2003/2004
Monitored Natural Attenuation Report For The

Onalaska Municipal Landfill Site
Onalaska, Wisconsin

sys on standby as of 11/26/01

ENSR Corporation
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1.0 INTRODUCTION

This annual report for the Onalaska Municipal Landfill (Site) includes monitoring data for the fall 2003 (October) and spring 2004 (April) sampling events. The groundwater monitoring was completed in compliance with the Monitored Natural Attenuation Plan, dated December 4, 2001 with some minor variances. The variances were due to the WDNR approved abandonment of two wells (upgradient wells, MW-1S and MW-1M) prior to the October 2003 sampling event, the sampling of a replacement upgradient monitoring well (MW-1SR), insufficient water in three wells (AW-1, AW-13, AW-28) during the October 2003 sampling event and the sampling of a newly installed residential well owned by Mr. Andrew Pretasky.

The Monitored Natural Attenuation (MNA) Plan was prepared for Region 5 of the U.S. Environmental Protection Agency (USEPA) per Revision 1 of the Statement of Work dated July 30, 2001. The USEPA decided, at the recommendation of the Wisconsin Department of Natural Resources (WDNR), to temporarily discontinue active groundwater extraction and to evaluate natural attenuation of contaminants in the groundwater. The groundwater extraction system was shut down on November 26, 2001 and remains off during the MNA study. This report discusses the purpose of MNA, background information on the Site, details on the MNA study, a summary of current contaminant concentrations and distribution, and discusses the effect natural attenuation has on controlling the spread of contaminants in groundwater.

1.1 Purpose

The MNA program was implemented in the fall of 2001 to replace the original groundwater-monitoring program. The primary objectives of the MNA program are to assess:

- Whether there are meaningful trends of contaminant mass decreasing over time at appropriate monitoring points.
- Whether there are indicators of active natural attenuation at the site based on hydrogeological and geochemical data.
- Whether natural attenuation is an acceptable modification to the remedy for the Site.

The extraction wells and treatment system have been placed on "stand by" and will remain off for the duration of the MNA study. The study is expected to continue through 2005, while the effectiveness of natural attenuation is evaluated. If it is determined that the natural attenuation will achieve the clean up criteria, then MNA would be implemented, once approved, as a modification to the Record of Decision (ROD) remedy.

1.2 Background

1.2.1 Physical Background

The Site is approximately 10 miles north of the city of La Crosse, Wisconsin, near the confluence of the Mississippi and Black rivers. **Figure 1-1**, attached, illustrates the Site Location. The Site was mined, as a sand and gravel quarry, and then used as a municipal and industrial waste landfill, between 1969 and 1980. Unconsolidated deposits at the site are 135 to 142 feet thick and consist primarily of sand and gravel. Beneath the unconsolidated deposits lies sandstone bedrock. The natural groundwater flow direction in the unconsolidated material (documented prior to groundwater extraction) is predominantly south-southwesterly toward the wetlands that border the Black River. During high river stages (i.e. spring), the groundwater flow direction is toward the south-southeast. Average groundwater flow velocity beneath the site was estimated during the Remedial Investigation (RI) to range between 55 and 110 feet per year, with an estimated average of 70 feet per year.

1.2.2 Contaminant Background

Industrial, commercial, and municipal wastes are reportedly mixed throughout the landfill deposits. For a time, open burning occurred at the site. Until early 1971, when open burning was banned, industrial solvents were burned regularly, at apparently random locations throughout the landfill. Some refuse was also burned periodically. Open burning reportedly continued, until as late as 1979, even though banned.

Previous Site investigations determined that liquid industrial wastes disposed of at the landfill consisted primarily of naphtha-based solvents, used in a metal cleaning process and solvent wastes from paint spray gun cleaning and machine shop cleaning fluids. At least two kinds of naphtha were disposed of at the site; high-flash naphtha and VM&P or Stoddard naphtha. These naphtha's were probably used in a paint cleaning process at one of the nearby plants and as general solvents.

In September 1982, the DNR sampled and analyzed water from Site monitoring wells and nearby private wells for compliance with drinking water standards for organic and inorganic constituents. The investigations indicated that groundwater contamination had occurred. The barium concentrations in the water from a residential well south of the Site exceeded the drinking water standard, and five organic compounds were detected above background levels.

On May 2, 1983, an EPA Potential Hazardous Waste Site inspection report was submitted. In September 1984, the Onalaska Landfill was placed on the National Priorities List.

The original groundwater-monitoring program at the Site was implemented in 1995. From 1995 through the 2001 spring monitoring event, groundwater samples were obtained from monitoring wells, extraction wells, and two nearby residential wells. In addition to sampling, groundwater elevations were measured in monitoring wells, air injection wells (i.e. Bioventing wells), and piezometers. From March 1995, through December 1996, sampling was conducted quarterly. In 1997, the sampling frequency was reduced from quarterly to semiannually. The wells included in the groundwater-monitoring program, as well as the parameters analyzed have changed on several occasions, since the groundwater monitoring program was implemented in 1995. The rationale for the changes prior to the MNA plan and previous groundwater monitoring results are documented in the Annual Groundwater Quality and Capture Reports. Each change was approved by the USEPA prior to being implemented.

Preliminary investigations conducted at the Site determined that contaminant concentrations in the groundwater at individual monitoring well locations exceeded one or more Federal or State standards or criteria. The Safe Drinking Water Act maximum contaminant levels (MCLs) for arsenic, barium, benzene, 1,1-dichloroethene (1,1 DCE), toluene, 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene, and xylene were exceeded at one or more monitoring well locations. Concentrations of toluene were observed as high as 43,000 ug/L. Of the three chlorinated compounds initially analyzed for, 1,1,1-TCA was the most prevalent, and was found at concentrations as high as 730 ug/L. The majority of the VOCs detected were found in shallow monitoring wells (MW-5S and MW-3S and B4S) and consisted of benzene, toluene, ethylbenzene and xylenes (BTEX). The vertical extent of BTEX and chlorinated compounds contamination was found to be confined to the upper 10 to 20 feet of the aquifer. However, ethylbenzene,1,1-DCA and chloroethane were detected at depths up to 50 to 60 feet into the water table. The vertical extent of semi-volatile organic compounds (SVOCs) contamination was also mostly confined to the upper 10 to 20 feet of the aquifer. There were no SVOCs detected in any of the deep monitoring wells.

Monitoring wells along the southwestern edge of the landfill and southwest of the landfill most commonly exhibited inorganic chemicals above background. These wells were primarily shallow and medium wells that included MW-2S, MW-2M, MW-3S, MW-4S, MW-B4S, MW-5S, and MW-8S. Four chemicals (barium, iron, manganese, and sodium) were detected above background with greater frequency than the other inorganic chemicals

1.3 Cleanup And Criteria

The ROD, signed August 14,1990, defines the selected remedy and addresses the goals of the remedial action. The selected action for the remedy includes the following remedial actions for groundwater:

- Extraction and treatment of the groundwater contaminant plume to meet Federal Safe Drinking Water Act (SDWA) drinking water standards and State of Wisconsin groundwater quality standards;
- Periodic monitoring of the groundwater contaminant plume;
- Deed restrictions limiting surface and groundwater use at the Onalaska Municipal Landfill site; and
- Continued reliance on state institutional controls governing groundwater use within the proximity of landfills.

The groundwater treatment system is on stand-by while Natural Attenuation is being evaluated as a modification to the ROD.

The remedial actions are currently ongoing (e.g. Natural Attenuation Monitoring) or are in place (e.g. institutional controls).

Under the remedy selected in the ROD, the following cleanup standards were adopted:

- The contaminant plume located at any point beyond the property boundary or design management zone (DMZ) must meet the following criteria:
  - Preventive Action Limits, (PALs) from Wisconsin Administrative Code Chapter NR 140:
- The groundwater contaminant plume located at the landfill waste boundary must meet the following criteria:
  - Maximum Contaminant Levels (MCLs) from the Safe Drinking Water Act, 40 CFR 141.61 and 40 CFR 143
  - Non-zero Maximum Contaminant Level Goals (MCLGs) from the Safe Drinking Water Act, 40 CFR 141.50

The DMZ defined for the Onalaska site extends 250 feet horizontally from the waste boundary as shown in **Figure 1-2**. The MCLs and nonzero MCLGs must be met at the landfill waste boundary and the more stringent Wisconsin standards (PALs) must be met at any point beyond the property boundary or the DMZ. The DMZ, as defined in NR 140, is a 3-dimensional boundary surrounding a regulated facility and extends from the ground surface through all saturated geological strata.

Specific cleanup standards (i.e., chemical-specific concentrations) were established in the ROD for 11 indicator chemicals (e.g. Chemicals of Concern). The USEPA amended the ROD on October 10, 2000, by an Explanation of Significant Differences (ESD) to revise the cleanup standards for these chemicals to the latest NR 140 PALS and Enforcement Standards (ESs). The list of contaminants included in the MNA Plan consists of the original 11 indicator chemicals, other contaminants detected at concentrations above PALs during the Remedial Investigation, and contaminants identified above

Wisconsin PALs since the groundwater monitoring program was implemented in 1995. This list and the applicable cleanup standards are presented in **Table 1-1**.

If it becomes apparent that it is not technically or economically feasible to achieve a PAL, then a Wisconsin Alternative Concentration Limit (WACL) may be established. Except where the background concentration of a compound exceeds the ES, the WACL established may not exceed the ES for that compound. A WACL is calculated using procedures defined by the WDNR.

If it becomes apparent that it is technically impracticable to achieve the groundwater cleanup standards, including potential WACLs, then USEPA in consultation with the WDNR may consider the use of alternate methods to control the groundwater contaminant plume or source to achieve the standards. If those alternate methods cannot attain groundwater cleanup standards, including potential WACLs, then a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) waiver may be considered.

2.0 NATURAL ATTENUATION MONITORING PROGRAM

The MNA Plan was developed to address the first two lines of evidence as provided in "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites" (USEPA, 1999). The first two lines of evidence are:

- The demonstration of meaningful trends of decrease of contaminant mass over time at appropriate monitoring points; and
- The demonstration of active natural attenuation at the site with hydrogeological and geochemical data and the calculation of degradation rate processes.

As recommended in the USEPA document, the third line of evidence, field or bench scale studies, could be done in the future, but is only recommended for consideration if the first two lines of evidence are inconclusive.

2.1 Monitoring Well Network

Selected groundwater monitoring wells, piezometers, and air injection wells will be used to monitor groundwater during the natural attenuation study. The wells are separated into two groups based on proximity to the landfill. The two groups of wells are listed below in **Table 2-1**.

As previously discussed, there were minor variances to the monitoring program for the October 2003/April 2004 sampling event. The variances were due to the WDNR approved abandonment of two wells (upgradient wells, MW-1S and MW-1M) prior to the October 2003 sampling event, the sampling of a replacement upgradient monitoring well (MW-1SR), insufficient water in three wells (AW-1, AW-13, AW-28) during the October 2003 sampling event, and the sampling of a newly installed residential well.

Both Group 1 and 2 wells were monitored for the first MNA sampling event the week of October 29, 2001, to establish baseline conditions at the time the groundwater extraction system was shut down. The system was shut down prior to sampling and was restarted after sampling to use up the remaining treatment chemicals. The system then was put on standby on November 26, 2001 and remains on standby except for monthly "bumping of the system".

Group 1 wells are sampled and analyzed semiannually and the Group 2 wells are sampled annually. If concentrations in the Group 2 wells increase and begin to approach PALs, or WACLs, the monitoring frequency will be reviewed and Group 2 wells may be sampled more frequently. Monitoring frequency in Group 1 wells also may be increased as needed to better evaluate whether natural attenuation is occurring for contaminants detected at elevated concentrations.

Groundwater level measurements are gauged semiannually during the sampling events in all the Group 1 and 2 wells.

2.2 Monitoring Rationale

As described in the MNA Plan, the following section discusses the monitoring rationale. Most of the Group 1 wells were selected to provide approximately equally spaced sampling locations downgradient of the landfill. The wells were selected so that they traverse the entire historical limits of the contaminated groundwater plume from the landfill. As a secondary consideration, wells were selected so that there is a sampling location near each idle extraction well. MW-1SR and the new residential well (upgradient wells) are included in the Group 1 wells, in order to gather sufficient data for statistical evaluation of background groundwater characteristics. Sampling from these wells may be reduced to once per year (i.e.; these wells will be re-categorized from Group 1 to Group 2 wells) after eight useable results are accumulated for each relevant parameter unless the characteristics in these wells are observed to fluctuate substantially on a semiannual basis. MW-2S and MW-2M were included in the Group 1 wells, to provide information about groundwater quality below the landfill. AW-9 was included in the Group 1 wells with two considerations in mind:

- it will provide information regarding groundwater quality at a distance from the landfill comparable to most of the other selected air wells;
- and it will also provide information that can be compared to wells MW-5S and AW-1, which are closer to the landfill perimeter.

Similarly, PZ-1 was selected to provide an additional monitoring point progressively further from AW-9 and inner wells MW-5S and AW-1. MW-14S was included for comparison to well AW-1 and nearby well PZ-1. Comparison of contaminants between these wells may provide information that can be used to determine whether natural attenuation processes are occurring in the first 300-feet from the landfill.

The Group 2 wells were selected from existing wells located toward the outer periphery of the estimated historical limits of contamination from the landfill. Groundwater data from the Group 2 wells will allow determination of whether natural attenuation processes are resulting in the decrease of contaminant mass when compared to the Group 1 wells. The primary emphasis will be the comparison of contaminant concentrations between Group 1 and Group 2 wells for evaluating the suitability of natural attenuation processes for the site.

Monitoring, piezometer, and air injection wells are 2 inches in diameter, but the screen length and elevation relative to the water table vary between wells. The screen length on the monitoring wells and piezometers is 10-feet. The screen length on the air injection wells is 5-feet. Most of the screened

intervals for the shallow monitoring points straddle the water table except for two of the piezometers and one monitoring well.

2.3 Monitoring Analytes

Analytes for sampling rounds will include the VOCs, metals, and natural attenuation parameters specified in Table 2-2. Currently, at the request of the WDNR, results for 36 VOC are reported by the laboratory and include all of the relevant VOCs identified on **Table 2-2**. **Table 2-2** includes the parameters to be monitored, rationale for inclusion, Wisconsin groundwater PAL and ES criteria.

2.4 Sampling Methodology

Groundwater sampling followed the guidelines presented in specific Site documents including the Natural Attenuation Plan, the Quality Assurance Project Plan (QAPP) and addendums, and the Sampling and Analyses Plan, and followed the WDNR Groundwater Sampling Desk Reference. Prior to purging each monitoring point, the depth to groundwater in each monitoring point was gauged and recorded in the project field book and on sample collection data sheets.

Field parameters were measured using a flow-through cell (when possible) and were collected during the purging process. If measuring parameters with a flow cell was not possible, then field parameters were measured with purge water collected in a container. Purging techniques consisted of using either a dedicated Whaler pump and tubing, a peristaltic pump and disposable tubing, or a single use disposable bailer. The wells were purged until all parameters including the more sensitive parameters of dissolved oxygen (DO) and oxidation reduction potential (ORP) stabilized to within 10 percent between two consecutive well volumes of purge water. At a minimum, three well volumes were purged from each monitoring point prior to the collection of groundwater samples. Data collected during the purging process, including specific conductivity, temperature, pH, DO and ORP, were recorded on the sample collection data sheets.

When pumps were used for purging and sampling the pump intake located approximately half way down the submerged screened interval. The pump rate was reduced to a low level after purging in order to simulate low flow sampling.

The residential wells were sampled from an outside spigot after the well had run for approximately 15 minutes immediately prior to sampling. According to the residential well owners, the wells had been running intermittently throughout the day prior to sampling.

Groundwater samples were collected using the respective purging equipment and directly placed in laboratory-supplied containers. The samples were stored on ice in a cooler and sent overnight under chain-of-custody to Severn Trent Laboratories in Canton, Ohio.

3.0 NATURAL ATTENUATION MONITORING RESULTS

Groundwater samples were collected from 28 monitoring points comprised of six air-injection wells, five piezometers, 14 monitoring wells, and three residential wells. As discussed further below, the past years monitoring program has shown that three organic contaminants, trimethylbenzene, benzene and methylene chloride, were detected above the ES established by the State of Wisconsin in one or more sampling points. Three metals, lead, manganese and iron were detected above the ES in one or more sampling points. The following are the results of the groundwater monitoring completed during the October 2003 and April 2004 monitoring events.

3.1 Groundwater Flow

Groundwater levels were gauged during the October 2003 and April 2004 monitoring events. Groundwater elevation data from these two monitoring events are presented in **Table 3-1**. Coulee Region Land Surveyors of La Crosse, Wisconsin surveyed the top of casing elevations and locations of each monitoring point on April 22, 2003. Coulee Region Land Surveyors surveyed the new residential well and MW-1SR on April 13, 2004. October 2003 groundwater elevation contours for the shallow and medium zone wells are shown on **Figures 3-1 and 3-2**, respectively. April 2004 groundwater elevation contours for the shallow and medium zone wells are shown in **Figures 3-3 and 3-4**, respectively. Groundwater elevations, gradients, and flow directions are discussed below.

The inferred groundwater flow direction in the shallow groundwater at the Site is towards the south-southwest. The inferred direction of groundwater flow in the medium zone is also towards the southwest.

Using the October 2003 gauging data, the hydraulic gradient in the shallow zone and medium zone was 0.0003 feet/foot.

Using the April 2004 gauging data, the hydraulic gradient in the shallow zone was 0.0003 feet/foot and the hydraulic gradient in the medium zone was 0.0005 feet/foot.

The groundwater flow at the site may be affected by the water level in the nearby Black River and the landfill.

3.2 Groundwater Quality

Monitoring for Natural Attenuation began in October 2001 (baseline natural attenuation monitoring event). This baseline sampling event was completed immediately after the system was turned off. The system was reactivated (for approximately one month) after the baseline sampling event was completed to use up remaining process treatment chemicals.

Since the baseline sampling event, four rounds of natural attenuation monitoring have been completed. This report discusses the results from the two most recent groundwater sampling events (October 2003 and April 2004). Also included is a discussion on the general trends in groundwater quality since the October 2001 sampling event (e.g. general trends in groundwater quality during the last four sampling events). The VOC and metals results from the October 2003 and April 2004 sampling events are summarized below and presented in **Table 3-2**. **Attachment A** contains the abbreviated analytical reports from both sampling events. The results for the natural attention parameters are discussed in Section 4.0. The complete analytical data packages for the sampling events are stored in ENSR's Minneapolis office.

3.3 Groundwater Monitoring Data

During the October 2003 and April 2004 sampling events, 28 well locations were sampled, including 22 wells for the October sampling event and 15 wells for the April sampling event. The following bullets summarize the results:

- No VOCs were detected in the Ackerman residential well. In the Pretasky well, benzene was detected at a concentration of 0.34 ug/l. In the Hubley well 1,2,4-trimethylbenzene was detected at a concentration of 0.18 ug/l. No other VOC were detected in the three residential wells. In the Ackerman well, the concentration of iron and manganese exceeded the ES. In the Hubley well, the concentration of manganese exceeded the ES and the iron exceeded the PAL. In the Pretasky well the concentration of manganese exceeded the ES and the concentrations of iron and arsenic exceeded the PAL.

- Of the 37 VOCs analyzed, 15 VOCs were detected. The following is a list of detected VOCs.

1,2,4-trimethylbenzene	Naphthalene	1,1-dichloroethane
1,3,5-trimethylbenzene	Toluene	cis-1,2-dichloroethene
acetone	Benzene	2-butanone
methylene chloride	Chlorobenzene	carbon disulfide
xylenes (total)	Ethylbenzene	trichloroethene

- The most common VOC contaminants detected were the trimethylbenzenes (1,2,4 & 1,3,5), xylenes, acetone, benzene, naphthalene and methylene chloride. The concentrations of the trimethylbenzene for the baseline-sampling event (November 2001) and the two most recent sampling events are depicted on Figures 3-5, 3-6, and 3-7, respectively. Concentrations of the trimethylbenzenes exceeded the ES in AW-25, MW-4S, and MW-5. Benzene exceeded the ES in MW-4S and methylne chloride exceeded the ES in AW-25. No other VOC exceeded the ES.

- The PAL was exceeded for trimethylbenzenes (AW-13, AW-20, AW-25, MW-4S, and MW-5S), benzene (AW-13, MW-1SR, MW-2S, MW-4S, MW-5S and PZ-1), methylene chloride (AW-25 and Trip Blank) and naphthalene (MW-14S, MW-4S and MW-5S). No other VOC exceeded the PAL.

- Methylene chloride, 2-butanone (MEK), benzene, and acetone were detected one or more of the trip blanks. Methylene chloride and acetone are common laboratory artifacts. The occurrence of VOC in the trip blanks is further discussed in Section 5 – Data Validation.

- The Ackerman residential well is located downgradient of the Site and was last tested on October 7, 2003. No VOCs were detected in the Ackerman well. Monitoring well MW-15M is located between the Site and Ackerman well. MW-15M was tested on October 7, 2003. Two VOCs were detected (1,2,4-Trimethylbenzene and cis-1,2-Dichloroethene) but are below the respective PAL.

- All nine metals tested were detected in one or more of the samples collected. Iron and manganese were the most prevalent metals detected. Concentrations of iron exceeded the ES in 14 monitoring wells and manganese exceeded the ES in 26 monitoring wells. Concentrations of lead exceeded the ES in MW-15M. No other ES were exceeded for metals.

- The PAL was exceeded for all nine metals tested. The PAL for manganese was exceeded in 25 wells and the PAL for iron was exceeded in 18 wells. Concentrations of arsenic exceeded the PAL in AW-20, AW-25, the Pretasky well, MW-2M, MW-2S, MW-4S, and MW-5S. Concentrations of cobalt (AW-20) barium (MW-15M, MW-2M, MW-6M and MW-8M), cadmium (MW-15M), lead (MW-15M, MW1SR and MW-6M), mercury (MW-2M) and vanadium (MW-1SR), exceeded the PAL in the respective wells. No other PALs for metals were exceeded.

Table 3-3 below, provides a comparison of groundwater quality over time from three wells. Wells MW-5S and MW-4S were selected to evaluate water quality immediately downgradient of the landfill. MW-5S and MW-4S have historically been two of the most impacted wells. MW-6S was selected as a well downgradient of the extraction system. All three of these monitoring wells were installed prior to activation of the groundwater extraction system.

Data from three different eras (pre-pumping, pumping and post pumping) are included in **Table 3-3**. The VOCs listed in the table were identified during the RI as the predominant organic compounds of concern. The groundwater extraction system operated from June 1994 through November 2001.

4.0 NATURAL ATTENUATION EVALUATION

This section discusses the analytical results for the MNA parameters for the samples collected during the October 2003 and April 2004 monitoring events. Presented below is a discussion on the natural attenuation environment at the Site. Future MNA data will continue to look at natural attention indicators and will evaluate trends in contaminants using a WDNR approved statistical model.

The results of the laboratory analyzed and field collected natural attenuation parameters from the October 2003 and April 2004 sampling events are summarized below and contained in **Table 3-2**. The field parameters reported in **Table 3-2** were collected from the final purge volume.

Concentration isopleth contours, using data from the October 2003 and April 2004 sampling events were completed for sulfate (**Figure 4-1 and 4-2**) and methane (**Figure 4-3 and 4-4**) and are discussed below.

The field-collected parameters included the following:

- Oxidation/Reduction Potential (ORP)
- Dissolved Oxygen (DO)
- Temperature
- pH
- Specific Conductance

The laboratory analyzed natural attenuation parameters included the following:

- Total Organic Carbon (TOC)
- Nitrate
- Dissolved iron
- Sulfate
- Alkalinity
- Dissolved gases (methane, ethane, ethene)
- Chloride

The following is a summary of findings from the natural attenuation monitoring:

- ORP in the monitoring points ranged from 86mV to 209mV. An ORP value greater than 50mV indicate reductive dechlorination can occur. Future monitoring will evaluate the trends in ORP concentrations. A decreasing concentration of ORP in groundwater indicates an increase in biological activity.

- DO in the monitoring points ranged from 0.33 mg/l to 9.0 mg/l. Generally, DO concentrations less than 1 mg/l indicate anaerobic conditions and concentrations greater than 1 mg/l indicate aerobic conditions. It appears that groundwater at most monitoring points was in aerobic conditions. Anaerobic conditions were found in AW-13, MW-1M, MW-2M, and MW-8M. The DO concentrations exhibited both aerobic and anaerobic conditions between the October 2003 and April 2004 sampling events in AW-20, AW-25, AW-28, and MW-4S.

- The pH, conductivity and temperature data were used to evaluate when stagnant water had been removed during the purging process.

- Ethene was detected in AW-28 (0.18 ug/l). No ethane or ethane was detected in the other groundwater samples. Ethane and ethane are degradation products of vinyl chloride. No vinyl chloride was detected in the groundwater. Vinyl chloride is also degradation product of the chlorinated VOC. The groundwater results have exhibited low levels of the chlorinated VOCs, thus degradation products (Vinyl chloride) are not expected to be present in significant concentrations.

- Chloride can be used as a measure of degradation of chlorinated volatile organic compounds. The chloride concentration ranged from 2.1 to 19.7 mg/l. The PAL for chloride is 125 mg/l.

- Nitrate can be used as a terminal electron acceptor when oxygen is depleted. The concentrations of nitrate ranged from below detection limits to 25.7 mg/l. The PAL for nitrate is 2 mg/l and was exceeded in AW-1, AW-28. The ES for nitrate is 10 mg/l and was exceeded in AW-20 and AW-25. No other nitrate exceedances were observed in the other wells.

- Increasing concentrations of alkalinity reflects higher concentrations of calcium and magnesium, indicating that microbial respiration is releasing carbon dioxide into the groundwater. The concentrations of alkalinity at the Site ranged from 77 mg/L to 560 mg/L. Future results will be evaluated on a well-by-well basis to determine trends in alkalinity concentrations.

- Total Organic Carbon (TOC) can be used as a general measure of organics concentration, both natural and man made. The TOC at the Site ranged from 0.8 to 33 mg/L, with most of the TOC concentrations around 5 mg/l.

- Sulfate can be used as an electron acceptor once oxygen, nitrate, and iron have been reduced. The concentration of sulfate is expected to decrease with an increase in biological activity. The concentrations of sulfate in the groundwater for the October 2003 and April 2004 are illustrated on Figure 4-1 and Figure 4-2. The highest concentrations of sulfate were detected in the upgradient wells or wells outside the plume for both sampling events and were typically lower in wells with contaminants present.

- Higher concentrations of methane in the groundwater is a characteristic of strong reducing conditions, such as those that support reductive dechlorination. Thus, higher methane concentrations may indicate that Natural Attenuation is occurring. The concentrations of methane in the groundwater for the October 2003 and April 2004 are illustrated on **Figure 4-3 and Figure 4-4**. The highest concentrations of methane were detected in the wells within the plume, while wells outside the plume had substantially lower methane concentrations.

5.0 DATA VALIDATION

Full validation was performed on the data for four groundwater samples analyzed for selected total metals by SW-846 Methods 6010B and 7470A and four groundwater samples for the site-specific VOCs by SW-846 Method 8260B. The samples were collected at the Onalaska site on either April 13, 2004 or April 14, 2004 and submitted to Severn Trent Laboratory (STL) in North Canton, OH for analysis. STL processed and reported the samples under Lot # A4D150139.

The metals sample results were assessed according to the "USEPA Contract Laboratory Program National Functional Guidelines for Validation of Inorganic Data", February 1994. Modification of the Functional Guidelines was done to accommodate the non-Contract Laboratory Program (CLP) methodologies. The VOC sample results were assessed according to the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (2/99). Modification of the Functional Guidelines was done to accommodate the non-CLP methodologies.
In general, the data appear to be valid as reported and may be used for decision making purposes. See the discussion below for specific issues observed.

Samples included in this review are listed below:

- AW-13
- AW-14
- MW-4S
- MW-5S

5.1 Metals Data Validation

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with chain-of-custody (COC) requests
- Holding times/sample preservation
- Initial and continuing calibrations
- Laboratory blanks/equipment blanks/field blanks
- Inductively coupled plasma (ICP) interference check sample (ICS) results
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Laboratory duplicate results
- Field duplicate results
- Laboratory control sample (LCS) results
- Serial dilution results
- Sample quantitation/detection limit results

DISCUSSION

Agreement of Analyses Conducted with COC Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. No discrepancies were noted.

Holding Times/Sample Preservation

The samples were analyzed within the method specified holding time for total metals. Sample preservation was acceptable.

Initial and Continuing Calibrations

All criteria were met for the calibration curves, the initial calibration verification, and the continuing calibration verification (ICV/CCV) standards for metals.

Although a Contract Required Detection Limit (CRDL) standard is not applicable to SW-846 methods, STL chose to analyze a similar standard [CRI for Inductively Coupled Plasma (ICP) Analysis and CRA for atomic absorption (AA) analyses]. An acceptance limit of 100 $\pm$ 20% recovery (%R) was used to evaluate these standards. All CRI and CRA standards met the acceptance criteria with the following exception.

CRI/CRA	Analyte	%R	True Value (ug/L)	Affected samples
CR	Mercury	78	0.20	AW-13, AW-25, MW-4S, MW-5S

Samples AW-13, AW-25, MW-4S, and MW-5S were nondetect for mercury. These nondetects may be biased low and therefore should be considered as estimated.

It should also be noted that any positive result (<2 times the true value of the CRA) or nondetect mercury result in any sample in this data package, although it did not undergo full validation, should also be considered as estimated.

Laboratory Blanks/Equipment Blanks/Field Blanks

No equipment or field blanks were submitted with this sample set. Sampling equipment consisted of dedicated or disposable equipment. No validation action was taken other than this notation.

No target analytes were detected in the laboratory preparation blank. Various analytes were detected in the initial and continuing calibration blanks (ICBs and CCBs) associated with these samples. The presence of blank contamination indicates that false positive results or false negative results (for negative blanks) may exist for these analytes in the associated samples. An Action Level (AL) was established for each analyte at 5 times the highest concentration detected in the blanks and should be considered for the evaluation of blank contamination in the sample data. The following table summarizes these ALs. The associated samples are listed below.

Blank Type	Analyte	Conc. Detected (µg/L)	AL (µg/L)
ICB/CCB	Arsenic	2.1	10.5
	Barium	0.50	2.5
	Cobalt	0.70	3.5
	Manganese	0.70	3.5
	Vanadium	1.0	5.0

Results less than the value of a positive blank AL in the associated samples AW-13, AW-25, MW-4S, and MW-5S should be considered as false positives.

It may be appropriate to review results for these analytes in other samples in this data package to determine if false positive results exist.

ICP ICS Results

All criteria were met for the analysis of the ICS A and ICS AB solutions.

MS/MSD Results

MS/MSD analyses were performed on sample AW-4S for total metals. All %Rs and relative percent differences (%RPDs) were within acceptable limits.

Laboratory Duplicate Results

Laboratory duplicate analyses were not performed. Precision in the laboratory was demonstrated by the MS/MSD analyses as discussed above.

Field Duplicate Results

Samples AW-4S and AW-4SD were submitted as a field duplicate pair with this sample set. The following table summarizes the RPDs of the detected total analytes in the field duplicate pair, all of which met the QC acceptance criteria of ±30% for an aqueous matrix.

Analytes	AW-4S (mg/L)	AW-4SD (mg/L)	RPD (%)
Barium	0.33	0.33	0
Iron	24.7	25.4	2.8
Manganese	2.1	2.2	4.7

LCS Results

The %Rs of all spiked analytes met the QC acceptance criteria in the LCS analyses for total metals.

Serial Dilution Results

The laboratory performed serial dilution analyses on a sample in this data package, which did not undergo full validation. However the percent differences (%Ds) for all analytes met the QC acceptance criteria of <10% and no validation action was required on this basis.

Sample Quantitation and Detection Limit Results

No dilutions were required for the samples in this data set analyzed for total metals.

Result calculations were spot checked and no discrepancies were noted.

Nondetects were reported at the laboratory reporting limit. Detected results were reported to the method detection limit (MDL) and were flagged by the laboratory with a "B" as estimated. The MDLs and/or reporting limits for all analytes except lead were at or below the regulatory Enforcement Standards and Preventative Action Limits. The MDL for lead was 0.0017 mg/L which slightly exceeds the Preventative Action Limit of 0.0015 mg/L for this analyte.

5.2 VOC Data Validation

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with the chain of custody requests
- Holding times/sample preservation
- Gas chromatography/mass spectrometry (GC/MS) tunes
- Initial and continuing calibrations
- Method blanks/trip blanks/field blank
- Surrogate spike recoveries
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Internal standard performance
- Field duplicate results
- Quantitation limits and sample results

Agreement of Analyses Conducted with COC Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. There were no discrepancies noted.

Holding Times/Sample Preservation

The samples were analyzed within the method specified holding time with the exception of sample Trip Blank (cooler K544). This sample was placed in another sample cooler and was found past it's method specified holding time. This sample was not part of the set to be validated; however, the positive and nondetect results should be considered as estimated (J and UJ, respectively).

The cooler temperature was within the acceptable range of 4°C ± 2°C.

All samples were preserved at a pH <2.

GC/MS Tunes

The frequency and abundance of all bromofluorobenzene tunes were within the QC acceptance criteria. The samples were analyzed within the method specified tune times.

Initial and Continuing Calibrations

The percent relative standard deviations (%RSDs) or correlation coefficients, the response factors (RFs), and the percent differences (%Ds) of all compounds were within the QC acceptance limits in the initial and continuing calibration standards associated with these samples with the exception of acetone. The following tables summarize the nonconformance. All positive and nondetect results for acetone should be considered estimated (J and UJ, respectively). It may be appropriate to review results for this analyte in the other samples in this data package.

Calibration	Compound	%RSD
ICAL	Acetone	37.8
Associated samples: All samples		

Calibration	Compound	%D
CCAL (4/20/04)	Acetone	33.4
Associated samples: All samples		

Method Blanks/Trip Blanks

A field blank was not submitted with this sample set. Only dedicated or disposable sampling equipment was used. No validation action was taken other than this notation.

Benzene was detected in the laboratory method blanks. Acetone, 2-butanone, methylene chloride and/or benzene were detected in the trip blanks. The presence of blank contamination indicates that false positives may exist for these analytes in the associated samples. Action Levels (ALs) were established at 5x the highest concentration detected in the blanks for benzene and at 10x the highest concentration detected in the blanks for acetone, 2-butanone, and methylene chloride and should be considered for the evaluation of blank contamination in the sample data. The following tables summarize the ALs and the associated samples.

Sample results would be qualified as follows:

- If the sample result is ≤ AL and ≤ the SQL, the result is considered nondetect (U) at the SQL.
- If the sample result is ≤ AL and > SQL, the result is considered nondetect (U) at the reported concentration.
- If the sample result is > AL, the result is not qualified.

It may be appropriate to review results for these analytes in other samples for false positive results.

Type of Blank	Compound	Detected Conc. (µg/L)	AL (µg/L)
Laboratory Method Blank (4/20/04)	Benzene	0.50	2.55
Associated samples: AW-13, AW-25, MW-4S, and MW-5S.			

Type of Blank	Compound	Detected Conc. (µg/L)	AL (µg/L)
Laboratory Method Blank (4/21/04)	Benzene	0.26	1.3
Associated samples: Trip Blank (cooler K581)			

Type of Blank	Compound	Detected Conc. (µg/L)	AL (µg/L)
Trip Blank (cooler K581) Trip Blank (cooler K544) (max. contam. reported)	Acetone	2.1	21
	2-Butanone	1.1	11
	Methylene chloride	0.90	9.0
Associated samples: all samples			

Surrogate Spike Recoveries

The surrogate percent recoveries (%Rs) were within the QC acceptance limits in all sample analyses.

LCS/LCSD Results

The %Rs and RPDs were within the laboratory's QC acceptance criteria in the LCS/LCSD associated with all samples in this data set.

MS/MSD Results

MS/MSD analyses were performed on sample MW-4S. The %Rs and RPDs were all within the laboratory's QC acceptance criteria.

Internal Standard Performance

The internal standard performance was within the QC acceptance criteria in all sample analyses.

Field Duplicate Results

Samples MW-4S and MW-4SD were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair. The RPDs were all within the QC acceptance criteria. The RPD for naphthalene was not calculable (NC) due to a nondetect result in the sample but is acceptable since the detected result is < 5 times the SQL.

Compound	MW-4S (µg/L)	MW-4SD (µg/L)	RPD (%)
Ethylbenzene	9.4	8.4	11
1,2,4-Trimethylbenzene	1100	1000	10
1,3,5-Trimethylbenzene	310	280	10
Xylene (total)	52	39	29
Naphthalene	40 U	7.6 J	NC

Quantitation Limits and Sample Results

The following samples were analyzed as dilutions due to target analytes, which would have exceeded the calibration range and would have produced inaccurate results. The laboratory elevated sample quantitation limits accordingly.

Sample	Dilution
AW-13	10x
MW-4S	40x
MW-5S	3.33x

Nondetects were reported at the laboratory reporting limit. Detected results were reported to the MDL and were flagged by the laboratory with a "J" as estimated. The MDLs and/or reporting limits for all compounds except 1,1,2,2,-tetrachloroethane, bromodichloromethane, cis-1,3-dichloropropene, and vinyl chloride were at or below the project Enforcement Standards (ESs) and Preventative Action Limits (PALs). Detection limit exceedances of the ESs and/or PALs are listed in the table below.

Compound	Reporting Limit (µg/L)	MDL (µg/L)	PAL (µg/L)	ES (µg/L)
1,1,2,2-Tetrachloroethane	1.0	0.22	0.02	0.2
Bromodichloromethane	1.0	0.14	0.06	0.6
Cis-1,3-dichloropropene	1.0	0.12	0.2	0.02
Vinyl chloride	1.0	0.21	0.02	0.2

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based upon the October 2003 and April 2004 sampling events.

- Review of the groundwater quality suggests that natural attenuation is preventing the further spread of contaminants.

- The natural attenuation data indicates that natural attenuation may be an effective modification to the ROD.

- The limited list of chemicals of concern from the ROD did not include the trimethylbenzenes (1,2,4-trimethlbenzene and 1,3,5-trimethylbenzene). Testing for trimethylbenzenes did not begin until 2001 and thus were not evaluated in the Preliminary Health Assessment. The current natural attenuation-monitoring program analyzes for 37 VOC including all site chemicals of concern. The most recent sampling data indicates that trimethylbenzenes exceed the Enforcement Standard in three wells.

- Several VOC (acetone, benzene, 2-butonone and methylene chloride) were detected in the trip blanks potentially indicating false positives in other samples.

- Concentrations of iron and manganese in groundwater samples collected at the Site (including the upgradient monitoring well) have exceeded the Enforcement Standards. Background levels of iron and manganese in shallow groundwater throughout Wisconsin are similar to the concentrations detected at the Site.

- The Hubley residential well and the Pretasky residential well each had a detectable concentration of a VOC. The concentration of the detected VOC was below the Preventive Action Level.

The following are recommendations for this Site resulting from the recent monitoring events.

- Continue with natural attenuation monitoring to evaluate groundwater quality and determine if natural attenuation can be an effective modification to the ROD remedy that remains protective of human health and the environment.

- Evaluate monitoring data to determine if the presence of the trimethylbenzenes requires an additional health analysis.

- Work with the laboratory to reduce the occurrence of false positives in the samples. Request that the laboratory reduce method detection limits for VOC and metals to below their respective Preventive Action Limit.

- Complete additional studies to evaluate the occurrence of iron and manganese (as well as other metals) in the groundwater with respect to background levels and develop Wisconsin Alternative Concentration Limits (WACLs) for iron and manganese, if applicable.

- Modify the sampling schedule to better determine changes in groundwater quality and natural attenuation. Specifically, increase monitoring frequency from semiannually to quarterly for select key monitoring points.

7.0 REFERENCES

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WDNR. Understanding Chlorinated Hydrocarbon Behavior in Groundwater: (Draft) Pub-RR-69. December 2002.

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TABLE 1-1
Contaminants Included in the Natural Attenuation Plan
Onalaska Municipal Landfill

Contaminants	Wisconsin NR140 PAL [ug/L][1]	Wisconsin NR140 ES [ug/L]	Federal MCL [ug/L]
Organic Contaminants			
BETX			
Benzene	0.5	5	5
Ethylbenzene	140	700	700
Toluene	200	1,000	1,000
Total Xylenes	1,000	10,000	10,000
Chlorinated VOC[2]			
1,1-Dichioroethane	85	850	N.A.[3]
1,1-Dichloroethene	0.7	7	7
1,1,1-Trichloroethane	40	200	200
Cis-1,2-Dichloroethene	7	70	70
Trans-1,2-Dichloroethene	20	100	100
Trichloroethene	0.5	5	5
Tetrachloroethene	0.5	5	5
Methylene Chloride	0.5	5	N.A.
Vinyl Chloride (Chloroethene)	0.02	0.2	2
Other VOC			
1,2,4 and 1,3,5 Trimethylbenzene	96	480	N.A.
Naphthalene	8	40	N.A.
Metal Contaminants			
Arsenic	5	50	10
Barium	400	2,000	2,000
Iron	150	300	N.A.
Lead	1.5	15	15
Manganese	25	50	N.A.
Cadmium	0.5	5	5
Cobalt	8	40	N.A.
Mercury	0.2	2	2
Vanadium	6	30	N.A.

Notes:

1. ug/L= micrograms per liter, equivalent to parts to billion
2. VOC = Volatile Organcic Compounds
3. N.A.= Not applicable

TABLE 2-1
Wells Listed by Group

Onalaska Municipal Landfill

Group 1 Wells			Group 2 Wells	
MW-1SR(a)	MW-5S	AW-9	MW-6S	MW-15M
	MW-14S	AW-13	MW-6M	PZ-2
MW-1 M(a)	PZ-1	AW-20	MW-8S	PZ-3
	PZ-5	AW-25	MW-8M	PZ-4
MW-2S	AW-1	AW-28	MW-12S	b

a) Wells MW-1S and MW-1M were abandoned prior to the October 2003 sampling event. An upgradient shallow monitoring well (MW-1SR) was installed to replace MW-1S.

b) The Ackerman and Hubley residential wells will be sampled once per year to verify they are not impacted. However, these wells will not be used in the monitored natural attenuation study. A new residential well (Pretasky well) was sampled during the April 2004 sampling event and served as an uprgradient, medium depth monitoring well, replacing MW-1M.

TABLE 2 - 2
Parameter List and Relevant Criteria for Monitored Natural Attenuation
Onalaska Municipal Landfill

Parameter	Rationale	State of WI Groundwater Criteria PAL (ug/L)	State of WI Groundwater Criteria WI ES (ug/L)
Organic Constituents			
BETX			
Benzene	COC	0.5	5
Ethylbenzene	COC	140	700
Toluene	COC	200	1,000
Total Xylenes	COC	1,000	10,000
Chlorinated VOCs			
1,1-Dichloroethane	COC	85	850
1,1-Dichloroethene	COC	0.7	7
1,1,1 –Trichloroethane	COC	40	200
cis-1,2-Dichloroethene	COC	7	70
trans-1,2-Dichloroethene	COC	20	100
Trichloroethene	COC	0.5	5
Tetrachloroethene	COC	0.5	5
Methylene Chloride (MW-4S only)	COC	0.5	5
Vinyl Chloride (Chloroethene)	COC	0.02	0.2
Other VOCs			
1,2,4-and 1,3,5-Trimethylbenzene	COC	96	480
SVOCs			
Naphthalene	COC	8	40
Inorganic Constituents (Metals)			
Arsenic	COC	5	50
Barium	COC	400	2,000
Iron	COC	150	300
Lead	COC	1.5	15
Manganese	COC	25	50
Cadmium	COC	0.5	5
Cobalt	COC	8	40
Mercury	COC	0.2	2
Vanadium	COC	6	30

Table 2 - 2 (Continued)
Parameter List and Relevant Criteria for Monitored Natural Attenuation
Onalaska Municipal Landfill

Parameter	7.1.1.1 Rationale	State of WI Groundwater Criteria	
		PAL (ug/L)	WI ES (ug/L)
Natural Attenuation Parameters			
Field Parameters			
Oxidation-Reduction Potential	Optimal values of < 50 mV indicate reductive dechlorination may be occurring.	N.A	N.A
Dissolved Oxygen	Concentrations in groundwater < 1,000 ug/L dissolved oxygen indicate anaerobic conditions present. > 1mg/L indicate aerobic conditions.	N.A	N.A
pH	Optimum range of pH is 5 to 9.	N.A	N.A
Temperature		N.A	N.A
Specific Conductance		N.A	N.A
Laboratory Parameters			
Nitrate	Concentrations in groundwater > 1,000 ug/L nitrate may compete with reductive processes of Chlorinated VOC.	2,000	10,000
Sulfate	Can be used as electron acceptor once oxygen, nitrate, and iron have been depleted or reduced. Concentrations > 20,000 ug/L may compete with reductive pathway.	125,000	250,000
Iron (already included above)	Concentrations in groundwater > 1,000 ug/L may indicate iron reduction has occurred and reductive dechlorination of CVOCs is possible.	150	300
Manganese (already included above)	Concentrations in groundwater > 1,000 ug/L may indicate manganese reduction has occurred and reductive dechlorination of CVOCs is possible.	25	50
Methane, ethane, ethane (dissolved gasses)	Higher concentrations of methane may indicate methanogenesis is occurring, ethane and ethane degradation products of vinyl chloride.	N.A	N.A

Table 2 - 2 (Continued)
Parameter List and Relevant Criteria for Monitored Natural Attenuation
Onalaska Municipal Landfill

Parameter	7.1.1.2 Rationale	State of WI Groundwater Criteria	
		PAL (ug/L)	WI ES (ug/L)
Alkalinity	Reflects higher concentrations of calcium and magnesium, indicating the microbial respiration is releasing CO2 into the groundwater.	N.A	N.A
Chloride	A measure of CVOC degradation.	125,000	250,000
Total Organic Carbon	A general measure of organics' concentration, including those naturally occurring.	N.A	N.A

a. State of Wisconsin Groundwater Quality Standards as specified in NR 140.
b. Natural Attenuation Parameters recommended in Technical Protocols cited in Final OSWER Directive (USEPA April 1999)

Table 3-1
Groundwater Elevation Table
Onalaska Landfill
Onalaska, Wisconsin

Date of Water Level Measurements: April 13, 2004			
Well Number	**Elevation Top of Casing[1]**	**Depth to Groundwater**	**Elevation of Groundwater**
Ackerman Well	658.28	NM[2]	NM
AW-1	663.62	18.87	644.75
AW-9	660.12	15.38	644.74
AW-13	658.85	14.01	644.84
AW-20	652.71	8.06	644.65
AW-25	657.26	12.56	644.7
AW-28	660.91	16.18	644.73
EW-1	666.86	NM	NM
EW-2	660.94	NM	NM
EW-3	657.61	NM	NM
EW-4	659.98	NM	NM
EW-5	659.07	NM	NM
Hubley Well	657.20	NM	NM
MW-10M	657.74	13.37	644.37
MW-11M	658.35	13.79	644.56
MW-12S	664.22	19.49	644.73
MW-14S	656.05	11.31	644.74
MW-15M	656.98	12.41	644.57
Pretasky Well	662.95	NM	NM
MW-1SR	660.54	15.59	644.95
MW-2D	673.90	29.09	644.81
MW-2M	673.64	28.77	644.87
MW-2S	672.85	27.99	644.86
MW-4S	665.84	21	644.84
MW-5S	657.11	12.35	644.76
MW-6M	649.71	5.17	644.54
MW-6S	647.86	3.32	644.54
MW-7M	663.74	18.93	644.81
MW-8D	660.60	15.52	645.08
MW-8M	660.71	16.04	644.67
MW-8S	660.74	16.1	644.64
MW-9M	657.32	12.86	644.46
PZ-1	656.40	11.68	644.72
PZ-2	651.36	6.62	644.74
PZ-3	648.96	4.16	644.8
PZ-4	649.13	4.53	644.6
PZ-5	661.98	17.15	644.83
PZ-6	660.78	15.99	644.79

Notes:

1. Top of Casing elevation surveyed by Coulee Region Land Surveyors, Inc. on April 22, 2003. MW-1SR and Rsidential Well were surveyed on April 13, 2004.

2. NM = Water level was not measured.

Table 3-1
Groundwater Elevation Table
Onalaska Landfill
Onalaska, Wisconsin

Date of Water Level Measurements: October 7, 2003			
Well Number	**Elevation Top of Casing[1]**	**Depth to Groundwater**	**Elevation of Groundwater**
Ackerman Well	658.28	NM[2]	NM
AW-1	663.62	21.23	642.39
AW-9	660.12	17.74	642.38
AW-13	658.85	15.95	642.9
AW-20	652.71	10.43	642.28
AW-25	657.26	14.92	642.34
AW-28	660.91	18.46	642.45
EW-1	666.86	NM	NM
EW-2	660.94	NM	NM
EW-3	657.61	NM	NM
EW-4	659.98	NM	NM
EW-5	659.07	NM	NM
Hubley Well	657.20	NM	NM
MW-10M	657.74	15.57	642.17
MW-11M	658.35	16.03	642.32
MW-12S	664.22	21.88	642.34
MW-14S	656.05	13.64	642.41
MW-15M	656.98	14.75	642.23
Pretasky Well	662.95	NM	NM
MW-1SR	660.54	17.94	642.6
MW-2D	673.90	NM[3]	NM
MW-2M	673.64	31.2	642.44
MW-2S	672.85	30.43	642.42
MW-4S	665.84	23.42	642.42
MW-5S	657.11	14.75	642.36
MW-6M	649.71	7.47	642.24
MW-6S	647.86	5.62	642.24
MW-7M	663.74	21.35	642.39
MW-8D	660.60	18.29	642.31
MW-8M	660.71	18.22	642.49
MW-8S	660.74	18.47	642.27
MW-9M	657.32	15.12	642.2
PZ-1	656.40	14.05	642.35
PZ-2	651.36	9.22	642.14
PZ-3	648.96	6.46	642.5
PZ-4	649.13	6.84	642.29
PZ-5	661.98	19.56	642.42
PZ-6	660.78	18.42	642.36

Notes:

1. Top of Casing elevation surveyed by Coulee Region Land Surveyors, Inc. on April 22, 2003. MW-1SR and Rsidential Well were surveyed on April 13, 2004.
2. NM = Water level was not measured.
3. Obstruction at a depth of 29 feet.

Table 3-2
AW-1
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/23/2003	4/13/2004	PAL	ES
1,2,4-Trimethylbenzene	25	8.4	2.3	96	480
1,3,5-Trimethylbenzene	22	6.1	2.1	96	480
Acetone	6	< 1.1	< 0.66	200	1000
Benzene	< 0.37	< 0.37	0.45	0.5	5
Methylene chloride	3.8	< 0.29	0.35	0.5	5
Xylenes (total)	4	4.7	< 0.45	1000	10000
Metals, mg/L					
Arsenic	< 0.0021	< 0.0021	< 0.0026	0.005	0.05
Barium	0.25	0.13	0.18	0.4	2
Cadmium	0.0032	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.0043	< 0.00074	< 0.00096	0.008	0.04
Iron	**4.5**	**0.39**	0.23	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0017	0.0015	0.015
Manganese	**6**	**0.7**	**0.72**	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00071	0.006	0.03
Dissolved Gases, ug/L					
Ethane	< 3	< 3	< 0.7	---	---
Ethene	< 2.9	< 2.9	< 0.65	---	---
Methane	1500	690	630	---	---
Natural Attenuation Parameters, mg/L					
Chloride	2.1	5.6	4.6	125	250
Nitrate as N	< 0.0076	0.83	8.6	2	10
Sulfate	9.1	6.2	17.2	125	250
Total Alkalinity	290	210	270	---	---
Total Organic Carbon	6	2	5	---	---
pH	---	6.98	6.9	---	---
Conductivity (mS/cm)	---	0.441	0.612	---	---
Temperature (C)	---	7.87	7.35	---	---
ORP (mV)	---	1.78	159	---	---
Dissolved Oxygen (mg/L)	---	4.5	1.81	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
AW-9
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/23/2003	10/8/2003	4/13/2004	PAL	ES
1,2,4-Trimethylbenzene	1.6	< 0.37	< 0.14	< 0.14	96	480
Acetone	2.9	< 1.1	< 0.66	< 0.66	200	1000
Benzene	< 0.37	< 0.37	< 0.2	0.39	0.5	5
Methylene chloride	3.8	0.34	< 0.28	< 0.28	0.5	5
Xylenes (total)	< 0.44	< 0.44	0.61	< 0.45	1,000	10,000
Metals, mg/L						
Arsenic	< 0.0021	< 0.0021	< 0.0029	< 0.0026	0.005	0.05
Barium	0.072	0.051	0.19	0.043	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.0011	< 0.00096	0.008	0.04
Iron	0.067	< 0.042	0.11	< 0.049	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	0.041	0.016	**0.24**	**0.15**	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00096	< 0.00071	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 0.3	< 0.6	< 0.6	< 0.14	---	---
Ethene	< 0.29	< 0.58	< 0.58	< 0.13	---	---
Methane	260	220	340	110	---	---
Natural Attenuation Parameters, mg/L						
Chloride	3.1	3	6.9	2.6	125	250
Nitrate as N	0.42	1.1	0.07	2	2	10
Sulfate	3.5	3.1	5.4	3.7	125	250
Total Alkalinity	220	170	190	170	---	---
Total Organic Carbon	1	0.8	2	1	---	---
pH	7.07	---	7.23	7.16	---	---
Conductivity (mS/cm)	0.36	---	0.406	0.356	---	---
Temperature (C)	7.35	---	15.24	7.09	---	---
ORP (mV)	190	---	209	178	---	---
Dissolved Oxygen (mg/L)	6.67	---	6.02	5.7	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
AW-13
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	Duplicate 12/12/2002	4/22/2003	4/14/2004	PAL	ES
1,2,4-Trimethylbenzene	2	1.8	**860**	250	96	480
1,3,5-Trimethylbenzene	< 0.4	1.1	**32**	11	96	480
Acetone	2.5	5.9	< 24	< 6.6	200	1000
Benzene	< 0.37	< 0.37	< 8.2	3.8	0.5	5
Methylene chloride	3.6	3.6	< 6.4	< 2.8	0.5	5
Naphthalene	< 0.42	< 0.42	< 9.3	2.4	8	40
Toluene	< 0.39	< 0.39	< 8.7	5.3	200	1,000
Xylenes (total)	< 0.44	< 0.44	10	< 4.5	1,000	10,000
Metals, mg/L						
Arsenic	0.0033	< 0.0021	0.0048	0.0038	0.005	0.05
Barium	0.28	0.27	0.2	0.28	0.4	2
Cadmium	< 0.00028	< 0.00028	0.00034	< 0.00028	0.0005	0.005
Cobalt	0.0043	0.0044	< 0.00074	0.0049	0.008	0.04
Iron	**4.7**	**5.1**	**34.8**	**10.4**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	< 0.0017	0.0015	0.015
Manganese	**24.3**	**23.7**	**11.4**	**22.7**	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000087	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00067	0.00084	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 1.5	< 0.6	< 3	< 1.4	---	---
Ethene	< 1.4	< 0.58	< 2.9	< 1.3	---	---
Methane	300	340	2200	1800	---	---
Natural Attenuation Parameters, mg/L						
Chloride	2.6	2.3	6.7	3.5	125	250
Nitrate as N	0.2	0.28	0.01	< 0.016	2	10
Sulfate	3.1	2.7	0.49	0.69	125	250
Total Alkalinity	550	550	260	560	---	---
Total Organic Carbon	5	4	5	12	---	---
pH	---	---	7.08	6.91	---	---
Conductivity (mS/cm)	---	---	0.585	0.999	---	---
Temperature (C)	---	---	8.78	7.85	---	---
ORP (mV)	---	---	87	154	---	---
Dissolved Oxygen (mg/L)	---	---	0.32	0.45	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
AW-20
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/22/2003	Duplicate 4/23/03	10/8/2003	4/14/2004	PAL	ES
1,2,4-Trimethylbenzene	22	**450**	**450**	170	3.4	96	480
1,3,5-Trimethylbenzene	17	**200**	**190**	120	0.5	96	480
Acetone	3.6	< 17	< 17	< 13	< 0.66	200	1000
Benzene	< 0.37	< 5.7	< 5.7	< 4	0.39	0.5	5
Methylene chloride	3.4	< 4.5	< 4.5	< 5.6	< 0.28	0.5	5
Naphthalene	0.64	8.2	8.9	6.8	0.97	8	40
Xylenes (total)	1.1	30	28	12	< 0.45	1,000	10,000
Metals, mg/L							
Arsenic	0.0088	< 0.0021	< 0.0021	0.021	0.003	0.005	0.05
Barium	0.29	0.13	0.23	0.38	0.2	0.4	2
Cadmium	0.00037	< 0.00028	< 0.00028	< 0.00036	0.00029	0.0005	0.005
Cobalt	0.011	< 0.00074	0.01	0.011	0.0023	0.008	0.04
Iron	**23.3**	**0.39**	**5.4**	**50**	**0.44**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**17**	**0.7**	**11.8**	**16.1**	**2.6**	0.025	0.05
Mercury	0.000087	< 0.000087	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00067	0.0029	< 0.00071	0.006	0.03
Dissolved Gases, ug/L							
Ethane	< 3	< 3	< 3	< 3	< 0.7	---	---
Ethene	< 2.9	< 2.9	< 2.9	< 2.9	< 0.65	---	---
Methane	1600	690	830	2200	890	---	---
Natural Attenuation Parameters, mg/L							
Chloride	1.8	5.6	7.1	5.5	2.4	125	250
Nitrate as N	< 0.0076	0.83	1.9	0.24	**25.7**	2	10
Sulfate	1.1	6.2	3.9	0.22	20.4	125	250
Total Alkalinity	600	210	400	520	420	---	---
Total Organic Carbon	15	2	10	21	12	---	---
pH	---	6.98	6.98	6.71	6.87	---	---
Conductivity (mS/cm)	---	0.445	0.445	1.09	0.979	---	---
Temperature (C)	---	7.61	7.61	15.46	7.96	---	---
ORP (mV)	---	147	147	141	152	---	---
Dissolved Oxygen (mg/L)	---	0.23	0.23	2.32	0.34	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
AW-25
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/22/2003	10/8/2003	4/14/2004	PAL	ES
1,2,4-Trimethylbenzene	240	52	**760**	2.5	96	480
1,3,5-Trimethylbenzene	38	9.1	**210**	0.28	96	480
Acetone	< 8.6	< 2.8	< 13	1.4	200	1000
Benzene	< 2.9	< 0.92	< 4	0.4	0.5	5
Methylene chloride	**5.1**	< 0.72	**7.6**	< 0.28	0.5	5
Naphthalene	4.5	< 1	6.8	< 0.16	8	40
Xylenes (total)	5.6	2.9	18	< 0.45	1,000	10,000
Metals, mg/L						
Arsenic	0.0034	< 0.0021	0.013	< 0.0026	0.005	0.05
Barium	0.43	0.23	0.32	0.29	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	0.0049	0.0021	0.002	0.0015	0.008	0.04
Iron	**13.8**	**3.6**	**19.6**	0.098	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**6.6**	**2.3**	**3.4**	**0.9**	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00096	< 0.00071	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 3	< 3	< 3	< 0.28	---	---
Ethene	< 2.9	< 2.9	< 2.9	< 0.26	---	---
Methane	570	1400	2200	530	---	---
Natural Attenuation Parameters, mg/L						
Chloride		15.2	2.1	4.9	125	250
Nitrate as N	0.97	2.2	< 0.019	**20.8**	2	10
Sulfate	4.4	1.9	0.77	25.4	125	250
Total Alkalinity	520	320	290	460	---	---
Total Organic Carbon	7	6	5	11	---	---
pH	---	7.02	6.71	7.05	---	---
Conductivity (mS/cm)	---	0.644	0.576	1.04	---	---
Temperature (C)	---	7.67	15.47	7.82	---	---
ORP (mV)	---	156	147	155	---	---
Dissolved Oxygen (mg/L)	---	0.88	2.78	0.66	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
AW-28
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/22/2003	4/14/2004	PAL	ES
1,2,4-Trimethylbenzene	45	44	10	96	480
1,3,5-Trimethylbenzene	21	18	2.6	96	480
Acetone	5.4	< 2.2	1.2	200	1000
Benzene	< 0.46	< 0.74	0.44	0.5	5
Methylene chloride	4.6	< 0.58	< 0.28	0.5	5
Naphthalene	< 0.52	< 0.84	0.25	8	40
Toluene	0.83	< 0.78	< 0.17	200	1,000
Xylenes (total)	2.9	1.6	0.57	1,000	10,000
Metals, mg/L					
Arsenic	0.0026	< 0.0021	< 0.0026	0.005	0.05
Barium	0.26	0.22	0.22	0.4	2
Cadmium	< 0.00028	< 0.00028	0.00034	0.0005	0.005
Cobalt	0.0064	0.0036	0.0059	0.008	0.04
Iron	**9.8**	**3.7**	**0.74**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0017	0.0015	0.015
Manganese	**5**	**2.4**	**2.5**	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00071	0.006	0.03
Dissolved Gases, ug/L					
Ethane	< 3	< 3	< 0.14	---	---
Ethene	< 2.9	< 2.9	0.18	---	---
Methane	1200	1700	2800	---	---
Natural Attenuation Parameters, mg/L					
Chloride	10.8	14	19.7	125	250
Nitrate as N	1.1	1.7	8.9	2	10
Sulfate	1.4	2.7	9.6	125	250
Total Alkalinity	370	360	390	---	---
Total Organic Carbon	9	11	33	---	---
pH	---	7.02	6.9	---	---
Conductivity (mS/cm)	---	0.7	0.853	---	---
Temperature (C)	---	8.35	8.8	---	---
ORP (mV)	---	166	158	---	---
Dissolved Oxygen (mg/L)	---	1.36	0.44	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-1S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	4/22/2003	PAL	ES
2-Butanone	< 0.59	0.82	90	460
Acetone	3.7	< 1.1	200	1000
Methylene chloride	2.4	0.37	0.5	5
Metals, mg/L				
Arsenic	0.0029	< 0.0021	0.005	0.05
Barium	0.034	0.039	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	0.008	0.04
Iron	0.15	0.12	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	**0.86**	**0.76**	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	0.00088	0.0012	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	18	150	---	---
Natural Attenuation Parameters, mg/L				
Chloride	5.5	7.3	125	250
Nitrate as N	< 0.0076	0.14	2	10
Sulfate	19.7	12.9	125	250
Total Alkalinity	120	140	---	---
Total Organic Carbon	4	3	---	---
pH	7.11	7.17	---	---
Conductivity (mS/cm)	0.3	0.325	---	---
Temperature (C)	11.2	8.38	---	---
ORP (mV)	157	137	---	---
Dissolved Oxygen (mg/L)	6.39	5.66	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-1SR
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	10/8/2003	4/13/2004	PAL	ES
1,2,4-Trimethylbenzene	1.1	< 0.14	96	480
1,3,5-Trimethylbenzene	0.3	< 0.18	96	480
Benzene	< 0.2	0.5	0.5	5
Naphthalene	0.34	< 0.16	8	40
Xylenes (total)	0.64	< 0.45	1,000	10,000
Metals, mg/L				
Arsenic	< 0.0029	< 0.0026	0.005	0.05
Barium	0.18	0.047	0.4	2
Cadmium	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	0.003	0.00099	0.008	0.04
Iron	**6.2**	**0.76**	0.15	0.3
Lead	0.0024	< 0.0017	0.0015	0.015
Manganese	**2.1**	**1.8**	0.025	0.05
Mercury	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	0.008	0.0018	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.14	---	---
Ethene	< 0.29	< 0.13	---	---
Methane	250	87	---	---
Natural Attenuation Parameters, mg/L				
Chloride	8.9	7.3	125	250
Nitrate as N	< 0.019	0.23	2	10
Sulfate	7	4.6	125	250
Total Alkalinity	95	97	---	---
Total Organic Carbon	5	5	---	---
pH	6.95	7.33	---	---
Conductivity (mS/cm)	0.254	0.216	---	---
Temperature (C)	11.93	8.1	---	---
ORP (mV)	162	177	---	---
Dissolved Oxygen (mg/L)	6.6	2.08	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-1M
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	4/22/2003	PAL	ES
Acetone	3.4	< 1.1	200	1000
Methylene chloride	2.4	0.32	0.5	5
Metals, mg/L				
Arsenic	0.014	0.01	0.005	0.05
Barium	0.32	0.33	0.4	2
Cadmium	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	0.008	0.04
Iron	8.7	7.7	0.15	0.3
Lead	< 0.0016	< 0.0016	0.0015	0.015
Manganese	1.7	1.6	0.025	0.05
Mercury	< 0.000087	< 0.000087	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	9.9	89	---	---
Natural Attenuation Parameters, mg/L				
Chloride	7.8	8.1	125	250
Nitrate as N	< 0.0076	< 0.0076	2	10
Sulfate	5.2	5.7	125	250
Total Alkalinity	76	72	---	---
Total Organic Carbon	4	3	---	---
pH	6.75	7.08	---	---
Conductivity (mS/cm)	0.209	0.215	---	---
Temperature (C)	9.61	9.42	---	---
ORP (mV)	86	105	---	---
Dissolved Oxygen (mg/L)	0.35	0.43	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2

Pretasky well
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	4/14/2004	PAL	ES
Benzene	0.34	0.5	5

Metals, mg/L			
Arsenic	0.0082	0.005	0.05
Barium	0.083	0.4	2
Cadmium	< 0.00028	0.0005	0.005
Cobalt	< 0.00096	0.008	0.04
Iron	0.22	0.15	0.3
Lead	< 0.0017	0.0015	0.015
Manganese	1.1	0.025	0.05
Mercury	< 0.000029	0.0002	0.002
Vanadium	0.0019	0.006	0.03

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-2S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	4/22/2003	10/7/2003	4/13/2004	PAL	ES
1,2,4-Trimethylbenzene	< 0.37	< 0.37	0.14	< 0.14	96	480
Acetone	3.8	< 1.1	< 0.66	4.1	200	1000
Benzene	0.91	0.45	1.3	1.2	0.5	5
Carbon disulfide	< 0.24	< 0.24	< 0.21	0.44	200	1000
Chlorobenzene	19	1.5	13	7.1	---	---
Methylene chloride	2.8	< 0.29	< 0.28	< 0.28	0.5	5
Metals, mg/L						
Arsenic	0.012	0.012	0.011	0.013	0.005	0.05
Barium	0.17	0.14	0.18	0.14	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	0.008	0.0013	0.0019	0.0039	0.008	0.04
Iron	**29.5**	**29.3**	**40**	**36.2**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**1.9**	**2.8**	**3**	**2.3**	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	0.00084	0.002	0.0013	0.0022	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 1.5	< 1.5	< 3	< 1.4	---	---
Ethene	< 1.4	< 1.4	< 2.9	< 1.3	---	---
Methane	520	540	870	3200	---	---
Natural Attenuation Parameters, mg/L						
Chloride	26.1	18.4	12.8	9.2	125	250
Nitrate as N	< 0.0076	0.01	< 0.019	< 0.016	2	10
Sulfate	< 0.11	0.22	0.25	0.23	125	250
Total Alkalinity	180	170	230	160	---	---
Total Organic Carbon	6	4	5	6	---	---
pH	6.47	6.74	6.47	6.48	---	---
Conductivity (mS/cm)	0.563	0.476	0.56	0.435	---	---
Temperature (C)	10.65	11.36	10.83	10.88	---	---
ORP (mV)	133	96	168	153	---	---
Dissolved Oxygen (mg/L)	3.35	0.9	1.93	1.05	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-2M
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	4/22/2003	10/7/2003	4/13/2004	PAL	ES
Acetone	5.5	< 1.1	< 0.66	< 0.66	200	1000
Benzene	< 0.37	< 0.37	< 0.2	0.46	0.5	5
Methylene chloride	3.1	< 0.29	< 0.28	< 0.28	0.5	5
Metals, mg/L						
Arsenic	0.019	0.019	0.02	0.021	0.005	0.05
Barium	0.37	0.66	0.42	0.35	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.0011	< 0.00096	0.008	0.04
Iron	**5**	**9.6**	**6.4**	**4.9**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**0.41**	**0.64**	**0.41**	**0.49**	0.025	0.05
Mercury	0.000092	< 0.000087	< 0.000067	0.00084	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00096	< 0.00071	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 0.3	< 0.6	< 0.3	< 0.14	---	---
Ethene	< 0.29	< 0.58	< 0.29	< 0.13	---	---
Methane	22	310	130	73	---	---
Natural Attenuation Parameters, mg/L						
Chloride	4.8	16	6.9	5.5	125	250
Nitrate as N	< 0.0076	< 0.0076	< 0.019	< 0.016	2	10
Sulfate	0.13	< 0.11	< 0.14	< 0.11	125	250
Total Alkalinity	100	160	110	100	---	---
Total Organic Carbon	4	4	4	4	---	---
pH	6.98	7.26	7.02	7.54	---	---
Conductivity (mS/cm)	0.231	0.391	0.26	0.23	---	---
Temperature (C)	10.01	10.61	10.6	10.48	---	---
ORP (mV)	107	89	140	109	---	---
Dissolved Oxygen (mg/L)	0.41	1.11	0.99	0.33	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-4S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	Duplicate 12/12/2002	4/22/2003	10/8/2003	4/13/2004	Duplicate 4/13/2004	PAL	ES
1,2,4-Trimethylbenzene	540	570	780	1100	1100	1000	96	480
1,3,5-Trimethylbenzene	120	130	170	230	310	280	96	480
Benzene	< 9.2	< 9.2	< 11	< 17	13	17	0.5	5
Ethylbenzene	10	< 10	16	38	9.4	8.4	140	700
Naphthalene	< 10	< 10	14	20	< 6.4	7.6	8	40
Xylenes (total)	29	27	54	160	52	39	1,000	10,000
Metals, mg/L								
Arsenic	0.0089	0.009	0.0065	0.0091	0.0086	0.0083	0.005	0.05
Barium	0.3	0.32	0.26	0.29	0.33	0.33	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00028	< 0.00036	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.00074	< 0.0011	< 0.00096	< 0.00096	0.008	0.04
Iron	16.9	17.2	15.4	18.9	24.7	25.4	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0016	< 0.0023	< 0.0017	< 0.0017	0.0015	0.015
Manganese	2.1	2.1	1.8	2.1	2.1	2.2	0.025	0.05
Mercury	< 0.000087	< 0.000087	< 0.000087	< 0.000067	< 0.000029	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00067	< 0.00096	< 0.00071	0.00088	0.006	0.03
Dissolved Gases, ug/L								
Ethane	< 3	< 3	< 3	< 3	< 2.8	< 2.8	---	---
Ethene	< 2.9	< 2.9	< 2.9	< 2.9	< 2.6	< 2.6	---	---
Methane	1200	750	1700	1400	160	500	---	---
Natural Attenuation Parameters, mg/L								
Chloride	13.5	13.5	10.2	7.7	11.4	11	125	250
Nitrate as N	< 0.0076	< 0.0076	< 0.0076	< 0.019	< 0.016	< 0.016	2	10
Sulfate	0.98	0.92	0.22	0.15	1	1.1	125	250
Total Alkalinity	280	280	260	290	310	310	---	---
Total Organic Carbon	5	6	5	4	12	14	---	---
pH	6.66	7.15	---	6.825	6.85	6.85	---	---
Conductivity (mS/cm)	0.612	0.543	---	0.611	0.671	0.671	---	---
Temperature (C)	12.02	10.15	---	11.72	10.17	10.17	---	---
ORP (mV)	117	132	---	133	151	151	---	---
Dissolved Oxygen (mg/L)	4.49	0.58	---	7.49	0.93	0.93	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-5S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/22/2003	10/7/2003	4/14/2004	Duplicate 4/14/2004	PAL	ES
1,2,4-Trimethylbenzene	210	180	750	67	51	96	480
1,3,5-Trimethylbenzene	47	38	200	2.7	2.4	96	480
Benzene	< 2.8	< 2.1	< 13	1.5	0.56	0.5	5
Ethylbenzene	6.2	5.1	29	1.5	1.2	140	700
Methylene chloride	3.9	< 1.7	< 19	< 0.93	< 0.56	0.5	5
Naphthalene	6.2	5.4	28	2.2	1.6	8	40
Xylenes (total)	12	13	150	2	1.8	1,000	10,000
Metals, mg/L							
Arsenic	0.0098	0.011	0.022	0.01	0.012	0.005	0.05
Barium	0.18	0.28	0.27	0.27	0.28	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	< 0.00028	0.0005	0.005
Cobalt	0.0025	0.0041	0.0058	0.0045	0.0041	0.008	0.04
Iron	10.2	19.4	30.5	11.2	11.7	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	< 0.0017	0.0015	0.015
Manganese	1.6	2	2.3	1.3	1.3	0.025	0.05
Mercury	0.000088	< 0.000087	0.000075	< 0.000029	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00096	< 0.00071	< 0.00071	0.006	0.03
Dissolved Gases, ug/L							
Ethane	< 3	< 0.3	< 3	< 1.4	< 2.8	---	---
Ethene	< 2.9	< 0.29	< 2.9	< 1.3	< 2.6	---	---
Methane	130	230	910	1100	490	---	---
Natural Attenuation Parameters, mg/L							
Chloride	5.8	5.7	4.3	4.6	4.5	125	250
Nitrate as N	0.1	0.62	0.02	0.94	1.3	2	10
Sulfate	0.34	3.3	0.16	1.8	2.3	125	250
Total Alkalinity	140	160	180	160	160	---	---
Total Organic Carbon	5	4	9	6	6	---	---
pH	6.99	7.12	6.65	6.95	6.95	---	---
Conductivity (mS/cm)	0.333	0.379	0.425	0.361	0.361	---	---
Temperature (C)	12.4	9.66	12.77	9.63	9.63	---	---
ORP (mV)	106	117	151	169	169	---	---
Dissolved Oxygen (mg/L)	1.75	0.74	5.12	2.82	2.82	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-6S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	10/7/2003	PAL	ES
1,1-Dichloroethane	0.55	0.71	85	850
Acetone	2.6	< 0.66	200	1000
cis-1,2-Dichloroethene	< 0.35	0.59	7	70
Methylene chloride	2.2	< 0.28	0.5	5
Trichloroethene	< 0.42	0.37	0.5	5
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.17	0.13	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	0.0022	< 0.0011	0.008	0.04
Iron	0.065	< 0.044	0.15	0.3
Lead	< 0.0016	< 0.0023	0.0015	0.015
Manganese	**2.7**	**2.7**	0.025	0.05
Mercury	< 0.000087	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	2.9	7.9	---	---
Natural Attenuation Parameters, mg/L				
Chloride	6.7	5.6	125	250
Nitrate as N	< 0.0076	< 0.019	2	10
Sulfate	4	3.6	125	250
Total Alkalinity	160	150	---	---
Total Organic Carbon	6	5	---	---
pH	7.45	7.37	---	---
Conductivity (mS/cm)	0.342	0.307	---	---
Temperature (C)	11.1	10.28	---	---
ORP (mV)	113	127	---	---
Dissolved Oxygen (mg/L)	2.86	3.08	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-6M
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	10/7/2003	PAL	ES
1,1-Dichloroethane	< 0.3	0.61	85	850
Acetone	2.1	< 0.66	200	1000
cis-1,2-Dichloroethene	< 0.35	0.42	7	70
Methylene chloride	2.1	< 0.28	0.5	5
Metals, mg/L				
Arsenic	0.0024	< 0.0029	0.005	0.05
Barium	0.75	0.89	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	< 0.00074	< 0.0011	0.008	0.04
Iron	< 0.042	0.12	0.15	0.3
Lead	< 0.0016	0.0024	0.0015	0.015
Manganese	1.7	2.8	0.025	0.05
Mercury	0.000097	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	1.1	6.6	---	---
Natural Attenuation Parameters, mg/L				
Chloride	6	4.7	125	250
Nitrate as N	< 0.0076	0.02	2	10
Sulfate	0.42	1.8	125	250
Total Alkalinity	100	140	---	---
Total Organic Carbon	4	3	---	---
pH	7.49	7.44	---	---
Conductivity (mS/cm)	0.227	0.289	---	---
Temperature (C)	10.5	10.71	---	---
ORP (mV)	96	140	---	---
Dissolved Oxygen (mg/L)	0.42	4.41	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-8S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	10/7/2003	PAL	ES
Acetone	2.2	< 0.66	200	1000
Methylene chloride	2.6	< 0.28	0.5	5
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.088	0.093	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	< 0.00074	< 0.0011	0.008	0.04
Iron	0.052	< 0.044	0.15	0.3
Lead	< 0.0016	< 0.0023	0.0015	0.015
Manganese	**0.59**	**0.32**	0.025	0.05
Mercury	< 0.000087	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	0.58	6.2	---	---
Natural Attenuation Parameters, mg/L				
Chloride	9.5	17.2	125	250
Nitrate as N	1.5	0.15	2	10
Sulfate	12.3	5.6	125	250
Total Alkalinity	190	230	---	---
Total Organic Carbon	0.9	2	---	---
pH	7.32	7.15	---	---
Conductivity (mS/cm)	0.44	0.497	---	---
Temperature (C)	11.73	11.96	---	---
ORP (mV)	124	177	---	---
Dissolved Oxygen (mg/L)	7.07	4.3	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-8M
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	10/7/2003	PAL	ES
1,2,4-Trimethylbenzene	< 0.37	0.36	96	480
1,3,5-Trimethylbenzene	< 0.4	0.22	96	480
Acetone	2.9	< 0.66	200	1000
Methylene chloride	3.2	< 0.28	0.5	5
Trichloroethene	< 0.42	0.23	0.5	5
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.68	0.73	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	< 0.00074	< 0.0011	0.008	0.04
Iron	< 0.042	0.045	0.15	0.3
Lead	< 0.0016	< 0.0023	0.0015	0.015
Manganese	2.7	2.8	0.025	0.05
Mercury	0.00009	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	2	110	---	---
Natural Attenuation Parameters, mg/L				
Chloride	2.6	12.8	125	250
Nitrate as N	< 0.0076	< 0.019	2	10
Sulfate	5.7	1.1	125	250
Total Alkalinity	220	240	---	---
Total Organic Carbon	2	3	---	---
pH	7.41	7.31	---	---
Conductivity (mS/cm)	0.422	0.479	---	---
Temperature (C)	9.95	10.44	---	---
ORP (mV)	105	150	---	---
Dissolved Oxygen (mg/L)	1.74	0.92	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-12S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	10/7/2003	PAL	ES
Acetone	3	< 0.66	200	1000
Methylene chloride	2.7	< 0.28	0.5	5
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.021	0.021	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	< 0.00074	< 0.0011	0.008	0.04
Iron	< 0.042	< 0.044	0.15	0.3
Lead	0.0034	< 0.0023	0.0015	0.015
Manganese	0.0023	0.0017	0.025	0.05
Mercury	< 0.000087	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	0.0013	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	< 0.39	< 0.39	---	---
Natural Attenuation Parameters, mg/L				
Chloride	24.3	9.1	125	250
Nitrate as N	1.6	1.4	2	10
Sulfate	7.2	5	125	250
Total Alkalinity	170	210	---	---
Total Organic Carbon	1	0.8	---	---
pH	7.29	7.44	---	---
Conductivity (mS/cm)	0.444	0.438	---	---
Temperature (C)	12.04	11.97	---	---
ORP (mV)	132	190	---	---
Dissolved Oxygen (mg/L)	5.86	9.0	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-14S
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/23/2003	10/8/2003	4/13/2004	PAL	ES
1,2,4-Trimethylbenzene	1.7	0.97	5.5	2.1	96	480
1,3,5-Trimethylbenzene	0.64	< 0.4	1.8	0.8	96	480
Acetone	4.3	< 1.1	< 3.3	< 0.66	200	1000
Benzene	< 0.37	< 0.37	< 1	0.43	0.5	5
Ethylbenzene	< 0.41	< 0.41	1.2	0.4	140	700
Methylene chloride	2.1	< 0.29	< 1.4	< 0.28	0.5	5
Naphthalene	5	2.2	18	6	8	40
Xylenes (total)	1.4	0.47	2.3	1.1	1,000	10,000
Metals, mg/L						
Arsenic	< 0.0021	< 0.0021	< 0.0029	< 0.0026	0.005	0.05
Barium	0.18	0.084	0.19	0.11	0.4	2
Cadmium	0.00045	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	0.0052	0.0015	< 0.0011	0.0017	0.008	0.04
Iron	**11.6**	**2.5**	**17.8**	**5.4**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**3.7**	**0.83**	**7**	**1.9**	0.025	0.05
Mercury	0.000088	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	< 0.00067	< 0.00067	< 0.00096	< 0.00071	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 3	< 0.6	< 3	< 1.4	---	---
Ethene	< 2.9	< 0.58	< 2.9	< 1.3	---	---
Methane	450	430	1200	1700	---	---
Natural Attenuation Parameters, mg/L						
Chloride	5	5.4	7.3	5.7	125	250
Nitrate as N	0.01	0.34	< 0.019	0.21	2	10
Sulfate	3	5.4	0.18	8.4	125	250
Total Alkalinity	210	150	170	160	---	---
Total Organic Carbon	14	5	12	10	---	---
pH	6.88	6.96	6.89	6.96	---	---
Conductivity (mS/cm)	0.441	0.328	0.404	0.357	---	---
Temperature (C)	11.13	7.7	12.24	7.71	---	---
ORP (mV)	114	166	162	166	---	---
Dissolved Oxygen (mg/L)	3.22	5.02	6.03	3.38	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
MW-15M
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	10/7/2003	Duplicate 10/7/2003	PAL	ES
1,1-Dichloroethane	1	< 0.26	< 0.26	85	850
1,2,4-Trimethylbenzene	< 0.37	0.29	0.28	96	480
cis-1,2-Dichloroethene	0.56	0.29	0.26	7	70
Methylene chloride	3	< 0.28	< 0.28	0.5	5
Metals, mg/L					
Arsenic	0.0054	< 0.0029	< 0.0029	0.005	0.05
Barium	0.86	0.74	0.75	0.4	2
Cadmium	0.00031	0.00092	< 0.00036	0.0005	0.005
Cobalt	0.0012	< 0.0011	< 0.0011	0.008	0.04
Iron	**1.1**	**4.1**	**1.6**	0.15	0.3
Lead	0.0049	**0.13**	**0.043**	0.0015	0.015
Manganese	**3.6**	**3.4**	**3.5**	0.025	0.05
Mercury	0.000092	< 0.000067	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	< 0.00096	0.006	0.03
Dissolved Gases, ug/L					
Ethane	< 0.3	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	< 0.29	---	---
Methane	12	19	21	---	---
Natural Attenuation Parameters, mg/L					
Chloride	5.2	5.1	5.2	125	250
Nitrate as N	0.03	< 0.019	< 0.019	2	10
Sulfate	2.4	5.8	5.6	125	250
Total Alkalinity	240	230	230	---	---
Total Organic Carbon	3	2	2	---	---
pH	7.25	7.2	---	---	---
Conductivity (mS/cm)	0.466	0.469	---	---	---
Temperature (C)	10.65	10.76	---	---	---
ORP (mV)	93	100	---	---	---
Dissolved Oxygen (mg/L)	0.51	2.3	---	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
PZ-1
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/23/2003	10/8/2003	4/13/2004	PAL	ES
Benzene	< 0.37	< 0.37	< 0.2	0.5	0.5	5
Methylene chloride	3.4	< 0.29	< 0.28	< 0.28	0.5	5
Metals, mg/L						
Arsenic	0.0029	< 0.0021	< 0.0029	0.0035	0.005	0.05
Barium	0.024	0.031	0.033	0.039	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.0011	< 0.00096	0.008	0.04
Iron	< 0.042	< 0.042	< 0.044	0.058	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**0.19**	**0.3**	**0.37**	**0.49**	0.025	0.05
Mercury	0.000091	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	0.0013	0.0011	0.0012	0.0015	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 0.3	< 0.3	< 0.3	< 0.14	---	---
Ethene	< 0.29	< 0.29	< 0.29	< 0.13	---	---
Methane	6.6	1.5	48	3.8	---	---
Natural Attenuation Parameters, mg/L						
Chloride	9.4	12.8	5.8	7.2	125	250
Nitrate as N	0.23	0.23	< 0.019	< 0.016	2	10
Sulfate	1.6	5.5	6.1	9.1	125	250
Total Alkalinity	120	130	190	150	---	---
Total Organic Carbon	3	< 0.7	2	3	---	---
pH	7.54	7.43	7.31	7.92	---	---
Conductivity (mS/cm)	0.271	0.314	0.404	0.326	---	---
Temperature (C)	11.33	9.93	11.09	9.58	---	---
ORP (mV)	105	169	186	151	---	---
Dissolved Oxygen (mg/L)	2.78	4.8	3.99	1.96	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
PZ-2
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	10/7/2003	PAL	ES
Acetone	2.6	< 0.66	200	1000
Methylene chloride	2.4	< 0.28	0.5	5
Metals, mg/L				
Arsenic	**0.056**	< 0.0029	0.005	0.05
Barium	0.66	0.071	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	0.011	< 0.0011	0.008	0.04
Iron	**98.8**	**20.8**	0.15	0.3
Lead	0.0062	< 0.0023	0.0015	0.015
Manganese	**5.2**	**1.5**	0.025	0.05
Mercury	0.00013	< 0.000067	0.0002	0.002
Vanadium	0.026	0.0016	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.6	< 3	---	---
Ethene	< 0.58	< 2.9	---	---
Methane	98	490	---	---
Natural Attenuation Parameters, mg/L				
Chloride	8.6	6.6	125	250
Nitrate as N	< 0.0076	< 0.019	2	10
Sulfate	2.4	< 0.14	125	250
Total Alkalinity	160	77	---	---
Total Organic Carbon	15	7	---	---
pH	6.68	6.67	---	---
Conductivity (mS/cm)	0.432	0.239	---	---
Temperature (C)	11.03	11.08	---	---
ORP (mV)	116	149	---	---
Dissolved Oxygen (mg/L)	5.14	4.43	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
PZ-3
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/11/2002	10/7/2003	PAL	ES
Acetone	3.1	< 0.66	200	1000
Methylene chloride	2.5	< 0.28	0.5	5
Metals, mg/L				
Arsenic	0.0038	< 0.0029	0.005	0.05
Barium	0.097	0.081	0.4	2
Cadmium	0.00099	< 0.00036	0.0005	0.005
Cobalt	0.0018	< 0.0011	0.008	0.04
Iron	1.2	0.58	0.15	0.3
Lead	< 0.0016	< 0.0023	0.0015	0.015
Manganese	2.7	2.2	0.025	0.05
Mercury	0.00012	0.00007	0.0002	0.002
Vanadium	0.0028	< 0.00096	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	2.4	51	---	---
Natural Attenuation Parameters, mg/L				
Chloride	6.3	5.5	125	250
Nitrate as N	< 0.0076	< 0.019	2	10
Sulfate	1.2	3.5	125	250
Total Alkalinity	160	180	---	---
Total Organic Carbon		6	---	---
pH	7.06	6.96	---	---
Conductivity (mS/cm)	0.33	0.363	---	---
Temperature (C)	10.98	10.18	---	---
ORP (mV)	133	191	---	---
Dissolved Oxygen (mg/L)	4.48	3.83	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
PZ-4
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	10/7/2003	PAL	ES
1,1-Dichloroethane	< 0.3	0.33	85	850
Acetone	3.5	< 0.66	200	1000
cis-1,2-Dichloroethene	< 0.35	0.46	7	70
Methylene chloride	2.6	< 0.28	0.5	5
Trichloroethene	< 0.42	0.34	0.5	5
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.12	0.077	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	0.001	< 0.0011	0.008	0.04
Iron	< 0.042	< 0.044	0.15	0.3
Lead	< 0.0016	< 0.0023	0.0015	0.015
Manganese	2.6	2	0.025	0.05
Mercury	0.000088	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03
Dissolved Gases, ug/L				
Ethane	< 0.3	< 0.3	---	---
Ethene	< 0.29	< 0.29	---	---
Methane	< 0.39	10	---	---
Natural Attenuation Parameters, mg/L				
Chloride	5.5	4.5	125	250
Nitrate as N	< 0.0076	< 0.019	2	10
Sulfate	4.2	5.1	125	250
Total Alkalinity	130	130	---	---
Total Organic Carbon	5	4	---	---
pH	7.53	7.17	---	---
Conductivity (mS/cm)	0.278	0.283	---	---
Temperature (C)	11.80	11.52	---	---
ORP (mV)	105	133	---	---
Dissolved Oxygen (mg/L)	12	3.89	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
PZ-5
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	4/23/2003	10/8/2003	4/13/2004	PAL	ES
Acetone	3	< 1.1	< 0.66	< 0.66	200	1000
Benzene	< 0.37	< 0.37	< 0.2	0.49	0.5	5
Methylene chloride	2.5	0.34	< 0.28	< 0.28	0.5	5
Metals, mg/L						
Arsenic	< 0.0021	< 0.0021	< 0.0029	< 0.0026	0.005	0.05
Barium	0.091	0.075	0.082	0.061	0.4	2
Cadmium	< 0.00028	< 0.00028	< 0.00036	< 0.00028	0.0005	0.005
Cobalt	< 0.00074	< 0.00074	< 0.0011	0.001	0.008	0.04
Iron	0.13	0.12	< 0.044	**0.59**	0.15	0.3
Lead	< 0.0016	< 0.0016	< 0.0023	< 0.0017	0.0015	0.015
Manganese	**0.18**	**0.17**	**0.43**	**0.67**	0.025	0.05
Mercury	0.000098	< 0.000087	< 0.000067	< 0.000029	0.0002	0.002
Vanadium	0.0011	0.00075	< 0.00096	0.0012	0.006	0.03
Dissolved Gases, ug/L						
Ethane	< 0.6	< 0.3	< 0.3	< 0.28	---	---
Ethene	< 0.58	< 0.29	< 0.29	< 0.26	---	---
Methane	130	210	47	47	---	---
Natural Attenuation Parameters, mg/L						
Chloride	9.7	8.6	5.6	2.6	125	250
Nitrate as N	0.48	0.37	0.28	0.47	2	10
Sulfate	5.7	10.1	5.5	4.6	125	250
Total Alkalinity	260	220	260	190	---	---
Total Organic Carbon	2	1	2	2	---	---
pH	7.15	7.18	7.16	7.44	---	---
Conductivity (mS/cm)	0.529	0.469	0.492	0.397	---	---
Temperature (C)	10.98	8.72	10.56	8.77	---	---
ORP (mV)	112	159	157	184	---	---
Dissolved Oxygen (mg/L)	1.21	2.42	3.63	3.83	---	---

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
Ackerman
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	4/22/2003	10/7/2003	PAL	ES
	(No VOCs Detected)			
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.024	0.023	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	< 0.00074	< 0.0011	0.008	0.04
Iron	**5.9**	**1.7**	0.15	0.3
Lead	0.0034	< 0.0023	0.0015	0.015
Manganese	**0.12**	**0.085**	0.025	0.05
Mercury	< 0.000087	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
Hubley
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	4/22/2003	10/8/2003	PAL	ES
1,2,4-Trimethylbenzene	< 0.37	0.18	96	480
Metals, mg/L				
Arsenic	< 0.0021	< 0.0029	0.005	0.05
Barium	0.084	0.087	0.4	2
Cadmium	< 0.00028	< 0.00036	0.0005	0.005
Cobalt	< 0.00074	< 0.0011	0.008	0.04
Iron	0.16	0.16	0.15	0.3
Lead	< 0.0016	< 0.0023	0.0015	0.015
Manganese	**0.2**	**0.32**	0.025	0.05
Mercury	< 0.000087	< 0.000067	0.0002	0.002
Vanadium	< 0.00067	< 0.00096	0.006	0.03

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
TRIP BLANK
Summary of Detected Compounds
Former Onalaska Landfill

Volatile Organic Compounds (VOC), ug/L	12/12/2002	12/12/2002	4/22/2003	10/7/2003 (133874)	10/8/2003 (133875)	4/14/2004 (K544)	4/14/2004 (K581)	PAL	ES
2-Butanone	< 0.59	< 0.59	2.2	0.45	< 0.36	1	1.1	90	460
Acetone	< 1.1	< 1.1	3.5	1	0.66	1.9	2.1	200	1000
Benzene	< 0.37	< 0.37	< 0.37	< 0.2	< 0.2	< 0.2	0.32	0.5	5
Methylene chloride	1.9	2	1	< 0.28	< 0.28	1.4	0.9	0.5	5

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3-2
Notes
Summary of Detected Compounds
Former Onalaska Landfill

For the VOC only; the compounds reported are the only VOC that have been detected since the December 2002 sampling event

Shaded cells indicate the compound exceeds the WDNR Preventive Action Level (PAL)

Shaded cell and bold number indicates the compound exceeds the WDNR PAL and Enforcement Standard (ES)

The ES and PAL criteria for trimethylbenzene (TMB) is the sum of 1,2,4-TMB and 1,3,5-TMB

< indicates the compound was not detected at or above the detection limit

--- indicates no criteria associated with that compound

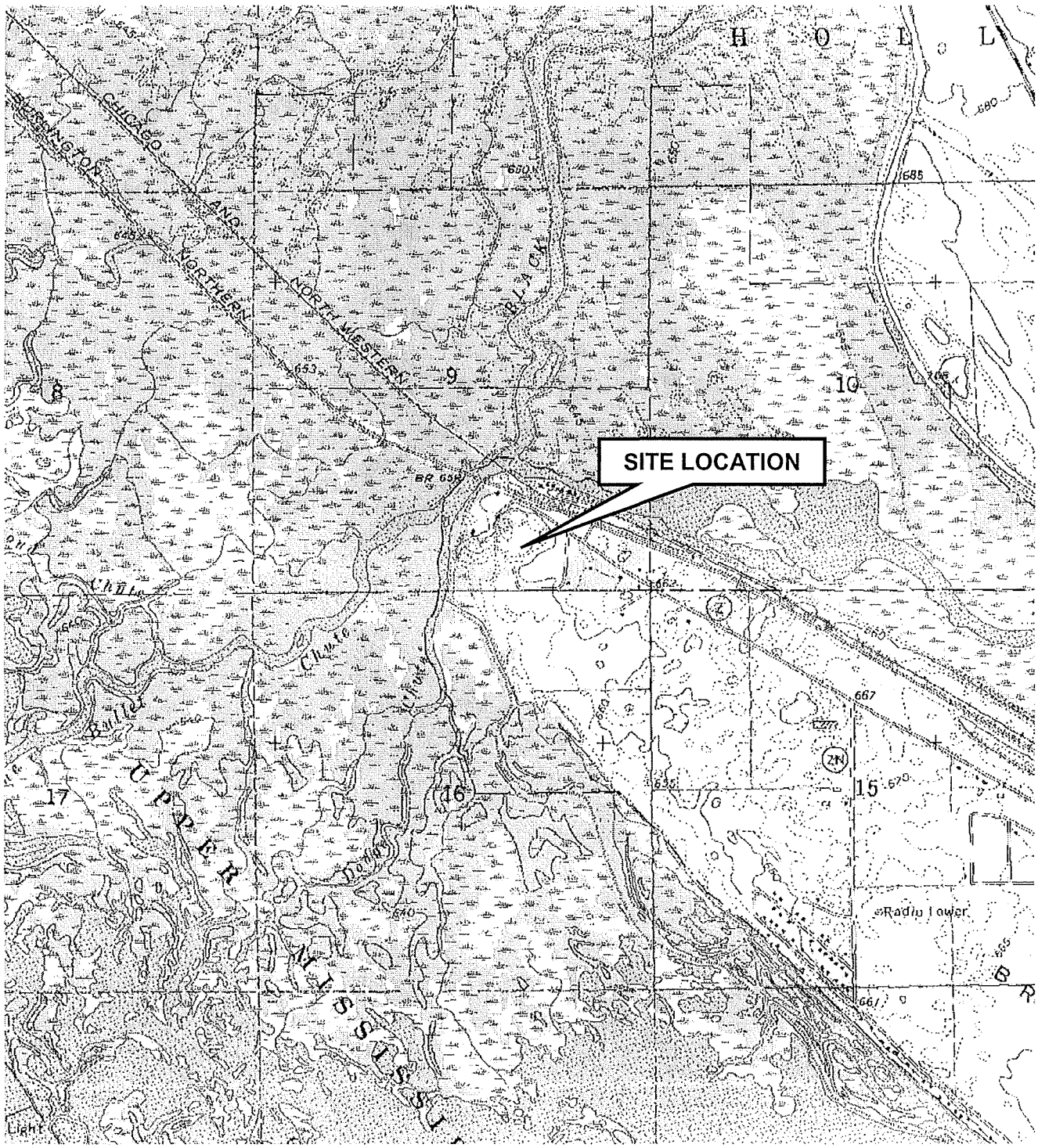
Ackerman, Hubley and Pretasky residential wells were sampled for VOC and metals

Note: Please see notes provided at the end of this table.
Well was not sampled in October 2003 due to insufficient water.

Table 3 - 3
Comparison of Concentrations of Certain VOCs in the Groundwater
Onalaska Municipal Landfill

Well Number	Sample Date	Concentration in ppb				
		benzene	toluene	xylenes	1-1, DCA	TCE
MW-4S	10/31/93	0.93	54.64	317	5.71	0.13
	12/19/96	<0.3	7	371.4	<0.2	<1.0
	10/26/98	<8	<8	86	<8	<8
	11/1/01	<0.16	<0.18	30	<0.16	<0.14
	12/22/02	<9.2	<9.8	29	<7.5	<10
	4/22/03	<11	<11	54	<8.6	<12
	10/8/03	<17	<14	160	<22	<18
	4/13/04	17	<6.8	52	<7.4	<6.3
MW-5S	10/31/93	0.78	160	469	3.39	0.29
	12/18/96	0.7	490.5	174.9	0.3	<1.0
	10/26/98	<0.4	28	27	<0.4	<0.4
	11/02/01	<0.16	0.48	180	<0.16	0.14
	12/22/02	<2.8	<3	13	<2.4	<3.2
	4/22/03	<2.1	<2.2	13	<1.7	<2.4
	10/7/03	<13	<11	150	<15	<15
	4/14/04	1.5	<0.57	2	<0.52	<0.44
MW-6S	10/31/93	0.5	1.78	0.1	7.1	0.14
	10/2/96	<1	<1	<1	0.3	<1
	10/27/98	<0.4	<0.4	<0.4	<0.4	<0.4
	10/31/01	<0.16	<0.18	<0.33	0.33	0.16
	12/12/03	<0.37	<0.39	<0.44	0.55	<0.42
	10/7/03	<0.2	<0.17	<0.45	0.71	0.37

FIGURES



SOURCE: USGS 7½ Minute Topographic Quadrangle Holmen, Wi-Minn., dated 1973, obtained from DeLorme

SCALE

0 1/4 1/2 1 MILE

N

ENSR INTERNATIONAL

FIGURE 1-1

SITE LOCATION MAP

Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB	DATE: Aug 2003	PROJECT NO: 09413-114	REV: 0
FILE NO.: FIG1-1.DOC	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

Residential

MW-1SR

ASPHALT DRIVE

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

COUNTY ROAD "Z"

SHORELINE

RIVER

BLACK

AW-1

HUBLEY WELL

MW-14S

~500'

CLARIFIER

MW-2

D M S

PZ-1 AW-9

MW-5S

AST WITH CONCRETE PIT

EW-5

PROCESS BUILDING

AW-13

EW-4

PZ-2

DESIGNATED MANAGEMENT ZONE

EW-3

AW-20

AW-25

EW-2

AW-28

MW-4S

EW-1

PZ-3

PZ-5

PZ-6

MW-6

M S

~365'

MW-15M

GRAVEL DRIVE

MW-7M

SPORTSMANS CLUB ROAD

MW-8

ACKERMAN WELL

S M D

MW-12S

GARDEN SPIGOTS

PZ-4

PASTURE

CROPLAND

MW-10M

MW-9M

MW-11M

LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ▨ = Extraction Well
- ○ = Air Well
- = Approximate Property Boundary
- = Approximate extent of landfill cap
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

Approximate Scale
1 inch = 175 feet

0 175 350

N

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.

Figure 1-2
Site Plan
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: Aug 2003	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.: siteplan.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

642.60
MW-1SR

Residential

642.60

ASPHALT DRIVE

SHORELINE

RIVER

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

COUNTY ROAD "Z"

642.39
AW-1

HUBLEY WELL
MW-14S
642.41

642.38
PZ-1 AW-9
642.35

CLARIFIER

AST WITH CONCRETE PIT

MW-5S
642.36

EW-5

PROCESS BUILDING

642.90
AW-13

EW-4

642.14
PZ-2

DESIGNATED MANAGEMENT ZONE

EW-3

AW-20
642.28

AW-25
642.34

EW-2

AW-28
642.45

642.50
PZ-3

MW-2
D M S
642.42

642.42
MW-4S

EW-1

642.45

PZ-5
642.42

PZ-6
642.34

MW-7M

MW-6
M S
642.24

MW-15M

GRAVEL DRIVE

MW-8
S M D
642.27

ACKERMAN WELL

SPORTSMANS CLUB ROAD

MW-12S
642.34

GARDEN SPIGOTS

PZ-4
642.29

642.30

PASTURE

CROPLAND

Inferrred direction of Groundwater Flow

MW-10M

MW-9M

MW-11M

LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⊡ = Extraction Well
- ○ = Air Well
- = Approximate Property Boundary
- = Approximate extent of landfill cap
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

Approximate Scale
1 inch = 175 feet

0 175 350

N

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.

Figure 3-1
Shallow Groundwater Elevation Map
October 7, 2003
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: AC	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.: GW Elev.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

642.60
MW-1SR

Residential

ASPHALT DRIVE

SHORELINE

RIVER

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

COUNTY ROAD "Z"

BLACK

HUBLEY WELL
MW-14S

AW-1

CLARIFIER

AST WITH CONCRETE PIT

PZ-1 AW-9

MW-5S

EW-5

PROCESS BUILDING

AW-13

EW-4

PZ-2

DESIGNATED MANAGEMENT ZONE

EW-3

AW-20

AW-25

EW-2

AW-26

MW-2
D M S
642.44

Inferrred direction of Groundwater Flow

MW-4S

EW-1

PZ-3

642.50

PZ-5

PZ-6

642.39
MW-7M

MW-6
M S
642.24

642.23
MW-15M

GRAVEL DRIVE

MW-8

SPORTSMANS CLUB ROAD

642.40

ACKERMAN WELL

S M D
642.49

MW-12S

GARDEN SPIGOTS

PZ-4

PASTURE

CROPLAND

642.17
MW-10M

642.20
MW-9M

642.32
MW-11M

642.30

642.20

LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⊡ = Extraction Well
- ○ = Air Well
- = Approximate Property Boundary
- = Approximate extent of landfill cap
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

Approximate Scale
1 inch = 175 feet

0 175 350

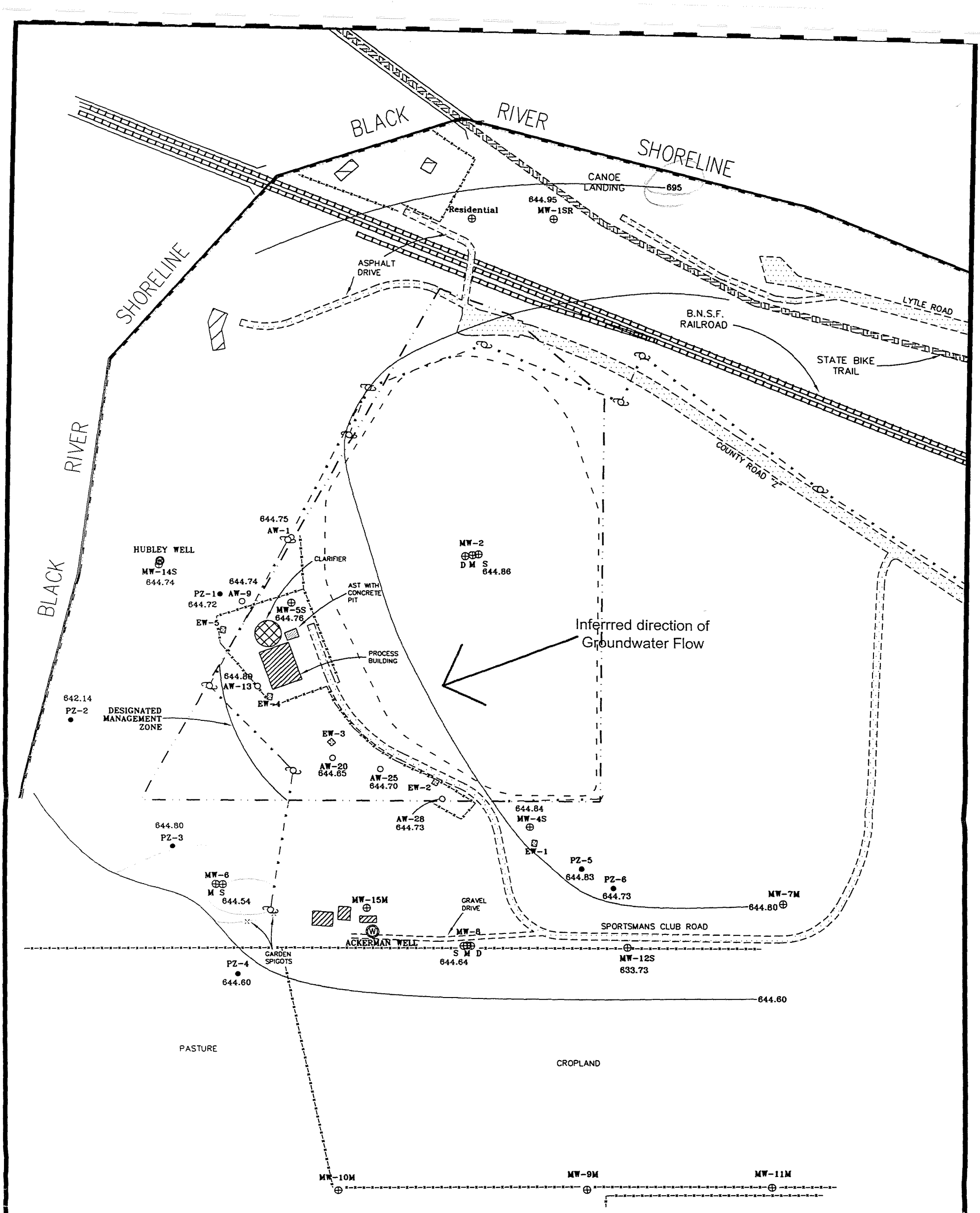
N

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.

Figure 3-2
Medium Groundwater Elevation Map
October 7, 2003
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: AC	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.: GW Elev.dwg	CHECKED: PJM		



LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⊡ = Extraction Well
- ○ = Air Well
- = Approximate Property Boundary
- = Approximate extent of landfill cap
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

Approximate Scale
1 inch = 175 feet

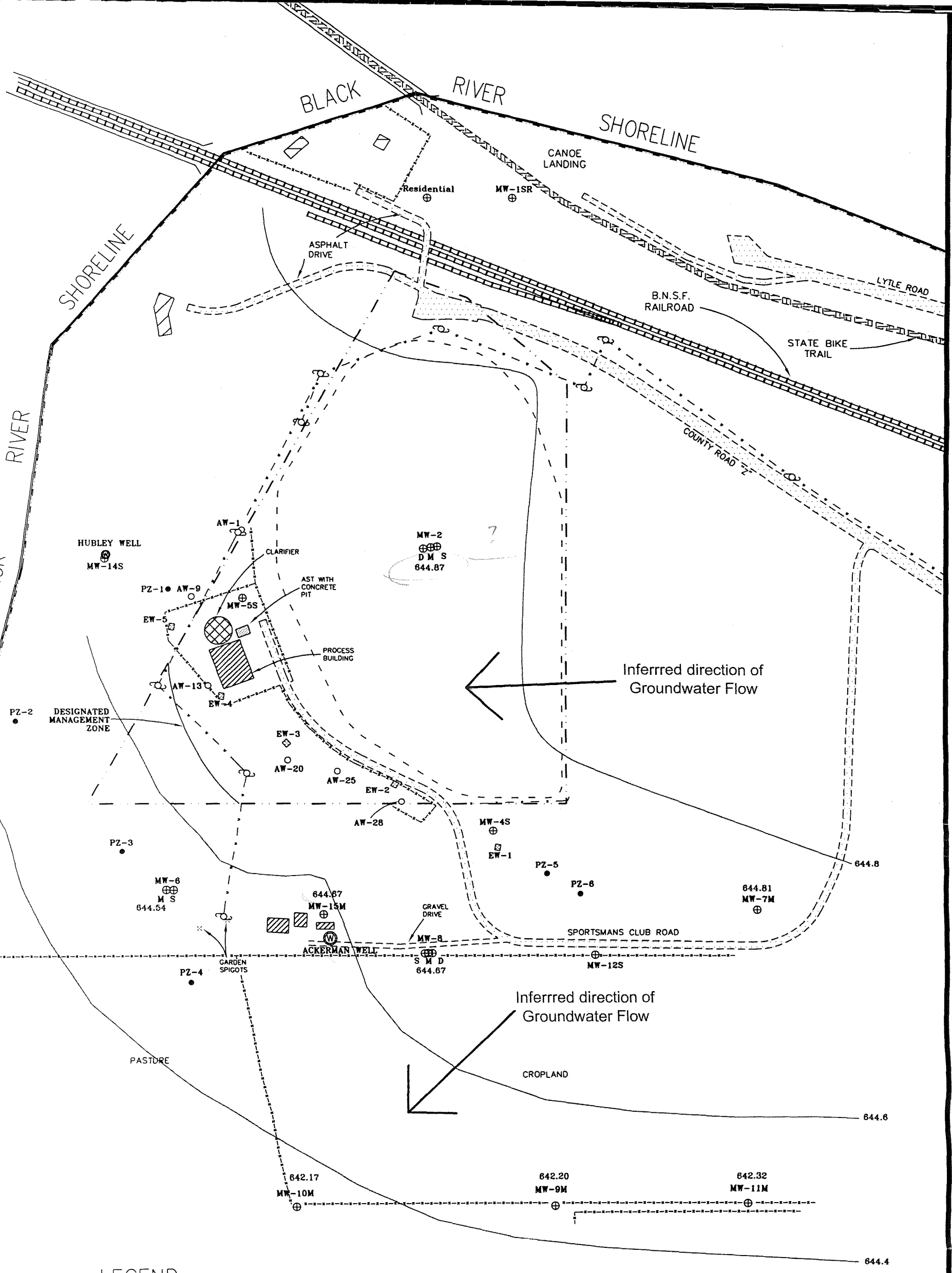
0 175 350

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.

Figure 3-3
Shallow Groundwater Elevation Map
April 13, 2004
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: AC	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.: GW Elev.dwg	CHECKED: PJM		



LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ▨ = Extraction Well
- ○ = Air Well
- = Approximate Property Boundary
- = Approximate extent of landfill cap
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

Approximate Scale
1 inch = 175 feet

0 175 350

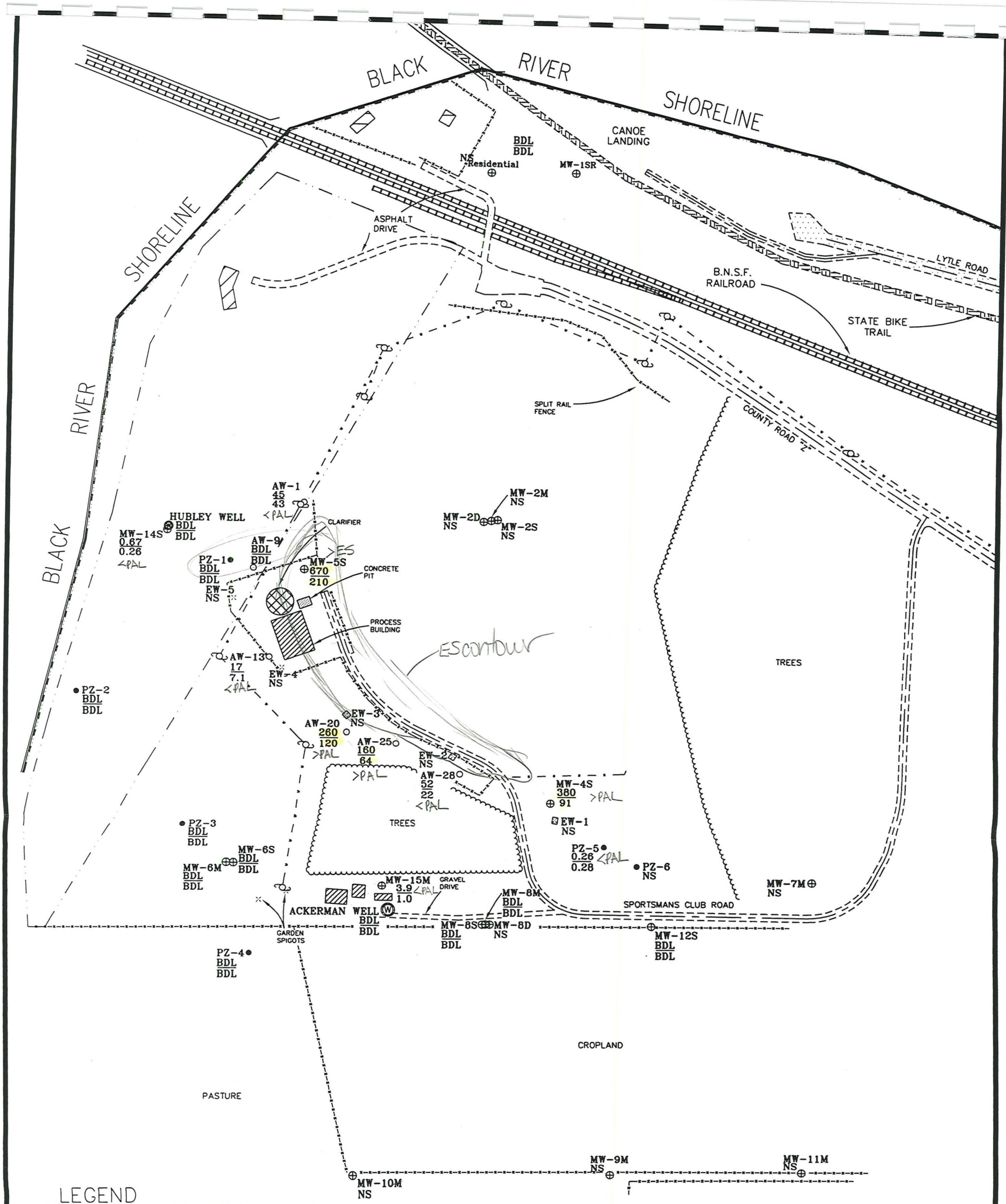
N

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.

Figure 3-4
Medium Groundwater Elevation Map
April 13, 2004
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.: GW Elev.dwg	CHECKED: PJM		



LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⁜ = Extraction Well
- O = Air Well
- = Approximate Property Line
- = Centerline
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

N

96/480
PAL/ES

Approximate Scale
1 inch = 175 feet

0 175 350

NOTES

NS = Not sampled
ND = Not Detected

52 = 1,2,4 – Trimethylbenzene concentration in groundwater (ug/l)
0.12 = 1,3,5 – Trimethylbenzene concentration in groundwater (ug/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.

Groundwater samples were collected by CH2M Hill, Fall 2001 Sampling, Baseline Natural Attenuation Monitoring.

Figure 3-5
November 2001 - Baseline
Trimethylbenzene Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

Residential ⊕ NS

MW-1SR ⊕ 1.1 / 0.3

ASPHALT DRIVE

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

SPLIT RAIL FENCE

COUNTY ROAD "Z"

BLACK RIVER SHORELINE

AW-1 NS

HUBLEY WELL 0.18 / ND

MW-14S 5.5 / 1.8

AW-9 ND / ND

CLARIFIER

750 / 200

PZ-1 ND / ND

MW-5S

CONCRETE PIT

EW-5

MW-2M ND / ND

MW-2D NS

MW-2S 0.14 / ND

PROCESS BUILDING

Inferred extent of groundwater that exceeds the ES for the Trimethylbenzenes

AW-13 NS

EW-4

TREES

PZ-2 ND / ND

EW-3

AW-20 170 / 120

AW-25 760 / 210

EW-2

AW-28 NA

MW-4S 1100 / 230 >> ES

EW-1

PZ-3 ND / ND

MW-6S ND / ND

MW-6M ND / ND

TREES

0.29 / NA

PZ-5 ND / ND

PZ-6 NS

MW-7M ⊕ NS

MW-15M

GRAVEL DRIVE

MW-8M 0.36 / 0.22

SPORTSMANS CLUB ROAD

ACKERMAN WELL (W) ND / ND

MW-8S ND / ND

MW-8D NS

MW-12S NA

GARDEN SPIGOTS

PZ-4 ND / ND

CROPLAND

PASTURE

MW-9M

MW-11M

MW-10M NS

NS

NS

LEGEND

⊕ = Monitoring Well
● = Piezometer
⁜ = Extraction Well
O = Air Well
— · — · — = Approximate Property Line
——— = Centerline
——— = Fence line
= Utility lines
= Utility pole
= Hydrant

N

Approximate Scale
1 inch = 175 feet

0 175 350

96/480

NOTES

NS = Not sampled
ND = Not Detected
52 = 1,2,4 – Trimethylbenzene concentration in groundwater (ug/l)
0.12 = 1,3,5 – Trimethylbenzene concentration in groundwater (ug/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.
Groundwater samples were collected by ENSR on October 7 and October 8, 2003

Figure 3-6
October 2003
Trimethylbenzene Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

Residential ⊕NA

MW-1SR ⊕ ND / ND

ASPHALT DRIVE

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

SPLIT RAIL FENCE

COUNTY ROAD "Z"

BLACK RIVER SHORELINE

AW-1 2.3 / 2.1

<PAL

↓ a lot

HUBLEY WELL 0.18 / ND

MW-14S 2.1 / 0.8

AW-9 ND / ND

CLARIFIER 6.7 / 2.7

MW-2M ND / ND

MW-2D NS

MW-2S ND / ND

PZ-1 ND / ND

MW-5S

EW-5

CONCRETE PIT

PROCESS BUILDING

Inferred extent of groundwater that exceeds the ES for the Trimethylbenzenes

AW-13 250 / 11

EW-4

TREES

PZ-2 NS

EW-3

AW-20 3.4 / 0.5

AW-25 2.5 / 0.28

EW-2

<PAL

AW-28 10 / 2.6

MW-4S 1100 / 310

EW-1

PZ-3 NS

TREES

MW-6S NS

MW-6M NS

NS

PZ-5 ND / ND

PZ-6 NS

MW-7M NS

MW-15M

GRAVEL DRIVE

MW-8M NS

ACKERMAN WELL (W) NS

SPORTSMANS CLUB ROAD

GARDEN SPIGOTS

MW-8S NS

MW-8D

MW-12S NS

PZ-4 NS

CROPLAND

PASTURE

MW-9M NS

MW-11M NS

MW-10M NS

LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⊗ = Extraction Well
- ○ = Air Well
- Approximate Property Line
- Centerline
- Fence line
- Utility lines
- Utility pole
- Hydrant

N

Approximate Scale
1 inch = 175 feet

0 175 350

NOTES

NS = Not sampled
ND = Not Detected

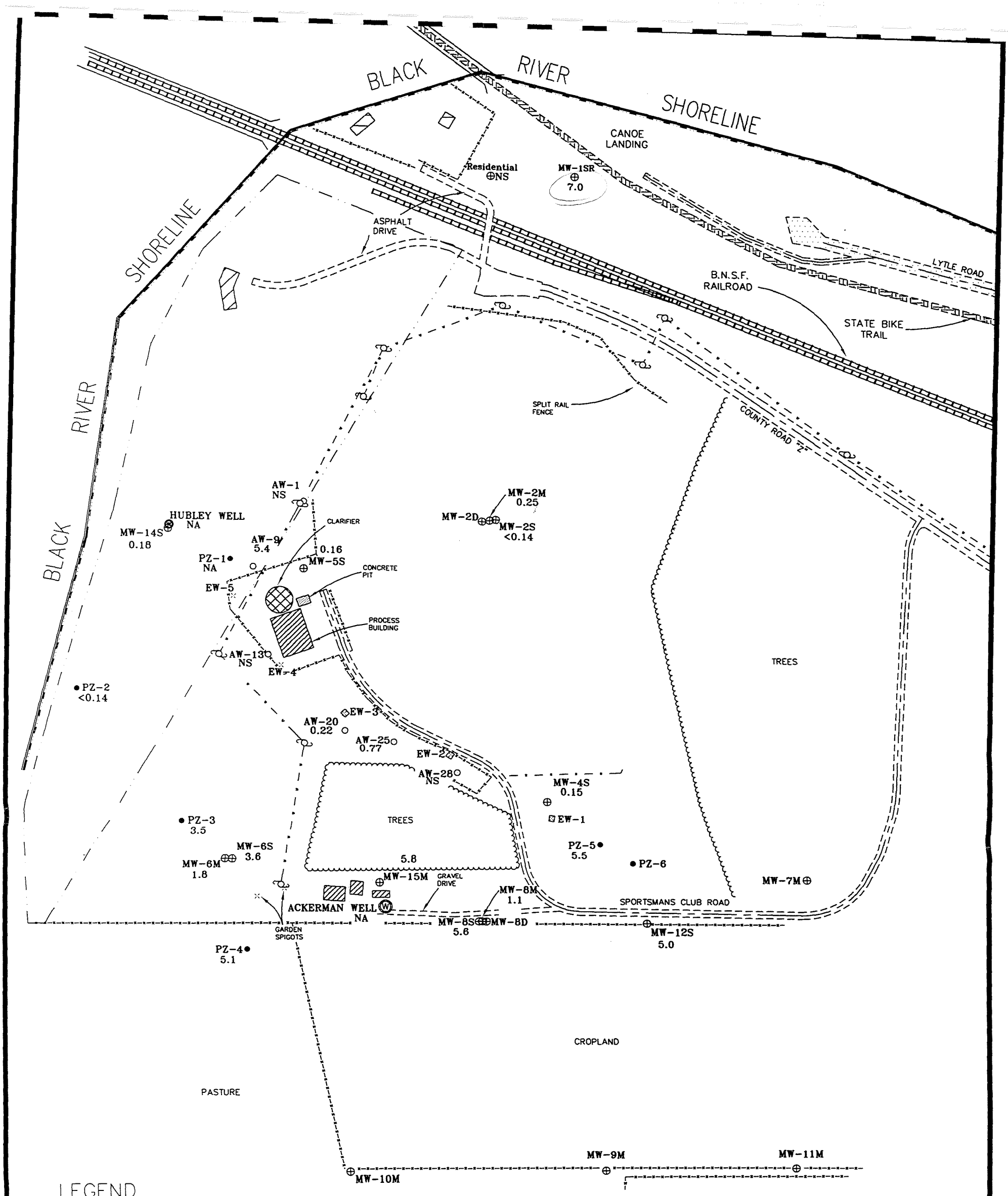
52 = 1,2,4 – Trimethylbenzene concentration in groundwater (ug/l)
0.12 = 1,3,5 – Trimethylbenzene concentration in groundwater (ug/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.
Groundwater samples were collected by ENSR on April 13 and 14, 2004

Figure 3-7
April 2004
Trimethylbenzene Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		



LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⁜ = Extraction Well
- O = Air Well
- = Approximate Property Line
- = Centerline
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

NOTES

NS = Not sampled
ND = Not Detected

5.1 = Sulfate concentration in groundwater (mg/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.
Groundwater samples were collected by ENSR on October 7 and 8, 2003

N

Approximate Scale
1 inch = 175 feet

0 175 350

Figure 4-1
October 2003
Sulfate Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

Residential ⊕NA

MW-1SR ⊕ 4.6

ASPHALT DRIVE

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

SPLIT RAIL FENCE

COUNTY ROAD "Z"

BLACK RIVER SHORELINE

AW-1 17.2

HUBLEY WELL NS

MW-14S 8.4

AW-9 3.7

CLARIFIER

1.8

PZ-1 NA

MW-5S

CONCRETE PIT

EW-5

PROCESS BUILDING

AW-13 0.69

EW-4

PZ-2 NS

AW-20 20.4

EW-3

AW-25 25.4

EW-2

AW-28 9.6

MW-2M 0.23

MW-2D

MW-2S <0.11

MW-4S 1.0

EW-1

TREES

PZ-3 NS

MW-6S NS

MW-6M NS

NS

PZ-5 4.6

PZ-6

MW-7M ⊕

MW-15M

GRAVEL DRIVE

MW-8M NS

ACKERMAN WELL Ⓦ NS

SPORTSMANS CLUB ROAD

MW-8S MW-8D NS

MW-12S NS

GARDEN SPIGOTS

PZ-4 NS

CROPLAND

PASTURE

MW-9M

MW-11M

MW-10M

LEGEND

⊕ = Monitoring Well
● = Piezometer
⁜ = Extraction Well
○ = Air Well
= Approximate Property Line
= Centerline
= Fence line
= Utility lines
= Utility pole
= Hydrant

N

Approximate Scale
1 inch = 175 feet

0 175 350

NOTES

NS = Not sampled
ND = Not Detected

4.6 = Sulfate concentration in groundwater (mg/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.
Groundwater samples were collected by ENSR on April 13 and 14, 2003

Figure 4-2
April 2004
Sulfate Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

Residential ⊕NS

MW-1SR ⊕ 250

ASPHALT DRIVE

SHORELINE RIVER BLACK

LYTLE ROAD

B.N.S.F. RAILROAD

STATE BIKE TRAIL

SPLIT RAIL FENCE

COUNTY ROAD "Z"

AW-1 NS

HUBLEY WELL NA

MW-14S 1200

AW-9 340

CLARIFIER

910

MW-5S

PZ-1 NA

CONCRETE PIT

EW-5

PROCESS BUILDING

AW-13 NS

EW-4

PZ-2 NA

EW-3

AW-20 2200

AW-25 2200

EW-2

AW-28 NS

MW-2M 870

MW-2D

MW-2S 130

MW-4S 1400

EW-1

PZ-3 51

MW-6S 7.9

MW-6M 6.6

TREES

19

PZ-5 47

PZ-6

MW-7M

MW-15M

GRAVEL DRIVE

MW-8M 110

ACKERMAN WELL NA

SPORTSMANS CLUB ROAD

MW-8S 6.2

MW-8D

MW-12S <0.39

GARDEN SPIGOTS

PZ-4 10

CROPLAND

PASTURE

MW-9M

MW-11M

MW-10M

LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⁜ = Extraction Well
- ○ = Air Well
- = Approximate Property Line
- = Centerline
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

N

Approximate Scale
1 inch = 175 feet

0 175 350

NOTES

NS = Not sampled
ND = Not Detected

6.6 = Methane concentration in groundwater (mg/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.
Groundwater samples were collected by ENSR on October 7 and 8, 2003

Figure 4-3
October 2003
Methane Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		

BLACK RIVER SHORELINE

CANOE LANDING

Residential ⊕NA

MW-1SR ⊕ 87

ASPHALT DRIVE

SHORELINE

RIVER

BLACK

B.N.S.F. RAILROAD

LYTLE ROAD

STATE BIKE TRAIL

SPLIT RAIL FENCE

COUNTY ROAD "Z"

AW-1 NS

HUBLEY WELL NS

MW-14S 1700

AW-9 110

PZ-1 3.8

MW-5S 1100

CLARIFIER

CONCRETE PIT

EW-5

PROCESS BUILDING

AW-13 1800

EW-4

PZ-2 NS

MW-2M 73

MW-2D

MW-2S 3200

TREES

EW-3

AW-20 890

AW-25 530

EW-2

AW-28 2800

MW-4S 160

EW-1

PZ-3 NS

TREES

PZ-5 47

PZ-6

MW-6S NS

MW-6M NS

NS

MW-15M

GRAVEL DRIVE

MW-8M NS

MW-7M

SPORTSMANS CLUB ROAD

ACKERMAN WELL NS

MW-8S MW-8D NS

MW-12S NS

GARDEN SPIGOTS

PZ-4 NS

CROPLAND

PASTURE

MW-9M

MW-11M

MW-10M

LEGEND

- ⊕ = Monitoring Well
- ● = Piezometer
- ⊗ = Extraction Well
- ○ = Air Well
- = Approximate Property Line
- = Centerline
- = Fence line
- = Utility lines
- = Utility pole
- = Hydrant

N

Approximate Scale
1 inch = 175 feet

0 175 350

NOTES

NS = Not sampled
ND = Not Detected

6.6 = Methane concentration in groundwater (mg/l)

Source:

Onalaska Landfill Site Plan Survey, prepared by Coulee Region Land Surveyors, Inc., project no. S-4754, dated 5/14/03.
Groundwater samples were collected by ENSR on April 13 and 14, 2004

Figure 4-4
April 2004
Methane Groundwater Analytical Results
Onalaska Landfill
Onalaska, Wisconsin

DRAWN: CMB/5802	DATE: June 2004	PROJECT No.: 09413-114	ENSR INTERNATIONAL
FILE No.:analytical.dwg	CHECKED: PJM		

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-15M					
Sample #: 001 Date Sampled: 10/07/03 13:30 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	**0.00092 B**	**0.0020**	**mg/L**	**SW846 6010B**	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	**0.13**	**0.0030**	**mg/L**	**SW846 6010B**	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.74**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**4.1**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**3.4**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**19**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

Client Sample ID: MW-15M

Sample #: 001 Date Sampled: 10/07/03 13:30 Date Received: 10/08/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Volatile Organics by GC/MS				Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	10	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	**0.29 J**	**0.50**	**ug/L**	**SW846 8260B**
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
Naphthalene	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	**0.29 J**	**1.0**	**ug/L**	**SW846 8260B**
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**230**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**5.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**5.8**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**2**	**1**	**mg/L**	**MCAWW 415.1**	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-6S					
Sample #: 002 Date Sampled: 10/07/03 12:40 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.13 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	**2.7**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**7.9**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

Client Sample ID: MW-6S

Sample #: 002 Date Sampled: 10/07/03 12:40 Date Received: 10/08/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	**0.71 J**	**1.0**	**ug/L**	**SW846 8260B**	
cis-1,2-Dichloroethene	**0.59**	**0.50**	**ug/L**	**SW846 8260B**	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	**0.37 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**150**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**5.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**3.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**5**	**1**	**mg/L**	**MCAWW 415.1**	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-6M					
Sample #: 003 Date Sampled: 10/07/03 12:25 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	**0.0024 B**	**0.0030**	**mg/L**	**SW846 6010B**	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.89**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**0.12**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**2.8**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**6.6**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

Client Sample ID: MW-6M

Sample #: 003 Date Sampled: 10/07/03 12:25 Date Received: 10/08/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	**0.61 J**	**1.0**	**ug/L**	**SW846 8260B**	
cis-1,2-Dichloroethene	**0.42 J**	**0.50**	**ug/L**	**SW846 8260B**	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**140**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**4.7**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	**0.020 B**	**0.10**	**mg/L**	**MCAWW 300.0A**	
Sulfate	**1.8**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**3**	**1**	**mg/L**	**MCAWW 415.1**	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: PZ-4					
Sample #: 004 Date Sampled: 10/07/03 11:50 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.077 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	**2.0**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**10**	**0.50**	**ug/L**	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

Client Sample ID: PZ-4

Sample #: 004 Date Sampled: 10/07/03 11:50 Date Received: 10/08/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	**0.33 J**	**1.0**	**ug/L**	**SW846 8260B**	
cis-1,2-Dichloroethene	**0.46 J**	**0.50**	**ug/L**	**SW846 8260B**	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	**0.34 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**130**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**4.5**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**5.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**4**	**1**	**mg/L**	**MCAWW 415.1**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: PZ-3					
Sample #: 005 Date Sampled: 10/07/03 16:30 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.081 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**0.58**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**2.2**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	**0.000070 B**	**0.00020**	**mg/L**	**SW846 7470A**	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**51**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

Client Sample ID: PZ-3
Sample #: 005 Date Sampled: 10/07/03 16:30 Date Received: 10/08/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	**180**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**5.5**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**3.5**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**6**	**1**	**mg/L**	**MCAWW 415.1**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: PZ-2					
Sample #: 006 Date Sampled: 10/07/03 16:00 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	**0.0016 B**	**0.0070**	**mg/L**	**SW846 6010B**	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.071 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**20.8**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**1.5**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**490**	**5.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

Client Sample ID: PZ-2
Sample #: 006 Date Sampled: 10/07/03 16:00 Date Received: 10/08/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	**77**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**6.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	**7**	**1**	**mg/L**	**MCAWW 415.1**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-15MD					
Sample #: 007 Date Sampled: 10/07/03 13:30 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	**0.043**	**0.0030**	**mg/L**	**SW846 6010B**	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.75**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**1.6**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**3.5**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**21**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-15MD					
Sample #: 007 Date Sampled: 10/07/03 13:30 Date Received: 10/08/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	**0.26 J**	**0.50**	**ug/L**	**SW846 8260B**	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**230**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**5.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**5.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**2**	**1**	**mg/L**	**MCAWW 415.1**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: TRIP					
Sample #: 008 Date Sampled: 10/07/03 13:30 Date Received: 10/08/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: ACKERMAN					
Sample #: 009 Date Sampled: 10/07/03 11:00 Date Received: 10/08/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.023 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**1.7**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**0.085**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: A3J080218 ONALASKA LANDFILL, WISCONSIN Date Reported: 10/27/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: ACKERMAN					
Sample #: 009 Date Sampled: 10/07/03 11:00 Date Received: 10/08/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

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Lot #: A3J090307 — ONALASKA LANDFILL - WISCONSIN — Date Reported: 10/28/03

Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Client Sample ID: MW-1SR (116)				
Sample #: 001 Date Sampled: 10/08/03 09:50 Date Received: 10/09/03 Matrix: WATER				
Trace Inductively Coupled Plasma (ICP) Metals				Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B
Cadmium	ND	0.0020	mg/L	SW846 6010B
Cobalt	**0.0030 B**	**0.0070**	**mg/L**	**SW846 6010B**
Lead	**0.0024 B**	**0.0030**	**mg/L**	**SW846 6010B**
Vanadium	**0.0080**	**0.0070**	**mg/L**	**SW846 6010B**
Inductively Coupled Plasma (ICP) Metals				Reviewed
Barium	**0.18 B**	**0.20**	**mg/L**	**SW846 6010B**
Iron	**6.2**	**0.10**	**mg/L**	**SW846 6010B**
Manganese	**2.1**	**0.015**	**mg/L**	**SW846 6010B**
Mercury in Liquid Waste (Manual Cold-Vapor)				Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A
Dissolved Gases in Water				Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175
Ethene	ND	0.50	ug/L	RSK SOP-175
Methane	**250**	**0.50**	**ug/L**	**RSK SOP-175**
Volatile Organics by GC/MS				Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Acetone	ND	10	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	10	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-1SR (116)
Sample #: 001 Date Sampled: 10/08/03 09:50 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	**0.34 J**	**1.0**	**ug/L**	**SW846 8260B**	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**1.1**	**1.0**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	**0.30 J**	**1.0**	**ug/L**	**SW846 8260B**	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	**0.64 J**	**1.0**	**ug/L**	**SW846 8260B**	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**95**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**8.9**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**7.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**5**	**1**	**mg/L**	**MCAWW 415.1**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: PZ-05 (130)
Sample #: 002 Date Sampled: 10/08/03 09:00 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.082 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	**0.43**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**47**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: PZ-05 (130)
Sample #: 002 Date Sampled: 10/08/03 09:00 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	260	5.0	mg/L	MCAWW 310.1	
Chloride	5.6	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	0.28	0.10	mg/L	MCAWW 300.0A	
Sulfate	5.5	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-4S (120)
Sample #: 003 Date Sampled: 10/08/03 08:30 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	**0.0091 B**	**0.010**	**mg/L**	**SW846 6010B**	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.29**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**18.9**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**2.1**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**1400**	**5.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	83	ug/L	SW846 8260B	
Chloroethane	ND	83	ug/L	SW846 8260B	
Chloromethane	ND	83	ug/L	SW846 8260B	
Acetone	ND	830	ug/L	SW846 8260B	
Bromodichloromethane	ND	83	ug/L	SW846 8260B	
Bromoform	ND	83	ug/L	SW846 8260B	
2-Butanone	ND	830	ug/L	SW846 8260B	
Carbon disulfide	ND	83	ug/L	SW846 8260B	
Carbon tetrachloride	ND	83	ug/L	SW846 8260B	
Chlorobenzene	ND	83	ug/L	SW846 8260B	
Dibromochloromethane	ND	83	ug/L	SW846 8260B	
Chloroform	ND	83	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	83	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-4S (120)
Sample #: 003 Date Sampled: 10/08/03 08:30 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	83	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	83	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	83	ug/L	SW846 8260B	
2-Hexanone	ND	830	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	830	ug/L	SW846 8260B	
Styrene	ND	83	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	83	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	83	ug/L	SW846 8260B	
Benzene	ND	83	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	83	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	42	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	42	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	83	ug/L	SW846 8260B	
Ethylbenzene	**38 J**	**83**	**ug/L**	**SW846 8260B**	
Methylene chloride	ND	83	ug/L	SW846 8260B	
Naphthalene	**20 J**	**83**	**ug/L**	**SW846 8260B**	
Tetrachloroethene	ND	83	ug/L	SW846 8260B	
Toluene	ND	83	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	83	ug/L	SW846 8260B	
Trichloroethene	ND	83	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**1100**	**83**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	**230**	**83**	**ug/L**	**SW846 8260B**	
Vinyl chloride	ND	83	ug/L	SW846 8260B	
Xylenes (total)	**160**	**83**	**ug/L**	**SW846 8260B**	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**290**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**7.7**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**0.15 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**4**	**1**	**mg/L**	**MCAWW 415.1**	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-8S (124)
Sample #: 004 Date Sampled: 10/07/03 20:00 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.093 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	**0.32**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**6.2**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
ONALASKA LANDFILL - WISCONSIN
Project Number: 00507

Lot #: A3J090307 Date Reported: 10/28/03

Client Sample ID: MW-8S (124)
Sample #: 004 Date Sampled: 10/07/03 20:00 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	230	5.0	mg/L	MCAWW 310.1	
Chloride	17.2	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	0.15	0.10	mg/L	MCAWW 300.0A	
Sulfate	5.6	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-8M (125)					
Sample #: 005 Date Sampled: 10/07/03 20:10 Date Received: 10/09/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.73**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**0.045 B**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**2.8**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**110**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-8M (125)
Sample #: 005 Date Sampled: 10/07/03 20:10 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	**0.23 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,2,4-Trimethylbenzene	**0.36 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	**0.22 J**	**1.0**	**ug/L**	**SW846 8260B**	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**240**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**12.8**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**1.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**3**	**1**	**mg/L**	**MCAWW 415.1**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
ONALASKA LANDFILL - WISCONSIN
Project Number: 00507

Lot #: A3J090307 Date Reported: 10/28/03

Client Sample ID: MW-12S (126)
Sample #: 006 Date Sampled: 10/07/03 20:35 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	**0.0013 B**	**0.0070**	**mg/L**	**SW846 6010B**	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.021 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	**0.0017 B**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	ND	0.50	ug/L	RSK SOP-175	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-12S (126)
Sample #: 006 Date Sampled: 10/07/03 20:35 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	210	5.0	mg/L	MCAWW 310.1	
Chloride	9.1	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	1.4	0.10	mg/L	MCAWW 300.0A	
Sulfate	5.0	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	0.8 B	1	mg/L	MCAWW 415.1	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-5S (121)
Sample #: 007 Date Sampled: 10/07/03 17:35 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	**0.022**	**0.010**	**mg/L**	**SW846 6010B**	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	**0.0058 B**	**0.0070**	**mg/L**	**SW846 6010B**	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.27**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**30.5**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**2.3**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	**0.000075 B**	**0.00020**	**mg/L**	**SW846 7470A**	

B Estimated result. Result is less than RL.

Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**910**	**5.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	67	ug/L	SW846 8260B	
Chloroethane	ND	67	ug/L	SW846 8260B	
Chloromethane	ND	67	ug/L	SW846 8260B	
Acetone	ND	670	ug/L	SW846 8260B	
Bromodichloromethane	ND	67	ug/L	SW846 8260B	
Bromoform	ND	67	ug/L	SW846 8260B	
2-Butanone	ND	670	ug/L	SW846 8260B	
Carbon disulfide	ND	67	ug/L	SW846 8260B	
Carbon tetrachloride	ND	67	ug/L	SW846 8260B	
Chlorobenzene	ND	67	ug/L	SW846 8260B	
Dibromochloromethane	ND	67	ug/L	SW846 8260B	
Chloroform	ND	67	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	67	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-5S (121)
Sample #: 007 Date Sampled: 10/07/03 17:35 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	67	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	67	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	67	ug/L	SW846 8260B	
2-Hexanone	ND	670	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	670	ug/L	SW846 8260B	
Styrene	ND	67	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	67	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	67	ug/L	SW846 8260B	
Benzene	ND	67	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	67	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	33	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	33	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	67	ug/L	SW846 8260B	
Ethylbenzene	**29 J**	**67**	**ug/L**	**SW846 8260B**	
Methylene chloride	ND	67	ug/L	SW846 8260B	
Naphthalene	**28 J**	**67**	**ug/L**	**SW846 8260B**	
Tetrachloroethene	ND	67	ug/L	SW846 8260B	
Toluene	ND	67	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	67	ug/L	SW846 8260B	
Trichloroethene	ND	67	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**750**	**67**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	**200**	**67**	**ug/L**	**SW846 8260B**	
Vinyl chloride	ND	67	ug/L	SW846 8260B	
Xylenes (total)	**150**	**67**	**ug/L**	**SW846 8260B**	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	180	5.0	mg/L	MCAWW 310.1	
Chloride	4.3	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	0.020 B	0.10	mg/L	MCAWW 300.0A	
Sulfate	0.16 B	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	9	1	mg/L	MCAWW 415.1	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-2S (117)
Sample #: 008 Date Sampled: 10/07/03 18:30 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	**0.011**	**0.010**	**mg/L**	**SW846 6010B**	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	**0.0019 B**	**0.0070**	**mg/L**	**SW846 6010B**	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	**0.0013 B**	**0.0070**	**mg/L**	**SW846 6010B**	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.18 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**40.0**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**3.0**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**870**	**5.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	**13**	**1.0**	**ug/L**	**SW846 8260B**	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-2S (117)
Sample #: 008 Date Sampled: 10/07/03 18:30 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	**1.3**	**1.0**	**ug/L**	**SW846 8260B**	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**0.14 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

Inorganic Analysis					Reviewed
Alkalinity	**230**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**12.8**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**0.25 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**5**	**1**	**mg/L**	**MCAWW 415.1**	

B Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-2M (118)
Sample #: 009 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	**0.020**	**0.010**	**mg/L**	**SW846 6010B**	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.42**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**6.4**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**0.41**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**130**	**0.50**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-2M (118)					
Sample #: 009 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	**110**	5.0	**mg/L**	**MCAWW 310.1**	
Chloride	**6.9**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	**4**	1	**mg/L**	**MCAWW 415.1**	
Client Sample ID: TRIP(COC# 133874)					
Sample #: 010 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER					

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: TRIP(COC# 133874)
Sample #: 010 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	**1.0 J**	**10**	**ug/L**	**SW846 8260B**	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	**0.45 J**	**10**	**ug/L**	**SW846 8260B**	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: TRIP(COC# 133874)					
Sample #: 010 Date Sampled: 10/07/03 18:50 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
J Estimated result. Result is less than RL.					
Client Sample ID: AW-09 (132)					
Sample #: 011 Date Sampled: 10/08/03 13:15 Date Received: 10/09/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.19 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**0.11**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**0.24**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					Reviewed
Ethane	ND	1.0	ug/L	RSK SOP-175	
Ethene	ND	1.0	ug/L	RSK SOP-175	
Methane	**340**	**1.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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ENSR Consulting & Engineering
ONALASKA LANDFILL - WISCONSIN
Project Number: 00507

Lot #: A3J090307 Date Reported: 10/28/03

Client Sample ID: AW-09 (132)
Sample #: 011 Date Sampled: 10/08/03 13:15 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	**0.61 J**	**1.0**	**ug/L**	**SW846 8260B**	

J Estimated result. Result is less than RL.

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: AW-09 (132)					
Sample #: 011 Date Sampled: 10/08/03 13:15 Date Received: 10/09/03 Matrix: WATER					
Inorganic Analysis					Reviewed
Alkalinity	**190**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**6.9**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	**0.070 B**	**0.10**	**mg/L**	**MCAWW 300.0A**	
Sulfate	**5.4**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**2**	**1**	**mg/L**	**MCAWW 415.1**	

B Estimated result. Result is less than RL.

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: PZ-01 (129)					
Sample #: 012 Date Sampled: 10/08/03 13:00 Date Received: 10/09/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	**0.0012 B**	**0.0070**	**mg/L**	**SW846 6010B**	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.033 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	ND	0.10	mg/L	SW846 6010B	
Manganese	**0.37**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	

B Estimated result. Result is less than RL.

Dissolved Gases in Water					Reviewed
Ethane	ND	0.50	ug/L	RSK SOP-175	
Ethene	ND	0.50	ug/L	RSK SOP-175	
Methane	**48**	**0.50**	**ug/L**	**RSK SOP-175**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: PZ-01 (129)
Sample #: 012 Date Sampled: 10/08/03 13:00 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
ONALASKA LANDFILL - WISCONSIN
Project Number: 00507

Lot #: A3J090307 Date Reported: 10/28/03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: PZ-01 (129)					
Sample #: 012 Date Sampled: 10/08/03 13:00 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	
Inorganic Analysis					Reviewed
Alkalinity	**190**	**5.0**	**mg/L**	**MCAWW 310.1**	
Chloride	**5.8**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	**6.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	
Total Organic Carbon	**2**	**1**	**mg/L**	**MCAWW 415.1**	
Client Sample ID: MW-14S (127)					
Sample #: 013 Date Sampled: 10/08/03 12:40 Date Received: 10/09/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	ND	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.19 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**17.8**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**7.0**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**1200**	**5.0**	**ug/L**	**RSK SOP-175**	

B Estimated result. Result is less than RL.

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: MW-14S (127)
Sample #: 013 Date Sampled: 10/08/03 12:40 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	5.0	ug/L	SW846 8260B	
Chloroethane	ND	5.0	ug/L	SW846 8260B	
Chloromethane	ND	5.0	ug/L	SW846 8260B	
Acetone	ND	50	ug/L	SW846 8260B	
Bromodichloromethane	ND	5.0	ug/L	SW846 8260B	
Bromoform	ND	5.0	ug/L	SW846 8260B	
2-Butanone	ND	50	ug/L	SW846 8260B	
Carbon disulfide	ND	5.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	5.0	ug/L	SW846 8260B	
Chlorobenzene	ND	5.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	5.0	ug/L	SW846 8260B	
Chloroform	ND	5.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	5.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	5.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	5.0	ug/L	SW846 8260B	
2-Hexanone	ND	50	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	50	ug/L	SW846 8260B	
Styrene	ND	5.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	5.0	ug/L	SW846 8260B	
Benzene	ND	5.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	5.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	2.5	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	2.5	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	5.0	ug/L	SW846 8260B	
Ethylbenzene	**1.2 J**	**5.0**	**ug/L**	**SW846 8260B**	
Methylene chloride	ND	5.0	ug/L	SW846 8260B	
Naphthalene	**18**	**5.0**	**ug/L**	**SW846 8260B**	
Tetrachloroethene	ND	5.0	ug/L	SW846 8260B	
Toluene	ND	5.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	5.0	ug/L	SW846 8260B	
Trichloroethene	ND	5.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**5.5**	**5.0**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	**1.8 J**	**5.0**	**ug/L**	**SW846 8260B**	
Vinyl chloride	ND	5.0	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: MW-14S (127)					
Sample #: 013 Date Sampled: 10/08/03 12:40 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
Xylenes (total)	2.3 J	5.0	ug/L	SW846 8260B	
J Estimated result. Result is less than RL.					
Elevated reporting limits due to dilution for TICs.					
Inorganic Analysis					Reviewed
Alkalinity	170	5.0	mg/L	MCAWW 310.1	
Chloride	7.3	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	0.18 B	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	12	1	mg/L	MCAWW 415.1	
B Estimated result. Result is less than RL.					
Client Sample ID: AW-20 (134)					
Sample #: 014 Date Sampled: 10/08/03 14:05 Date Received: 10/09/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	0.021	0.010	mg/L	SW846 6010B	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	0.011	0.0070	mg/L	SW846 6010B	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	0.0029 B	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	0.38	0.20	mg/L	SW846 6010B	
Iron	50.0	0.10	mg/L	SW846 6010B	
Manganese	16.1	0.015	mg/L	SW846 6010B	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: AW-20 (134)
Sample #: 014 Date Sampled: 10/08/03 14:05 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**2200**	**5.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	20	ug/L	SW846 8260B	
Chloroethane	ND	20	ug/L	SW846 8260B	
Chloromethane	ND	20	ug/L	SW846 8260B	
Acetone	ND	200	ug/L	SW846 8260B	
Bromodichloromethane	ND	20	ug/L	SW846 8260B	
Bromoform	ND	20	ug/L	SW846 8260B	
2-Butanone	ND	200	ug/L	SW846 8260B	
Carbon disulfide	ND	20	ug/L	SW846 8260B	
Carbon tetrachloride	ND	20	ug/L	SW846 8260B	
Chlorobenzene	ND	20	ug/L	SW846 8260B	
Dibromochloromethane	ND	20	ug/L	SW846 8260B	
Chloroform	ND	20	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	20	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	20	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
2-Hexanone	ND	200	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	200	ug/L	SW846 8260B	
Styrene	ND	20	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	20	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	20	ug/L	SW846 8260B	
Benzene	ND	20	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	20	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	20	ug/L	SW846 8260B	
Ethylbenzene	ND	20	ug/L	SW846 8260B	
Methylene chloride	ND	20	ug/L	SW846 8260B	
Naphthalene	**6.8 J**	**20**	**ug/L**	**SW846 8260B**	
Tetrachloroethene	ND	20	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: AW-20 (134)					
Sample #: 014 Date Sampled: 10/08/03 14:05 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
Toluene	ND	20	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	20	ug/L	SW846 8260B	
Trichloroethene	ND	20	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**170**	20	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	**120**	20	**ug/L**	**SW846 8260B**	
Vinyl chloride	ND	20	ug/L	SW846 8260B	
Xylenes (total)	**12 J**	20	**ug/L**	**SW846 8260B**	
J Estimated result. Result is less than RL.					
Inorganic Analysis					Reviewed
Alkalinity	520	5.0	mg/L	MCAWW 310.1	
Chloride	5.5	1.0	mg/L	MCAWW 300.0A	
Nitrate as N	0.24	0.10	mg/L	MCAWW 300.0A	
Sulfate	0.22 B	1.0	mg/L	MCAWW 300.0A	
Total Organic Carbon	21	1	mg/L	MCAWW 415.1	
B Estimated result. Result is less than RL.					
Client Sample ID: AW-25 (135)					
Sample #: 015 Date Sampled: 10/08/03 14:25 Date Received: 10/09/03 Matrix: WATER					
Trace Inductively Coupled Plasma (ICP) Metals					Reviewed
Arsenic	**0.013**	0.010	**mg/L**	**SW846 6010B**	
Cadmium	ND	0.0020	mg/L	SW846 6010B	
Cobalt	**0.0020 B**	0.0070	**mg/L**	**SW846 6010B**	
Lead	ND	0.0030	mg/L	SW846 6010B	
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.32**	0.20	**mg/L**	**SW846 6010B**	
Iron	**19.6**	0.10	**mg/L**	**SW846 6010B**	
Manganese	**3.4**	0.015	**mg/L**	**SW846 6010B**	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: AW-25 (135)
Sample #: 015 Date Sampled: 10/08/03 14:25 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	
B Estimated result. Result is less than RL.					
Dissolved Gases in Water					Reviewed
Ethane	ND	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	
Methane	**2200**	**5.0**	**ug/L**	**RSK SOP-175**	
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	20	ug/L	SW846 8260B	
Chloroethane	ND	20	ug/L	SW846 8260B	
Chloromethane	ND	20	ug/L	SW846 8260B	
Acetone	ND	200	ug/L	SW846 8260B	
Bromodichloromethane	ND	20	ug/L	SW846 8260B	
Bromoform	ND	20	ug/L	SW846 8260B	
2-Butanone	ND	200	ug/L	SW846 8260B	
Carbon disulfide	ND	20	ug/L	SW846 8260B	
Carbon tetrachloride	ND	20	ug/L	SW846 8260B	
Chlorobenzene	ND	20	ug/L	SW846 8260B	
Dibromochloromethane	ND	20	ug/L	SW846 8260B	
Chloroform	ND	20	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	20	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	20	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	20	ug/L	SW846 8260B	
2-Hexanone	ND	200	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	200	ug/L	SW846 8260B	
Styrene	ND	20	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	20	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	20	ug/L	SW846 8260B	
Benzene	ND	20	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	20	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

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ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Client Sample ID: AW-25 (135)				
Sample #: 015 Date Sampled: 10/08/03 14:25 Date Received: 10/09/03 Matrix: WATER				
Volatile Organics by GC/MS				Reviewed
trans-1,2-Dichloroethene	ND	10	ug/L	SW846 8260B
1,1-Dichloroethene	ND	20	ug/L	SW846 8260B
Ethylbenzene	ND	20	ug/L	SW846 8260B
Methylene chloride	**7.6 J**	**20**	**ug/L**	**SW846 8260B**
Naphthalene	**6.8 J**	**20**	**ug/L**	**SW846 8260B**
Tetrachloroethene	ND	20	ug/L	SW846 8260B
Toluene	ND	20	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	20	ug/L	SW846 8260B
Trichloroethene	ND	20	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	**760**	**20**	**ug/L**	**SW846 8260B**
1,3,5-Trimethylbenzene	**210**	**20**	**ug/L**	**SW846 8260B**
Vinyl chloride	ND	20	ug/L	SW846 8260B
Xylenes (total)	**18 J**	**20**	**ug/L**	**SW846 8260B**

J Estimated result. Result is less than RL.

Inorganic Analysis				Reviewed
Alkalinity	290	5.0	mg/L	MCAWW 310.1
Chloride	2.1	1.0	mg/L	MCAWW 300.0A
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A
Sulfate	**0.77 B**	1.0	mg/L	MCAWW 300.0A
Total Organic Carbon	5	1	mg/L	MCAWW 415.1

B Estimated result. Result is less than RL.

Client Sample ID: HUBLEY				
Sample #: 016 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER				
Trace Inductively Coupled Plasma (ICP) Metals				Reviewed
Arsenic	ND	0.010	mg/L	SW846 6010B
Cadmium	ND	0.0020	mg/L	SW846 6010B
Cobalt	ND	0.0070	mg/L	SW846 6010B
Lead	ND	0.0030	mg/L	SW846 6010B

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: HUBLEY					
Sample #: 016 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER					
Vanadium	ND	0.0070	mg/L	SW846 6010B	
Inductively Coupled Plasma (ICP) Metals					Reviewed
Barium	**0.087 B**	**0.20**	**mg/L**	**SW846 6010B**	
Iron	**0.16**	**0.10**	**mg/L**	**SW846 6010B**	
Manganese	**0.32**	**0.015**	**mg/L**	**SW846 6010B**	
Mercury in Liquid Waste (Manual Cold-Vapor)					Reviewed
Mercury	ND	0.00020	mg/L	SW846 7470A	

B Estimated result. Result is less than RL.

Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	ND	10	ug/L	SW846 8260B	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	

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SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: HUBLEY					
Sample #: 016 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	**0.18 J**	**1.0**	**ug/L**	**SW846 8260B**	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: TRIP(COC# 133875)					
Sample #: 017 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER					
Volatile Organics by GC/MS					Reviewed
Bromomethane	ND	1.0	ug/L	SW846 8260B	
Chloroethane	ND	1.0	ug/L	SW846 8260B	
Chloromethane	ND	1.0	ug/L	SW846 8260B	
Acetone	**0.66 J**	**10**	**ug/L**	**SW846 8260B**	
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B	
Bromoform	ND	1.0	ug/L	SW846 8260B	
2-Butanone	ND	10	ug/L	SW846 8260B	
Carbon disulfide	ND	1.0	ug/L	SW846 8260B	
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B	
Chlorobenzene	ND	1.0	ug/L	SW846 8260B	
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B	
Chloroform	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B	
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

ENSR Consulting & Engineering
Lot #: A3J090307 ONALASKA LANDFILL - WISCONSIN Date Reported: 10/28/03
Project Number: 00507

Client Sample ID: TRIP(COC# 133875)
Sample #: 017 Date Sampled: 10/08/03 10:45 Date Received: 10/09/03 Matrix: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Volatile Organics by GC/MS					Reviewed
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B	
2-Hexanone	ND	10	ug/L	SW846 8260B	
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B	
Styrene	ND	1.0	ug/L	SW846 8260B	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B	
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Benzene	ND	1.0	ug/L	SW846 8260B	
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B	
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B	
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B	
Ethylbenzene	ND	1.0	ug/L	SW846 8260B	
Methylene chloride	ND	1.0	ug/L	SW846 8260B	
Naphthalene	ND	1.0	ug/L	SW846 8260B	
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B	
Toluene	ND	1.0	ug/L	SW846 8260B	
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B	
Trichloroethene	ND	1.0	ug/L	SW846 8260B	
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B	
Vinyl chloride	ND	1.0	ug/L	SW846 8260B	
Xylenes (total)	ND	1.0	ug/L	SW846 8260B	

J Estimated result. Result is less than RL.