<5	NA	<5	<5	<10	<5	24 J	<10
N,N–dimethylaniline	<10	<10	<10	<10	NA	<10	<10	<10	<10	4 J	<10
Methylene Chloride	<1	<1	<1			<10	<10	<10	<10	1 J	<10

MW-30

Date	9/98	2/99	7/99	3/00	9/00	3/01
Acetone	<10	<10	<10	<10	<10 J	<10
Benzene	<10	<10	0.7 J	<10	<10 J	<10
Trichloroethene	<10	<10	0.5 J	<10	<10 J	<10
Aniline	<10	<10	<10	18	8 J	8 J
N,N–dimethylaniline	<10	2 J	1 J	2 J	2 J	2 J
Methylene Chloride	<10	<10	<10	4 J	2 J	<10

MW-29

Date	9/98	2/99	7/99	3/00	9/00	3/01
Acetone	<10	7 J	<10	<10	<10 J	<10
Benzene	<10	<10	<10	<10	<10 J	<10
Xylene	2 J	1 J	<10	<10	<10 J	<10
Aniline	<10	5 J	2 J	450 D	24 J	30
N,N–dimethylaniline	13	4 J	4 J	6 J	4 J	4 J

MW-25D

Date	8/95	10/95	8/96	8/97	2/99	3/00	9/00	3/01
Acetone	<1,000	NA	15	<10	<10	<10	<10	<10
Trichloroethene	<5	3 J	<10	<10	<10	<10	<10	<10
N,N–dimethylaniline	1 J	<10	<10	<11	<10	<10	<10	<10
Aniline	<5	<5	<5	<5	<5	<10	<5	5 J

MW-25S

Date	8/95	10/95	8/96	8/97	2/99	6/99	7/99	3/00	9/00	3/01
Aniline	<5	<5	<5	<5	130	110	5 J	<5	<10 J	<10
N,N–dimethylaniline	0.7 J	<10	<10	<10	<10	21 J	<10	<10	<10	<10

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
Acetone	<10	<1,000	<1,000	<10	<10	12	<10	<10	<10 J	<10 J	<10	<10	<10
Benzene	<5	<5	<5	7	<5	11	62	<10	<10 J	<5	<5	<10	<10
Aniline	<10	<10	<10	<10	<10	<10	7 J	<10	2 J	<10	2 J	<10	<10
N,N–dimethylaniline	<10	<10	<10	<10	<10	<10	7 J	<10	2 J	<10	2 J	<10	<10

MW-27

Date	9/98	7/99	3/00	9/00	3/01
Acetone	23	<10 J	<10 J	<10 J	<10
Benzene	3 J	4 J	8 J	4 J	5 J
Toluene	4 J	2 J	<10	<10	<10
Ethylbenzene	<10	3 J	8 J	3 J	5 J
Xylene	3 J	8 J	2 J	1 J	2 J
Aniline	340 DJ	740 D	110 D	16 J	280 D
N,N–dimethylaniline	<10	<10	1 J	2 J	2 J
Methylene Chloride	<10	<10	<10	1 J	<10

PZ-5S

Date	11/89	11/90	11/91	11/92	8/95	8/96	8/97	2/99	6/99	3/00	3/01
N,N–dimethylaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10 J	<10	3 J

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 — GROUND–WATER MONITORING WELL
- PZ-A — PIEZOMETER
- BIANNUAL DOWNGRADIENT PERIMETER GROUND–WATER MONITORING LOCATION
- MW-26S — PUMPING WELL
- PZ-8S & PZ-8D — DECOMISSIONED PIEZOMETERS
- BOUNDARY OF IMPACTED AREA
- GROUND–WATER WITHDRAWAL TRENCH
- GROUND–WATER INFILTRATION TRENCH
- PIPING TO BUILDING
- PIPING FROM BUILDING
- AREA OF RELATIVELY HIGHER CONCENTRATIONS OF COCs

SAMPLE IDENTIFICATION

MW-35

Date	9/98	7/99	3/00	9/00	3/01
Benzene	<10	0.7 J	<10	<10 J	<10
Aniline	6 J	3 J	<5	<10	<10
N,N–dimethylaniline	5 J	4 J	2 J	3 J	<10

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. < = COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
6. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
7. D = CONCENTRATION IS BASED ON DILUTED SAMPLE ANALYSIS.
8. E = IDENTIFIES COMPOUNDS WHOSE CONCENTRATIONS EXCEED THE CALIBRATION RANGE OF THE INSTRUMENTS.
9. NA = NOT AVAILABLE.
10. B = THE COMPOUND HAS BEEN FOUND IN THE SAMPLE AS WELL AS IN IT'S ASSOCIATED BLANK; IT'S 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. DETECTION EXCEEDING NYSDEC GROUND–WATER QUALITY STANDARDS ARE INDICATED BY SHADING.
13. THE ANILINE DATA FOR THE 9/98 SAMPLING EVENT FOR MW–16, 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.
14. ONLY DETECTED COC's ARE PRESENTED ON THIS FIGURE.

SCALE:
120' 0 120'

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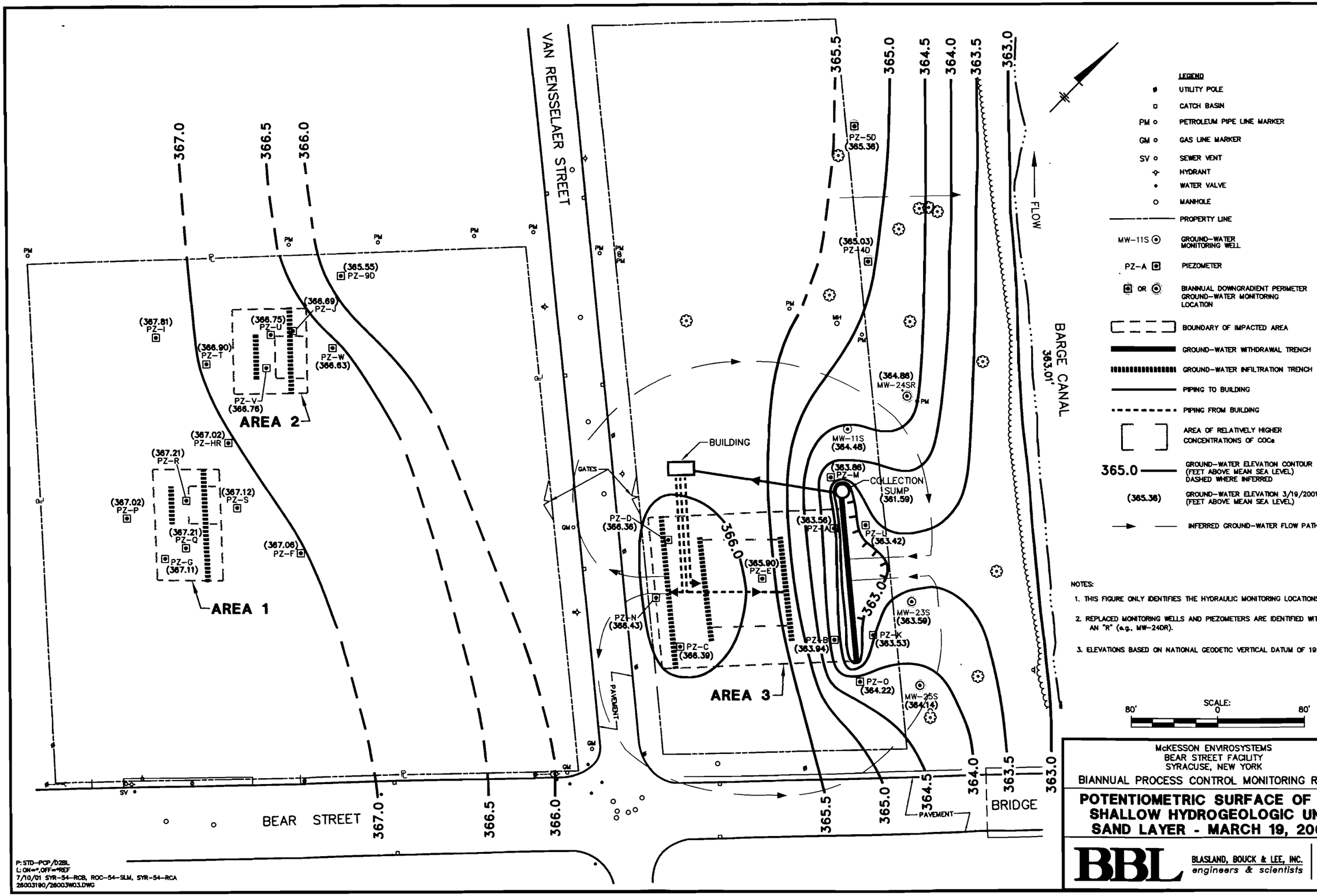
SUMMARY OF HISTORIC GROUNDWATER MONITORING DATA

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2

P:\STD–PCP\D2BL
L: ON= * OFF= *REF*
7/10/01 SYR–54–RCB RCA
28003190/28003C05.DWG



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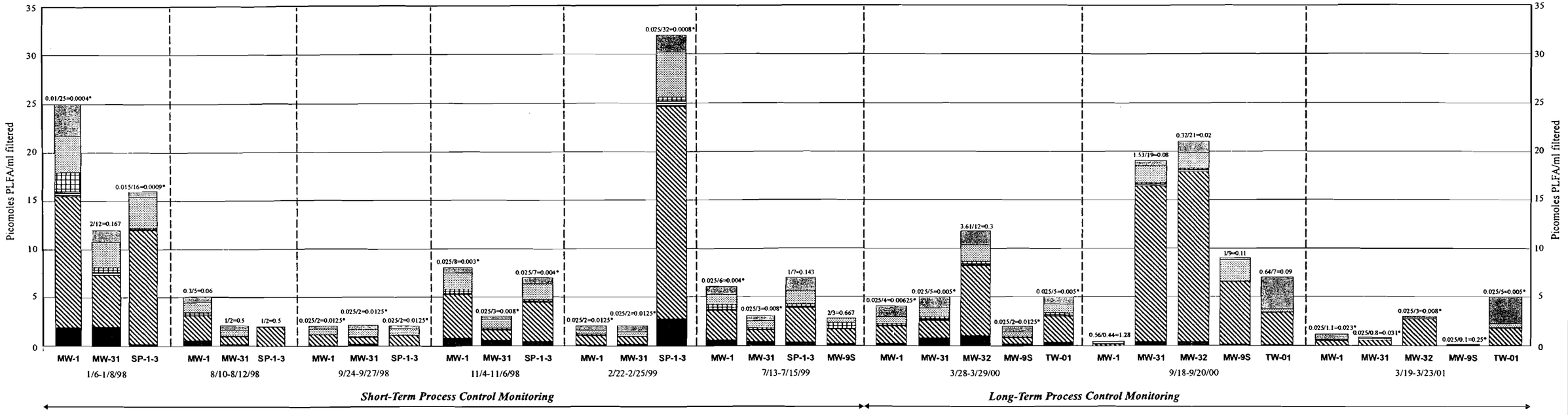
POTENTIOMETRIC SURFACE OF THE SHALLOW HYDROGEOLOGIC UNIT SAND LAYER - MARCH 19, 2001

BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 3

P:STD-POP/D2BL
L:ON=*,OFF=*REF
7/10/01 SYR-54-RCB, ROC-54-SLM, SYR-54-RCA
26003190/26003W03.DWG



NOTES:

1. Ratio above stacked bar graph is PHA to PLFA. PLFA/PHA ratio above 0.2 suggests unbalanced growth of the microbial community.
2. * = Ratio is half the PHA detection limit to PLFA.
3. Start up operation began on June 10, 1998.
4. Initial discrete RAMM injections were conducted from August 5 to August 12, 1998.
5. MW-9S was not scheduled to be sampled during the short-term process control monitoring program, but was sampled in July 1999 (week 52) to provide additional information regarding Area 1. This well is part of the long-term process control monitoring program.
6. Additional discrete RAMM injections were conducted on August 28 through August 30, 2000.

06/01 SYR-D54-DJH
26003190/26003n03.cdr

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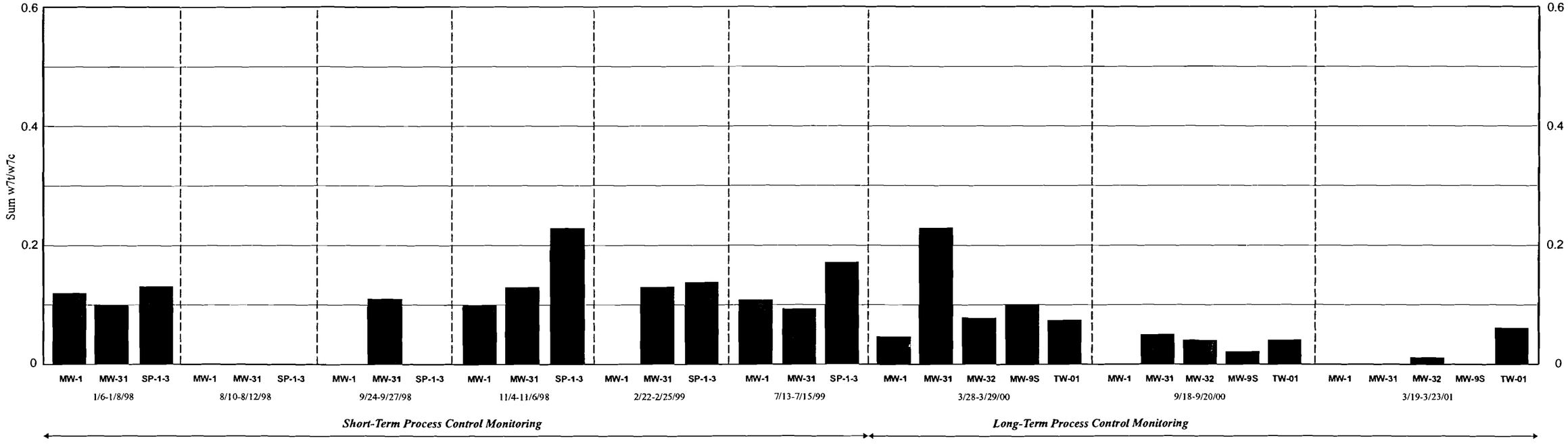
AREA 1 - BIOMASS PLFA DISTRIBUTION

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 4



NOTES:

1. Sum w7t/w7c = The sum of 16:1w7t/16:1w7c and 18:1w7t/18:1w7c.
2. The ratios 16:1w7t/16:1w7c and 18:1w7t/18:1w7c show the effect of toxicity or starvation on the microbial community. The range (for the sum w7t/w7c) is generally between 0.1 (healthy) to 0.6 (starved). A higher ratio indicates increased stress.
3. MW-9S was not scheduled to be sampled during the short-term process control monitoring program, but was sampled in July 1999 (week 52) to provide additional information regarding Area 1. This well is part of the long-term process control monitoring program.

05/01 SYR-D54-DJH
26003190/26003n01.cdr

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BIANNUAL PROCESS CONTROL MONITORING REPORT

AREA 1 - ENVIRONMENTAL STRESS

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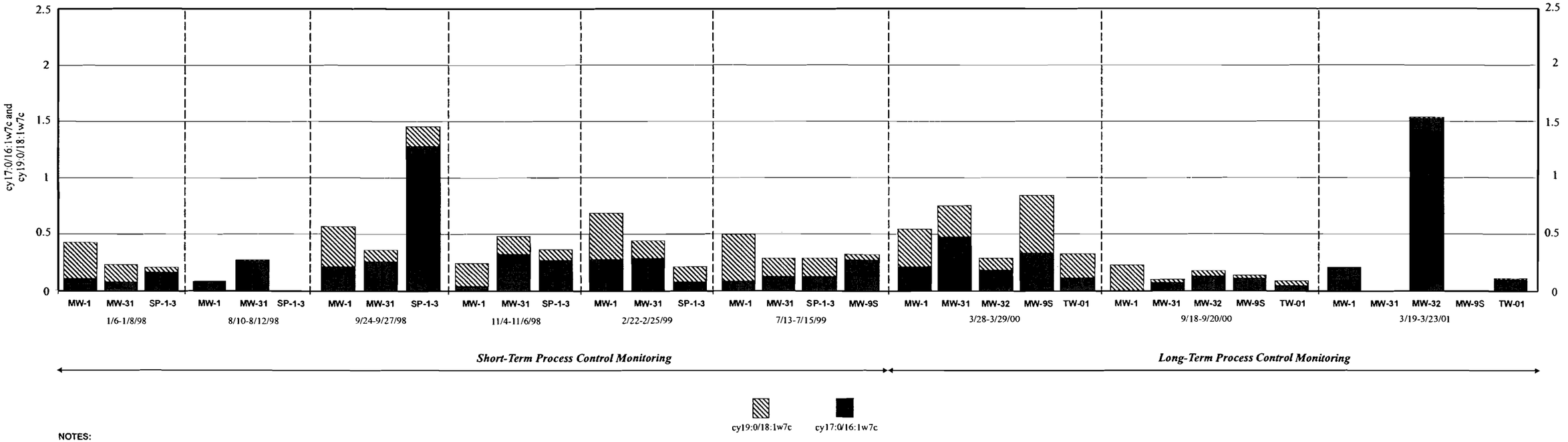
FIGURE 5



NOTES:

1. The two ratios: cy17:0/16:1w7c and cy19:0/18:1w7c express a growth rate of the microbial community. The sum of these two ratios falls within the range of 0.1 (log phase) to 5.0 (stationary phase). A lower ratio suggests a higher turnover rate.
2. MW-9S was not scheduled to be sampled during the short-term process control monitoring program, but was sampled in July 1999 (week 52) to provide additional information regarding Area 1. This well is part of the long-term process control monitoring program.

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BIANNUAL PROCESS CONTROL MONITORING REPORT

AREA 1 - TURNOVER RATE

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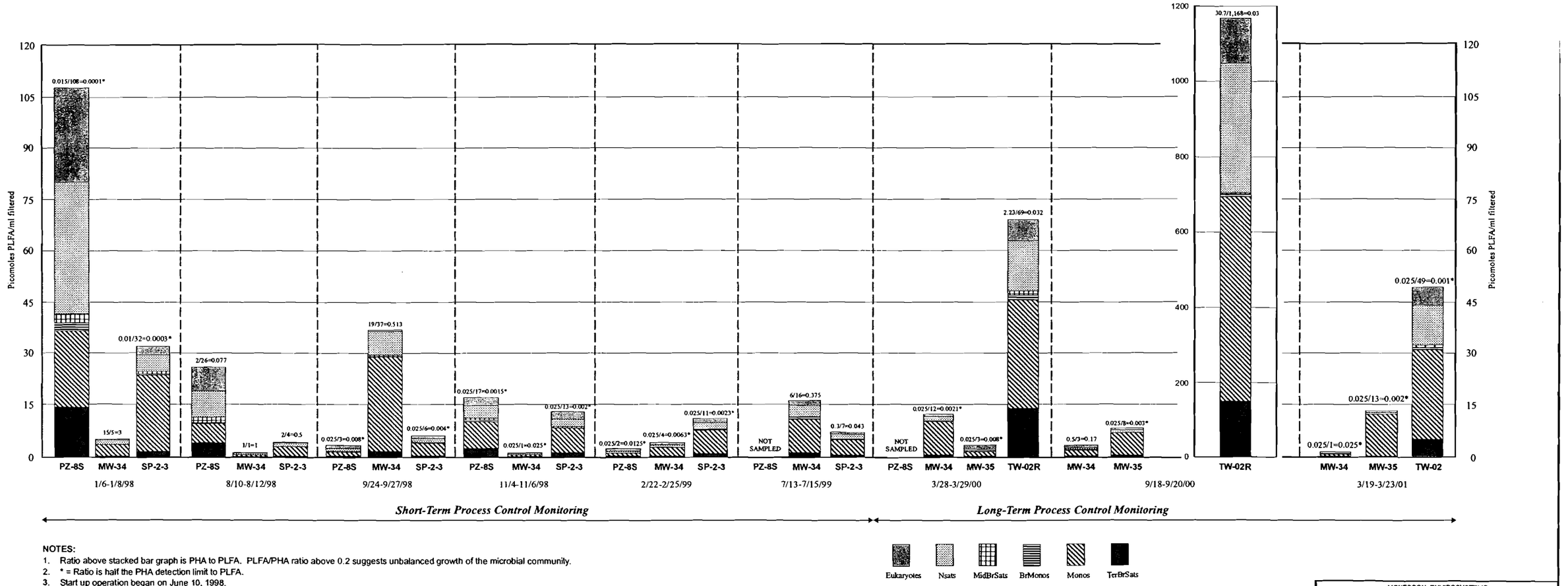
FIGURE 6

06/01 SYR-D54-DJH
26003190/26003n02.cdr



NOTES:

1. Ratio above stacked bar graph is PHA to PLFA. PLFA/PHA ratio above 0.2 suggests unbalanced growth of the microbial community.
2. * = Ratio is half the PHA detection limit to PLFA.
3. Start up operation began on June 10, 1998.
4. Initial discrete RAMM injections were conducted from August 5 to August 12, 1998.
5. PZ-8S was not sampled in July 1999 and in March 2000 because this piezometer was damaged. This piezometer was decommissioned in August 2000.
6. Additional discrete RAMM injections were conducted on August 28 through August 30, 2000.

06/01 SYR-054-DJH
26003190/26003n05.cdr

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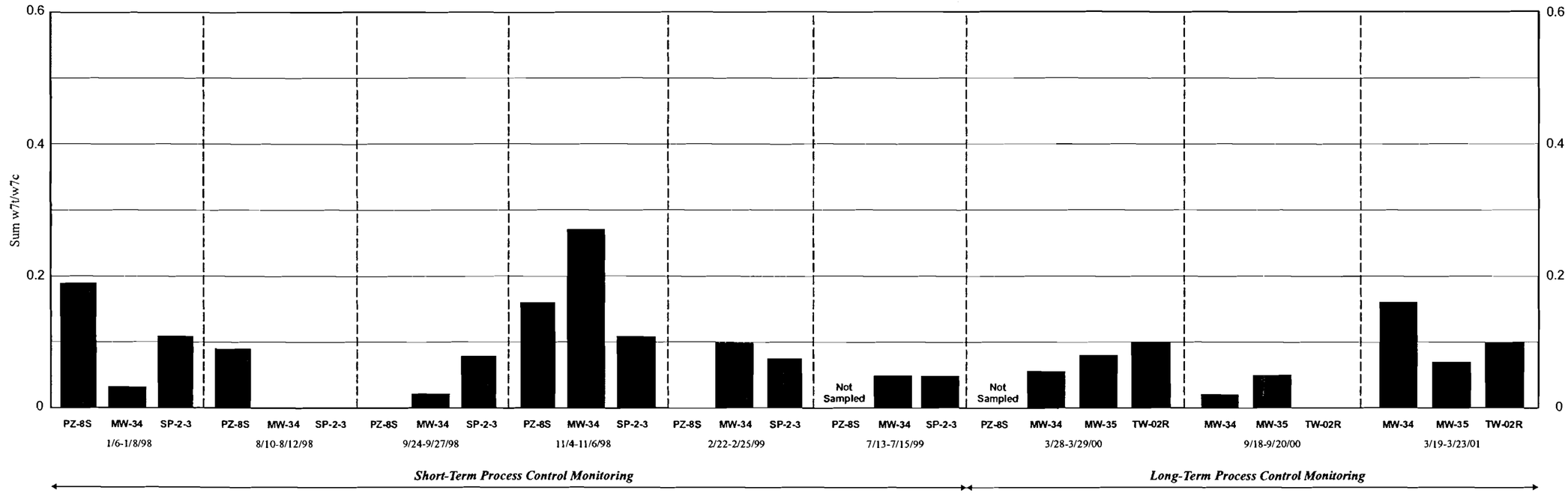
BIANNUAL PROCESS CONTROL MONITORING REPORT

AREA 2 - BIOMASS PLFA DISTRIBUTION

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 7



NOTES:

1. Sum w7t/w7c = The sum of 16:1w7t/16:1w7c and 18:1w7t/18:1w7c.
2. The ratios 16:1w7t/16:1w7c and 18:1w7t/18:1w7c show the effect of toxicity or starvation on the microbial community. The range (for the sum w7t/w7c) is generally between 0.1 (healthy) to 0.6 (starved). A higher ratio indicates increased stress.
3. PZ-8S was not sampled in July 1999 and in March 2000 because this piezometer was damaged. This piezometer was decommissioned in August 2000.

06/01 SYR-D54-DJH
26003190/26003n04.cdr

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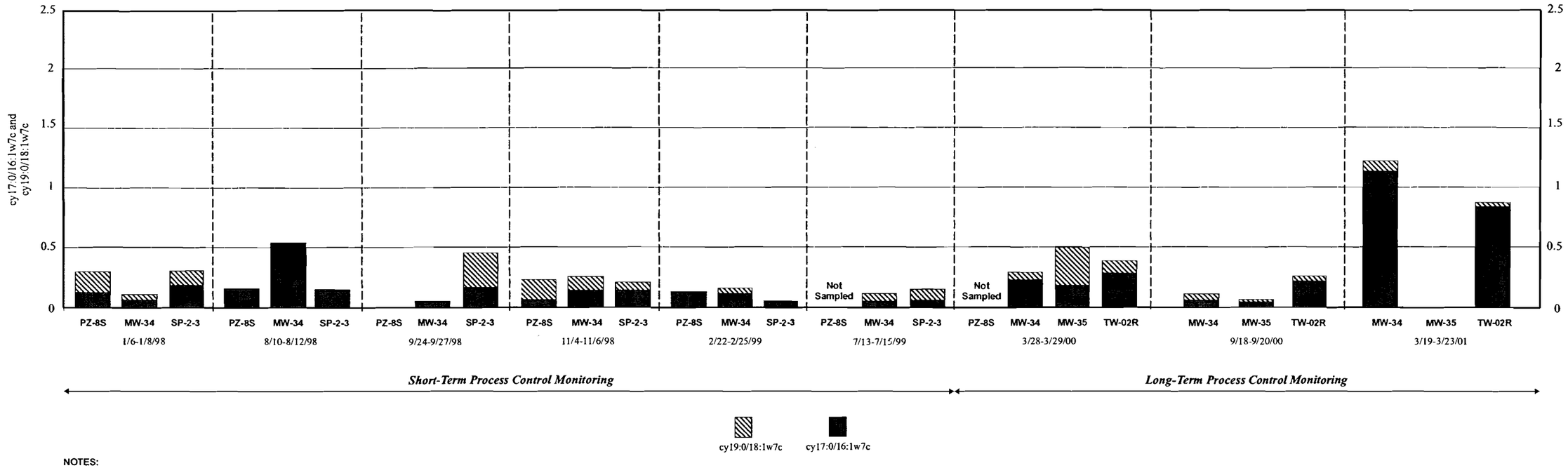
BIANNUAL PROCESS CONTROL MONITORING REPORT

AREA 2 - ENVIRONMENTAL STRESS

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 8



NOTES:

1. The two ratios: cy17:0/16:1w7c and cy19:0/18:1w7c express a growth rate of the microbial community. The sum of these two ratios falls within the range of 0.1 (log phase) to 5.0 (stationary phase). A lower ratio suggests a higher turnover rate.
2. PZ-8S was not sampled in July 1999 and in March 2000 because this piezometer was damaged. This piezometer was decommissioned in August 2000.

06/01 SYR-D54-DJH LBR
26003190/26003n06.cdr

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AREA 2 - TURNOVER RATE

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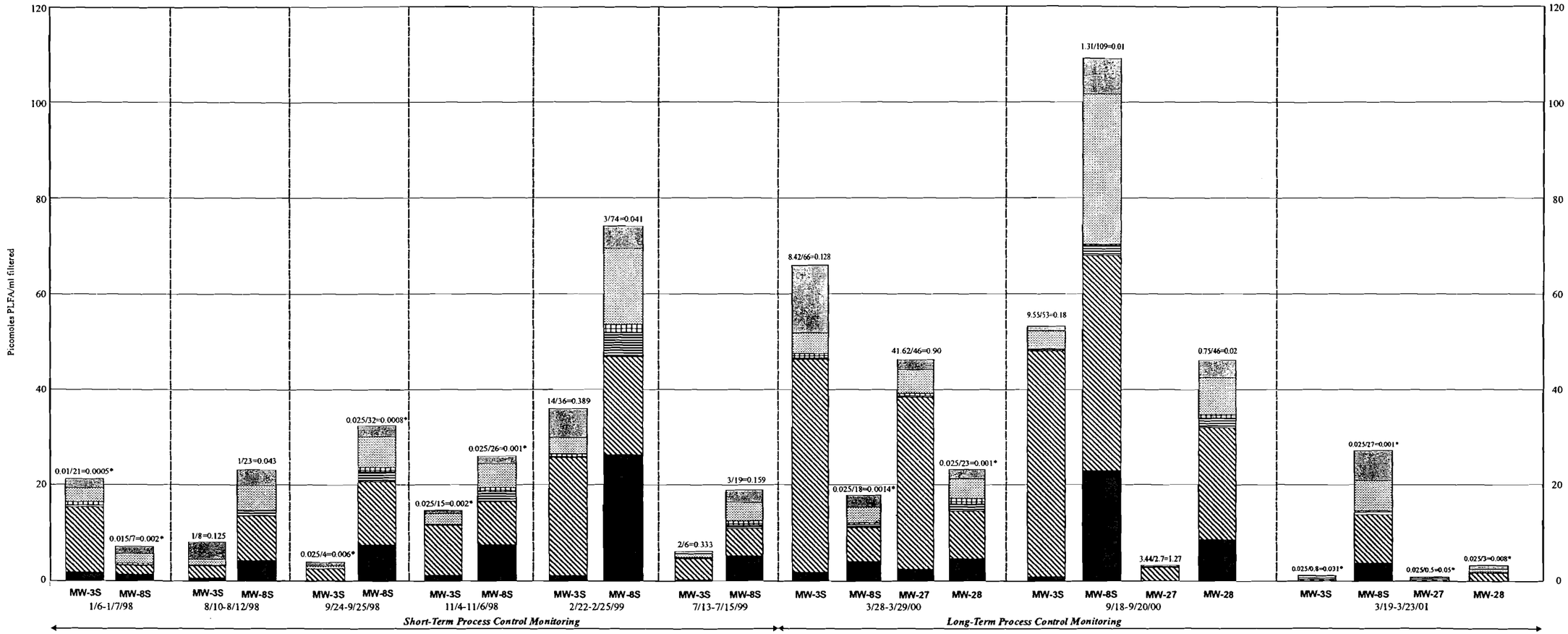
FIGURE 9



NOTES:

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2. * = Ratio is half the PHA detection limit to PLFA.
3. Start up operation began on June 10, 1998.
4. Initial discrete RAMM injections were conducted from August 5 to August 12, 1998.
5. Additional discrete RAMM injections were conducted on August 28 through August 30, 2000.

06/01 SYR-D54-DJH
26003190/26003n09.cdr

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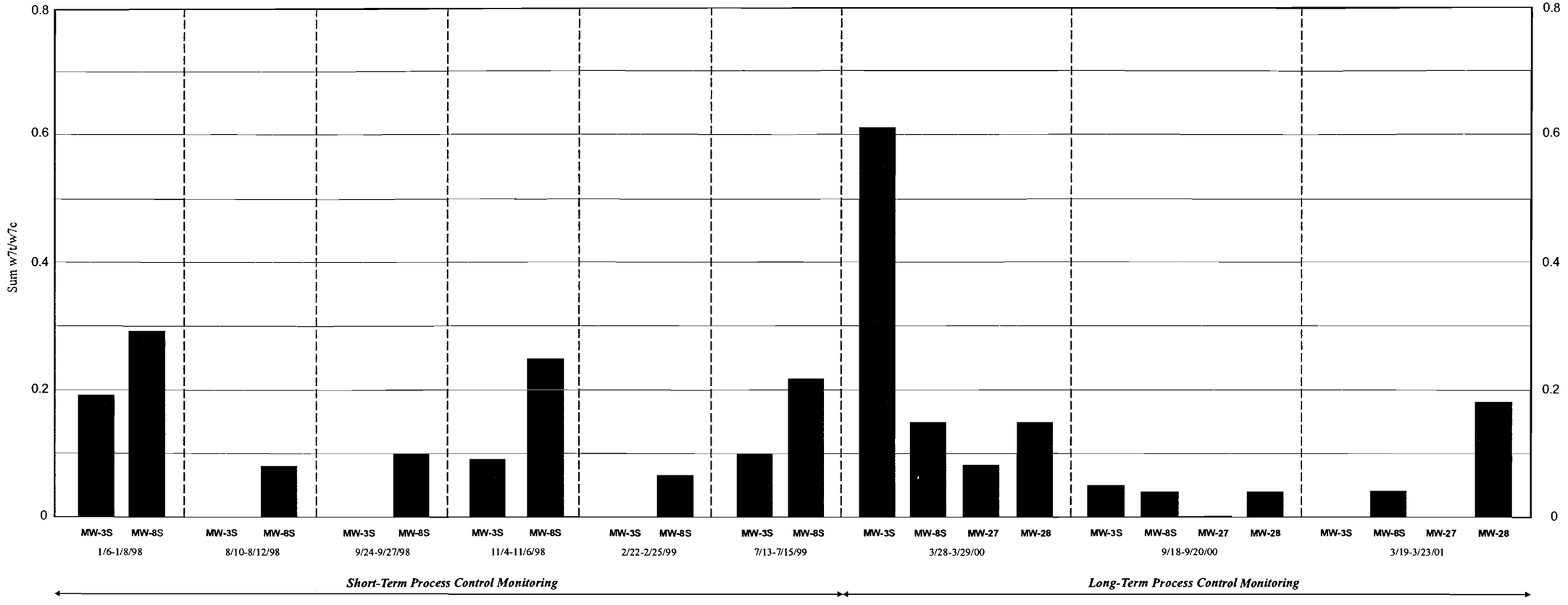
AREA 3 - BIOMASS
PLFA DISTRIBUTION

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 10



NOTES:

1. Sum w7t/w7c = The sum of 16:1w7t/16:1w7c and 18:1w7t/18:1w7c.
2. The ratios 16:1w7t/16:1w7c and 18:1w7t/18:1w7c show the effect of toxicity or starvation on the microbial community. The range for the sum w7t/w7c) is generally between 0.1 (healthy) to 0.6 (starved). A higher ratio indicates increased stress.

06/01 SYR-D54-DJH
26003190/26003n06.cdr

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BIANNUAL PROCESS CONTROL MONITORING REPORT

AREA 3 - ENVIRONMENTAL STRESS

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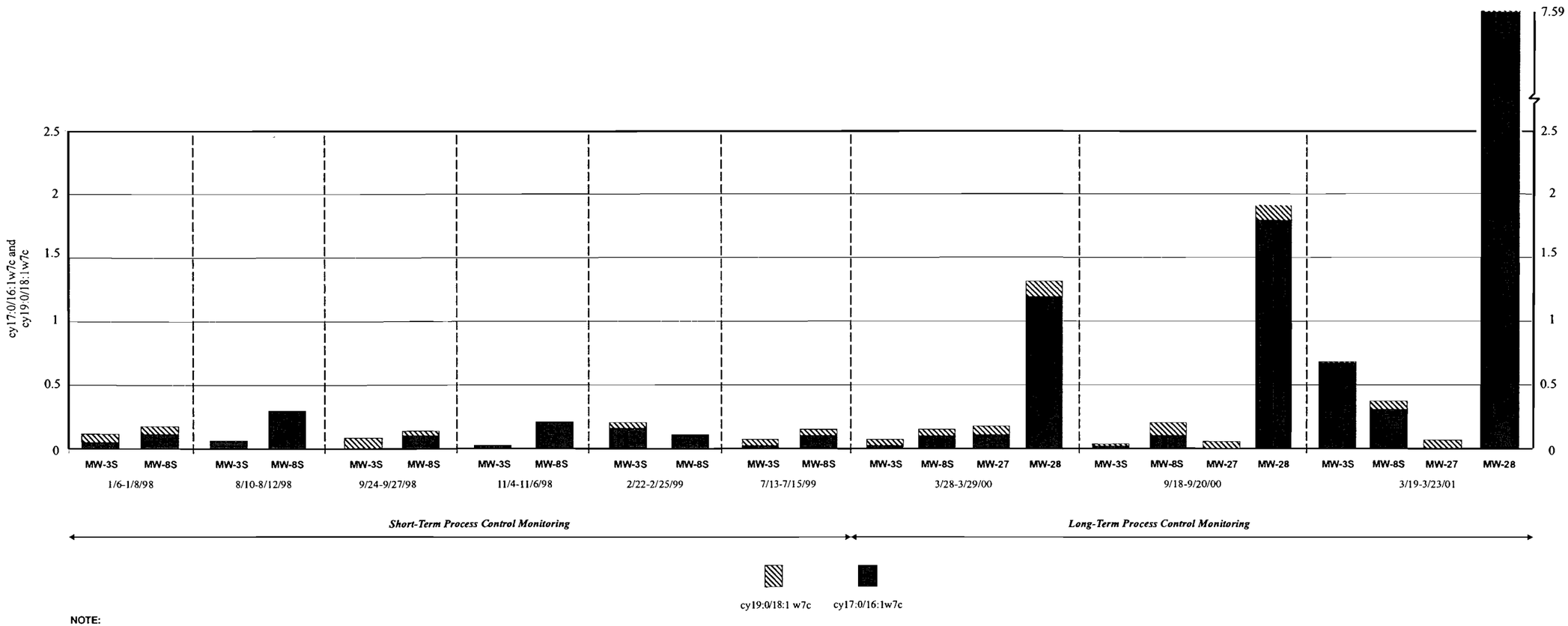
FIGURE 11



NOTE:

1. The two ratios: cy17:0/16:1w7c and cy19:0/18:1w7c express a growth rate of the microbial community. The sum of these two ratios falls within the range of 0.1 (log phase) to 5.0 (stationary phase). A lower ratio suggests a higher turnover rate.

06/01 SYR-D54-DJH
26003190/26003n07.cdr

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BIANNUAL PROCESS CONTROL MONITORING REPORT

AREA 3 - TURNOVER RATE

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 12

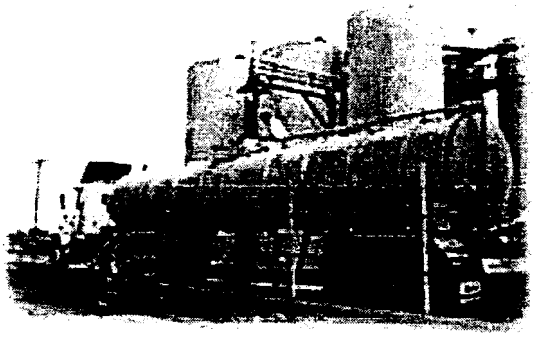
Attachment 1

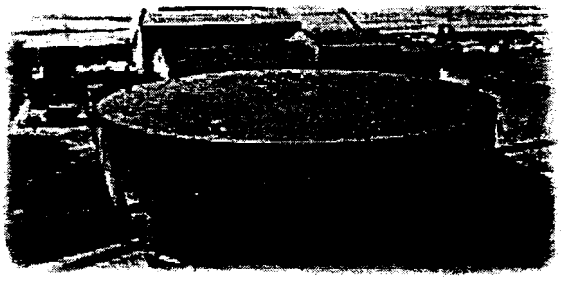
Information Regarding Suga-Lik™ Blackstrap Molasses

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Suga-Lik® U.S. Sugar Corporation Molasses & Liquid Feed Department
"An Employee-Owned Company"

Blackstrap Molasses





U.S. Sugar Corporation's Molasses and Liquid Feed Department markets its own pure sugar cane molasses, an important by-product of sugar cane processing.

Blackstrap Molasses can be valuable for numerous uses such as animal feed, feed milling ingredient, fermentation, soil amendment and other miscellaneous industrial processes. For example, as a fermentation feedstock in the production of yeast, lysine and ethanol, blackstrap molasses contains high concentrations of C6 sugars and other fermentable carbohydrates as well as significant concentrations of "B" vitamins, especially biotin, which enhance fermentation rates. Molasses can also be used as an environmentally friendly and biodegradable agent for dust and wind erosion. In the production of carbon black pellets and charcoal briquettes, molasses can serve as a relatively low-ash binder. And, as a soil amendment, molasses contains high carbon and nutrient content, which nurtures soil and composting mircrobes.

U.S. Sugar is basic in cane molasses. This is important in that the Company has control of the production of its molasses from the sugar cane genetics, to the agricultural practices, to harvest and to processing.

At U.S. Sugar's Research Department, our technical staff has the expertise and knowledge on molasses attributes and is willing to consult with industrial R&D departments to potentially fit molasses into various applications.

The Company's molasses is available in truckload, rail tank car and ocean cargo quantities. See the weekly USDA Molasses Market News Report for the South Florida quote for current prices.

For more information about Suga-Lik™ liquid feeds or pure sugar cane molasses call: 1-800-940-7253 or click on "Contact Us" below to send us an email message.

UNITED STATES SUGAR CORPORATION
Molasses & Liquid Feeds Division
P.O. DRAWER 1207
CLEWISTON, FL 33440

09/02/99

Typical "AS FED" Composition of
U. S. Sugar's Heavy Mill Run Cane Molasses

Brix, spindle	86.0 degrees	
Weight/gallon	12.0 lbs	
Nitrogen	1.01 %	
Crude Protein	6.30 %	
Total Sugars	49.9 %	NRC Energy Density (as fed)
Dry Matter	78.5 %	NE maint. 0.595 mcal/lb
Moisture	21.5 %	NE gain 0.378 mcal/lb
Ash	16.0 %	NE lact. 0.578 mcal/lb
Organic Matter	62.5 %	
Reducing Substances, as Dextrose	11.5 %	
Sucrose	35.9 %	
Fructose	5.6 %	
Glucose	2.6 %	
pH	5.5	
Calcium	0.8 %	
Phosphorus	negligible	
Potassium	4.2 %	
Chloride	3.1%	
Magnesium	0.27 %	
Sulfur	0.78 %	
Sodium	0.03 %	
Copper	14 ppm	
Iron	130 ppm	
Manganese	5 ppm	
Zinc	8 ppm	
Cobalt	negligible	
Iodine	negligible	
Selenium	negligible	
Biotin	3 ppm	
Folic Acid	0.04 ppm	
Inositol	6000 ppm	
Calcium Pantothenate	60 ppm	
Pyridoxine	4 ppm	
Riboflavin	2.5 ppm	
Thiamine	1.8 ppm	
Niacin	500 ppm	
Choline	700 ppm	

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