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September 30, 2002

Project #3125

Mr. Andrew F. Boettcher
Remediation and Redevelopment Team
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Drive
P. O. Box 12436
Milwaukee, WI 53121-0436

Subject: Results of the Additional Groundwater Investigation
Completed for the former Good Hope Road Landfill Site
Milwaukee, Wisconsin

Dear Mr. Boettcher:

At the request of the Village of Whitefish Bay, Sigma Environmental Services, Inc. (Sigma) has completed additional groundwater investigation activities for the above-referenced site. The activities included: 1) installation of a well nest in a residential subdivision south of Webster Middle School (MPS Site) to further define the down-gradient impacts associated with the former Good Hope Road Landfill Site, 2) installation of water level measuring points along Lincoln Creek to evaluate surface water and groundwater interaction, and 3) completion of a comprehensive groundwater sampling and analysis program from monitoring points located at the landfill site and sites south of the landfill (MPS site and the residential subdivision). In addition, Natural Resources Technology (NRT) also completed groundwater monitoring concurrently at sampling points located at a site west of the landfill (Presidio Apartment Complex Site). Attached Figure 1 presents the study area consisting of the landfill site and the vicinity. This report summarizes the data collection activities, presents a comprehensive evaluation of the cumulative database developed for the study area, and provides recommendations for future activities.

ADDITIONAL INVESTIGATION ACTIVITIES

The investigation activities were designed to accomplish the following project goals:

- Evaluate the shallow and deep groundwater flow systems, and the interaction between the local surface water bodies and the groundwater systems;
- Delineate the groundwater impacts south of the landfill; and,
- Evaluate the subsurface conditions to assess the potential for natural attenuation of groundwater impacts south of the landfill.

The following tasks were completed to collect the relevant data and meet the project goals.

- Installed one well nest (a shallow water table well MW-11and a deep piezometer PZ-11) at the intersection of Hassel Lane and North 52nd Street in a residential subdivision (Figure 1) in June 2002 to further delineate the downgradient extent of the groundwater impacts.

- Installed surface water level measuring points along Lincoln Creek in June 2002 to obtain surface water elevation data and assess the interaction of the groundwater flow with the surface water bodies (Lincoln Creek and the recently constructed detention pond).

- Collected one complete round of water level data from all existing and newly installed monitoring wells, piezometers and surface water level measuring points in June 2002 to evaluate horizontal and vertical gradients of the shallow and deeper reaches of the groundwater flow system.

- Collected one round of groundwater quality data from the newly installed well nest and select existing monitoring well/piezometer locations (six on the landfill site and six from the MPS site) on June 2002 to evaluate the groundwater quality conditions with respect to chlorinated organic compounds. Groundwater monitoring also included the collection of natural attenuation parameters (including ethene, ethane and methane) from select wells and *in situ* parameters (such as dissolved oxygen, redox, ferrous iron etc.) from all the wells/piezometers included for groundwater quality sampling. In addition, water level and water quality data were collected by NRT from sampling points located at the adjacent Presidio Apartment Complex property.

- Completed in situ hydraulic conductivity tests (slug tests) in two well nests (two shallow wells and two deep wells) to further evaluate groundwater flow parameters.

- Collected a soil sample from soil boring MW-11 for laboratory analysis of total organic content and pH to evaluate contaminant transport parameters.

- Completed a professional survey for elevation and location of the newly installed well/piezometer nest, staff gauges, wells installed by others along Lincoln Creek on east side of the landfill property, and several existing wells following repair/replacement of the well covers/protective casings (damaged due to vandalism).

Monitoring Well/Piezometer Nest Installation

On June 11 and 12, 2002, two soil borings were advanced to depths of 18 feet below ground surface (bgs) and 49 feet bgs and completed as monitoring well MW-11 and piezometer PZ-11, respectively. The soil borings are located on the northeast corner of 52nd Street and Hassel Lane, approximately 2,400 feet south of the former landfill site. Monitoring well MW-11 was blind drilled to a depth of 18 feet bgs using the hollow stem auger method and completed with a 15-foot length of two-inch diameter PVC screen (0.01 slot) connected to an appropriate length of PVC riser pipe. Piezometer PZ-11 was drilled to a depth of 40 feet bgs using the hollow stem auger drilling method and completed to a total depth of 49 feet bgs using the mud rotary method. Soil samples were collected on a continuous basis from zero to 36 feet bgs, and the interval of 42 feet bgs to 49 feet bgs; no samples were collected between 36 feet and 42 feet depth interval due to change in drilling method. Samples were characterized based on color, texture, grain size and plasticity, classified in accordance with the Unified Soil Classification System (USCS), and field screened using a Photoionization Detector calibrated to 100 parts per million isobutylene. Piezometer PZ-11 was installed inside a six-inch diameter steel double casing set in cement-grout from one to 36 feet bgs, and completed with a 5-foot length 2-inch diameter PVC screen (0.010 slot) set to a depth of 49 feet bgs and connected to an appropriate length of PVC riser. Upon completion of the monitoring well and piezometer installation, Sigma personnel developed the wells on June 14, 2002 in accordance with Chapter NR 141. Soil boring logs, monitoring well construction logs, and development forms are included as **Attachment A**.

Surface Water Level Measuring Point (Staff Gauge) Installation

On June 20, 2002, several monitoring points were established along Lincoln Creek to measure the water level elevation of the creek. Three of the measuring points are located on Good Hope Road Bridge (Staff Gauge #1), Green Tree Road Bridge (Staff Gauge # 3) and Mill Road Bridge (Staff Gauge #4), and the fourth measuring point (Staff Gauge #2) was set on a storm sewer outlet to the creek located immediately south of the landfill. Location and elevation of the measuring points were surveyed relative to mean sea level datum and state plane coordinates, respectively, by a professional surveyor and incorporated into the site map (Figure 1).

Groundwater Monitoring Activities

On June 26 and 27, 2002 groundwater monitoring activities were completed at the study area. The sampling activities were also coordinated with the NRT staff to coincide the collection of water level and water quality data from the Presidio site during the same time period. A total of 23 monitoring wells and piezometers at the landfill site, nine sampling points at the MPS site, eight sampling points at the residential subdivision, and 12 sampling points at the Presidio property were used to collect water level data. A summary of the water level measurement collected to date from all the monitoring wells within the study area is presented in Table 1.

Groundwater samples were collected from the newly installed monitoring well/piezometer nest at the residential subdivision, six sampling points at the MPS site, nine sampling points at the landfill site and 12 sampling points located at the Presidio site. Groundwater samples were submitted to the project laboratories for analyses of VOCs (EPA Method 8260 for all the samples) and dissolved gases (ethene, ethane and methane for select samples). *In situ* field measurements were also recorded during the sampling event. Groundwater analytical results are summarized in **Table 2** (laboratory report is included as **Attachment B**), and results of the dissolved gas analysis and *in situ* measurements are shown in **Table 3.** A summary of groundwater monitoring completed by NRT is included as **Appendix C.**

SUMMARY OF INVESTIGATION RESULTS

Geology beneath the study area was characterized by evaluating historic boring logs and by observations noted during completion of the additional investigation activities. The hydrogeology of the shallow and deep groundwater flow system, including the magnitude of the lateral and vertical flow gradients, was evaluated from water-level measurements collected during field data collection activities conducted in June 2002. Soil and groundwater quality beneath the sites was evaluated based on the analytical results of the media samples.

Local Geology

Geologic interpretations presented in this section are based on a comprehensive evaluation of soil borings installed during various phases of investigations completed at the landfill site and its vicinity by Sigma and other consultants (NRT, STS Consultants, Ltd., and K. Singh & Associates, Inc.). Several soil boring, monitoring well and piezometer logs were evaluated to develop a north to south trending geologic cross section (A – A'), a west to east trending geologic cross section (B – B'), and a second west to east trending geologic cross section (C – C'). The latter transects the Presidio Square Apartment Complex and the landfill site on the west, crossing Lincoln Creek to the east. A cross section location map is provided on **Figure 2.** The aforementioned cross-sections are depicted on **Figures 3 through 5.**

A thin veneer of topsoil and fill material was identified across the area under site investigation. Topsoil material varies in thickness from approximately 2½ feet to less than 1.0 foot in thickness and fill material comprised of (sometimes reworked) organic clayey silt and/or silty clay material and general landfill refuse (predominantly encountered in the northern portion of the study area beneath the former landfill) varies in thickness from approximately 6 feet to 12 feet.

Consistent with observations and interpretations provided by others, a low permeable silty clay deposit (glacial till) was identified beneath the fill material at the landfill site and Presidio Apartment property, thinning to the south towards the Milwaukee Public School property and beyond. The sequence is up to 20 feet in thickness. Contained within the till deposit are frequent, interbedded and discontinuous seams and/or lenses of silty sand, silt and sand

containing gravel. The interbedded seams and/or lenses were noted to thin and potentially "pinch-out" to the east, generally toward Lincoln Creek, where the unit becomes coarser in texture (cross section C – C'). Longitudinally, glacial till becomes less complex toward the south as interpreted in cross sections A – A' and B – B', as the glacial silty clay thins and sand and gravel seams thicken in a north to south orientation. The difference in permeability of deposits beneath the Presidio property and former landfill, versus the stratigraphic depositional change toward the south, modify lateral and vertical groundwater gradients from north to south.

Underlying the aforementioned deposits, a veneer of coarse angular gravel with varying zones of clay containing gravel chips was encountered. The material is interpreted as residuum or extremely weathered dolomitic limestone bedrock, and is very dense in characteristic. Immediately beneath the residuum is competent dolomitic limestone bedrock of the Niagara Formation. The competent bedrock surface was encountered as shallow as 28 feet, beneath the landfill on the north (cross section C – C'), and as deep as 71 feet beneath MPS property toward the south. The bedrock surface appears to have a uniform north-south topographic high, sloping gently to moderately both west-southwest and east-northeast. A bedrock surface elevation contour map, interpreted from multiple soil borings installed across the area of investigation, is presented as **Figure 6**.

Local Hydrogeology

Water level measurements were collected from the entire monitoring well and piezometer network across the study area to interpret the lateral direction of shallow and deeper groundwater flow, and to calculate the magnitude of vertical flow gradients beneath the site. For purposes of presentation, water-level measurements obtained during the recent monitoring event in June 2002 are the basis for the following discussion.

The June 26, 2002 monitoring event consisted of the collection of manual water-level measurements from 56 monitoring wells and/or piezometers, and four river level measuring points along Lincoln Creek. A historical summary of groundwater elevation data is presented in **Table 1**.

Lateral Groundwater Flow Direction - The groundwater flow direction beneath and in the immediate vicinity of the landfill site was evaluated in three separate flow regimes which appear to be contiguous: shallow monitoring wells installed with screens intersecting silty clay deposits defining the upper zone of glacial till (depths of 10 feet bgs to 20 feet bgs), middle depth monitoring wells/piezometers installed with screens intersecting permeable water bearing sand and silt seams or lenses interbedded within the clay materials (depths of 25 feet bgs to 35 feet bgs), and deep piezometers installed with screened intervals fully saturated (depths of 45 feet bgs to 70 feet bgs) in material defined as glacially derived deposits and/or residuum/bedrock unit. Lateral flow directions determined during the June 2002 monitoring

event for the three flow regimes are depicted on **Figures 7 through 9.** It is important to note that several monitoring wells installed at the landfill site (e.g., monitoring wells W-MW-11 and MW-22) were completed with screen intervals which include the shallow silty clay/fill zone and the middle depth permeable zone and therefore water level data from these wells were not considered representative of either of the units and not used for evaluation of lateral flow.

Shallow Groundwater Flow in the Landfill Area - Shallow groundwater flow was evaluated in the vicinity of and beneath the former landfill site using water-level data collected from 17 monitoring wells and two river gauging stations **(Figure 7).** Water table wells were typically screened within the low permeable fill material comprised of silty clay deposits, however, monitoring wells installed within the limits of the former landfill site were typically screened within both fill material and glacial till.

Shallow groundwater flow beneath and in the immediate vicinity of the former landfill site is generally from the west-southwest to the east-northeast towards Lincoln Creek, with depth to water averaging 10 feet. The calculated mean lateral flow gradient as of June 26, 2002 had a moderate magnitude of approximately 0.02 feet/foot. The gradient becomes steep along the bank of Lincoln Creek. Observations are generally consistent with observations made previously by others.

Middle Depth and Deep Piezometer Groundwater Flow across the Study Area – Middle depth groundwater flow (typically at 30 feet bgs) was evaluated in the vicinity of and beneath the former landfill site and further south using water-level data collected from 23 monitoring wells/piezometers and two river gauging stations **(Figure 8).** Middle depth wells/piezometers were typically screened within water bearing deposits encountered in the interbedded seams and lenses of glacial till, however, middle depth wells installed south of the landfill did not always encounter interbedded seams as the silty clay appears to thin or pinch out, yielding water bearing sand and sandy gravel deposits.

Review of the middle depth water level contour map indicates that groundwater flow in this zone as measured on June 26, 2002 is to the east-southeast in the landfill area (a slight departure from shallow groundwater flow), becoming southerly in the southern portion of the study area, which is consistent with the gradient of Lincoln Creek. Water level measurements and gauging information appear to indicate Lincoln Creek may have been a groundwater discharge boundary during the June 2002 event. Further discussion is presented in the following sections describing vertical flow characteristics. The mean lateral flow gradient in the middle zone had a calculated magnitude of approximately 0.01 feet/foot during the June 26, 2002 event. The middle depth and deeper flow zones appear to be hydraulically contiguous as interpreted from **Figures 5** and **6.**

Seven deep piezometers were installed within the lower portion of glacial till and/or the upper portion of residuum/bedrock unit to evaluate the deep flow regime **(Figure 9)**. Review of the potentiometric surface contour map indicates that deeper groundwater flow is generally to the southeast in the northern reaches of the investigative area (an approximate 45 degree departure from both shallow and middle depth gradients), becoming southerly approaching Lincoln Creek. The lateral flow gradient in the deeper flow zone had a calculated magnitude of approximately 0.002 feet/foot during June 2002.

Vertical Gradients - Vertical gradients were calculated to evaluate the vertical component of groundwater flow beneath the study area.

Monitoring Well and Piezometer Nests - Based on review of data collected, groundwater monitoring well/piezometer nests consistently exhibited vertical downward gradients with two exceptions at MW-8/PZ-8 and MW-10/PZ-10, the latter located along the west bank of Lincoln Creek; upward gradients were observed in these locations during the January 2001 and June 2002 data collection event.

In general, the calculated magnitude of vertical gradients between water table wells and piezometers decrease with closer proximity to Lincoln Creek (suggesting Lincoln Creek was gaining) when compared to the magnitude of the gradients observed west of the landfill. Moderate to strong downward gradients were calculated between well nests completed within the vicinity and immediately beneath the former landfill. Vertical gradients calculated between the middle depth water level and deep potentiometric surface during June 2002 are insignificant.

Calculations of the vertical gradients for the June 2002 monitoring event are presented as **Tables 4.**

Hydraulic Conductivity - On July 26, 2002, hydraulic conductivity testing was conducted by performing slug-out tests at monitoring wells MW-11 and MPS:P-6 and bedrock piezometers PZ-11 and MPS:P-7. Groundwater level recovery was almost instantaneous in monitoring well PZ-11 indicating a relatively high hydraulic conductivity of the materials. At MPS:P-7 hydraulic conductivity was determined to be approximately 1.26×10^{-3} centimeter per second (cm/sec). Based on the slug tests the hydraulic conductivity values were calculated to be approximately 1.97×10^{-2} cm/sec at MPS:P-6, and 2.80×10^{-3} cm/sec at MW-11. Previous slug tests completed in monitoring wells located at the landfill site indicated similar hydraulic conductivity values for the sand and gravel zone encountered in monitoring wells MW-11 and MPS:P-6. The measured hydraulic conductivity is also consistent with the typical range reported for sand and gravel. Hydraulic conductivity test results are presented as **Attachment C.**

Groundwater Conditions beneath the Study Area - Groundwater quality data collected to date from the monitoring well network in the study area was reviewed to identify the areas of high impacts (potential sources), and determine the downgradient extent of the dissolved plume. A contaminant distribution plot of chlorinated volatile organic compounds (CVOCs) detected in groundwater was developed using the most recent water quality data available for each of the monitoring points and is presented as **Figure 10**.

A review of the plot indicates that two potential source areas and corresponding relatively high groundwater impacts are present which includes: a) the southwest corner of the landfill site and b) the southwest corner of the Presidio Apartment Complex. Concentrations of CVOCs appear to decrease substantially to the east as well as to the south, downgradient from the two potential source areas. Data from the shallow monitoring wells (screened across the water table interface) and/or within the sand and gravel unit, also indicates that no detectable concentrations of tetrachlorethene (PCE) or trichloroethene (TCE) have been identified in any of the existing MPS wells or recently installed wells south of the school. However, breakdown compounds (e.g., cis-1,2-Dichloroethene [DCE] and vinyl chloride) have been detected in wells located on the MPS property, representing significant dechlorination in the interpreted downgradient flow direction. Monitoring wells located further downgradient (south) in the residential subdivision positioned to define the extent of impacts did not exhibit any detectable concentrations of these contaminants in the subsurface.

Analytical results from the June 2002 sampling event for the deep piezometers screened at the bedrock interface also indicate a similar contaminant distribution profile; DCE and vinyl chloride impacts are identified beneath the MPS property and no detectable concentrations of these contaminants are identified in the subsurface further downgradient (south) beneath the residential subdivision.

As shown in **Figure 10** concentrations of DCE and vinyl chloride in groundwater generally decrease in the downgradient direction, from north of the school property to the south. Further downgradient at the residential neighborhood, no detectable concentrations of CVOCs were identified in the recently installed well/piezometer. It is evident that the contaminant plume identified in groundwater beneath the school property has not migrated to these newly installed well/piezometer locations.

The southern extent of the groundwater plume appears to be well defined based on the existing groundwater quality database. The dissolved CVOC plume appears to have dissipated between Green Tree Road and Hassel Lane. This conclusion can be supported by the fact that the distribution of natural attenuation parameters observed in monitoring wells MPS:P-6/P-7 and MW-11/PZ-11, located at the southern extent of the plume, conforms to the conditions conducive for biodegradation of CVOCs. Although only one round of data is currently available, it is important to note that only end products of biodegradation of CVOC compounds

(ethene, ethane and methane) are present at relatively low levels in groundwater sample from monitoring well MW-11/piezometer PZ-11; however no CVOCs were detected at these locations. In contrast, CVOCs as well as degradation end products were detected in groundwater samples from immediately upgradient wells MPS:P-6/piezometer MPS:P-7. Distribution of the degradation end products is an indication that the CVOC plume consisting of dissolved DCE and vinyl chloride is likely attenuating before reaching the monitoring well/piezometer location at the downgradient extent (MW-11/PZ-11).

PRELIMINARY NATURAL ATTENUATION DATA EVALUATION

Natural attenuation is generally evaluated using a "lines of evidence" approach. Typically, the first line of evidence, reduction of contaminants, is documented through reviewing historical trends in contaminant concentration and distribution in conjunction with site geology and hydrogeology to show that reduction in the total mass of contaminant is occurring at the site.

The second line of evidence, presence and distribution of geochemical and biochemical indicators, is documented by examining changes in the concentrations and distributions of geochemical and biochemical indicator parameters that have been shown to be related to natural attenuation.

The third line of evidence (direct microbiological evidence) is documented by: 1) demonstrating that the types of microorganisms that have been associated with chlorinated solvent biodegradation are present at the site; and/or 2) demonstrating that the indigenous (naturally-present) microorganisms can biodegrade the contaminants present at the site under site conditions (e. g., microcosm biofeasibility studies).

The preliminary data collection activities for the project site were focused on developing the first two lines of evidence. Data to develop the third line of evidence (microbial identifications or microcosm studies) was not considered at this stage because this information is generally only required when data supporting the first two lines of evidence are insufficient to adequately support natural attenuation.

> ***First Line of Evidence*** - The most compelling evidence of bioremediation occurring at a CVOC impacted site is the presence of chlorinated compound breakdown products such as cis- and trans-dichloroethene (DCE, though cis-1,2-DCE predominates and is the best indicator of the two DCE isomers that biodegradation is occurring) and vinyl chloride in the groundwater. Based on recent chlorinated compounds concentrations detected at the downgradient properties (MPS: P-1 through P-7, **Table 2**), cis-1,2-DCE and vinyl chloride represent anywhere from 95 to 99 percent of the total chlorinated compound concentrations at a given well location. Additionally, concentrations of both cis-1,2-DCE and vinyl chloride detected in monitoring wells immediately south of the potential source areas (MPS:P1 through MPS:P-3) appear to increase with time indicating

generation and migration of breakdown products from the source areas. However, further downgradient, and at depth, concentrations of both breakdown products appear to decrease with time indicating attenuation with time. Figures 11 and 12 present CVOC concentration trends detected in groundwater samples from MPS wells.

Second Line of Evidence - Anaerobic degradation of PCE and TCE proceeds via DCE and vinyl chloride to ethene, ethane and methane. Based on the two rounds of dissolved gas analysis completed for select wells at the project site (**Table 3**), the presence of ethene, ethane and methane in groundwater appears to follow the typical distribution pattern of chlorinated breakdown products. The presence of these gases is a significant piece of evidence, which supports the first line of evidence data that bioremediation processes are likely occurring at the site.

Additional geochemical indicators of natural attenuation at the site include low (less than one part per million [< 1 mg/l]) dissolved oxygen (DO) and low Redox (reduction-oxidation) potential, which exist at values generally less than 50 millivolts (the level considered the demarcating line between anaerobic [< 50 mV] and aerobic [> 50 mV] conditions). Both DO and Redox indicate an anaerobic condition at the subsurface, which is conducive to chlorinated compound degradation.

Concentrations of ferrous iron (Fe^{2+}), which is a metabolic by-product of the biodegradation process, have not been detected in any monitoring wells/piezometers in the study area. Once the available oxygen and nitrate are depleted, subsurface microorganisms use oxidized ferric iron (Fe^{3+}) as an electron acceptor and generate ferrous iron (Fe^{2+}) as a by-product. Based on several USEPA field studies of CVOC sites, the presence of high ferrous iron (Fe^{2+}) at CVOC sites have been attributed to the biodegradation of vinyl chloride under anaerobic condition. Lack of ferrous iron in the subsurface groundwater across the study area indicates degradation of vinyl chloride may not be occurring under anaerobic conditions. However, the presence of the dissolved gases in the downgradient wells (particularly MW-11/PZ-11) indicate degradation of vinyl chloride is likely occurring via aerobic processes.

Given that only limited rounds of supporting geochemical and biochemical data have been collected, no statistical trend has been developed to directly support a natural attenuation approach to closure. To further support the potential applicability of RNA at the site, natural attenuation screening was performed using the USEPA Natural Attenuation Protocol. The result of the screening yielding a site specific score of 26 (greater than 20) indicating strong evidence for biodegradation of residual impacts at the site (Appendix D). Given the presence of source areas with high CVOC concentrations, that these sources need to be remediated prior to implementing RNA at the site. In addition, multiple rounds of supporting geochemical and biochemical data from the entire monitoring network are necessary, following source

remediation, to determine the effectiveness of natural attenuation in stabilizing and reducing the levels of CVOCs in the downgradient plume.

EXPOSURE ASSESSMENT

Concerns for human health have been evaluated at the Webster Middle School building on the MPS property and the residential subdivision under the direction of the Wisconsin Department of Health & Family Services, Division of Public Health (WDOPH) in 2000. Potential human exposure pathways have been evaluated and no risks to human have been identified.

Indoor air sampling was also conducted at Webster Middle School on two events. Results of this evaluation found no indoor air exposure concerns at the school building (Sigma letter reports to WDOPH, dated August 2002 and February 2001). In addition, soil gas samples were collected in the residential subdivision south of Green Tree Road to evaluate the potential for groundwater volatilization to occur in homes. The results of this assessment also indicated no indoor air exposure concerns (Sigma letter report to WDNR, dated February 2001).

Based on the subsurface data collected to date, human health risks by direct contact appear limited by site conditions, which include topsoil and grass or asphalt covering the area of highest impacts (area within the landfill and Presidio Apt. Complex) and concrete paving and the facility building located above impacted soil and groundwater in down-gradient locations. It is important to note that a low permeability silty clay layer (approximately 10 feet in thickness) is also present above the impacted soil and groundwater in down-gradient locations.

The potential exposure resulting from discharge of impacted groundwater into Lincoln Creek also appears to be a limited concern. Surface water samples were collected from Lincoln Creek at two locations immediately east of the landfill site as part of a hydrological study for Lincoln Creek Flood Control Management Plan commissioned by the MMSD in 1998. Results of the laboratory analyses indicated no significant impacts to the surface water at these locations. Additional data should be collected following source area remediation to confirm low potential for exposure further south along Lincoln Creek (east of MPS site and the residential subdivision).

CONCLUSIONS

Based on Sigma's subsurface groundwater plume delineation activities, and a comprehensive evaluation of the groundwater flow and contaminant distribution in the subsurface across the study area, the following conclusions in relation to the environmental conditions at the project site have been developed:

- Three groundwater flow systems (shallow, middle depth and deep) were identified beneath the former landfill and the Presidio Apt. Complex sites. However, the shallow groundwater flow system observed in water table wells screened within water bearing zone (10 feet bgs

to 20 feet bgs interval) terminates in the immediate vicinity of the former landfill site and the direction of flow is strongly east to the Lincoln Creek.

- The middle depth flow system observed in wells/piezometers typically screened within water bearing deposits encountered in glacial till unit (25 feet bgs to 35 feet bgs interval) at the Presidio and the landfill sites becomes the shallow flow system further south where the silty clay unit appears to pinch out and water bearing interbedded seams composed of sand and gravel appear to predominate. The direction of groundwater flow in this zone is to the east-southeast in the northern portion of the study area (a slight departure from shallow groundwater flow), becoming southerly in the area of the school and south, which is consistent with the gradient of Lincoln Creek.

- Water level measurements and gauging information appear to indicate Lincoln Creek may have been a groundwater discharge boundary during the June 2002 event.

- The deeper direction of groundwater flow is generally to the southeast in the northern reaches of the investigative area, becoming southerly in the southern portion of the study area.

- Review of the vertical gradients between the shallow and deeper units indicates that strong downward gradients are present between the shallow flow system and middle depth flow system in the area of the landfill; however, generally small to insignificant downward gradients are present between the middle depth and the deep flow systems throughout the study area. Relatively small upward gradients were observed in two locations (MW-8/PZ-8 and MW-10/PZ-10). The upward gradient identified in well nest MW-10/P Z-10 located within close proximity of Lincoln Creek may indicate a discharge boundary.

- The newly installed shallow well nest south of the school property did not exhibit detectable concentrations of DCE or vinyl chloride. Therefore, based on an initial groundwater sampling round, the groundwater plume appears to not have migrated to the newly installed well/piezometer location.

- Groundwater samples collected from deep piezometers screened at the top of bedrock on the MPS property exhibit decreasing trends of DCE and vinyl chloride, however, no detectable concentrations of either PCE or TCE were identified, further evidence of dechlorination. However, based on three rounds of data increasing concentration trends of breakdown products (DCE and vinyl chloride) are apparent at four of the MPS wells.

- The downgradient plume of DCE and vinyl chloride appears to dissipate between Green Tree Road and Hassle Lane. A review of the natural attenuation parameters indicates the presence of ethene, ethane and methane in groundwater samples from MW-11/PZ-11,

which is likely due to migration of degradation end by-products of vinyl chloride.

- Although review of the RNA parameters indicates attenuation of dissolved CVOCs is occurring in the subsurface, review of the several rounds of groundwater quality data collected from monitoring wells located near the source areas (Presidio Apt. Complex and the former landfill property) and immediately south (MPS wells) indicate increasing trends for degradation compounds (DCE and Vinyl Chloride). In order to consider natural attenuation as an acceptable and effective remedial action for the downgradient plume, identified source areas at the site need to be addressed through active remediation to meet Wisconsin Administrative Codes NR 726 and NR 140 requirements of stable or shrinking plume conditions.

- Based on the subsurface data collected to date, human health risk by direct contact and vapor migration currently appear limited by site conditions, which include topsoil and grass covering the area of highest impacts (area within the landfill and Presidio Apt. Complex) and concrete paving and the facility building located above impacted soil and groundwater in downgradient locations. However, the low potential risk exposure to humans at downgradient receptors such as Lincoln Creek will have to be monitored further during the source remediation phase to confirm the low risk of such exposure.

RECOMMENDATION

Based on the above conclusions, the following activities are recommended for the site:

- Develop a remedial action plan consisting of source(s) remediation strategy and enhanced groundwater monitoring to determine the effectiveness of natural attenuation at the site. The remedial action plan will include the following elements.

    1. A source remediation strategy to prevent further CVOC contribution to the groundwater and allow RNA to be an effective remediation strategy for the identified downgradient groundwater impacts.

    2. Install additional monitoring points south of the landfill site and east of the MPS property along Lincoln Creek to evaluate hydrogeologic characteristics and contaminant distribution to the east

    3. Develop and implement an enhanced groundwater monitoring program to demonstrate continued attenuation of the groundwater plume and thus establish remediation by natural attenuation as a viable method to address groundwater impacts south of the landfill site.

Attached to this report is a check in the amount of $750 for the WDNR review fee. Please contact Sigma at (414) 768-7144 with any questions or comments about this project.

Sincerely,

SIGMA ENVIRONMENTAL SERVICES, INC.

Randy E. Boness, P.G.
Senior Project Manager

Mafizul Islam, P.E.
Senior Project Engineer

Enclosures:

Table 1 - Static Groundwater Level Data
Table 2 - Groundwater Quality Results
Table 3 – Groundwater Biodegradation Parameters
Table 4 – Vertical Gradient Calculations

Figure 1 – Site Plan Map
Figure 2 - Geologic Cross Section Location Map
Figure 3 - Geologic Cross Section A - A'
Figure 4 - Geologic Cross Section B - B'
Figure 5 - Geologic Cross Section C - C'
Figure 6 - Bedrock Surface Contour Map
Figure 7 - Shallow Water Table Contour Map (June 2002)
Figure 8 - Middle Depth Water Level Contour Map (June 2002)
Figure 9 - Deep Potentiometric Surface Contour Map (June 2002)
Figure 10 – Distribution of Select CVOCs in Groundwater

Attachment A - Soil Boring Logs and Well/Piezometer Construction Forms
Attachment B - Groundwater Laboratory Analytical Report
Attachment C - Summary of Laboratory Data Collected by NRT
Attachment D- RNA Screening Results

cc (w/ enclosures): Mr. Dennis L. Fisher - Meissner Tierney et. al.
Mr. Robert Karnauskas – Natural Resource Technology

FIGURES

LEGEND

= MONITORING WELL

= PIEZOMETER

— x — = CHAIN LINK FENCE

— - — = PROPERTY LINE

WEST GOOD HOPE ROAD

STAFF GAUGE 1
(684.06)

APARTMENT COMPLEX

PROPERTY LINE

FORMER LANDFILL

PRESIDIO SQUARE APARTMENT COMPLEX

MW-6
W-MW-1S
W-MW-2S
MW-18
PZ-A
MW-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
PROPERTY LINE
MW-103
MW-107
P-107
MW-E
MW-10
W-MW-4D
W-MW-4S
P-101
MW-101
MW-108
P-108
MW-27
MW-106
P-106
MW-11
MW-C
PZ-C
W-MW-3S
MW-B
PZ-B
PZ-D
MW-D
MW-22
OUTFALL
STAFF GAUGE 2
(682.38)
MW-24S
MW-24D
HUSTIS STREET
MW-25
MW-26
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
55th STREET
53rd STREET
LINCOLN CREEK
STAFF GAUGE 3
(680.57)
MPS:P-6
PZ-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
MW-8
PZ-8
HASSEL LANE
PZ-9
MW-9
GRACELAND CEMETERY
RESIDENTIAL
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
BRENTWOOD
BRENTWOOD
49th STREET
47th STREET
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4
(677.05)

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 8-30-02	DR. BY: BEB	DR.# 3125-051	SCALE: 1" = 400'
SITE PLAN MAP			FIGURE 1

PROPERTY LINE

PRESIDIO SQUARE APARTMENT COMPLEX

FORMER LANDFILL

PROPERTY LINE

MW-6
PZ-A
MW-A
MW-104
MW-102
P-102
MW-4
C
MW-103
MW-107
A
MW-E
MW-101
P-101
P-107
MW-10
MW-C
PZ-C
MW-27
MW-108
MW-106
P-106
W-MW-11
MW-B
W-MW-3S
HUSTIS STREET
P-108
PZ-D
PZ-B
C'
MW-D
MW-22
MW-26
PROPERTY LINE
MW-24S
MW-24D
MW-25
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
55th STREET
53rd STREET
LINCOLN CREEK
MPS:P-6
PZ-7
GREEN TREE ROAD
W-9
W-42
CASPER STREET
CODY STREET
RESIDENTIAL
B
PZ-11
MW-11
PZ-9
MW-9
B'
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
RESIDENTIAL
W-31
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
W-6
51st STREET
BRENTWOOD
BRENTWOOD
RESIDENTIAL
49th STREET
47th STREET
MW-10
PZ-10
MILL ROAD
A'

0 200 400 800

LEGEND

- ● = ABANDONED WELL (FORMER RESIDENTIAL WELL)
- ◒ = MONITORING WELL
- ⊕ = PIEZOMETER
- —x— = CHAIN LINK FENCE

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 12-14-00	DR. BY: BEB	DR.# 3125-043	SCALE: 1" = 400'
GEOLOGIC CROSS SECTION LOCATION MAP			FIGURE 2

LEGEND

= MONITORING WELL
= PIEZOMETER
= CHAIN LINK FENCE
= PROPERTY LINE
= BEDROCK SURFACE CONTOUR
INTERVAL = 2.0'

WEST GOOD HOPE ROAD
STAFF GAUGE 1
(684.06)
APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
PRESIDIO SQUARE APARTMENT COMPLEX
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
MW-107
P-107
W-MW-4D
MW-103
MW-E
MW-10
MW-101
P-101
MW-27
P-106
642
644
646
P-108
MW-22
640
MW-245
MW-24D
HUSTIS
MW-25
MW-26
MW-B
OUTFALL
STAFF GAUGE 2
(682.39)
638
636
634
632
630
628
MPS:MW-1
MPS:P-1
MPS:P-2
MPS:MW-2
WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)
55th STREET
53rd STREET
LINCOLN CREEK
664
662
660
658
656
654
652
650
648
646
644
642
640
GREEN TREE ROAD
MPS:P-6
PZ-7
620
622
624
626
CASPER STREET
CEDAR STREET
RESIDENTIAL
PZ-9
MW-9
MW-11
PZ-11
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
49th STREET
47th STREET
BRENTWOOD
RESIDENTIAL
RESIDENTIAL
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 3
(671.05)
636
638
640
642
644
646
648
650
648
646
644
642
640

BEDROCK SURFACE ELEVATIONS IN FEET (JUNE 2002)	
WELL ID	ELEVATION
PZ-8	-- 630.25
PZ-9	-- 638.75
PZ-10	-- 647.85
PZ-11	-- 646.50
MPSP-7	-- 648.00
MSSP-5	-- 632.40
P-108	-- 640.68
MW-22	-- 641.55

GRAPHIC SCALE
0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 8-30-02	DR. BY: BEB	DR.# 3125-054	SCALE: 1" = 400'
BEDROCK SURFACE CONTOUR MAP			FIGURE 6

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = SHALLOW WATER TABLE CONTOUR
  INTERVAL = 2.0'
- ( ) = SURFACE WATER ELEVATIONS
- = GROUNDWATER FLOW DIRECTION

694 692 690 688 686 684 696 698 700

STAFF GAUGE 1
(684.06)

APARTMENT COMPLEX

PROPERTY LINE

FORMER LANDFILL

PRESIDIO SQUARE APARTMENT COMPLEX

MW-104 MW-102 W-MW-5S MW-103 MW-107 MW-E W-MW-4S MW-101 MW-27 MW-C MW-108 MW-22 MW-D MW-B MW-24S MW-25

OUTFALL
STAFF GAUGE 2
(682.38)

MPS:MW-1 MPS:MW-2

WEBSTER MIDDLE SCHOOL
(MILWAUKEE PUBLIC SCHOOL PROPERTY)

MPS:P-5 MPS:P-4

WYRICK PARK
(MILWAUKEE COUNTY PROPERTY)

55th STREET

53rd STREET

LINCOLN CREEK

STAFF GAUGE 3

MPS:P-6 MPS:P-7

GREEN TREE ROAD

CASPER STREET

CODY STREET

RESIDENTIAL

MW-11 PZ-11

MW-8 PZ-8

HASSEL LANE

PZ-9 MW-9

GRACELAND CEMETERY

56th STREET

55th STREET

54th STREET

53rd STREET

52nd STREET

51st STREET

BRENTWOOD

49th STREET

47th STREET

RESIDENTIAL

RESIDENTIAL

MW-10 PZ-10

MILL ROAD

STAFF GAUGE 4

STATIC WATER TABLE ELEVATIONS IN FEET (JUNE 2002)	
WELL ID	ELEVATION
MW-B	-- 683.22
MW-C	-- 686.82
MW-D	-- 695.55
MW-E	-- 696.00
W-MW-4S	-- 683.40
W-MW-5S	-- 683.18
MPS:MW-1	-- 701.02
MW-24S	-- 701.69
MW-25	-- 694.23
MW-101	-- 700.50
MW-102	-- 696.94
MW-103	-- 700.45
MW-104	-- 700.55
MW-106	-- 697.26
MW-107	-- 699.67
MW-108	-- 698.75
MW-27	-- 696.08
SG1	-- 684.06
SG2	-- 682.38

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

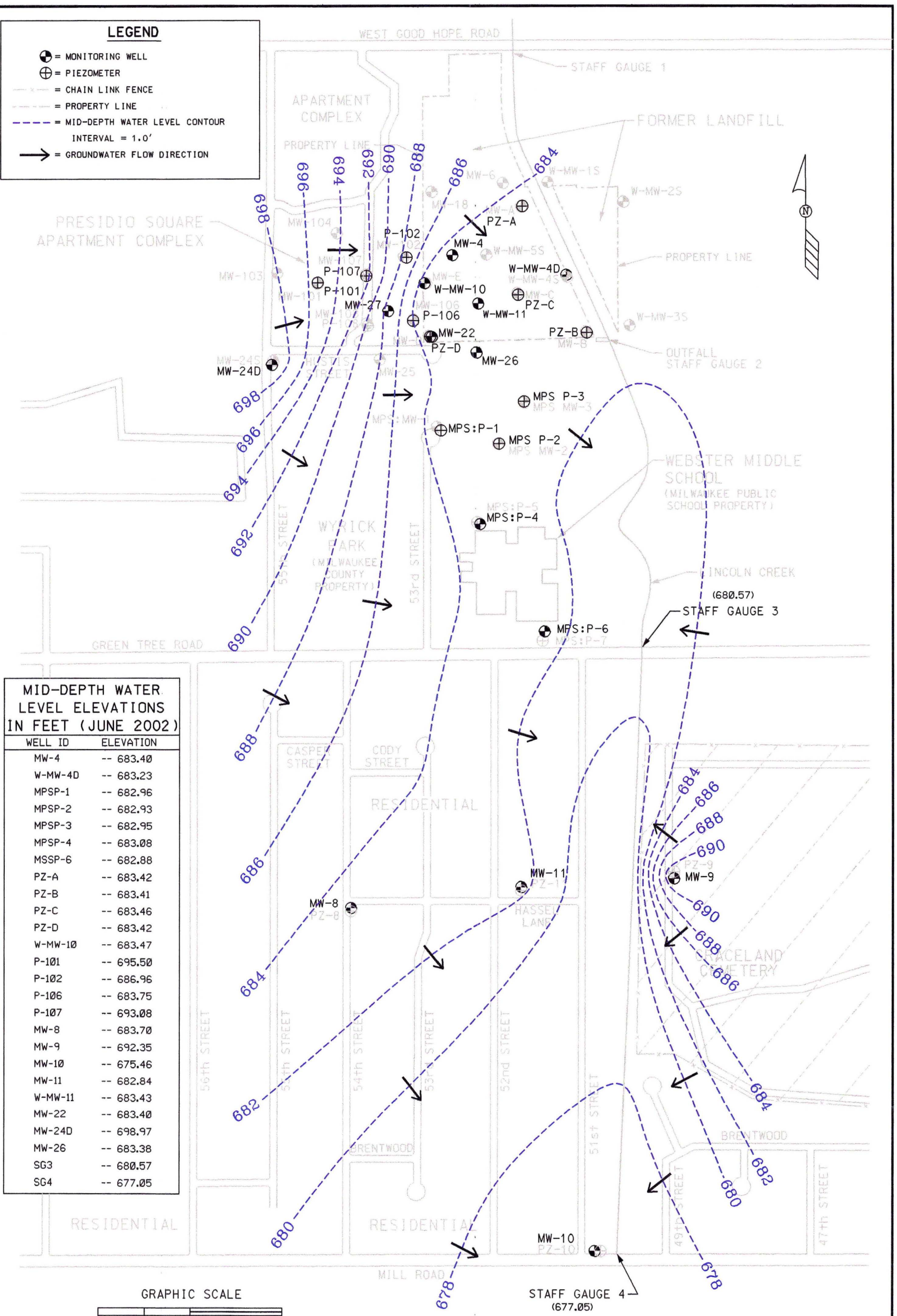
DATE: 8-30-02	DR. BY: BEB	DR.# 3125-059	SCALE: 1" = 400'

SHALLOW WATER TABLE CONTOUR MAP (JUNE 2002)

FIGURE 7

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = MID-DEPTH WATER LEVEL CONTOUR
  INTERVAL = 1.0'
- = GROUNDWATER FLOW DIRECTION



MID-DEPTH WATER LEVEL ELEVATIONS IN FEET (JUNE 2002)

WELL ID	ELEVATION
MW-4	-- 683.40
W-MW-4D	-- 683.23
MPSP-1	-- 682.96
MPSP-2	-- 682.93
MPSP-3	-- 682.95
MPSP-4	-- 683.08
MSSP-6	-- 682.88
PZ-A	-- 683.42
PZ-B	-- 683.41
PZ-C	-- 683.46
PZ-D	-- 683.42
W-MW-10	-- 683.47
P-101	-- 695.50
P-102	-- 686.96
P-106	-- 683.75
P-107	-- 693.08
MW-8	-- 683.70
MW-9	-- 692.35
MW-10	-- 675.46
MW-11	-- 682.84
W-MW-11	-- 683.43
MW-22	-- 683.40
MW-24D	-- 698.97
MW-26	-- 683.38
SG3	-- 680.57
SG4	-- 677.05

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY
MILWAUKEE, WI

SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 8-30-02	DR. BY: BEB	DR.# 3125-058	SCALE: 1" = 400'

MID-DEPTH WATER LEVEL CONTOUR MAP (JUNE 2002)

FIGURE 8

LEGEND

- = MONITORING WELL
- = PIEZOMETER
- = CHAIN LINK FENCE
- = PROPERTY LINE
- = DEEP PIEZOMETER WATER TABLE CONTOUR INTERVAL = 1.0'
- = GROUNDWATER FLOW DIRECTION

WEST GOOD HOPE ROAD
STAFF GAUGE 1
APARTMENT COMPLEX
PROPERTY LINE
FORMER LANDFILL
PRESIDIO SQUARE APARTMENT COMPLEX
MW-6
W-MW-1S
W-MW-2S
MW-18
MW-A
PZ-A
MW-104
P-102
MW-102
MW-4
W-MW-5S
686
685
PROPERTY LINE
MW-107
P-107
MW-103
W-MW-4D
W-MW-4S
MW-C
PZ-C
MW-101
P-101
MW-27
MW-105
MW-106
P-106
W-MW-10
W-MW-11
W-MW-3S
P-108
MW-2
PZ-B
MW-B
684
MW-D
PZ-D
MW-26
OUTFALL STAFF GAUGE 2
MW-24S
MW-24D
HUSTIS STREET
MW-25
MPS P-3
MPS MW-3
MPS:MW-1
MPS:P-1
MPS P-2
MPS MW-2
WEBSTER MIDDLE SCHOOL (MILWAUKEE PUBLIC SCHOOL PROPERTY)
MPS:P-5
MPS:P-4
55th STREET
WICK PARK (MILWAUKEE COUNTY PROPERTY)
53rd STREET
LINCOLN CREEK
STAFF GAUGE 3
MPS:P-6
MPS:P-7
GREEN TREE ROAD
CASPER STREET
CODY STREET
RESIDENTIAL
MW-11
PZ-11
PZ-9
MW-9
MW-8
PZ-8
HASSEL LANE
GRACELAND CEMETERY
56th STREET
55th STREET
54th STREET
53rd STREET
52nd STREET
51st STREET
49th STREET
47th STREET
683
682
681
680
679
678
677
BRENTWOOD
MW-10
PZ-10
MILL ROAD
STAFF GAUGE 4

DEEP PIEZOMETER WATER TABLE ELEVATIONS IN FEET (JUNE 2002)	
WELL ID	ELEVATION
PZ-8	-- 683.80
PZ-9	-- 687.87
PZ-10	-- 676.63
PZ-11	-- 682.83
MPSP-7	-- 682.83
MSSP-5	-- 682.93
P-108	-- 686.23

GRAPHIC SCALE

0 200 400 800

NOTES:
1. BOUNDARIES ARE APPROXIMATE.
2. THIS MAP WAS DEVELOPED FROM A MILWAUKEE COUNTY MAP, THIENSVILLE QUADRANGLE TOPOGRAPHIC MAP, AND SURVEY DATA.

VILLAGE OF WHITEFISH BAY MILWAUKEE, WI			SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 8-30-02	DR. BY: BEB	DR.# 3125-055	SCALE: 1" = 400'
DEEP PIEZOMETRIC SURFACE CONTOUR MAP (JUNE 2002)			FIGURE 9

Figure 11
CVOC Concentration vs Time
MPS Wells

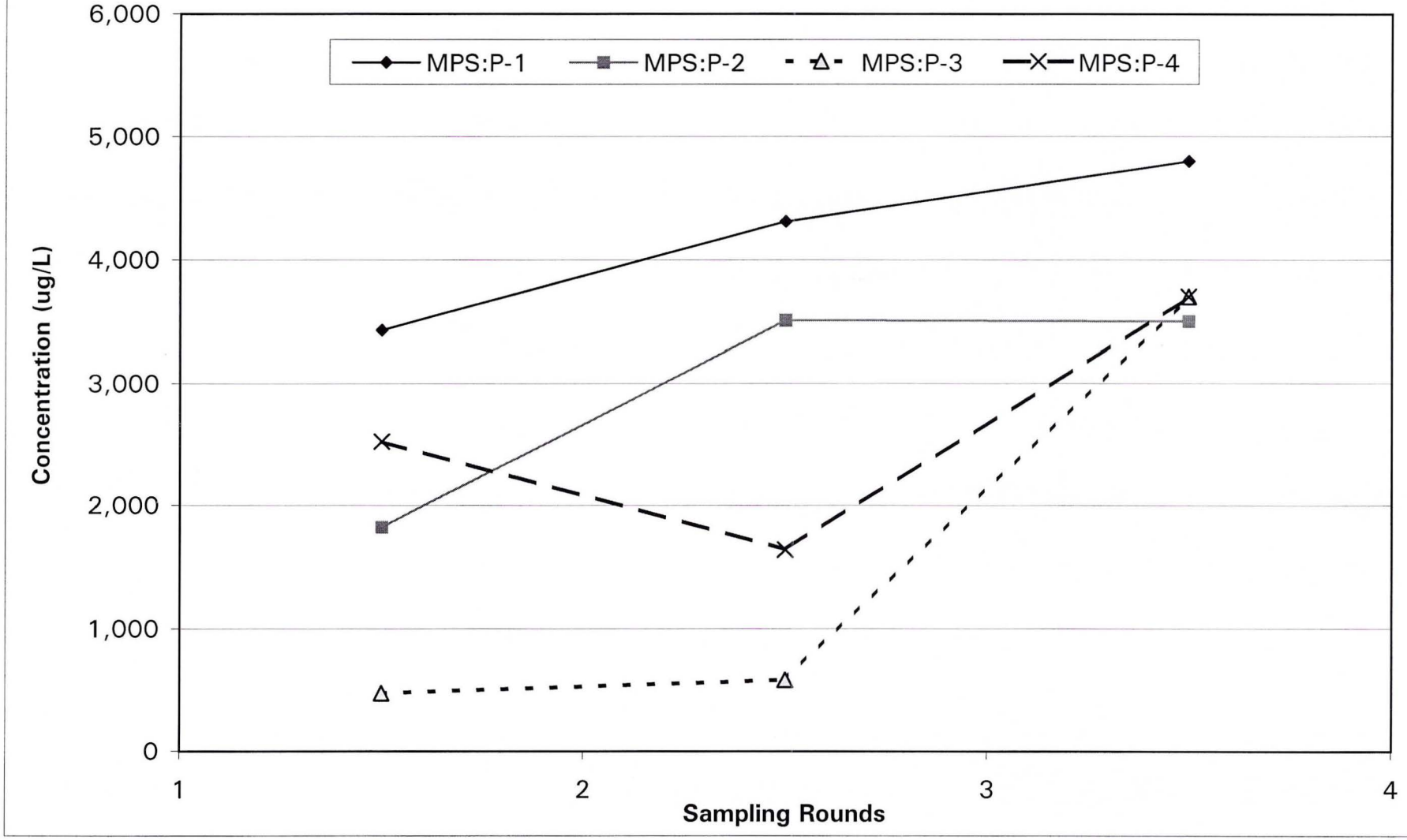
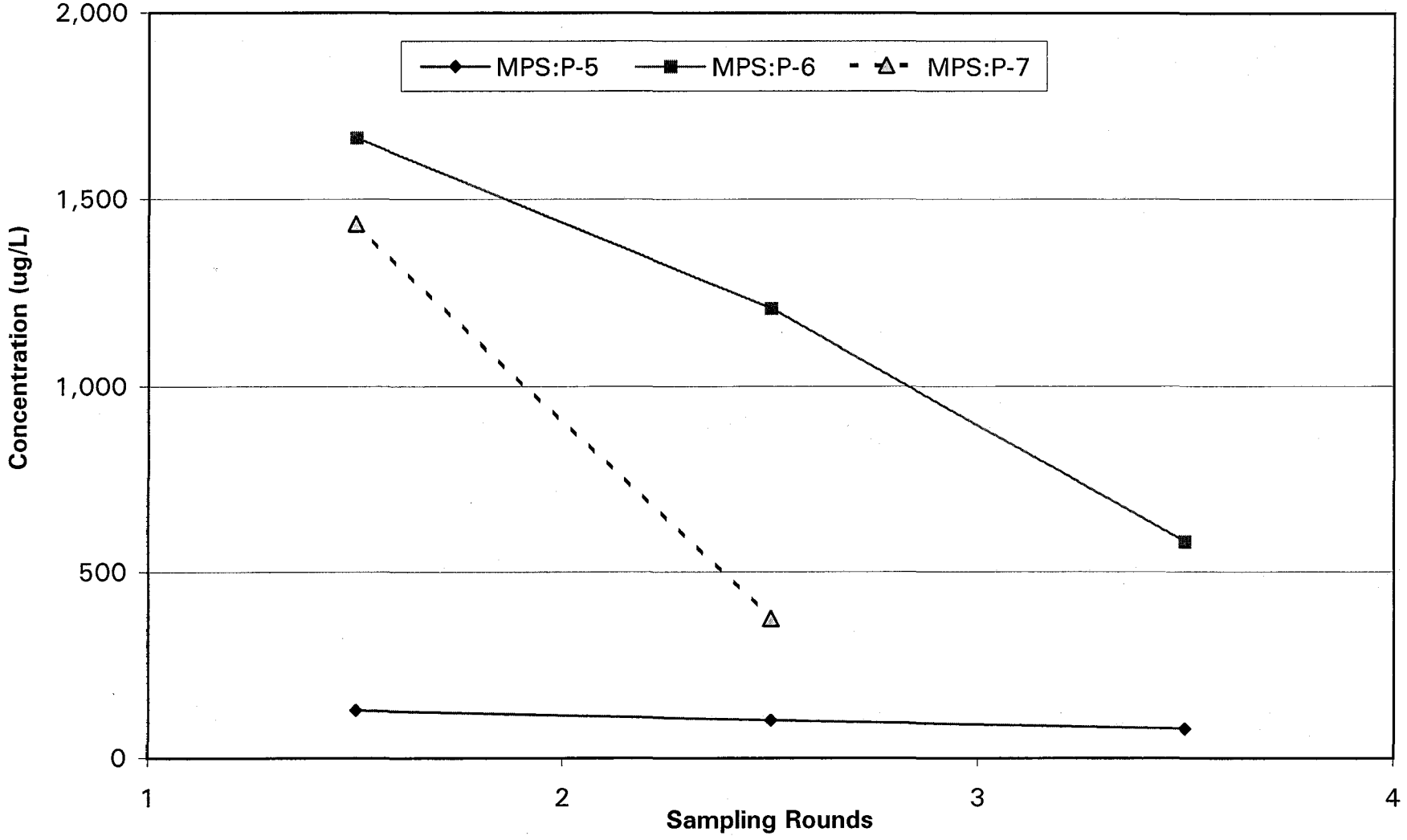


Figure 12
CVOC Concentration vs Time
MPS Wells



TABLES

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
MW-A	697.36	16.4	10.0	690.96	11.89	685.47	06/19/97
					11.27	686.09	07/21/97
					10.10	687.26	03/27/98
					11.19	686.17	04/29/98
					12.99	684.37	07/15/98
					9.62	687.74	08/18/98
					DRY	DRY	06/26/02
PZ-A	697.20	22.0	3.0	678.20	13.20	684.00	06/19/97
					12.38	684.82	07/21/97
					12.25	684.95	03/27/98
					11.21	685.99	04/29/98
					14.06	683.14	07/15/98
					12.58	684.62	08/18/98
					13.78	683.42	06/26/02
MW-B	693.04	15.6	10.0	687.44	8.05	684.99	06/19/97
					7.80	685.24	07/21/97
					5.79	687.25	03/27/98
					5.38	687.66	04/29/98
					8.22	684.82	07/15/98
					7.85	685.19	08/18/98
(see note 1)	693.63	16.2	10.0	687.48	10.41	683.22	06/26/02
PZ-B	692.61	25.3	5.0	672.31	8.65	683.96	06/19/97
					7.87	684.74	07/21/97
					7.77	684.84	03/27/98
					6.97	685.64	04/29/98
					9.63	682.98	07/15/98
					8.09	684.52	08/18/98
	692.41	24.8	5.0	672.66	9.20	683.41	06/26/02
MW-C	700.24	17.0	10.0	693.24	15.78	684.46	06/19/97
					11.97	688.27	07/21/97
					10.22	690.02	03/27/98
					9.29	690.95	04/30/98
					16.50	683.74	07/15/98
					10.02	690.22	08/18/98
					13.42	686.82	06/26/02
PZ-C	700.45	28.4	5.0	677.05	16.41	684.04	06/19/97
					15.64	684.81	07/21/97
					15.53	684.92	03/27/98
					14.74	685.71	04/30/98
					17.40	683.05	07/15/98
					15.86	684.59	08/18/98
	700.45	25.9	5.0	679.55	16.99	683.46	06/26/02
MW-D	709.20	19.1	10.0	700.10	14.20	695.00	06/19/97
					13.16	696.04	07/21/97
					12.78	696.42	03/27/98
					15.01	694.19	07/15/98
					13.48	695.72	08/18/98
	709.20	19.2	10.0	700.00	13.65	695.55	06/26/02
PZ-D	709.17	31.3	5.0	682.87	25.23	683.94	06/19/97
					24.45	684.72	07/21/97
					24.33	684.84	03/27/98
					26.22	682.95	07/15/98
					24.70	684.47	08/18/98
	709.17	31.5	5.0	682.72	25.75	683.42	06/26/02

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
MW-E	708.68	18.6	10.0	700.08	12.90	685.52	06/19/97
					12.20	686.22	07/21/97
					11.33	697.35	03/27/98
					15.37	693.31	07/15/98
					13.18	685.24	08/18/98
					12.68	696.00	06/26/02
MW-4	698.42	20.7	5.0	682.77	13.15	685.27	06/07/96
					16.10	682.32	01/06/97
					14.40	684.02	06/19/97
					13.51	684.91	03/27/98
					15.38	683.04	07/15/98
					13.86	684.56	08/18/98
					14.93	683.49	06/26/02
MW-6	703.30	22.3	5.0	686.00	18.42	684.88	06/19/97
					17.40	685.90	07/21/97
					17.11	686.19	03/27/98
					15.86	687.44	04/30/98
					19.57	683.73	07/15/98
					17.27	686.03	08/18/98
	703.30	22.0	5.0	686.30	18.90	684.40	06/26/02
W-MW-10	708.69	30.4	5.0	683.29	23.44	685.25	06/07/96
					26.37	682.32	01/06/97
					24.70	683.99	06/19/97
					23.81	684.88	03/27/98
					25.68	683.01	07/15/98
					24.15	684.54	08/18/98
					25.22	683.47	06/26/02
W-MW-11	705.29	27.9	5.0	682.44	20.78	684.51	06/07/96
					23.00	682.29	01/06/97
					21.31	683.98	06/19/97
					20.44	684.85	03/27/98
					22.30	682.99	07/15/98
					20.78	684.51	08/18/98
					21.86	683.43	06/26/02
MW-18	703.65	27.5	10.0	686.19	16.42	687.23	06/07/96
					21.36	682.29	01/06/97
					19.51	684.14	06/19/97
					17.60	686.05	03/27/98
					20.52	683.13	07/15/98
					17.47	686.18	08/18/98
					NM	NM	06/26/02
MW-22	709.47	32.5	10.0	687.02	24.31	685.16	06/07/96
					25.57	683.90	06/19/97
					24.68	684.79	03/27/98
					26.54	682.93	07/15/98
					25.02	684.45	08/18/98
	709.47	27.0	10.0	692.52	26.07	683.40	06/26/02
MW-24S	711.01				10.26	700.75	08/18/98
					10.14	700.87	08/26/98
	711.01	14.8	5.0	701.21	9.32	701.69	06/26/02
MW-24D	711.00				12.31	698.69	08/18/98
					12.84	698.16	08/26/98
	711.00	24.9	5.0	691.10	12.03	698.97	06/26/02

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
MW-25	705.48	21.8	10.0	693.64	10.54	694.94	06/07/96
					12.16	693.32	01/06/97
					11.59	693.89	06/19/97
					10.86	694.62	03/27/98
					12.30	693.18	07/15/98
					11.43	694.05	08/18/98
					11.25	694.23	06/26/02
MW-26	702.47	24.1	10.0	688.39	17.33	685.14	06/07/96
					20.25	682.22	01/06/97
					18.57	683.90	06/19/97
					17.82	684.65	07/21/97
					17.69	684.78	03/27/98
					19.55	682.92	07/15/98
					18.03	684.44	08/18/98
					19.09	683.38	06/26/02
W-MW-1S	699.48	18.4	10.0	691.08	12.52	686.96	05/12/98
					16.72	682.76	07/15/98
					MN	MN	06/26/02
W-MW-2S	701.35	15.2	10.0	696.13	9.49	691.86	05/12/98
					15.97	685.38	07/15/98
					MN	MN	06/26/02
W-MW-3S	693.14	17.8	10.0	685.34	3.72	689.42	05/13/98
					9.13	684.01	07/15/98
					MN	MN	06/26/02
W-MW-4S	696.64	18.1	10.0	688.54	8.72	687.92	05/13/98
					10.28	686.36	07/15/98
	695.93	17.9	10.0	688.08	12.53	683.40	06/26/02
W-MW-4D	695.63	22.8	5.0	677.83	11.90	683.73	05/12/98
					14.10	681.53	07/15/98
	696.92	22.6	5.0	679.37	13.69	683.23	06/26/02
W-MW-5S	696.48	16.4	10.0	690.08	11.38	685.10	05/12/98
					13.94	682.54	07/15/98
	696.73	17.3	10.0	689.43	13.30	683.18	06/26/02
MPS: MW-1	708.95	18.2	10.0	700.75	9.41	699.54	08/18/98
					8.92	700.03	08/19/98
					9.45	699.50	08/26/98
					9.13	699.82	12/08/00
					9.12	699.83	01/12/01
					7.93	701.02	06/26/02
MPS: P-1	708.99	32.3	5.0	681.69	24.04	684.95	08/18/98
					25.08	683.91	08/19/98
					25.33	683.66	08/26/98
					27.49	681.50	01/21/99
					27.13	681.86	12/08/00
					27.36	681.63	01/12/01
					26.03	682.96	06/26/02

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
MPS: MW-2	703.42	17.8	10.0	695.62	DRY	DRY	08/18/98
					DRY	DRY	08/19/98
					DRY	DRY	08/26/98
					16.96	686.46	01/12/01
					16.92	686.50	06/26/02
MPS: P-2	703.58	33.4	5.0	675.18	19.63	683.95	08/18/98
					19.68	683.90	08/19/98
					19.91	683.67	08/26/98
					22.09	681.49	01/21/99
					21.98	681.60	01/12/01
					20.65	682.93	06/26/02
MPS: MW-3	696.41	11.0	6.0	691.41	10.73	685.68	08/18/98
					10.82	685.59	08/19/98
					DRY	DRY	08/26/98
					DRY	DRY	01/12/01
					DRY	DRY	06/26/02
MPS: P-3	696.58	31.1	5.0	670.48	12.58	684.00	08/18/98
					12.64	683.94	08/19/98
					12.90	683.68	08/26/98
					15.06	681.52	01/21/99
					14.94	681.64	01/12/01
					13.63	682.95	06/26/02
MPS: P-4	703.01	32.45	5.0	675.56	19.42	683.59	01/18/99
					21.23	681.78	12/08/00
					21.47	681.54	01/12/01
	703.20	32.3	5.0	675.95	20.12	683.08	06/26/02
MPS: P-5	703.12	75.7	5.0	632.42	19.55	683.57	01/25/99
					21.04	682.08	12/08/00
					21.43	681.69	01/12/01
	703.30	75.9	5.0	632.40	20.37	682.93	06/26/02
MPS: P-6	693.22	19.9	5.0	678.32	9.75	683.47	02/13/99
	693.30				11.50	681.80	12/07/00
					11.79	681.51	01/12/01
	693.32	19.9	5.0	678.47	10.44	682.88	06/26/02
MPS: P-7	693.04	41.9	5.0	656.14	10.97	682.07	12/07/00
					11.20	681.84	01/12/01
					10.21	682.83	06/26/02
PZ-8	696.21	67.4	5.0	633.81	13.88	682.33	12/07/00
					14.06	682.15	01/12/01
					12.41	683.80	06/26/02
MW-8	696.24	19.9	15.0	691.34	13.86	682.38	12/07/00
					14.16	682.08	01/12/01
					12.54	683.70	06/26/02

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
PZ-9	697.68	60.5	5.0	642.18	11.29	686.39	12/07/00
					11.71	685.97	01/12/01
					9.81	687.87	06/26/02
MW-9	697.70	19.8	15.0	692.90	7.47	690.23	12/07/00
					8.19	689.51	01/12/01
					5.35	692.35	06/26/02
PZ-10	686.84	42.5	5.0	649.34	13.75	673.09	12/07/00
					14.05	672.79	01/12/01
	686.95	42.5	5.0	649.45	10.21	676.63	06/26/02
MW-10	687.10	19.5	15.0	682.60	15.53	671.57	12/07/00
					15.94	671.16	01/12/01
	687.21	19.5	15.0	682.71	11.75	675.46	06/26/02
PZ-11	691.46	48.5	5.0	648.01	8.63	682.83	06/26/02
MW-11	691.68	17.7	15.0	688.98	8.84	682.84	06/26/02
MW-101	708.57	15.1	10.0	703.52	9.05	699.52	12/12/96
					8.31	700.26	01/06/97
					8.19	700.38	06/19/97
					8.70	699.87	07/15/98
					8.01	700.56	08/18/98
					8.24	700.33	08/26/98
					8.07	700.50	06/26/02
P-101	708.65	35.4	5.0	678.25	14.49	694.16	12/12/96
					14.22	694.43	01/06/97
					13.64	695.01	06/19/97
					14.48	694.17	07/15/98
					13.14	695.51	08/18/98
					13.62	695.03	08/26/98
					13.15	695.50	06/26/02
MW-102	707.42	17.5	10.0	699.92	12.32	695.10	12/12/96
					12.37	695.05	01/06/97
					10.71	696.71	06/19/97
					11.23	696.19	07/15/98
					10.13	697.29	08/18/98
					10.38	697.04	08/26/98
					10.48	696.94	06/26/02
P-102	706.53	32.3	5.0	679.22	18.97	687.56	08/18/98
					19.27	687.26	08/26/98
					19.57	686.96	06/26/02
MW-103	715.68	19.1	10.0	706.63	16.05	699.63	12/12/96
					15.34	700.34	01/06/97
					15.28	700.40	06/19/97
					15.84	699.84	07/15/98
					15.11	700.57	08/18/98
					15.35	700.33	08/26/98
					15.23	700.45	06/26/02

Table 1
Static Groundwater Level Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date
MW-104	709.23	14.8	10.0	704.43	9.88	699.35	12/12/96
					9.19	700.04	01/06/97
					8.88	700.35	06/19/97
	709.31	14.8	10.0	704.51	9.37	699.94	07/15/98
					8.67	700.64	08/18/98
					8.92	700.39	08/26/98
					8.76	700.55	06/26/02
MW-106	706.53	17.0	10.0	699.50	8.65	697.88	08/18/98
					9.06	697.47	08/26/98
					9.27	697.26	06/26/02
P-106	706.51	31.7	5.0	679.78	21.78	684.73	08/18/98
					22.05	684.46	08/26/98
					22.76	683.75	06/26/02
MW-107	707.67	16.8	10.0	700.91	7.82	699.85	08/18/98
					8.11	699.56	08/26/98
					8.00	699.67	06/26/02
P-107	707.87	29.8	5.0	683.11	13.62	694.25	08/18/98
					14.04	693.83	08/26/98
					14.79	693.08	06/26/02
MW-108	707.07	16.7	10.0	700.42	8.20	698.87	08/18/98
					8.35	698.72	08/26/98
					8.32	698.75	06/26/02
P-108	707.18	69.1	5.0	643.09	21.18	686.00	08/18/98
					21.82	685.36	08/26/98
					20.95	686.23	06/26/02
MW-27	706.61	27.4	10.0	689.18	9.72	696.89	06/07/96
					11.98	694.63	12/12/96
					11.81	694.80	01/06/97
					10.62	695.99	06/19/97
					10.96	695.65	07/15/98
					11.72	694.89	08/18/98
					10.51	696.10	08/26/98
					10.53	696.08	06/26/02
STAFF GUAGE 1	698.62				14.56	684.06	06/26/02
STAFF GUAGE 2	689.33				6.95	682.38	06/26/02
STAFF GUAGE 3	696.74				16.17	680.57	06/26/02
STAFF GUAGE 4	689.50				12.45	677.05	06/26/02

Notes:
1. Top of casing elevations for MPS MW-1 through MPS P-6 from Natural Resource Technology report (4/16/99). Top of casing elevations for MPS P-6 through MW-10 surveyed by Northshore Engineering on December 12, 2000 (MPS P-6 re-surveyed).
2. Depth of well measured from top of casing.
3. NM-Water level not measured.

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

MW-A Screened Interval: 4 to 14 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	0.45	<0.23	<0.26	<0.28	<0.28	<0.25	<0.23	NA	NA	<0.27	<0.28	<0.27	<0.20	<0.23
04/21/98	0.44	NR	NR	<0.47	<0.90	NR	NR	NR	NR	<0.41	NR	NR	<0.49	<0.52

PZ-A Screened Interval: 17 to 20 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	**2.1**	<0.23	<0.26	<0.28	0.64	<0.25	0.59	NA	NA	**1.0**	0.74	<0.27	**2.0**	**0.79**
04/21/98	<0.44	NR	NR	<0.47	2.7	NR	NR	NR	NR	<0.41	NR	NR	<0.49	<0.52

MW-B Screened Interval: 4 to 14 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<0.41	<0.23	<0.26	<0.28	0.34	<0.25	<0.23	NA	NA	<0.27	<0.28	<0.27	<0.20	<0.23
04/21/98	<0.44	NR	NR	<0.47	<0.90	NR	NR	NR	NR	<0.47	NR	NR	<0.49	<0.52

PZ-B Screened Interval: 18.5 to 23.5 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<0.41	<0.23	<0.26	<0.28	0.48	<0.25	<0.23	NA	NA	<0.27	<0.28	<0.27	<0.20	<0.23
04/21/98	<0.44	NR	NR	<0.47	<0.90	NR	NR	NR	NR	<0.41	NR	NR	<0.47	<0.52

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

MW-C Screened Interval: 5 to 15 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<2.0	<1.2	<1.3	<1.4	**270**	3.4	<1.2	NA	NA	**73**	<1.4	<1.4	**540**	**14**
04/21/98	0.58	NR	NR	<0.47	**51**	NR	NR	NR	NR	**81**	NR	NR	**13**	**3.1**

PZ-C Screened Interval: 21 to 26 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<0.41	<0.23	0.89	0.62	**110**	2.3	<0.23	NA	NA	0.27	<0.28	<0.27	**1.5**	**150**
04/21/98	<0.44	NR	NR	0.8	**200**	NR	NR	NR	NR	<0.41	NR	NR	**16**	**230**
07/15/98	<0.44	NR	NR	<0.47	**82**	NR	NR	NR	NR	<0.41	NR	NR	**0.89**	**150**

MW-D Screened Interval: 7 to 17 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<100	<58	**120**	<70	**26,000**	**62**	**1,800**	NA	NA	**4,500**	**660**	**400**	**9,900**	**520**
06/27/02	<86	<110	<110	<110	**21,000**	<120	<100	<120	<280	**460**	<130	<110	**1,400**	**280**

PZ-D Screened Interval: 24.5 to 29.5 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<41	<23	81	**42**	**19,000**	**84**	36	NA	NA	**51**	<28	<27	**1,900**	**4,100**
06/27/02	<86	<110	<110	<110	**19,000**	<120	<100	<120	<280	<100	<130	<110	**5,000**	**3,500**

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

MW-E Screened Interval: 7 to 17 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/19/97	<8.2	<4.6	<5.2	<5.6	**390**	<5.0	<4.6	NA	NA	**510**	<5.6	<5.4	**2,700**	<4.6
06/27/02	<4.3	<5.6	<5.7	<5.7	**140**	<5.9	<4.9	<6.0	<14	**290**	<6.3	<5.7	**330**	<1.2

MW-4 Screened Interval: 14.2 to 19.2 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
10/05/88	<1.0	<1.0	3.6	<1.0	NA	<1.0	<1.0	<1.0	NR	**400**	<1.0	<1.0	**425**	<1.0
11/10/88	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	NR	**223**	<1.0	<1.0	**341**	<1.0
04/19/89	<1.0	<1.0	6	2.3	NA	**229**	<1.0	<1.0	NR	**110**	<1.0	<1.0	**264**	<1.0
11/16/93	<0.2	<0.5	2.3	1.0	**212**	2.2	<1.0	<2.5	NR	**87.1**	<1.0	<0.5	**104**	**38.7**
06/07/96	NA	NA	ND	NA	**190**	ND	ND	NA	NR	**1,400**	ND	ND	**1,100**	**18**
06/20/97	<0.82	<0.46	1.60	0.72	**150**	0.92	<0.46	NA	NA	**270**	<0.56	<0.54	**170**	**18**
06/27/02	<4.3	<5.6	<5.7	<5.7	**170**	<5.9	<4.9	<6.0	<14	**640**	<6.3	<5.7	**310**	**7.4**

MW-6 Screened Interval: 15.3 to 20.3 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
11/16/93	0.3	<0.5	<0.5	<0.4	0.9	<0.5	<1.0	NA	NA	<0.5	<2.0	<0.5	**0.7**	**1.3**
06/07/96	NA	NA	NA	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
06/20/97	<0.41	<0.23	<0.26	<0.28	0.45	<0.25	<0.23	NA	NA	<0.27	<0.28	<0.27	<0.20	**0.37**
04/21/98	<0.44	NR	NR	<0.47	<0.90	NR	NR	NR	NR	<0.41	NR	NR	<0.43	**0.99**
07/15/98	<0.44	NR	NR	<0.47	<1.1	NR	NR	NR	NR	<0.41	NR	NR	<0.49	**1.3**

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
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W-MW-10 Screened Interval: 23.3 to 28.3 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
10/05/88	<1.0	<1.0	23	**46**	NR	<1.0	<1.0	**8.2**	NA	**138**	24	30	**2630**	<1.0
11/10/88	3.9	<1.0	31	**54**	NR	<1.0	<1.0	<1.0	NA	**34**	3.4	<1.0	**877**	<1.0
04/19/89	<1.0	<1.0	18.8	**35.6**	NR	**10400**	3.5	<1.0	NA	**477**	11.5	<1.0	**3400**	**3400**
11/16/93	0.3	<0.5	2.4	**2.3**	**61.8**	**20.2**	<1.0	<2.5	NA	**751**	<2.0	<0.5	**2740**	**303**
06/07/96	NA	NA	ND	NA	**740**	ND	ND	NA	NA	**300**	ND	ND	**1,700**	**640**
06/20/97	<8.2	<4.6	<5.2	<5.6	**1,400**	19	<4.6	NA	NA	**460**	<5.6	<5.4	**2,000**	**620**
06/27/02	<43	<56	<57	<57	**17,000**	<59	87 "J"	<60	<140	<49	**460**	<57	<73	**4,600**

W-MW-11 Screened Interval: 20.6 to 25.6 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
10/05/88	<1.0	<1.0	19.4	**18.7**	NA	<1.0	<1.0	<1.0	NA	**15.6**	3.6	27.9	<1.0	<1.0
11/10/88	<1.0	<1.0	20.6	**20.8**	NA	<1.0	<1.0	<1.0	NA	**9**	<1.0	**42.6**	**11.9**	<1.0
04/19/89	**3.6**	<1.0	30.2	**26**	NA	**9130**	0.7	<1.0	NA	**11.8**	2.2	**48.4**	**69**	**825**
11/16/93	**1.1**	<0.5	22.9	**7.0**	**2,660**	**21.3**	39.8	<2.5	NA	<0.5	30.4	21.8	**7.2**	**1,750**
06/07/96	NA	NA	ND	NA	**28,000**	NA	**400**	NA	NA	ND	**1,000**	ND	ND	**7,500**
06/20/97	<41	<23	32	<28	**9,300**	**54**	45	NA	NA	<27	110	<27	<20	**2,100**
06/27/02	<86	<110	<110	<110	**1,300**	<120	<100	<120	<280	**1,300**	<130	<110	**3,900**	**400**

MW-18 Screened Interval: 15.7 to 25.7 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
4/19/1988	<1.0	<1.0	4.8	0.4	NA	**106**	<1.0	<1.0	NA	<1.0	<1.0	<1.0	**9.4**	<1.0
11/16/93	0.2	<0.5	2.5	<0.4	**111**	1.8	<1.0	<2.5	NA	<0.5	<2.0	<0.5	**3.2**	**30.5**
06/07/96	NA	NA	ND	NA	**15**	NA	ND	NA	NA	ND	ND	ND	**1.4**	**2.3**
06/20/97	<0.41	<0.23	0.94	0.33	**83**	1.4	<0.23	NA	NA	<0.27	<0.28	<0.27	**3.2**	**11**

MW-22 Screened Interval: 21.8 to 31.8 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
4/19/1989	**16.8**	ND	**165**	**82.3**	**NA**	**22,200**	**24.7**	<1	NA	**36.4**	**25.3**	**<1**	**1,180**	**2,490**
11/16/93	**13.8**	**20.1**	**153**	**58.7**	**1,830**	**195**	**3,680**	NA	NA	**823**	**2,310**	**468**	**1,720**	**770**
06/27/95	<40	NA	<100	<80	**17,400**	<100	**12,600**	NA	NA	**7,290**	**1,360**	**251**	**13,400**	**3,460**
06/07/96	<600	<1000	<1000	<1000	**73,000**	<1000	**5,100**	<1000	<1000	**4,100**	3,100	**1,100**	**83,000**	**2,800**

Table 2
Groundwater Quality Data
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MW-24S Screened Interval: 7.7 to 12.7 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
11/16/93	<0.2	<0.5	<0.5	<0.4	<0.5	<0.5	<1.0	NA	NA	<0.5	<2.0	<0.5	**0.5**	<0.2
06/07/96	<0.6	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0
08/18/98	<0.27	NA	<0.35	<0.43	0.7	<0.79	0.43	<0.36	NA	**1.2**	0.29	<0.30	1.2	<0.20

MW-24D Screened Interval: 17.8 to 22.8 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
11/16/93	<0.2	<0.50	<0.50	<0.40	<0.50	<0.5	<1.0	<2.5	NA	<0.5	5.9	<0.5	<0.3	<0.2
06/07/96	<0.6	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0
08/18/98	<0.27	NA	<0.35	<0.43	0.96	<0.79	0.68	<0.36	NA	**2.1**	0.45	<0.30	5.4	<0.20

MW-25 Screened Interval: 10 to 20 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/95	<4.0	<10	<10	<8.0	**632**	<10	<20	NA	NA	<10	<40	<10	<4.0	**59.5**
06/07/96	NA	NA	ND	NA	**19**	ND	ND	NA	NA	ND	NA	ND	ND	**1.8**
06/20/97	<4.1	<2.3	<2.6	**7.1**	**1,000**	6.6	<2.3	NA	NA	<2.7	<2.8	<2.7	<2.0	**250**
8/18/1998	<0.27	NA	<0.35	**0.78**	**85**	<0.79	<0.32	<0.36	NA	<0.43	<0.27	<0.30	<0.37	**16**

MW-26 Screened Interval: 12 to 22 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/95	<20	<50	<50	<40	**3,070**	<50	<100	NA	NA	<50	<200	<50	<20	**712**
06/07/96	NA	NA	ND	NA	**1,100**	ND	ND	NA	NA	ND	NA	ND	ND	**690**
06/20/97	<4.1	<2.3	<2.6	<2.8	**1,000**	9.0	<2.3	NA	NA	<2.7	<2.8	<2.7	<2.0	**350**
06/27/02	<2.2	<2.8	<2.9	<2.9	**220**	<3.0	<2.5	<3.0	<7.0	<2.5	<3.2	<2.9	<3.7	**160**

Table 2
Groundwater Quality Data
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MW-27 Screened Interval: 18 to 28 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/95	**4.7**	<0.5	40.8	**8.8**	**4,270**	**80.6**	<1.0	NA	NA	**7.5**	10.6	<0.5	**63.9**	**4,100**
06/07/96	NA	NA	ND	NA	**7,700**	ND	ND	NA	NA	ND	NA	ND	ND	**8,700**
11/26/1996	<30	<50	<50	<50	**8,200**	<50	<50	<50	<50	<50	<50	<50	<50	**6,800**
6/19/1997	<20	<12	**32**	**29**	**9,800**	**50**	<12	<11	<11	<14	42	<14	<10	**7,500**
8/18/1998	<14	ND	34	**24**	**10,000**	**51**	<16	**30**	ND	<22	39	<15	<18	**5,500**
6/26/2002	**10**	ND	27	**24**	**8,800**	**57**	0.51	<0.85	ND	**1.1**	15	<0.69	**3.2**	**3,900**

W-MW-1S Screened Interval: 5 to 15 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
04/21/98	<0.44	NA	NA	<0.47	NA	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52
07/15/98	<0.44	NA	NA	<0.47	<0.9	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52

W-MW-2S Screened Interval: 5 to 15 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
04/21/98	<0.44	NA	NA	<0.47	<0.9	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52
07/15/98	<0.44	NA	NA	<0.47	<0.9	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52

W-MW-3S Screened Interval: 3 to 13 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
04/21/98	<0.44	NA	NA	<0.47	NA	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52
07/15/98	<0.44	NA	NA	<0.47	<0.9	NA	NA	NA	NA	<0.41	NA	NA	<0.63	<0.52

W-MW-4S Screened Interval: 5 to 15 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
04/21/98	<0.44	NA	NA	<0.47	NA	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52
07/15/98	<0.44	NA	NA	<0.47	<0.9	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52

Table 2
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W-MW-4D Screened Interval: 15 to 20 feet bgs

	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
04/21/98	<0.44	NA	NA	<0.47	<0.90	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52
07/15/98	<0.44	NA	NA	<0.47	1.3	NA	NA	NA	NA	<0.41	NA	NA	<0.49	<0.52

W-MW-5S Screened Interval: 5 to 15 feet bgs

	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
04/21/98	<0.44	NA	NA	<0.47	NA	NA	NA	NA	NA	<0.41	NA	NA	<0.49	**22**
07/15/98	<0.44	NA	NA	<0.47	**12**	NA	NA	NA	NA	<0.41	NA	NA	**1.2**	**43**

MPS MW-1 Screened Interval: 6 to 16 feet bgs

	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
08/19/98	<0.27	NA	<0.35	<0.43	<0.28	<0.79	<0.32	<0.36	<0.35	<0.43	<0.27	<0.30	<0.37	<0.20
12/08/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	<0.25

MPS P-1 Screened Interval: 25 to 30 feet bgs

	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
08/19/98	<5.4	NA	8.4	<8.6	**2,600**	<16	<6.4	<7.2	<7.0	<8.6	<5.4	<6.0	<7.4	**820**
01/21/99	<6.8	NA	11	<11	**3,200**	<20	<8.0	<9.0	<8.8	<11	<6.8	<7.5	<9.2	**1,100**
12/08/00	<10	NA	<25	<25	**3,200**	<25	<25	<25	<25	<25	<10	<25	<25	**1,600**
12/00 Dup.	<10	NA	<25	<25	**3,100**	<25	<25	<25	<25	<25	<10	<25	<25	**1,400**

MPS P-2 Screened Interval: 25.6 to 30.6 feet bgs

	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
08/19/98	<2.7	NA	5.2	<4.3	**1,000**	8.9	<3.2	**3.7**	<3.5	<4.3	<2.7	<3.0	<3.7	**810**
01/21/99	<5.4	NA	8.2	<8.6	**1,900**	<16	<6.4	<7.2	<7.0	<8.6	<5.4	<6.0	<7.4	**1,600**
06/27/02	<22	<28	<29	<29	**1,400**	<30	<25	<30	<70	<25	<32	<29	<37	**2,100**

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
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MPS P-3 Screened Interval: 25 to 30 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
08/19/98	<0.54	NA	<0.70	<0.86	**320**	1.7	<0.64	**1.0**	<0.70	<0.86	<0.54	<0.60	<0.74	**150**
01/21/99	<0.54	NA	0.78	<0.86	**340**	3.7	<0.64	<0.72	<0.70	<0.86	<0.54	<0.60	<0.74	**240**
06/27/02	<22	<28	<29	<29	**2,200**	<30	<25	<30	<70	<25	<32	<29	<37	**1,500**

MPS P-4 Screened Interval: 28 to 33 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
01/18/99	<2.7	NA	7.9	<4.3	**1,500**	11	<3.2	**7.2**	<3.5	<4.3	<2.7	<3.0	<3.7	**1,000**
12/08/00	<4.0	NA	<10	<10	**880**	<10	<10	<10	<10	<10	<4.0	<10	<10	**760**
06/27/02	<22	<28	<29	<29	**2,200**	<30	<25	<30	<70	<25	<32	<29	<37	**1,500**

MPS P-5 Screened Interval: 71.5 to 76.5 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
01/25/99	<0.27	NA	<0.35	<0.43	**18**	<0.79	<0.32	<0.36	0.38	<0.43	0.98	<0.30	<0.37	**110**
12/08/00	<0.20	NA	<0.50	<0.50	**10**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.50	<0.50	**91**
06/27/02	<0.43	<0.56	<0.57	<0.57	**25**	<0.59	<0.49	<0.6	<1.4	<0.49	<0.63	<0.57	<0.73	**53**

MPS P-6 Screened Interval: 15.5 to 20.5 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
02/13/99	<2.7	NA	4.7	<4.3	**850**	<7.9	<3.2	<3.6	<3.5	<4.3	<2.7	<3.0	<3.7	**810**
12/07/00	<0.10	NA	3.2	<0.25	**670**	3.6	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	**530**
06/27/02	<2.2	<2.8	<2.9	<2.9	**290**	<3.0	<2.5	<3.0	<7.0	<2.5	<3.2	<2.9	<3.7	**290**

MPS P-7 Screened Interval: 45 to 50 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	**33**	<0.25	<0.25	<0.25	0.36	<0.25	0.63	<0.25	<0.25	**1,400**
06/27/02	<2.2	<2.8	<2.9	<2.9	**15**	<3.0	<2.5	<3.0	<7.0	<2.5	<3.2	<2.9	<3.7	**360**

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
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PZ-8 Screened Interval: 63 to 68 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	<0.25

MW-8 Screened Interval: 5.5 to 20.5 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	<0.25

PZ-9 Screened Interval: 56 to 61 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	3.2	<0.25	2.2	<0.25	<0.25	<0.25

MW-9 Screened Interval: 5 to 20 feet bgs

Sampling Date	VOCs													
	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	<0.25

Table 2
Groundwater Quality Data
Village of Whitefish Bay - Former Good Hope Road Landfill Site
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PZ-10	Screened Interval: 38 to 43 feet bgs													
	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	2.8	<0.25	0.79	<0.25	<0.25	<0.25

MW-10	Screened Interval: 5 to 20 feet bgs													
	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
12/07/00	<0.10	NA	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	<0.25	<0.25

PZ-11	Screened Interval: 44 to 49 feet bgs													
	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/02	<0.43	<0.56	<0.57	<0.57	<0.53	<0.59	<0.49	<0.6	<1.4	<0.49	<0.63	<0.57	<0.73	<0.12

MW-11	Screened Interval: 5 to 20 feet bgs													
	VOCs													
Sampling Date	Benzene	Carbon Tetrachloride	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Ethylbenzene	Methylene Chloride	Naphthalene	PCE	Toluene	1,1,1-TCA	TCE	Vinyl Chloride
Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
NR 140 ES	5	5	850	7	70	100	700	5	40	5	1,000	200	5	0.2
NR 140 PAL	0.5	0.5	85	0.7	7	20	140	0.5	8	0.5	200	40	0.5	0.02
06/27/02	<0.43	<0.56	<0.57	<0.57	<0.53	<0.59	<0.49	<0.6	<1.4	<0.49	<0.63	<0.57	<0.73	<0.12

Notes:

1. NR 140 ES = Wis. Adm. Code Chapter NR 140 Enforcement Standard
2. NR 140 PAL = Wis. Adm. Code Chapter NR 140 Preventive Action Limit
3. Abbreviations:

ND = Not Detected
NS = Not Sampled
1,1-DCA = 1,1-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloethene
trans-1,2-DCE = trans-1,2-Dichloethene
TCE = Trichlorethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichlorethane

6. ES Exceedances: **BOLD** PAL Exceedances: **BOLD**

Table 3
Groundwater Biodegradation Parameters
Former Good Hope Road Landfill Site and the vicinity
Sigma Project No. 3125

MW-A	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/19/97	168	356	341663					

MW-B	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/19/97	64	107	170461					

MW-D	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/19/97	38009	22792	407794					
06/27/02	3300	8000	31000	0.2	-102.7	7	0	15.3

PZ-D	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	2500	870000	1500000	0.2	-142.9	7	0	14.8

MW-E	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	16	25	680	0.27	-59.4	7	0	15.4

MW-4	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02				0.22	-77.9	7	0	15.1

W-MW-10	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	130	53000	38000	0.29	-31.8	7	0	14.9

Table 3
Groundwater Biodegradation Parameters
Former Good Hope Road Landfill Site and the vicinity
Sigma Project No. 3125

W-MW-11	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02				0.23	-131.1	7	0	14.9

MW-26	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02				0.19	-146.9	7	0	15.1

MPS MW-1	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.61	109.6	7	0	12.0

MPS P-1	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.31	47.2	7	0	13.1

MPS MW-2	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.61	109.6	7	0	12.0

MPS P-2	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.61	109.6	7	0	12.0
06/27/02				0.28	-169.6	7	0	14.5

MPS MW-3	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.61	109.6	7	0	12.0

MPS P-3	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02				0.24	-178.4	7	0	14.7

Table 3
Groundwater Biodegradation Parameters
Former Good Hope Road Landfill Site and the vicinity
Sigma Project No. 3125

MPS P-4	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.42	22.3	7	0	13.7
06/27/02	910	37000	130000	0.5	77.1	7	0	14.8

MPS P-5	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.61	19.7	7	0	13.4
06/27/02	<5.0	64	520	0.22	-106.7	7	0	13.7

MPS P-6	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.43	38.9	7	0	14.2
06/27/02	520	4400	4400	0.47	110.6	7	0	15.2

MPS P-7	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.32	-43.7	7	0	13.5
06/27/02	6600	260000	550000	0.44	96.7	11	0	13.9

PZ-8	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.61	136.1	7	0.8	13.7

MW-8	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				1.09	212.2	7	0.2	13.9

PZ-9	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.79	157.7	7	0	13.5

MW-9	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.62	133.4	7	0	12.2

PZ-10	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.39	18.9	11	0	13.2

Table 3
Groundwater Biodegradation Parameters
Former Good Hope Road Landfill Site and the vicinity
Sigma Project No. 3125

MW-10	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
12/07/00				0.56	79.4	7	0	15.4

PZ-11	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	510	900	6800	0.37	192.7	7	0	13.8

MW-11	Biodegradation Parameters							
DATE	Ethene (nu/L)	Ethane (nu/L)	Methane (nu/L)	DO (mg/L)	REDOX (mV)	pH	Ferrous Iron (ppm)	Temp (°C)
06/27/02	560	110	16000	0.45	160.5	7	0	15.2

Table 4
Vertical Gradient Calculations
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date	Elev. Diff. (shallow - deep)	Water Col. mid-pt. Elev.	PZ Scr. mid-pt.	Mid-pt. Diff.	Calculated Vertical Gradient	Direction
MW-A	697.36	16.4	10.0	690.96	9.62	687.74	08/18/98	3.12	684.35	676.7	7.65	0.4078	Down
PZ-A	697.20	22.0	3.0	678.20	12.58	684.62	08/18/98						
MW-B	693.63	16.2	10.0	687.48	10.41	683.22	06/26/02	0.01	680.35	670.16	10.19	0.0010	Down
PZ-B	692.41	24.8	5.0	672.66	9.20	683.21	06/26/02						
MW-C	700.24	17.0	10.0	693.24	13.42	686.82	06/26/02	3.36	685.03	674.55	10.48	0.3206	Down
PZ-C	700.45	28.4	5.0	677.05	16.99	683.46	06/26/02						
MW-D	709.20	19.2	10.0	700.00	13.65	695.55	06/26/02	12.13	692.78	680.22	12.56	0.9661	Down
PZ-D	709.17	31.5	5.0	682.72	25.75	683.42	06/26/02						
MW-E	708.68	18.6	10.0	700.08	12.68	696.00	06/26/02	12.53	693.04	680.79	12.25	1.0229	Down
W-MW-10	708.69	30.4	5.0	683.29	25.22	683.47	06/26/02						
MW-24S	711.01	14.8	5.0	701.21	9.32	701.69	06/26/02	2.72	698.95	688.6	10.35	0.2628	Down
MW-24D	711.00	24.9	5.0	691.10	12.03	698.97	06/26/02						
W-MW-4S	696.64	18.1	10.0	688.54	12.53	684.11	06/26/02	0.88	681.33	676.87	4.455	0.1975	Down
W-MW-4D	696.92	22.6	5.0	679.37	13.69	683.23	06/26/02						
MPS: MW-1	708.95	18.2	10.0	700.75	7.93	701.02	06/26/02	18.06	695.89	679.19	16.7	1.0818	Down
MPS: P-1	708.99	32.3	5.0	681.69	26.03	682.96	06/26/02						
MPS: MW-2	703.42	17.8	10.0	695.62	16.92	686.50	06/26/02	3.57	686.06	672.68	13.38	0.2668	Down
MPS: P-2	703.58	33.4	5.0	675.18	20.65	682.93	06/26/02						
MPS: P-4	703.01	32.5	5.0	675.56	20.12	682.89	06/26/02	0.14	676.73	629.92	46.81	0.0030	Down
MPS: P-5	703.12	75.7	5.0	632.42	20.37	682.75	06/26/02						
MPS: P-6	693.32	19.9	5.0	678.47	10.44	682.88	06/26/02	0.05	678.18	653.64	24.54	0.0020	Down
MPS: P-7	693.04	41.9	5.0	656.14	10.21	682.83	06/26/02						
MW-8	696.24	19.9	15.0	691.34	12.54	683.70	06/26/02	-0.10	680.02	631.31	48.71	-0.0021	Up
PZ-8	696.21	67.4	5.0	633.81	12.41	683.80	06/26/02						
MW-9	697.70	19.8	15.0	692.90	5.35	692.35	06/26/02	4.48	685.13	639.68	45.45	0.0986	Down
PZ-9	697.68	60.5	5.0	642.18	9.81	687.87	06/26/02						

Table 4
Vertical Gradient Calculations
Village of Whitefish Bay - Former Good Hope Road Landfill Site
Sigma Project No. 3125

Well ID	Top of Casing Elevation (ft MSL)	Depth of Well (ft)	Screen Length (ft)	Top of Screen (ft-MSL)	Depth to Water (ft)	Groundwater Elevation (ft-MSL)	Date	Elev. Diff. (shallow - deep)	Water Col. mid-pt. Elev.	PZ Scr. mid-pt.	Mid-pt. Diff.	Calculated Vertical Gradient	Direction
MW-10	687.21	19.5	15.0	682.71	11.75	675.46	06/26/02	-1.28	671.59	646.95	24.64	-0.0520	Up
PZ-10	686.95	42.5	5.0	649.45	10.21	676.74	06/26/02						
MW-11	691.68	17.7	15.0	688.98	8.84	682.84	06/26/02	0.01	678.41	645.51	32.9	0.0003	Down
PZ-11	691.46	48.5	5.0	648.01	8.63	682.83	06/26/02						
MW-101	708.57	15.1	10.0	703.52	8.07	700.50	06/26/02	5.00	697.01	675.75	21.26	0.2352	Down
P-101	708.65	35.4	5.0	678.25	13.15	695.50	06/26/02						
MW-102	707.42	17.5	10.0	699.92	10.48	696.94	06/26/02	9.98	693.43	676.72	16.71	0.5972	Down
P-102	706.53	32.3	5.0	679.22	19.57	686.96	06/26/02						
MW-106	706.53	17.0	10.0	699.50	9.27	697.26	06/26/02	13.51	693.38	677.28	16.1	0.8391	Down
P-106	706.51	31.7	5.0	679.78	22.76	683.75	06/26/02						
MW-107	707.67	16.8	10.0	700.91	8.00	699.67	06/26/02	6.59	695.29	680.61	14.68	0.4489	Down
P-107	707.87	29.8	5.0	683.11	14.79	693.08	06/26/02						
MW-108	707.07	16.7	10.0	700.42	8.32	698.75	06/26/02	12.52	694.59	640.59	54	0.2319	Down
P-108	707.18	69.1	5.0	643.09	20.95	686.23	06/26/02						

Note:
Monitoring well MW-A was dry during June 2002 sampling event. Previous water level data for both MW-A and PZ-A were used to calculated vertical gradient

ATTACHMENT A

SOIL BORING LOGS
MONITORING WELL / PIEZOMETER CONSTRUCTION FORMS
WELL DEVELOPMENT FORMS

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Village of Whitefish Bay		**MW-11**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started (MM / DD / YY)	Date Drilling Completed (MM / DD / YY)	Drilling Method
Boart Longyear Drilling **Jeffrey and Jim**	**06 / 10 / 02**	**06 / 10 / 02**	**Hollow Stem Augerrotary**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___	**MW-11**	_____ Feet MSL	_____ Feet MSL	**8.25** inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of **SE** 1/4 of Section **23**, T **8** N, R **21** E
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Milwaukee	**41**	**Village of Whitefish Bay**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0	**0.0 to 21.0 Blind drilled, see PZ-11 for soil/rock description**										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Sigma Environmental Services, Inc.**
220 E. Ryan Road, Oak Creek, WI 53154 (414) 768-7144

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources
Boring Number **MW-11**

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-92
Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13.0											
			14.0											
			15.0											
			16.0											
			17.0											
			18.0											
			19.0											
			20.0											
			21.0	**End of boring, installed monitoring well**										
			22.0											
			23.0											
			24.0											
			25.0											
			26.0											
			27.0											
			28.0											
			29.0											
			30.0											
			31.0											
			32.0											

Village of Whitefish Bay

3125

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name **Village of Whitefish Bay**	Local Grid Location of Well _____ ft. ☐ N. _____ ft. ☐ E. ☐ S. ☐ W.	Well Name **MW-11**
Facility License, Permit or Monitoring Number _ _ _ _ _ _ _	Grid Origin Location Lat. ___ ___ ___ Long. ___ ___ ___ or	Wis. Unique Well Number DNR Well Number _ _ _ _ _ _ _ _ _ _
Type of Well Water Table Observation Well ☒ 11 Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed m m / d d / y y 0 6 / 1 0 / 0 2
Distance Well Is From Waste/Source Boundary ft.	Section Location of Waste/Source NW 1/4 of SE 1/4 of Sec. 23, T. 8 N, R. 21 ☒ E. ☐ W.	Well Installed By: (Person's Name and Firm) **Boart Longyear Drilling** **Jeffrey and Jim**
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or **1.0** ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☒ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

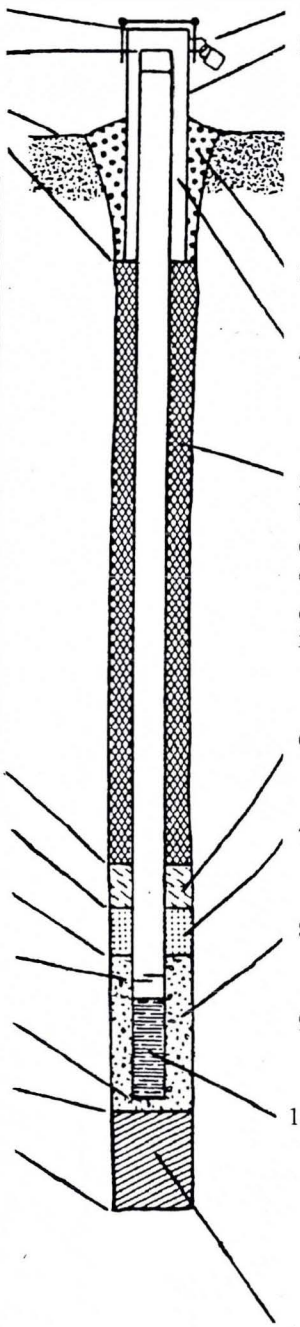
13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis):
_____



E. Bentonite seal, top _____ ft. MSL or **1.0** ft.

F. Fine sand, top _____ ft. MSL or **3.0** ft.

G. Filter pack, top _____ ft. MSL or **3.5** ft.

H. Screen joint, top _____ ft. MSL or **5.0** ft.

I. Well bottom _____ ft. MSL or **20.0** ft.

J. Filter pack, bottom _____ ft. MSL or **21.0** ft.

K. Borehole, bottom _____ ft. MSL or **21.0** ft.

L. Borehole, diameter **8.25** in.

M. O.D. well casing **2.40** in.

N. I.D. well casing **2.00** in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: **9.00** in.
b. Length: **1.0** ft.
c. Material: Steel ☒ 04
Other ☐ _____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: **compression cap**

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
Other ☒ _____

4. Material between well casing and protective pipe:
Bentonite ☐ 30
Annular space seal ☐
sand Other ☒

5. Annular space seal: a. Granular Bentonite ☐ 33
b. ____ Lbs/gal mud weight..Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. ____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☒ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. **#5 Badger**
b. Volume added **1/2 bag** ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. **#40 Badger**
b. Volume added **61/2 bags** ft³

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ _____

10. Screen material: **PVC**
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐ _____
b. Manufacturer _____
c. Slot size: **0.010** in.
d. Slotted length: **15.0** ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mary Mitchell Firm: **Sigma Environmental Services, Inc.**
220 E. Ryan Road, Oak Creek, WI 53154 (414) 768-7144

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs 144,147 & 160, Wis Stats, and ch NR 141, Wis Ad Code. In accordance with ch 144, Wis Stats, failure to file this form may result in a forfeiture of not less than $10, nor more than $10,000 for each day of violation. In accordance with ch 147, Wis Stats, failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

3125

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Page 1 of 3

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Village of Whitefish Bay		**PZ-11**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear Drilling **Jeffrey and Jim**	06 / 10 / 02 MM DD YY	06 / 10 / 02 MM DD YY	**8.25" HSA/** **mud rotary**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
____	____	**PZ-11**	_____ Feet MSL	_____ Feet MSL	**12.00** inches

Boring Location
State Plane _____ N, _____ E S
NW 1/4 of **SE** 1/4 of Section **23**, T **8** N, R **21** E

Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
_____ Feet ☐ S _____ Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Milwaukee	**41**	**Village of Whitefish Bay**

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	12	3 4 3 4	1.0	**0.0 to 1.0 very dark grayish brown (10YR3/2) clayey SILT, trace gravel, trace organics, soft, moist**	ML			0.7						
				1.0 to 2.0 dark grayish brown sandy SILT, trace gravel, trace mottling, medium soft, moist	ML									
2	8	2 3 4 4	3.0	**2.0 to 5.0 very dark grayish brown (10YR3/2) SILT, organics, trace fine sand, trace gravel, soft, moist**	ML			1.0						
3	10	3 4 4 4	5.0					0.7						
				5.0 to 6.3 yellowish brown (10YR5/6) fine to coarse SAND, trace gravel, poorly sorted, dry to moist	SW									
4	8	4 8 10 4	7.0	**6.3 to 10.0 grayish brown (10YR5/2) clayey SAND, trace gravel, well sorted, wet**	SP			0.7						
5	8	2 3 3 3	9.0					0.7						
6	18	8 20 12 14	11.0	**10.0 to 12.0 grayish brown (10YR5/2) sandy CLAY, trace gravel, low plasticity, medium soft, saturated**	CL			0.7						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm **Sigma Environmental Services, Inc.**
220 E. Ryan Road, Oak Creek, WI 53154 (414) 768-7144

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3125

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-92

Boring Number **PZ-11** Use only as an attachment to Form 4400-122.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
7	16	3 11 6 5	13.0	12.0 to 16.0 gray fine to coarse sandy GRAVEL, poorly sorted, saturated	GW			1.0						
8	10	5 12 16 7	14.0 15.0					0.7						
9	20	7 11 8 7	16.0 17.0	16.0 to 16.8 grayish brown (10YR5/2) gravelly CLAY, low plasticity, soft, saturated	CL			0.7						
				16.8 to 18.0 gray fine to coarse sandy GRAVEL, poorly sorted, saturated	GW									
10	20	10 12 25/4	18.0 19.0	18.0 to 22.0 grayish brown (10YR5/2) fine to coarse gravelly SAND, poorly sorted, saturated	SW			0.7						
11	6	18 17 22 24	20.0 21.0					0.7						
12	14	21 23 12 13	22.0 23.0	22.0 to 28.0 grayish brown (10YR5/2) fine to coarse SAND, trace fine to coarse gravel, poorly sorted, saturated	SW			0.7						
13	12	18 16 10 10	24.0 25.0					0.7						
14	16	13 10 11 10	26.0 27.0					0.7						
15	10	14 18 26	28.0 29.0	28.0 to 32.0 gray (10YR5/1) sandy fine to coarse gravel, poorly sorted, saturated	GW			0.7						
16	6	14 22 30	30.0 31.0 32.0					0.7						

Village of Whitefish Bay

3125

State of Wisconsin
Department of Natural Resources
Boring Number **PZ-11**

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-92
Use only as an attachment to Form 4400-122.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
17	6	28	32.0	**32.0 to 36.0 gray (10YR5/1) silt, stiff, saturated**	ML			0.7						
			33.0											
18	14	30	34.0	**trace organics**				0.7						
			35.0											
			36.0	**36.0 to 42.0 no sample**										
			37.0											
			38.0											
			39.0											
			40.0											
			41.0											
19	16	14 24 26 31	42.0	**42.0 to 45.0 gray (10YR5/1) fine to coarse sandy GRAVEL, poorly sorted, saturated no PID reading taken**	GW									
			43.0											
			44.0											
			45.0	**45.0 to 49.0 Dolomite**	DOLO									
20	0	28/0	47.0											
			48.0											
			49.0	**End of boring, Double cased peizometer installed**										
			50.0											
			51.0											
			52.0											

Village of Whitefish Bay
3125

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Whitefish Bay Landfill		MW-11

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear - J. Berthold	6/12/2002	6/12/2002	4 1/4" HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-11	Feet MSL	Feet MSL	8.0 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S / C / N
1/4 of 1/4 of Section , T N, R
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N Feet ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
11262	Milwaukee	41	Milwaukee

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	EARTH DRILL										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm Boart Longyear Company
101 Alderson Street Schofield, WI 54476
Tel: 715-359-7090
Fax: 715-355-5715

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A Rev. 5-97

Boring Number MW-11 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample										Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13											
			14											
			15											
			16											
			17											
			18											
			19											
			20											
			21	EOB 21.0' Well Set 20.0'										

State of Wisconsin
Department of Natural Resources Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Whitefish Bay Landfill	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-11
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or St. Plane ____ ft. N, ____ ft. E. S/C/N	Wis. Unique Well No. / DNR Well Number
Facility ID: 11262	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐E ☐W	Date Well Installed: 06/12/2002
Type of Well: Well Code 11/mw	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) J. Flaminio; Boart Longyear
Distance Well Is From Waste/Source Boundary ____ ft.		

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation Flush ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

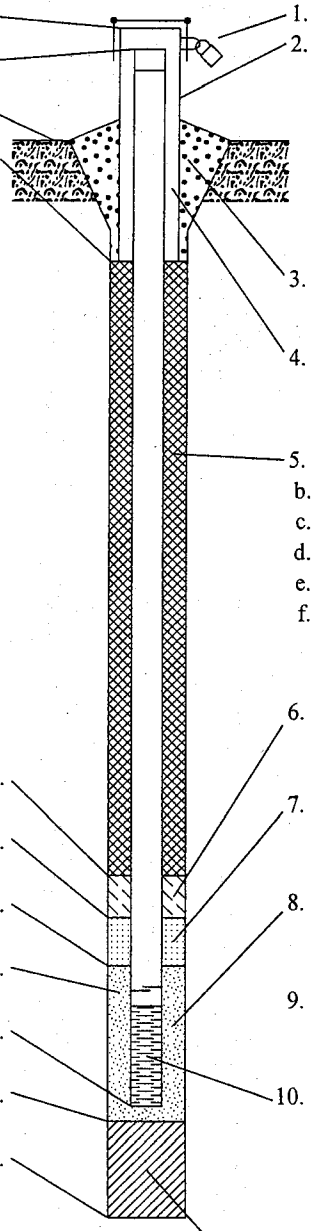
14. Drilling method used: Rotary ☐ 5 0; Hollow Stem Auger ☒ 4 1; ____ Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1 Drilling Mud ☐ 0 3 None ☐ 9 9

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.
F. Fine sand, top ____ ft. MSL or 3.0 ft.
G. Filter pack, top ____ ft. MSL or 3.5 ft.
H. Screen joint, top ____ ft. MSL or 5.0 ft.
I. Well bottom ____ ft. MSL or 20.0 ft.
J. Filter pack, bottom ____ ft. MSL or 21.0 ft.
K. Borehole, bottom ____ ft. MSL or 21.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 0 4; ____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 3 0; Concrete ☒ 0 1; ____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 3 0; #40 Badger Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1; Tremie pumped ☐ 0 2; Gravity ☒ 0 8
6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. #7 Badger
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Badger
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3; Flush threaded PVC schedule 80 ☐ 2 4; ____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; ____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.100 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☒ 1 4; ____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature ____ Firm Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Whitefish Bay Landfill		PZ-11

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear - J. Berthold	6/10/2002	6/10/2002	8 1/4" HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		PZ-11	Feet MSL	Feet MSL	12.0 Inches

Boring Location or Local Grid Origin (Check if estimated: ☐)
State Plane S / C / N
1/4 of 1/4 of Section , T N, R
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N Feet ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
11262	Milwaukee	41	Milwaukee

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 14	3 4 3 4	1	Brn Silty CLAY w/Organics						M				
2 SS	24 8	2 3 4 4	2 3							M				
3 SS	24 12	3 4 4 4	4 5							M				
				Brn Sandy GRAVEL										
3 SS	24 11	4 8 10 4	6 7	Brn Silty CLAY						M-W				
				Gry Silty CLAY										
4 SS	24 19	2 3 3 3	8 9	GRAVEL & SAND						W				
5 SS	24 5	8 20 12 4	10 11 12							W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm Boart Longyear Company
101 Alderson Street Schofield, WI 54476

Tel: 715-359-7090
Fax: 715-355-5715

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A Rev. 5-97

Boring Number PZ-11 Use only as an attachment to Form 4400-122.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
6 SS	24 9	3 11 6 5	13							W				
7 SS	24 17	5 12 16 7	14 15							W				
8 SS	24 16	7 11 8 7	16 17							W				
9 SS	18 10	10 12 25/.4	18 19							W				
10 SS	24 11	18 17 22 24	20 21							W				
11 SS	24 16	21 23 12 13	22 23							W				
12 SS	24 15	18 10 10 10	24 25							W				
14 SS	24 15	13 10 11 10	26 27							W				
15 SS	18 13	14 18 26	28 29							W				
16 SS	18 14	14 22 30	30 31							W				
			32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A Rev. 5-97

Boring Number PZ-11 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
17 SS	6 6	28	33							W				
18 SS	6 12	30	35							W				
19 SS	24 20	14 24 26 31	42 43							W				
20 SS	6 0	28	47											
			49	EOB 49.5' Well Set 49.0'										

State of Wisconsin
Department of Natural Resources Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 6-97

Facility/Project Name: Whitefish Bay Landfill	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: PZ-11
Facility License, Permit or Monitoring No.	Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or	Wis. Unique Well No. / DNR Well Number
Facility ID: 11262	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 06/12/2002
Type of Well: Well Code 12/pz	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: (Person's Name and Firm): J. Berthold
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Boart Longyear

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation Flush ft. MSL
C. Land surface elevation ____ ft. MSL
D. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

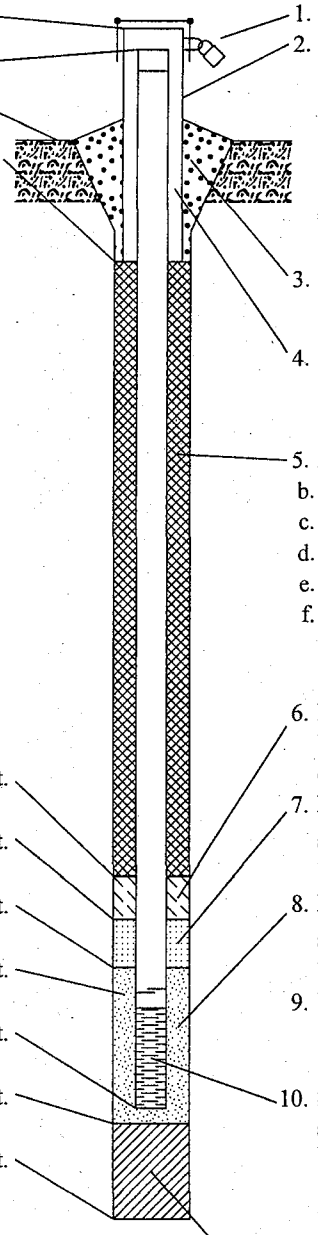
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.
F. Fine sand, top ____ ft. MSL or 40.0 ft.
G. Filter pack, top ____ ft. MSL or 42.0 ft.
H. Screen joint, top ____ ft. MSL or 44.0 ft.
I. Well bottom ____ ft. MSL or 49.0 ft.
J. Filter pack, bottom ____ ft. MSL or 49.5 ft.
K. Borehole, bottom ____ ft. MSL or 49.5 ft.
L. Borehole, diameter 12.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04
____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
____ Other ☐
4. Material between well casing and protective pipe:
Bentonite ☐ 30
#40 Badger Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. #7 Badger
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #40 Badger
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.100 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14
____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 Tel: 715-359-7090 Fax: 715-355-5715

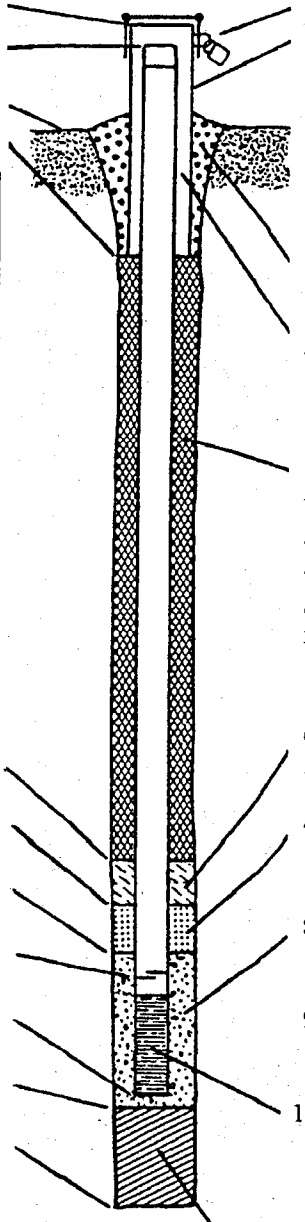
Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

ate of Wisconsin
epartment of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

acility/Project Name **Village of Whitefish Bay**	Local Grid Location of Well ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name **PZ-11**
acility License, Permit or Monitoring Number	Grid Origin Location Lat. ___ ___ ___ Long. ___ ___ ___ or	Wis. Unique Well Number DNR Well Number
ype of Well Water Table Observation Well ☐11 Piezometer ☒12	St. Plane ____ ft. N, ____ ft. E.	Date Well Installed 0 6 / 1 0 / 0 2 (m m d d y y)
istance Well Is From Waste/Source Boundary ft.	Section Location of Waste/Source ☒E. NW 1/4 of SE 1/4 of Sec. 23, T. 8 N, R. 21 ☐W.	Well Installed By: (Person's Name and Firm) **Boart Longyear Drilling**
Well A Point of Enforcement Std. Application? ☒ Yes ☐ No	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	**Jeffrey and Jim**



. Protective pipe, top elevation ____ ft. MSL
. Well casing, top elevation ____ ft. MSL
. Land surface elevation ____ ft. MSL
. Surface seal, bottom ____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐

15. Drilling fluid used: Water ☐02 Air ☐ 01 Drilling Mud ☒03 None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No
Describe **bentonite**

17. Source of water (attach analysis):
city water

. Bentonite seal, top ____ ft. MSL or 1.0 ft.
. Fine sand, top ____ ft. MSL or 40.0 ft.
. Filter pack, top ____ ft. MSL or 42.0 ft.
. Screen joint, top ____ ft. MSL or 44.0 ft.
Well bottom ____ ft. MSL or 49.0 ft.
Filter pack, bottom ____ ft. MSL or 49.5 ft.
. Borehole, bottom ____ ft. MSL or 49.5 ft.
. Borehole, diameter 12.00 in.
. O.D. well casing 2.37 in.
. I.D. well casing 2.06 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 9.00 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: **Steel casing: 1-36ft bgs**
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; **sand** Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight..Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☒ 50
e. ____ Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒3/8 in. ☐1/2 in. Bentonite pellets ☒ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. **#7 Badger**
b. Volume added **1/2 bag** ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. **# 40 Badger**
b. Volume added **21/2 bags** ft³
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen material: **PVC**
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer ____
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐

lereby certify that the information on this form is true and correct to the best of my knowledge.

ignature: Mary Ann Firm: **Sigma Environmental Services, Inc.**
220 E. Ryan Road, Oak Creek, WI 53154 (414) 768-7144

ase complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs 144,147 & 160, Wis Stats, ch NR 141, Wis Ad Code. In accordance with ch 144, Wis Stats, failure to file this form may result in a forfeiture of not less than $10, nor more than 00 for each day of violation. In accordance with ch 147, Wis Stats, failure to file this form may result in a forfeiture of not more than $10,000 for each of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

3125

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
VILLAGE of WHITEFISH BAY - GOOD HOPE LANDFILL	MILWAUKEE	MW-11

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	__	_____	___

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	■ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 105 min.

4. Depth of well (from top of well casisng) 20.00 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ____.__ gal.

7. Volume of water removed from well 110.00 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 8.87 ft.	9.31 ft.
Date	b. 06/14/2002 (m m d d y y y y)	06/14/2002 (m m d d y y y y)
Time	c. 07:45 ■ a.m. ☐ p.m.	09:30 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15	Clear ■ 20 Turbid ☐ 25
(Describe)	0-25 gallons turbid-silty 25-45 gallons slightly silty 45-75 gallons mostly clear	75-110 gallons clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: TOM Last Name: McCOY
Firm: SIGMA ENVIRONMENTAL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Tom McCoy
Print Name: TOM McCOY
Firm: SIGMA ENVIRONMENTAL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
VILLAGE of WHITEFISH BAY - GOOD HOPE LANDFILL	MILWAUKEE	PZ-11

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	__	_____	___

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	■ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 225 min.

4. Depth of well (from top of casisng) 49.00 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ___.__ gal.

7. Volume of water removed from well 180.00 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 8.71 ft.	9.12 ft.
Date	b. 06/14/2002 (m m d d y y y y)	06/14/2002
Time	c. 09:45 ■ a.m. ☐ p.m.	13:30 ☐ a.m. ■ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15	Clear ■ 20 Turbid ☐ 25
(Describe)	0-25 gallons turbid-silty 25-60 gallons slightly silty 60-135 gallons mostly clear	135-180 gallons clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___.__ mg/l	___.__ mg/l
15. COD	___.__ mg/l	___.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: TOM Last Name: McCOY
Firm: SIGMA ENVIRONMENTAL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Tom McCoy
Print Name: TOM McCOY
Firm: SIGMA ENVIRONMENTAL

NOTE: See instructions for more information including a list of county codes and well type codes.

ATTACHMENT B

GROUNDWATER LABORATORY ANALYTICAL REPORT

U.S. Analytical Lab

MAFIZUL ISLAM
SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399A						**Sample Type** Water			
Sample ID MW-D						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 86	ug/l	86	280	200	7/6/2002	8021A	CAH	1
Bromobenzene	< 84	ug/l	84	260	200	7/6/2002	8021A	CAH	1
Bromodichloromethane	< 110	ug/l	110	340	200	7/6/2002	8021A	CAH	1
tert-Butylbenzene	< 84	ug/l	84	280	200	7/6/2002	8021A	CAH	1
sec-Butylbenzene	< 92	ug/l	92	300	200	7/6/2002	8021A	CAH	1
n-Butylbenzene	< 68	ug/l	68	220	200	7/6/2002	8021A	CAH	1
Carbon Tetrachloride	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
Chlorobenzene	< 86	ug/l	86	280	200	7/6/2002	8021A	CAH	1
Chloroethane	< 140	ug/l	140	440	200	7/6/2002	8021A	CAH	1
Chloroform	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
Chloromethane	< 140	ug/l	140	440	200	7/6/2002	8021A	CAH	1
2-Chlorotoluene	< 76	ug/l	76	240	200	7/6/2002	8021A	CAH	1
4-Chlorotoluene	< 64	ug/l	64	200	200	7/6/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 34	ug/l	34	110	200	7/6/2002	8021A	CAH	1
Dibromochloromethane	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 52	ug/l	52	160	200	7/6/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 52	ug/l	52	160	200	7/6/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 62	ug/l	62	200	200	7/6/2002	8021A	CAH	1
Dichlorodifluoromethane	< 140	ug/l	140	440	200	7/6/2002	8021A	CAH	1
1,2-Dichloroethane	< 110	ug/l	110	340	200	7/6/2002	8021A	CAH	1
1,1-Dichloroethane	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
1,1-Dichloroethene	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
cis-1,2-Dichloroethene	21000	ug/l	110	340	200	7/6/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 120	ug/l	120	380	200	7/6/2002	8021A	CAH	1
1,2-Dichloropropane	< 110	ug/l	110	340	200	7/6/2002	8021A	CAH	1
2,2-Dichloropropane	< 38	ug/l	38	120	200	7/6/2002	8021A	CAH	1
Di-isopropyl ether	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 100	ug/l	100	300	200	7/6/2002	8021A	CAH	1
Ethylbenzene	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Hexachlorobutadiene	< 70	ug/l	70	220	200	7/6/2002	8021A	CAH	3 4
Isopropylbenzene	< 92	ug/l	92	300	200	7/6/2002	8021A	CAH	1
p-Isopropyltoluene	< 78	ug/l	78	260	200	7/6/2002	8021A	CAH	1

MAFIZUL ISLAM
SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399A						**Sample Type** Water			
Sample ID MW-D						**Sample Date** 6/27/2002			
Methylene chloride	< 120	ug/l	120	380	200	7/6/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Naphthalene	< 280	ug/l	280	920	200	7/6/2002	8021A	CAH	1
n-Propylbenzene	< 68	ug/l	68	220	200	7/6/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 50	ug/l	50	160	200	7/6/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 72	ug/l	72	220	200	7/6/2002	8021A	CAH	1
Tetrachloroethene	460	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Toluene	< 130	ug/l	130	400	200	7/6/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 20	ug/l	20	66	200	7/6/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 130	ug/l	130	420	200	7/6/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Trichloroethene (TCE)	1400	ug/l	150	460	200	7/6/2002	8021A	CAH	1
Trichlorofluoromethane	< 130	ug/l	130	420	200	7/6/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 84	ug/l	84	260	200	7/6/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 140	ug/l	140	460	200	7/6/2002	8021A	CAH	1
Vinyl Chloride	280	ug/l	24	74	200	7/6/2002	8021A	CAH	1
m&p-Xylene	< 190	ug/l	190	600	200	7/6/2002	8021A	CAH	1
o-Xylene	< 90	ug/l	90	280	200	7/6/2002	8021A	CAH	1
Lab Code 5041399B						**Sample Type** Water			
Sample ID MW-E						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 4.3	ug/l	4.3	14	10	7/6/2002	8021A	CAH	1
Bromobenzene	< 4.2	ug/l	4.2	13	10	7/6/2002	8021A	CAH	1
Bromodichloromethane	< 5.5	ug/l	5.5	17	10	7/6/2002	8021A	CAH	1
tert-Butylbenzene	< 4.2	ug/l	4.2	14	10	7/6/2002	8021A	CAH	1
sec-Butylbenzene	< 4.6	ug/l	4.6	15	10	7/6/2002	8021A	CAH	1
n-Butylbenzene	< 3.4	ug/l	3.4	11	10	7/6/2002	8021A	CAH	1
Carbon Tetrachloride	< 5.6	ug/l	5.6	18	10	7/6/2002	8021A	CAH	1
Chlorobenzene	< 4.3	ug/l	4.3	14	10	7/6/2002	8021A	CAH	1
Chloroethane	< 6.9	ug/l	6.9	22	10	7/6/2002	8021A	CAH	1
Chloroform	< 5.6	ug/l	5.6	18	10	7/6/2002	8021A	CAH	1

U.S. Analytical Lab

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SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399B						**Sample Type** Water			
Sample ID MW-E						**Sample Date** 6/27/2002			
Chloromethane	< 6.9	ug/l	6.9	22	10	7/6/2002	8021A	CAH	1
2-Chlorotoluene	< 3.8	ug/l	3.8	12	10	7/6/2002	8021A	CAH	1
4-Chlorotoluene	< 3.2	ug/l	3.2	10	10	7/6/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 1.7	ug/l	1.7	5.5	10	7/6/2002	8021A	CAH	1
Dibromochloromethane	< 5.6	ug/l	5.6	18	10	7/6/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 2.6	ug/l	2.6	8.2	10	7/6/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 2.6	ug/l	2.6	8.2	10	7/6/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 3.1	ug/l	3.1	10	10	7/6/2002	8021A	CAH	1
Dichlorodifluoromethane	< 6.8	ug/l	6.8	22	10	7/6/2002	8021A	CAH	1
1,2-Dichloroethane	< 5.4	ug/l	5.4	17	10	7/6/2002	8021A	CAH	1
1,1-Dichloroethane	< 5.7	ug/l	5.7	18	10	7/6/2002	8021A	CAH	1
1,1-Dichloroethene	< 5.7	ug/l	5.7	18	10	7/6/2002	8021A	CAH	1
cis-1,2-Dichloroethene	140	ug/l	5.3	17	10	7/6/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 5.9	ug/l	5.9	19	10	7/6/2002	8021A	CAH	1
1,2-Dichloropropane	< 5.4	ug/l	5.4	17	10	7/6/2002	8021A	CAH	1
2,2-Dichloropropane	< 1.9	ug/l	1.9	6	10	7/6/2002	8021A	CAH	1
Di-isopropyl ether	< 5.1	ug/l	5.1	16	10	7/6/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 4.8	ug/l	4.8	15	10	7/6/2002	8021A	CAH	1
Ethylbenzene	< 4.9	ug/l	4.9	16	10	7/6/2002	8021A	CAH	1
Hexachlorobutadiene	< 3.5	ug/l	3.5	11	10	7/6/2002	8021A	CAH	3 4
Isopropylbenzene	< 4.6	ug/l	4.6	15	10	7/6/2002	8021A	CAH	1
p-Isopropyltoluene	< 3.9	ug/l	3.9	13	10	7/6/2002	8021A	CAH	1
Methylene chloride	< 6	ug/l	6	19	10	7/6/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 4.9	ug/l	4.9	16	10	7/6/2002	8021A	CAH	1
Naphthalene	< 14	ug/l	14	46	10	7/6/2002	8021A	CAH	1
n-Propylbenzene	< 3.4	ug/l	3.4	11	10	7/6/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 2.5	ug/l	2.5	8	10	7/6/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 3.6	ug/l	3.6	11	10	7/6/2002	8021A	CAH	1
Tetrachloroethene	290	ug/l	4.9	16	10	7/6/2002	8021A	CAH	1
Toluene	< 6.3	ug/l	6.3	20	10	7/6/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 1	ug/l	1	3.3	10	7/6/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 6.5	ug/l	6.5	21	10	7/6/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 5.7	ug/l	5.7	18	10	7/6/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 5.2	ug/l	5.2	16	10	7/6/2002	8021A	CAH	1

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SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399B						**Sample Type** Water			
Sample ID MW-E						**Sample Date** 6/27/2002			
Trichloroethene (TCE)	330	ug/l	7.3	23	10	7/6/2002	8021A	CAH	1
Trichlorofluoromethane	< 6.5	ug/l	6.5	21	10	7/6/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 4.2	ug/l	4.2	13	10	7/6/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 7.2	ug/l	7.2	23	10	7/6/2002	8021A	CAH	1
Vinyl Chloride	< 1.2	ug/l	1.2	3.7	10	7/6/2002	8021A	CAH	1
m&p-Xylene	< 10	ug/l	10	30	10	7/6/2002	8021A	CAH	1
o-Xylene	< 4.5	ug/l	4.5	14	10	7/6/2002	8021A	CAH	1
Lab Code 5041399C						**Sample Type** Water			
Sample ID MW-4						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 4.3	ug/l	4.3	14	10	7/6/2002	8021A	CAH	1
Bromobenzene	< 4.2	ug/l	4.2	13	10	7/6/2002	8021A	CAH	1
Bromodichloromethane	< 5.5	ug/l	5.5	17	10	7/6/2002	8021A	CAH	1
tert-Butylbenzene	< 4.2	ug/l	4.2	14	10	7/6/2002	8021A	CAH	1
sec-Butylbenzene	< 4.6	ug/l	4.6	15	10	7/6/2002	8021A	CAH	1
n-Butylbenzene	< 3.4	ug/l	3.4	11	10	7/6/2002	8021A	CAH	1
Carbon Tetrachloride	< 5.6	ug/l	5.6	18	10	7/6/2002	8021A	CAH	1
Chlorobenzene	< 4.3	ug/l	4.3	14	10	7/6/2002	8021A	CAH	1
Chloroethane	< 6.9	ug/l	6.9	22	10	7/6/2002	8021A	CAH	1
Chloroform	< 5.6	ug/l	5.6	18	10	7/6/2002	8021A	CAH	1
Chloromethane	< 6.9	ug/l	6.9	22	10	7/6/2002	8021A	CAH	1
2-Chlorotoluene	< 3.8	ug/l	3.8	12	10	7/6/2002	8021A	CAH	1
4-Chlorotoluene	< 3.2	ug/l	3.2	10	10	7/6/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 1.7	ug/l	1.7	5.5	10	7/6/2002	8021A	CAH	1
Dibromochloromethane	< 5.6	ug/l	5.6	18	10	7/6/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 2.6	ug/l	2.6	8.2	10	7/6/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 2.6	ug/l	2.6	8.2	10	7/6/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 3.1	ug/l	3.1	10	10	7/6/2002	8021A	CAH	1
Dichlorodifluoromethane	< 6.8	ug/l	6.8	22	10	7/6/2002	8021A	CAH	1
1,2-Dichloroethane	< 5.4	ug/l	5.4	17	10	7/6/2002	8021A	CAH	1
1,1-Dichloroethane	< 5.7	ug/l	5.7	18	10	7/6/2002	8021A	CAH	1
1,1-Dichloroethene	< 5.7	ug/l	5.7	18	10	7/6/2002	8021A	CAH	1

U.S. Analytical Lab

MAFIZUL ISLAM
SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399C						**Sample Type** Water			
Sample ID MW-4						**Sample Date** 6/27/2002			
cis-1,2-Dichloroethene	170	ug/l	5.3	17	10	7/6/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 5.9	ug/l	5.9	19	10	7/6/2002	8021A	CAH	1
1,2-Dichloropropane	< 5.4	ug/l	5.4	17	10	7/6/2002	8021A	CAH	1
2,2-Dichloropropane	< 1.9	ug/l	1.9	6	10	7/6/2002	8021A	CAH	1
Di-isopropyl ether	< 5.1	ug/l	5.1	16	10	7/6/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 4.8	ug/l	4.8	15	10	7/6/2002	8021A	CAH	1
Ethylbenzene	< 4.9	ug/l	4.9	16	10	7/6/2002	8021A	CAH	1
Hexachlorobutadiene	< 3.5	ug/l	3.5	11	10	7/6/2002	8021A	CAH	3 4
Isopropylbenzene	< 4.6	ug/l	4.6	15	10	7/6/2002	8021A	CAH	1
p-Isopropyltoluene	< 3.9	ug/l	3.9	13	10	7/6/2002	8021A	CAH	1
Methylene chloride	< 6	ug/l	6	19	10	7/6/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 4.9	ug/l	4.9	16	10	7/6/2002	8021A	CAH	1
Naphthalene	< 14	ug/l	14	46	10	7/6/2002	8021A	CAH	1
n-Propylbenzene	< 3.4	ug/l	3.4	11	10	7/6/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 2.5	ug/l	2.5	8	10	7/6/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 3.6	ug/l	3.6	11	10	7/6/2002	8021A	CAH	1
Tetrachloroethene	640	ug/l	4.9	16	10	7/6/2002	8021A	CAH	1
Toluene	< 6.3	ug/l	6.3	20	10	7/6/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 1	ug/l	1	3.3	10	7/6/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 6.5	ug/l	6.5	21	10	7/6/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 5.7	ug/l	5.7	18	10	7/6/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 5.2	ug/l	5.2	16	10	7/6/2002	8021A	CAH	1
Trichloroethene (TCE)	310	ug/l	7.3	23	10	7/6/2002	8021A	CAH	1
Trichlorofluoromethane	< 6.5	ug/l	6.5	21	10	7/6/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 4.2	ug/l	4.2	13	10	7/6/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 7.2	ug/l	7.2	23	10	7/6/2002	8021A	CAH	1
Vinyl Chloride	7.4	ug/l	1.2	3.7	10	7/6/2002	8021A	CAH	1
m&p-Xylene	< 10	ug/l	10	30	10	7/6/2002	8021A	CAH	1
o-Xylene	< 4.5	ug/l	4.5	14	10	7/6/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399D						**Sample Type** Water			
Sample ID MW-11						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 0.43	ug/l	0.43	1.4	1	7/6/2002	8021A	CAH	1
Bromobenzene	< 0.42	ug/l	0.42	1.3	1	7/6/2002	8021A	CAH	1
Bromodichloromethane	< 0.55	ug/l	0.55	1.7	1	7/6/2002	8021A	CAH	1
tert-Butylbenzene	< 0.42	ug/l	0.42	1.4	1	7/6/2002	8021A	CAH	1
sec-Butylbenzene	< 0.46	ug/l	0.46	1.5	1	7/6/2002	8021A	CAH	1
n-Butylbenzene	< 0.34	ug/l	0.34	1.1	1	7/6/2002	8021A	CAH	1
Carbon Tetrachloride	< 0.56	ug/l	0.56	1.8	1	7/6/2002	8021A	CAH	1
Chlorobenzene	< 0.43	ug/l	0.43	1.4	1	7/6/2002	8021A	CAH	1
Chloroethane	< 0.69	ug/l	0.69	2.2	1	7/6/2002	8021A	CAH	1
Chloroform	< 0.56	ug/l	0.56	1.8	1	7/6/2002	8021A	CAH	1
Chloromethane	< 0.69	ug/l	0.69	2.2	1	7/6/2002	8021A	CAH	1
2-Chlorotoluene	< 0.38	ug/l	0.38	1.2	1	7/6/2002	8021A	CAH	1
4-Chlorotoluene	< 0.32	ug/l	0.32	1	1	7/6/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.17	ug/l	0.17	0.55	1	7/6/2002	8021A	CAH	1
Dibromochloromethane	< 0.56	ug/l	0.56	1.8	1	7/6/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/6/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/6/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 0.31	ug/l	0.31	1	1	7/6/2002	8021A	CAH	1
Dichlorodifluoromethane	< 0.68	ug/l	0.68	2.2	1	7/6/2002	8021A	CAH	1
1,2-Dichloroethane	< 0.54	ug/l	0.54	1.7	1	7/6/2002	8021A	CAH	1
1,1-Dichloroethane	< 0.57	ug/l	0.57	1.8	1	7/6/2002	8021A	CAH	1
1,1-Dichloroethene	< 0.57	ug/l	0.57	1.8	1	7/6/2002	8021A	CAH	1
cis-1,2-Dichloroethene	< 0.53	ug/l	0.53	1.7	1	7/6/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 0.59	ug/l	0.59	1.9	1	7/6/2002	8021A	CAH	1
1,2-Dichloropropane	< 0.54	ug/l	0.54	1.7	1	7/6/2002	8021A	CAH	1
2,2-Dichloropropane	< 0.19	ug/l	0.19	0.6	1	7/6/2002	8021A	CAH	1
Di-isopropyl ether	< 0.51	ug/l	0.51	1.6	1	7/6/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 0.48	ug/l	0.48	1.5	1	7/6/2002	8021A	CAH	1
Ethylbenzene	< 0.49	ug/l	0.49	1.6	1	7/6/2002	8021A	CAH	1
Hexachlorobutadiene	< 0.35	ug/l	0.35	1.1	1	7/6/2002	8021A	CAH	3 4
Isopropylbenzene	< 0.46	ug/l	0.46	1.5	1	7/6/2002	8021A	CAH	1
p-Isopropyltoluene	< 0.39	ug/l	0.39	1.3	1	7/6/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399D						**Sample Type** Water			
Sample ID MW-11						**Sample Date** 6/27/2002			
Methylene chloride	< 0.6	ug/l	0.6	1.9	1	7/6/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 0.49	ug/l	0.49	1.6	1	7/6/2002	8021A	CAH	1
Naphthalene	< 1.4	ug/l	1.4	4.6	1	7/6/2002	8021A	CAH	1
n-Propylbenzene	< 0.34	ug/l	0.34	1.1	1	7/6/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 0.25	ug/l	0.25	0.8	1	7/6/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 0.36	ug/l	0.36	1.1	1	7/6/2002	8021A	CAH	1
Tetrachloroethene	< 0.49	ug/l	0.49	1.6	1	7/6/2002	8021A	CAH	1
Toluene	< 0.63	ug/l	0.63	2	1	7/6/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.1	ug/l	0.1	0.33	1	7/6/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 0.65	ug/l	0.65	2.1	1	7/6/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 0.57	ug/l	0.57	1.8	1	7/6/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 0.52	ug/l	0.52	1.6	1	7/6/2002	8021A	CAH	1
Trichloroethene (TCE)	< 0.73	ug/l	0.73	2.3	1	7/6/2002	8021A	CAH	1
Trichlorofluoromethane	< 0.65	ug/l	0.65	2.1	1	7/6/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 0.42	ug/l	0.42	1.3	1	7/6/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 0.72	ug/l	0.72	2.3	1	7/6/2002	8021A	CAH	1
Vinyl Chloride	< 0.12	ug/l	0.12	0.37	1	7/6/2002	8021A	CAH	1
m&p-Xylene	< 1	ug/l	1	3	1	7/6/2002	8021A	CAH	1
o-Xylene	< 0.45	ug/l	0.45	1.4	1	7/6/2002	8021A	CAH	1
Lab Code 5041399E						**Sample Type** Water			
Sample ID PZ-D						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 86	ug/l	86	280	200	7/6/2002	8021A	CAH	1
Bromobenzene	< 84	ug/l	84	260	200	7/6/2002	8021A	CAH	1
Bromodichloromethane	< 110	ug/l	110	340	200	7/6/2002	8021A	CAH	1
tert-Butylbenzene	< 84	ug/l	84	280	200	7/6/2002	8021A	CAH	1
sec-Butylbenzene	< 92	ug/l	92	300	200	7/6/2002	8021A	CAH	1
n-Butylbenzene	< 68	ug/l	68	220	200	7/6/2002	8021A	CAH	1
Carbon Tetrachloride	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
Chlorobenzene	< 86	ug/l	86	280	200	7/6/2002	8021A	CAH	1
Chloroethane	< 140	ug/l	140	440	200	7/6/2002	8021A	CAH	1
Chloroform	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1

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Lab Code 5041399E						**Sample Type** Water			
Sample ID PZ-D						**Sample Date** 6/27/2002			
Chloromethane	< 140	ug/l	140	440	200	7/6/2002	8021A	CAH	1
2-Chlorotoluene	< 76	ug/l	76	240	200	7/6/2002	8021A	CAH	1
4-Chlorotoluene	< 64	ug/l	64	200	200	7/6/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 34	ug/l	34	110	200	7/6/2002	8021A	CAH	1
Dibromochloromethane	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 52	ug/l	52	160	200	7/6/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 52	ug/l	52	160	200	7/6/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 62	ug/l	62	200	200	7/6/2002	8021A	CAH	1
Dichlorodifluoromethane	< 140	ug/l	140	440	200	7/6/2002	8021A	CAH	1
1,2-Dichloroethane	< 110	ug/l	110	340	200	7/6/2002	8021A	CAH	1
1,1-Dichloroethane	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
1,1-Dichloroethene	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
cis-1,2-Dichloroethene	19000	ug/l	110	340	200	7/6/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 120	ug/l	120	380	200	7/6/2002	8021A	CAH	1
1,2-Dichloropropane	< 110	ug/l	110	340	200	7/6/2002	8021A	CAH	1
2,2-Dichloropropane	< 38	ug/l	38	120	200	7/6/2002	8021A	CAH	1
Di-isopropyl ether	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 100	ug/l	100	300	200	7/6/2002	8021A	CAH	1
Ethylbenzene	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Hexachlorobutadiene	< 70	ug/l	70	220	200	7/6/2002	8021A	CAH	3 4
Isopropylbenzene	< 92	ug/l	92	300	200	7/6/2002	8021A	CAH	1
p-Isopropyltoluene	< 78	ug/l	78	260	200	7/6/2002	8021A	CAH	1
Methylene chloride	< 120	ug/l	120	380	200	7/6/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Naphthalene	< 280	ug/l	280	920	200	7/6/2002	8021A	CAH	1
n-Propylbenzene	< 68	ug/l	68	220	200	7/6/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 50	ug/l	50	160	200	7/6/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 72	ug/l	72	220	200	7/6/2002	8021A	CAH	1
Tetrachloroethene	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1
Toluene	< 130	ug/l	130	400	200	7/6/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 20	ug/l	20	66	200	7/6/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 130	ug/l	130	420	200	7/6/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 110	ug/l	110	360	200	7/6/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 100	ug/l	100	320	200	7/6/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399E						**Sample Type** Water			
Sample ID PZ-D						**Sample Date** 6/27/2002			
Trichloroethene (TCE)	5000	ug/l	150	460	200	7/6/2002	8021A	CAH	1
Trichlorofluoromethane	< 130	ug/l	130	420	200	7/6/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 84	ug/l	84	260	200	7/6/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 140	ug/l	140	460	200	7/6/2002	8021A	CAH	1
Vinyl Chloride	3500	ug/l	24	74	200	7/6/2002	8021A	CAH	1
m&p-Xylene	< 190	ug/l	190	600	200	7/6/2002	8021A	CAH	1
o-Xylene	< 90	ug/l	90	280	200	7/6/2002	8021A	CAH	1
Lab Code 5041399F						**Sample Type** Water			
Sample ID PZ-11						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 0.43	ug/l	0.43	1.4	1	7/6/2002	8021A	CAH	1
Bromobenzene	< 0.42	ug/l	0.42	1.3	1	7/6/2002	8021A	CAH	1
Bromodichloromethane	< 0.55	ug/l	0.55	1.7	1	7/6/2002	8021A	CAH	1
tert-Butylbenzene	< 0.42	ug/l	0.42	1.4	1	7/6/2002	8021A	CAH	1
sec-Butylbenzene	< 0.46	ug/l	0.46	1.5	1	7/6/2002	8021A	CAH	1
n-Butylbenzene	< 0.34	ug/l	0.34	1.1	1	7/6/2002	8021A	CAH	1
Carbon Tetrachloride	< 0.56	ug/l	0.56	1.8	1	7/6/2002	8021A	CAH	1
Chlorobenzene	< 0.43	ug/l	0.43	1.4	1	7/6/2002	8021A	CAH	1
Chloroethane	< 0.69	ug/l	0.69	2.2	1	7/6/2002	8021A	CAH	1
Chloroform	< 0.56	ug/l	0.56	1.8	1	7/6/2002	8021A	CAH	1
Chloromethane	< 0.69	ug/l	0.69	2.2	1	7/6/2002	8021A	CAH	1
2-Chlorotoluene	< 0.38	ug/l	0.38	1.2	1	7/6/2002	8021A	CAH	1
4-Chlorotoluene	< 0.32	ug/l	0.32	1	1	7/6/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.17	ug/l	0.17	0.55	1	7/6/2002	8021A	CAH	1
Dibromochloromethane	< 0.56	ug/l	0.56	1.8	1	7/6/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/6/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/6/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 0.31	ug/l	0.31	1	1	7/6/2002	8021A	CAH	1
Dichlorodifluoromethane	< 0.68	ug/l	0.68	2.2	1	7/6/2002	8021A	CAH	1
1,2-Dichloroethane	< 0.54	ug/l	0.54	1.7	1	7/6/2002	8021A	CAH	1
1,1-Dichloroethane	< 0.57	ug/l	0.57	1.8	1	7/6/2002	8021A	CAH	1
1,1-Dichloroethene	< 0.57	ug/l	0.57	1.8	1	7/6/2002	8021A	CAH	1

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Lab Code 5041399F						**Sample Type** Water			
Sample ID PZ-11						**Sample Date** 6/27/2002			
cis-1,2-Dichloroethene	< 0.53	ug/l	0.53	1.7	1	7/6/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 0.59	ug/l	0.59	1.9	1	7/6/2002	8021A	CAH	1
1,2-Dichloropropane	< 0.54	ug/l	0.54	1.7	1	7/6/2002	8021A	CAH	1
2,2-Dichloropropane	< 0.19	ug/l	0.19	0.6	1	7/6/2002	8021A	CAH	1
Di-isopropyl ether	< 0.51	ug/l	0.51	1.6	1	7/6/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 0.48	ug/l	0.48	1.5	1	7/6/2002	8021A	CAH	1
Ethylbenzene	< 0.49	ug/l	0.49	1.6	1	7/6/2002	8021A	CAH	1
Hexachlorobutadiene	< 0.35	ug/l	0.35	1.1	1	7/6/2002	8021A	CAH	3 4
Isopropylbenzene	< 0.46	ug/l	0.46	1.5	1	7/6/2002	8021A	CAH	1
p-Isopropyltoluene	< 0.39	ug/l	0.39	1.3	1	7/6/2002	8021A	CAH	1
Methylene chloride	< 0.6	ug/l	0.6	1.9	1	7/6/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 0.49	ug/l	0.49	1.6	1	7/6/2002	8021A	CAH	1
Naphthalene	< 1.4	ug/l	1.4	4.6	1	7/6/2002	8021A	CAH	1
n-Propylbenzene	< 0.34	ug/l	0.34	1.1	1	7/6/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 0.25	ug/l	0.25	0.8	1	7/6/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 0.36	ug/l	0.36	1.1	1	7/6/2002	8021A	CAH	1
Tetrachloroethene	< 0.49	ug/l	0.49	1.6	1	7/6/2002	8021A	CAH	1
Toluene	< 0.63	ug/l	0.63	2	1	7/6/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.1	ug/l	0.1	0.33	1	7/6/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 0.65	ug/l	0.65	2.1	1	7/6/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 0.57	ug/l	0.57	1.8	1	7/6/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 0.52	ug/l	0.52	1.6	1	7/6/2002	8021A	CAH	1
Trichloroethene (TCE)	< 0.73	ug/l	0.73	2.3	1	7/6/2002	8021A	CAH	1
Trichlorofluoromethane	< 0.65	ug/l	0.65	2.1	1	7/6/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 0.42	ug/l	0.42	1.3	1	7/6/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 0.72	ug/l	0.72	2.3	1	7/6/2002	8021A	CAH	1
Vinyl Chloride	< 0.12	ug/l	0.12	0.37	1	7/6/2002	8021A	CAH	1
m&p-Xylene	< 1	ug/l	1	3	1	7/6/2002	8021A	CAH	1
o-Xylene	< 0.45	ug/l	0.45	1.4	1	7/6/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399G						**Sample Type** Water			
Sample ID MW-26						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Bromobenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 2.8	ug/l	2.8	8.5	5	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 2.1	ug/l	2.1	7	5	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chlorobenzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Chloroethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
Chloroform	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chloromethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 1.9	ug/l	1.9	6	5	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.85	ug/l	0.85	2.8	5	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 3.4	ug/l	3.4	11	5	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
cis-1,2-Dichloroethene	220	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 1	ug/l	1	3	5	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 2.4	ug/l	2.4	7.5	5	7/9/2002	8021A	CAH	1
Ethylbenzene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 2	ug/l	2	6.5	5	7/9/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399G						**Sample Type** Water			
Sample ID MW-26						**Sample Date** 6/27/2002			
Methylene chloride	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Naphthalene	< 7	ug/l	7	23	5	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 1.3	ug/l	1.3	4	5	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Toluene	< 3.2	ug/l	3.2	10	5	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.5	ug/l	0.5	1.7	5	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 3.7	ug/l	3.7	12	5	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 3.6	ug/l	3.6	12	5	7/9/2002	8021A	CAH	1
Vinyl Chloride	160	ug/l	0.6	1.9	5	7/9/2002	8021A	CAH	1
m&p-Xylene	< 4.8	ug/l	4.8	15	5	7/9/2002	8021A	CAH	1
o-Xylene	< 2.3	ug/l	2.3	7	5	7/9/2002	8021A	CAH	1
Lab Code 5041399H						**Sample Type** Water			
Sample ID W-MW-10						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 43	ug/l	43	140	100	7/9/2002	8021A	CAH	1
Bromobenzene	< 42	ug/l	42	130	100	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 55	ug/l	55	170	100	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 42	ug/l	42	140	100	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 46	ug/l	46	150	100	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 34	ug/l	34	110	100	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 56	ug/l	56	180	100	7/9/2002	8021A	CAH	1
Chlorobenzene	< 43	ug/l	43	140	100	7/9/2002	8021A	CAH	1
Chloroethane	< 69	ug/l	69	220	100	7/9/2002	8021A	CAH	1
Chloroform	< 56	ug/l	56	180	100	7/9/2002	8021A	CAH	1

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Lab Code 5041399H						**Sample Type** Water			
Sample ID W-MW-10						**Sample Date** 6/27/2002			
Chloromethane	< 69	ug/l	69	220	100	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 38	ug/l	38	120	100	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 32	ug/l	32	100	100	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 17	ug/l	17	55	100	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 56	ug/l	56	180	100	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 26	ug/l	26	82	100	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 26	ug/l	26	82	100	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 31	ug/l	31	100	100	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 68	ug/l	68	220	100	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 54	ug/l	54	170	100	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 57	ug/l	57	180	100	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 57	ug/l	57	180	100	7/9/2002	8021A	CAH	1
cis-1,2-Dichloroethene	17000	ug/l	53	170	100	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 59	ug/l	59	190	100	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 54	ug/l	54	170	100	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 19	ug/l	19	60	100	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 51	ug/l	51	160	100	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 48	ug/l	48	150	100	7/9/2002	8021A	CAH	1
Ethylbenzene	87 "J"	ug/l	49	160	100	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 35	ug/l	35	110	100	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 46	ug/l	46	150	100	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 39	ug/l	39	130	100	7/9/2002	8021A	CAH	1
Methylene chloride	< 60	ug/l	60	190	100	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 49	ug/l	49	160	100	7/9/2002	8021A	CAH	1
Naphthalene	< 140	ug/l	140	460	100	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 34	ug/l	34	110	100	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 25	ug/l	25	80	100	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 36	ug/l	36	110	100	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 49	ug/l	49	160	100	7/9/2002	8021A	CAH	1
Toluene	460	ug/l	63	200	100	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 10	ug/l	10	33	100	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 65	ug/l	65	210	100	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 57	ug/l	57	180	100	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 52	ug/l	52	160	100	7/9/2002	8021A	CAH	1

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Lab Code 5041399H						**Sample Type** Water			
Sample ID W-MW-10						**Sample Date** 6/27/2002			
Trichloroethene (TCE)	< 73	ug/l	73	230	100	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 65	ug/l	65	210	100	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 42	ug/l	42	130	100	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 72	ug/l	72	230	100	7/9/2002	8021A	CAH	1
Vinyl Chloride	4600	ug/l	12	37	100	7/9/2002	8021A	CAH	1
m&p-Xylene	280 "J"	ug/l	100	300	100	7/9/2002	8021A	CAH	1
o-Xylene	100 "J"	ug/l	45	140	100	7/9/2002	8021A	CAH	1
Lab Code 5041399I						**Sample Type** Water			
Sample ID W-MW-11						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 86	ug/l	86	280	200	7/9/2002	8021A	CAH	1
Bromobenzene	< 84	ug/l	84	260	200	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 110	ug/l	110	340	200	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 84	ug/l	84	280	200	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 92	ug/l	92	300	200	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 68	ug/l	68	220	200	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
Chlorobenzene	< 86	ug/l	86	280	200	7/9/2002	8021A	CAH	1
Chloroethane	< 140	ug/l	140	440	200	7/9/2002	8021A	CAH	1
Chloroform	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
Chloromethane	< 140	ug/l	140	440	200	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 76	ug/l	76	240	200	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 64	ug/l	64	200	200	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 34	ug/l	34	110	200	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 52	ug/l	52	160	200	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 52	ug/l	52	160	200	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 62	ug/l	62	200	200	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 140	ug/l	140	440	200	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 110	ug/l	110	340	200	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1

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Lab Code 5041399I						**Sample Type** Water			
Sample ID W-MW-11						**Sample Date** 6/27/2002			
cis-1,2-Dichloroethene	1300	ug/l	110	340	200	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 120	ug/l	120	380	200	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 110	ug/l	110	340	200	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 38	ug/l	38	120	200	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 100	ug/l	100	300	200	7/9/2002	8021A	CAH	1
Ethylbenzene	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 70	ug/l	70	220	200	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 92	ug/l	92	300	200	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 78	ug/l	78	260	200	7/9/2002	8021A	CAH	1
Methylene chloride	< 120	ug/l	120	380	200	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Naphthalene	< 280	ug/l	280	920	200	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 68	ug/l	68	220	200	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 50	ug/l	50	160	200	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 72	ug/l	72	220	200	7/9/2002	8021A	CAH	1
Tetrachloroethene	1300	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Toluene	< 130	ug/l	130	400	200	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 20	ug/l	20	66	200	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 130	ug/l	130	420	200	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	3900	ug/l	150	460	200	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 130	ug/l	130	420	200	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 84	ug/l	84	260	200	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 140	ug/l	140	460	200	7/9/2002	8021A	CAH	1
Vinyl Chloride	400	ug/l	24	74	200	7/9/2002	8021A	CAH	1
m&p-Xylene	< 190	ug/l	190	600	200	7/9/2002	8021A	CAH	1
o-Xylene	< 90	ug/l	90	280	200	7/9/2002	8021A	CAH	1

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Lab Code 5041399J						**Sample Type** Water			
Sample ID MPS P-2						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 22	ug/l	22	70	50	7/9/2002	8021A	CAH	1
Bromobenzene	< 21	ug/l	21	65	50	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 28	ug/l	28	85	50	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 21	ug/l	21	70	50	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 23	ug/l	23	75	50	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 17	ug/l	17	55	50	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
Chlorobenzene	< 22	ug/l	22	70	50	7/9/2002	8021A	CAH	1
Chloroethane	< 35	ug/l	35	110	50	7/9/2002	8021A	CAH	1
Chloroform	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
Chloromethane	< 35	ug/l	35	110	50	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 19	ug/l	19	60	50	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 16	ug/l	16	50	50	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 8.5	ug/l	8.5	28	50	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 13	ug/l	13	41	50	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 13	ug/l	13	41	50	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 16	ug/l	16	50	50	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 34	ug/l	34	110	50	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 27	ug/l	27	85	50	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
cis-1,2-Dichloroethene	1400	ug/l	27	85	50	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 30	ug/l	30	100	50	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 27	ug/l	27	85	50	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 10	ug/l	10	30	50	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 26	ug/l	26	80	50	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 24	ug/l	24	75	50	7/9/2002	8021A	CAH	1
Ethylbenzene	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 18	ug/l	18	55	50	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 23	ug/l	23	75	50	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 20	ug/l	20	65	50	7/9/2002	8021A	CAH	1

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Lab Code 5041399J						**Sample Type** Water			
Sample ID MPS P-2						**Sample Date** 6/27/2002			
Methylene chloride	< 30	ug/l	30	100	50	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Naphthalene	< 70	ug/l	70	230	50	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 17	ug/l	17	55	50	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 13	ug/l	13	40	50	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 18	ug/l	18	55	50	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Toluene	< 32	ug/l	32	100	50	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 5	ug/l	5	17	50	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 33	ug/l	33	110	50	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 26	ug/l	26	80	50	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 37	ug/l	37	120	50	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 33	ug/l	33	110	50	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 21	ug/l	21	65	50	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 36	ug/l	36	120	50	7/9/2002	8021A	CAH	1
Vinyl Chloride	2100	ug/l	6	19	50	7/9/2002	8021A	CAH	1
m&p-Xylene	< 48	ug/l	48	150	50	7/9/2002	8021A	CAH	1
o-Xylene	< 23	ug/l	23	70	50	7/9/2002	8021A	CAH	1
Lab Code 5041399K						**Sample Type** Water			
Sample ID MPS P-3						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 22	ug/l	22	70	50	7/9/2002	8021A	CAH	1
Bromobenzene	< 21	ug/l	21	65	50	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 28	ug/l	28	85	50	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 21	ug/l	21	70	50	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 23	ug/l	23	75	50	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 17	ug/l	17	55	50	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
Chlorobenzene	< 22	ug/l	22	70	50	7/9/2002	8021A	CAH	1
Chloroethane	< 35	ug/l	35	110	50	7/9/2002	8021A	CAH	1
Chloroform	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399K						**Sample Type** Water			
Sample ID MPS P-3						**Sample Date** 6/27/2002			
Chloromethane	< 35	ug/l	35	110	50	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 19	ug/l	19	60	50	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 16	ug/l	16	50	50	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 8.5	ug/l	8.5	28	50	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 13	ug/l	13	41	50	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 13	ug/l	13	41	50	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 16	ug/l	16	50	50	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 34	ug/l	34	110	50	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 27	ug/l	27	85	50	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
cis-1,2-Dichloroethene	2200	ug/l	27	85	50	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 30	ug/l	30	100	50	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 27	ug/l	27	85	50	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 10	ug/l	10	30	50	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 26	ug/l	26	80	50	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 24	ug/l	24	75	50	7/9/2002	8021A	CAH	1
Ethylbenzene	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 18	ug/l	18	55	50	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 23	ug/l	23	75	50	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 20	ug/l	20	65	50	7/9/2002	8021A	CAH	1
Methylene chloride	< 30	ug/l	30	100	50	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Naphthalene	< 70	ug/l	70	230	50	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 17	ug/l	17	55	50	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 13	ug/l	13	40	50	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 18	ug/l	18	55	50	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Toluene	< 32	ug/l	32	100	50	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 5	ug/l	5	17	50	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 33	ug/l	33	110	50	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 26	ug/l	26	80	50	7/9/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399K						**Sample Type** Water			
Sample ID MPS P-3						**Sample Date** 6/27/2002			
Trichloroethene (TCE)	< 37	ug/l	37	120	50	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 33	ug/l	33	110	50	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 21	ug/l	21	65	50	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 36	ug/l	36	120	50	7/9/2002	8021A	CAH	1
Vinyl Chloride	1500	ug/l	6	19	50	7/9/2002	8021A	CAH	1
m&p-Xylene	< 48	ug/l	48	150	50	7/9/2002	8021A	CAH	1
o-Xylene	< 23	ug/l	23	70	50	7/9/2002	8021A	CAH	1
Lab Code 5041399L						**Sample Type** Water			
Sample ID MPS P-4						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 22	ug/l	22	70	50	7/9/2002	8021A	CAH	1
Bromobenzene	< 21	ug/l	21	65	50	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 28	ug/l	28	85	50	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 21	ug/l	21	70	50	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 23	ug/l	23	75	50	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 17	ug/l	17	55	50	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
Chlorobenzene	< 22	ug/l	22	70	50	7/9/2002	8021A	CAH	1
Chloroethane	< 35	ug/l	35	110	50	7/9/2002	8021A	CAH	1
Chloroform	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
Chloromethane	< 35	ug/l	35	110	50	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 19	ug/l	19	60	50	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 16	ug/l	16	50	50	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 8.5	ug/l	8.5	28	50	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 28	ug/l	28	90	50	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 13	ug/l	13	41	50	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 13	ug/l	13	41	50	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 16	ug/l	16	50	50	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 34	ug/l	34	110	50	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 27	ug/l	27	85	50	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1

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Lab Code 5041399L						**Sample Type** Water			
Sample ID MPS P-4						**Sample Date** 6/27/2002			
cis-1,2-Dichloroethene	2200	ug/l	27	85	50	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 30	ug/l	30	100	50	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 27	ug/l	27	85	50	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 10	ug/l	10	30	50	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 26	ug/l	26	80	50	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 24	ug/l	24	75	50	7/9/2002	8021A	CAH	1
Ethylbenzene	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 18	ug/l	18	55	50	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 23	ug/l	23	75	50	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 20	ug/l	20	65	50	7/9/2002	8021A	CAH	1
Methylene chloride	< 30	ug/l	30	100	50	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Naphthalene	< 70	ug/l	70	230	50	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 17	ug/l	17	55	50	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 13	ug/l	13	40	50	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 18	ug/l	18	55	50	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 25	ug/l	25	80	50	7/9/2002	8021A	CAH	1
Toluene	< 32	ug/l	32	100	50	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 5	ug/l	5	17	50	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 33	ug/l	33	110	50	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 29	ug/l	29	90	50	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 26	ug/l	26	80	50	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 37	ug/l	37	120	50	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 33	ug/l	33	110	50	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 21	ug/l	21	65	50	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 36	ug/l	36	120	50	7/9/2002	8021A	CAH	1
Vinyl Chloride	1500	ug/l	6	19	50	7/9/2002	8021A	CAH	1
m&p-Xylene	< 48	ug/l	48	150	50	7/9/2002	8021A	CAH	1
o-Xylene	< 23	ug/l	23	70	50	7/9/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399M						**Sample Type** Water			
Sample ID MPS P-5						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 0.43	ug/l	0.43	1.4	1	7/8/2002	8021A	CAH	1
Bromobenzene	< 0.42	ug/l	0.42	1.3	1	7/8/2002	8021A	CAH	1
Bromodichloromethane	< 0.55	ug/l	0.55	1.7	1	7/8/2002	8021A	CAH	1
tert-Butylbenzene	< 0.42	ug/l	0.42	1.4	1	7/8/2002	8021A	CAH	1
sec-Butylbenzene	< 0.46	ug/l	0.46	1.5	1	7/8/2002	8021A	CAH	1
n-Butylbenzene	< 0.34	ug/l	0.34	1.1	1	7/8/2002	8021A	CAH	1
Carbon Tetrachloride	< 0.56	ug/l	0.56	1.8	1	7/8/2002	8021A	CAH	1
Chlorobenzene	< 0.43	ug/l	0.43	1.4	1	7/8/2002	8021A	CAH	1
Chloroethane	2.1 "J"	ug/l	0.69	2.2	1	7/8/2002	8021A	CAH	1
Chloroform	< 0.56	ug/l	0.56	1.8	1	7/8/2002	8021A	CAH	1
Chloromethane	< 0.69	ug/l	0.69	2.2	1	7/8/2002	8021A	CAH	1
2-Chlorotoluene	< 0.38	ug/l	0.38	1.2	1	7/8/2002	8021A	CAH	1
4-Chlorotoluene	< 0.32	ug/l	0.32	1	1	7/8/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.17	ug/l	0.17	0.55	1	7/8/2002	8021A	CAH	1
Dibromochloromethane	< 0.56	ug/l	0.56	1.8	1	7/8/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/8/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/8/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 0.31	ug/l	0.31	1	1	7/8/2002	8021A	CAH	1
Dichlorodifluoromethane	< 0.68	ug/l	0.68	2.2	1	7/8/2002	8021A	CAH	1
1,2-Dichloroethane	< 0.54	ug/l	0.54	1.7	1	7/8/2002	8021A	CAH	1
1,1-Dichloroethane	< 0.57	ug/l	0.57	1.8	1	7/8/2002	8021A	CAH	1
1,1-Dichloroethene	< 0.57	ug/l	0.57	1.8	1	7/8/2002	8021A	CAH	1
cis-1,2-Dichloroethene	25	ug/l	0.53	1.7	1	7/8/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 0.59	ug/l	0.59	1.9	1	7/8/2002	8021A	CAH	1
1,2-Dichloropropane	< 0.54	ug/l	0.54	1.7	1	7/8/2002	8021A	CAH	1
2,2-Dichloropropane	< 0.19	ug/l	0.19	0.6	1	7/8/2002	8021A	CAH	1
Di-isopropyl ether	< 0.51	ug/l	0.51	1.6	1	7/8/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 0.48	ug/l	0.48	1.5	1	7/8/2002	8021A	CAH	1
Ethylbenzene	< 0.49	ug/l	0.49	1.6	1	7/8/2002	8021A	CAH	1
Hexachlorobutadiene	< 0.35	ug/l	0.35	1.1	1	7/8/2002	8021A	CAH	3 4
Isopropylbenzene	< 0.46	ug/l	0.46	1.5	1	7/8/2002	8021A	CAH	1
p-Isopropyltoluene	< 0.39	ug/l	0.39	1.3	1	7/8/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399M						**Sample Type** Water			
Sample ID MPS P-5						**Sample Date** 6/27/2002			
Methylene chloride	< 0.6	ug/l	0.6	1.9	1	7/8/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 0.49	ug/l	0.49	1.6	1	7/8/2002	8021A	CAH	1
Naphthalene	< 1.4	ug/l	1.4	4.6	1	7/8/2002	8021A	CAH	1
n-Propylbenzene	< 0.34	ug/l	0.34	1.1	1	7/8/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 0.25	ug/l	0.25	0.8	1	7/8/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 0.36	ug/l	0.36	1.1	1	7/8/2002	8021A	CAH	1
Tetrachloroethene	< 0.49	ug/l	0.49	1.6	1	7/8/2002	8021A	CAH	1
Toluene	< 0.63	ug/l	0.63	2	1	7/8/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.1	ug/l	0.1	0.33	1	7/8/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 0.65	ug/l	0.65	2.1	1	7/8/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 0.57	ug/l	0.57	1.8	1	7/8/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 0.52	ug/l	0.52	1.6	1	7/8/2002	8021A	CAH	1
Trichloroethene (TCE)	< 0.73	ug/l	0.73	2.3	1	7/8/2002	8021A	CAH	1
Trichlorofluoromethane	< 0.65	ug/l	0.65	2.1	1	7/8/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 0.42	ug/l	0.42	1.3	1	7/8/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 0.72	ug/l	0.72	2.3	1	7/8/2002	8021A	CAH	1
Vinyl Chloride	53	ug/l	0.12	0.37	1	7/8/2002	8021A	CAH	1
m&p-Xylene	< 1	ug/l	1	3	1	7/8/2002	8021A	CAH	1
o-Xylene	< 0.45	ug/l	0.45	1.4	1	7/8/2002	8021A	CAH	1
Lab Code 5041399N						**Sample Type** Water			
Sample ID MPS P-6						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Bromobenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 2.8	ug/l	2.8	8.5	5	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 2.1	ug/l	2.1	7	5	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chlorobenzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Chloroethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
Chloroform	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399N						**Sample Type** Water			
Sample ID MPS P-6						**Sample Date** 6/27/2002			
Chloromethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 1.9	ug/l	1.9	6	5	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.85	ug/l	0.85	2.8	5	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 3.4	ug/l	3.4	11	5	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
cis-1,2-Dichloroethene	290	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 1	ug/l	1	3	5	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 2.4	ug/l	2.4	7.5	5	7/9/2002	8021A	CAH	1
Ethylbenzene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 2	ug/l	2	6.5	5	7/9/2002	8021A	CAH	1
Methylene chloride	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Naphthalene	< 7	ug/l	7	23	5	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 1.3	ug/l	1.3	4	5	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Toluene	< 3.2	ug/l	3.2	10	5	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.5	ug/l	0.5	1.7	5	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1

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Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399N						**Sample Type** Water			
Sample ID MPS P-6						**Sample Date** 6/27/2002			
Trichloroethene (TCE)	< 3.7	ug/l	3.7	12	5	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 3.6	ug/l	3.6	12	5	7/9/2002	8021A	CAH	1
Vinyl Chloride	290	ug/l	0.6	1.9	5	7/9/2002	8021A	CAH	1
m&p-Xylene	< 4.8	ug/l	4.8	15	5	7/9/2002	8021A	CAH	1
o-Xylene	< 2.3	ug/l	2.3	7	5	7/9/2002	8021A	CAH	1
Lab Code 5041399O						**Sample Type** Water			
Sample ID MPS P-7						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Bromobenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 2.8	ug/l	2.8	8.5	5	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 2.1	ug/l	2.1	7	5	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chlorobenzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Chloroethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
Chloroform	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chloromethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 1.9	ug/l	1.9	6	5	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.85	ug/l	0.85	2.8	5	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 3.4	ug/l	3.4	11	5	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1

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Lab Code 5041399O						**Sample Type** Water			
Sample ID MPS P-7						**Sample Date** 6/27/2002			
cis-1,2-Dichloroethene	15	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 1	ug/l	1	3	5	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 2.4	ug/l	2.4	7.5	5	7/9/2002	8021A	CAH	1
Ethylbenzene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 2	ug/l	2	6.5	5	7/9/2002	8021A	CAH	1
Methylene chloride	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Naphthalene	< 7	ug/l	7	23	5	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 1.3	ug/l	1.3	4	5	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Toluene	< 3.2	ug/l	3.2	10	5	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.5	ug/l	0.5	1.7	5	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 3.7	ug/l	3.7	12	5	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 3.6	ug/l	3.6	12	5	7/9/2002	8021A	CAH	1
Vinyl Chloride	360	ug/l	0.6	1.9	5	7/9/2002	8021A	CAH	1
m&p-Xylene	5.3 "J"	ug/l	4.8	15	5	7/9/2002	8021A	CAH	1
o-Xylene	4.7 "J"	ug/l	2.3	7	5	7/9/2002	8021A	CAH	1

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Lab Code 5041399P						**Sample Type** Water			
Sample ID DUPLICATE 1						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Bromobenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 2.8	ug/l	2.8	8.5	5	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 2.1	ug/l	2.1	7	5	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chlorobenzene	< 2.2	ug/l	2.2	7	5	7/9/2002	8021A	CAH	1
Chloroethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
Chloroform	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
Chloromethane	< 3.5	ug/l	3.5	11	5	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 1.9	ug/l	1.9	6	5	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.85	ug/l	0.85	2.8	5	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 2.8	ug/l	2.8	9	5	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 1.3	ug/l	1.3	4.1	5	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 1.6	ug/l	1.6	5	5	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 3.4	ug/l	3.4	11	5	7/9/2002	8021A	CAH	1
1,2-Dichloroethane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
cis-1,2-Dichloroethene	14	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 2.7	ug/l	2.7	8.5	5	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 1	ug/l	1	3	5	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 2.4	ug/l	2.4	7.5	5	7/9/2002	8021A	CAH	1
Ethylbenzene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	3 4
Isopropylbenzene	< 2.3	ug/l	2.3	7.5	5	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 2	ug/l	2	6.5	5	7/9/2002	8021A	CAH	1

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Lab Code 5041399P						**Sample Type** Water			
Sample ID DUPLICATE 1						**Sample Date** 6/27/2002			
Methylene chloride	< 3	ug/l	3	10	5	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Naphthalene	< 7	ug/l	7	23	5	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 1.7	ug/l	1.7	5.5	5	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 1.3	ug/l	1.3	4	5	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 1.8	ug/l	1.8	5.5	5	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 2.5	ug/l	2.5	8	5	7/9/2002	8021A	CAH	1
Toluene	< 3.2	ug/l	3.2	10	5	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.5	ug/l	0.5	1.7	5	7/9/2002	8021A	CAH	3
1,2,3-Trichlorobenzene	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3
1,1,1-Trichloroethane	< 2.9	ug/l	2.9	9	5	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 2.6	ug/l	2.6	8	5	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 3.7	ug/l	3.7	12	5	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 3.3	ug/l	3.3	11	5	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 2.1	ug/l	2.1	6.5	5	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 3.6	ug/l	3.6	12	5	7/9/2002	8021A	CAH	1
Vinyl Chloride	360	ug/l	0.6	1.9	5	7/9/2002	8021A	CAH	1
m&p-Xylene	5.8 "J"	ug/l	4.8	15	5	7/9/2002	8021A	CAH	1
o-Xylene	5 "J"	ug/l	2.3	7	5	7/9/2002	8021A	CAH	1
Lab Code 5041399Q						**Sample Type** Water			
Sample ID DUPLICATE 2						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 86	ug/l	86	280	200	7/9/2002	8021A	CAH	1
Bromobenzene	< 84	ug/l	84	260	200	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 110	ug/l	110	340	200	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 84	ug/l	84	280	200	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 92	ug/l	92	300	200	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 68	ug/l	68	220	200	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
Chlorobenzene	< 86	ug/l	86	280	200	7/9/2002	8021A	CAH	1
Chloroethane	< 140	ug/l	140	440	200	7/9/2002	8021A	CAH	1
Chloroform	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1

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Lab Code 5041399Q						**Sample Type** Water			
Sample ID DUPLICATE 2						**Sample Date** 6/27/2002			
Chloromethane	< 140	ug/l	140	440	200	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 76	ug/l	76	240	200	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 64	ug/l	64	200	200	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 34	ug/l	34	110	200	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 52	ug/l	52	160	200	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 52	ug/l	52	160	200	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 62	ug/l	62	200	200	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 140	ug/l	140	440	200	7/9/2002	8021A	CAH	4
1,2-Dichloroethane	< 110	ug/l	110	340	200	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	4
cis-1,2-Dichloroethene	21000	ug/l	110	340	200	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 120	ug/l	120	380	200	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 110	ug/l	110	340	200	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 38	ug/l	38	120	200	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 100	ug/l	100	300	200	7/9/2002	8021A	CAH	1
Ethylbenzene	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 70	ug/l	70	220	200	7/9/2002	8021A	CAH	4
Isopropylbenzene	< 92	ug/l	92	300	200	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 78	ug/l	78	260	200	7/9/2002	8021A	CAH	1
Methylene chloride	< 120	ug/l	120	380	200	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Naphthalene	< 280	ug/l	280	920	200	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 68	ug/l	68	220	200	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 50	ug/l	50	160	200	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 72	ug/l	72	220	200	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1
Toluene	< 130	ug/l	130	400	200	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 20	ug/l	20	66	200	7/9/2002	8021A	CAH	1
1,2,3-Trichlorobenzene	< 130	ug/l	130	420	200	7/9/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 110	ug/l	110	360	200	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 100	ug/l	100	320	200	7/9/2002	8021A	CAH	1

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Lab Code 5041399Q						**Sample Type** Water			
Sample ID DUPLICATE 2						**Sample Date** 6/27/2002			
Trichloroethene (TCE)	5400	ug/l	150	460	200	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 130	ug/l	130	420	200	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 84	ug/l	84	260	200	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 140	ug/l	140	460	200	7/9/2002	8021A	CAH	1
Vinyl Chloride	3700	ug/l	24	74	200	7/9/2002	8021A	CAH	1
m&p-Xylene	< 190	ug/l	190	600	200	7/9/2002	8021A	CAH	1
o-Xylene	< 90	ug/l	90	280	200	7/9/2002	8021A	CAH	1
Lab Code 5041399R						**Sample Type** Water			
Sample ID EQUIP BLANK						**Sample Date** 6/27/2002			
Organic									
VOC's									
Benzene	< 0.43	ug/l	0.43	1.4	1	7/9/2002	8021A	CAH	1
Bromobenzene	< 0.42	ug/l	0.42	1.3	1	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 0.55	ug/l	0.55	1.7	1	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 0.42	ug/l	0.42	1.4	1	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 0.46	ug/l	0.46	1.5	1	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 0.34	ug/l	0.34	1.1	1	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 0.56	ug/l	0.56	1.8	1	7/9/2002	8021A	CAH	1
Chlorobenzene	0.73 "J"	ug/l	0.43	1.4	1	7/9/2002	8021A	CAH	1
Chloroethane	< 0.69	ug/l	0.69	2.2	1	7/9/2002	8021A	CAH	1
Chloroform	< 0.56	ug/l	0.56	1.8	1	7/9/2002	8021A	CAH	1
Chloromethane	< 0.69	ug/l	0.69	2.2	1	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 0.38	ug/l	0.38	1.2	1	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 0.32	ug/l	0.32	1	1	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.17	ug/l	0.17	0.55	1	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 0.56	ug/l	0.56	1.8	1	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 0.31	ug/l	0.31	1	1	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 0.68	ug/l	0.68	2.2	1	7/9/2002	8021A	CAH	4
1,2-Dichloroethane	< 0.54	ug/l	0.54	1.7	1	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 0.57	ug/l	0.57	1.8	1	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 0.57	ug/l	0.57	1.8	1	7/9/2002	8021A	CAH	4

U.S. Analytical Lab

MAFIZUL ISLAM
SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399R						**Sample Type** Water			
Sample ID EQUIP BLANK						**Sample Date** 6/27/2002			
cis-1,2-Dichloroethene	< 0.53	ug/l	0.53	1.7	1	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 0.59	ug/l	0.59	1.9	1	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 0.54	ug/l	0.54	1.7	1	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 0.19	ug/l	0.19	0.6	1	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 0.51	ug/l	0.51	1.6	1	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 0.48	ug/l	0.48	1.5	1	7/9/2002	8021A	CAH	1
Ethylbenzene	< 0.49	ug/l	0.49	1.6	1	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 0.35	ug/l	0.35	1.1	1	7/9/2002	8021A	CAH	4
Isopropylbenzene	< 0.46	ug/l	0.46	1.5	1	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 0.39	ug/l	0.39	1.3	1	7/9/2002	8021A	CAH	1
Methylene chloride	< 0.6	ug/l	0.6	1.9	1	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 0.49	ug/l	0.49	1.6	1	7/9/2002	8021A	CAH	1
Naphthalene	< 1.4	ug/l	1.4	4.6	1	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 0.34	ug/l	0.34	1.1	1	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 0.25	ug/l	0.25	0.8	1	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 0.36	ug/l	0.36	1.1	1	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 0.49	ug/l	0.49	1.6	1	7/9/2002	8021A	CAH	1
Toluene	< 0.63	ug/l	0.63	2	1	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.1	ug/l	0.1	0.33	1	7/9/2002	8021A	CAH	1
1,2,3-Trichlorobenzene	< 0.65	ug/l	0.65	2.1	1	7/9/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 0.57	ug/l	0.57	1.8	1	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 0.52	ug/l	0.52	1.6	1	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 0.73	ug/l	0.73	2.3	1	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 0.65	ug/l	0.65	2.1	1	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 0.42	ug/l	0.42	1.3	1	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 0.72	ug/l	0.72	2.3	1	7/9/2002	8021A	CAH	1
Vinyl Chloride	< 0.12	ug/l	0.12	0.37	1	7/9/2002	8021A	CAH	1
m&p-Xylene	< 1	ug/l	1	3	1	7/9/2002	8021A	CAH	1
o-Xylene	< 0.45	ug/l	0.45	1.4	1	7/9/2002	8021A	CAH	1

MAFIZUL ISLAM
SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399S						**Sample Type** Water			
Sample ID TRIP BLANK						**Sample Date**			
Organic									
VOC's									
Benzene	< 0.43	ug/l	0.43	1.4	1	7/9/2002	8021A	CAH	1
Bromobenzene	< 0.42	ug/l	0.42	1.3	1	7/9/2002	8021A	CAH	1
Bromodichloromethane	< 0.55	ug/l	0.55	1.7	1	7/9/2002	8021A	CAH	1
tert-Butylbenzene	< 0.42	ug/l	0.42	1.4	1	7/9/2002	8021A	CAH	1
sec-Butylbenzene	< 0.46	ug/l	0.46	1.5	1	7/9/2002	8021A	CAH	1
n-Butylbenzene	< 0.34	ug/l	0.34	1.1	1	7/9/2002	8021A	CAH	1
Carbon Tetrachloride	< 0.56	ug/l	0.56	1.8	1	7/9/2002	8021A	CAH	1
Chlorobenzene	0.79 "J"	ug/l	0.43	1.4	1	7/9/2002	8021A	CAH	1
Chloroethane	< 0.69	ug/l	0.69	2.2	1	7/9/2002	8021A	CAH	1
Chloroform	< 0.56	ug/l	0.56	1.8	1	7/9/2002	8021A	CAH	1
Chloromethane	< 0.69	ug/l	0.69	2.2	1	7/9/2002	8021A	CAH	1
2-Chlorotoluene	< 0.38	ug/l	0.38	1.2	1	7/9/2002	8021A	CAH	1
4-Chlorotoluene	< 0.32	ug/l	0.32	1	1	7/9/2002	8021A	CAH	1
1,2-Dibromo-3-chloropropane	< 0.17	ug/l	0.17	0.55	1	7/9/2002	8021A	CAH	1
Dibromochloromethane	< 0.56	ug/l	0.56	1.8	1	7/9/2002	8021A	CAH	1
1,4-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/9/2002	8021A	CAH	1
1,3-Dichlorobenzene	< 0.26	ug/l	0.26	0.82	1	7/9/2002	8021A	CAH	1
1,2-Dichlorobenzene	< 0.31	ug/l	0.31	1	1	7/9/2002	8021A	CAH	1
Dichlorodifluoromethane	< 0.68	ug/l	0.68	2.2	1	7/9/2002	8021A	CAH	4
1,2-Dichloroethane	< 0.54	ug/l	0.54	1.7	1	7/9/2002	8021A	CAH	1
1,1-Dichloroethane	< 0.57	ug/l	0.57	1.8	1	7/9/2002	8021A	CAH	1
1,1-Dichloroethene	< 0.57	ug/l	0.57	1.8	1	7/9/2002	8021A	CAH	4
cis-1,2-Dichloroethene	< 0.53	ug/l	0.53	1.7	1	7/9/2002	8021A	CAH	1
trans-1,2-Dichloroethene	< 0.59	ug/l	0.59	1.9	1	7/9/2002	8021A	CAH	1
1,2-Dichloropropane	< 0.54	ug/l	0.54	1.7	1	7/9/2002	8021A	CAH	1
2,2-Dichloropropane	< 0.19	ug/l	0.19	0.6	1	7/9/2002	8021A	CAH	1
Di-isopropyl ether	< 0.51	ug/l	0.51	1.6	1	7/9/2002	8021A	CAH	1
EDB (1,2-Dibromoethane)	< 0.48	ug/l	0.48	1.5	1	7/9/2002	8021A	CAH	1
Ethylbenzene	< 0.49	ug/l	0.49	1.6	1	7/9/2002	8021A	CAH	1
Hexachlorobutadiene	< 0.35	ug/l	0.35	1.1	1	7/9/2002	8021A	CAH	4
Isopropylbenzene	< 0.46	ug/l	0.46	1.5	1	7/9/2002	8021A	CAH	1
p-Isopropyltoluene	< 0.39	ug/l	0.39	1.3	1	7/9/2002	8021A	CAH	1

U.S. Analytical Lab

MAFIZUL ISLAM
SIGMA ENVIRONMENTAL
220 EAST RYAN ROAD
OAK CREEK WI 53154

Project # 3125
Project Name GOOD HOPE LANDFILL
Invoice # E41399

Report Date *11-Jul-02*

Analyte	Result	Units	LOD	LOQ	Dil	Run Date	Method	Analyst	QC Code
Lab Code 5041399S						**Sample Type** Water			
Sample ID TRIP BLANK						**Sample Date**			
Methylene chloride	< 0.6	ug/l	0.6	1.9	1	7/9/2002	8021A	CAH	1
Methyl tert-butyl ether (MTBE)	< 0.49	ug/l	0.49	1.6	1	7/9/2002	8021A	CAH	1
Naphthalene	< 1.4	ug/l	1.4	4.6	1	7/9/2002	8021A	CAH	1
n-Propylbenzene	< 0.34	ug/l	0.34	1.1	1	7/9/2002	8021A	CAH	1
1,1,2,2-Tetrachloroethane	< 0.25	ug/l	0.25	0.8	1	7/9/2002	8021A	CAH	1
1,3-DCP, Tetrachloroethene	< 0.36	ug/l	0.36	1.1	1	7/9/2002	8021A	CAH	1
Tetrachloroethene	< 0.49	ug/l	0.49	1.6	1	7/9/2002	8021A	CAH	1
Toluene	< 0.63	ug/l	0.63	2	1	7/9/2002	8021A	CAH	1
1,2,4-Trichlorobenzene	< 0.1	ug/l	0.1	0.33	1	7/9/2002	8021A	CAH	1
1,2,3-Trichlorobenzene	< 0.65	ug/l	0.65	2.1	1	7/9/2002	8021A	CAH	1
1,1,1-Trichloroethane	< 0.57	ug/l	0.57	1.8	1	7/9/2002	8021A	CAH	1
1,1,2-Trichloroethane	< 0.52	ug/l	0.52	1.6	1	7/9/2002	8021A	CAH	1
Trichloroethene (TCE)	< 0.73	ug/l	0.73	2.3	1	7/9/2002	8021A	CAH	1
Trichlorofluoromethane	< 0.65	ug/l	0.65	2.1	1	7/9/2002	8021A	CAH	3 4
1,2,4-Trimethylbenzene	< 0.42	ug/l	0.42	1.3	1	7/9/2002	8021A	CAH	1
1,3,5-Trimethylbenzene	< 0.72	ug/l	0.72	2.3	1	7/9/2002	8021A	CAH	1
Vinyl Chloride	< 0.12	ug/l	0.12	0.37	1	7/9/2002	8021A	CAH	1
m&p-Xylene	< 1	ug/l	1	3	1	7/9/2002	8021A	CAH	1
o-Xylene	< 0.45	ug/l	0.45	1.4	1	7/9/2002	8021A	CAH	1

LOD Limit of Detection "J" Flag: Analyte detected between LOD and LOQ LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.
3	The spike recovery failed to meet acceptable QC limits.
4	The check standard failed to meet acceptable QC limits.

Authorized Signature

CHAIN OF CUSTODY RECORD

A. lytical Lab
1090 Kennedy Ave. • Kimberly, WI 54136
(920) 735-8295 • FAX 920-739-1738 • 800-490-4902
LAB@USOIL.COM

Rev. Date: 12-17-98

Chain # 32397
Page 1 of 2

Lab I.D. # 5041399
Account No. : Quote No.:

Project #: 3125
Sampler: (signature)

Sample Integrity - To be completed by receiving lab.
Method of Shipment: Courier Temp. of Temp. Blank: °C On Ice: Y
Cooler seal intact upon receipt: Y Yes No Labcoded By: GW

Project (Name / Location): GOOD HOPE LANDFILL MILWAUKEE, WI

Reports To: MAFIZUL ISLAM	Invoice To:
Company SIGMA ENVIRONMENTAL	Company
Address 220 E. RYAN ROAD	Address
City State Zip OAK CREEK, WI	City State Zip
Phone 414-768-7144	Phone

Sample Handling Request
___ Rush Analysis Date Required ____
X Normal Turn Around

Lab I.D.	Sample I.D.	Collection Date	Collection Time	No. of Containers Size and Type	Description*	Preservation
A	MW-D	6/27/02	13:20	3-40ml glass	GW	HCL
B	MW-E	6/27/02	14:20			
C	MW-4	6/27/02	14:45			
D	MW-11	6/27/02	8:50			
E	PZ-D	6/27/02	13:10			
F	PZ-11	6/27/02	9:20			
G	MW-26	6/27/02	12:45			
H	N-MW-10	6/27/02	14:10			
I	N-MW-11	6/27/02	13:45			

Analysis Requested

DRO (Mod/TPH)	GRO (Mod/TPH)	PVOC (EPA 8021)	BTEX (EPA 8021)	VOC (EPA 8021)	VOC (EPA 8260)	VOC DW (EPA 524.2)	O&G (EPA 413.1)	PAH (EPA 8310)	Pb	Flash Point	Other Analysis					PID/ FID
				X												
				X												
				X												
				X												
				X												
				X												
				X												
				X												
				X												
				X												

Department Use Only
Split Samples: Offered ? ____ Yes ____ No
Accepted? ____ Yes ____ No
Accepted By: ____

Comments/ Special Instructions
*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", etc.

Department Use Optional for Soil Samples
Disposition of unused portion of sample
Lab Should:
____ Dispose ____ Retain for ____ days
____ Return ____ Other

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	6:30	6/28/02	Deo Huss	12:10	6-28-02
Deo Huss	5:40	6-28-02			

Received in Laboratory By: Terri Lemire Time: 1740 Date: 6/28/02

CHAIN OF CUSTODY RECORD

A. lytical Lab
1090 Kennedy Ave. • Kimberly, WI 54136
(920) 735-8295 • FAX 920-739-1738 • 800-490-4902
LAB@USOIL.COM

Rev. Date: 12-17-98

Chain # 32398

Page 2 of 2

Lab I.D. # 5041399

Account No. : Quote No.:

Project #: 3125

Sampler: (signature)

Sample Integrity - To be completed by receiving lab.
Method of Shipment: COURIER Temp. of Temp. Blank. ____ °C On Ice: Y
Cooler seal intact upon receipt: X Yes ____ No Labcoded By: GU

Project (Name / Location): GOOD HOPE LANDFILL MILWAUKEE, WI

Reports To: MAFIZUL ISLAM Invoice To:

Company SIGMA ENVIRONMENTAL Company

Address 220 E. RYAN ROAD Address

City State Zip OAK CREEK, WI City State Zip

Phone 414-768-7144 Phone

Sample Handling Request

___ Rush Analysis Date Required ____

X Normal Turn Around

Analysis Requested

Lab I.D.	Sample I.D.	Collection Date	Collection Time	No. of Containers Size and Type	Description*	Preservation	DRO (Mod/TPH)	GRO (Mod/TPH)	PVOC (EPA 8021)	BTEX (EPA 8021)	VOC (EPA 8021)	VOC (EPA 8260)	VOC DW (EPA 524.2)	O&G (EPA 413.1)	PAH (EPA 8310)	Pb	Flash Point	Other Analysis					PID/ FID
J	MPS: P-2	6/27/02	11:55	3-40ml glass	GW	HCL					X												
K	MPS: P-3	6/27/02	12:25								X												
L	MPS: P-4	6/27/02	10:45								X												
M	MPS: P-5	6/27/02	11:20								X												
N	MPS: P-6	6/27/02	9:50								X												
O	MPS: P-7	6/27/02	10:20								X												
P	DUPLICATE #1	6/27/02	—								X												
Q	DUPLICATE #2	6/27/02	—								X												
R	EQUIPMENT BLANK	6/27/02	—		—						X												
S	TRIP BLANK	—	—	2-40ml glass	—						X												

Department Use Only

Split Samples: Offered ? ____ Yes ____ No

Accepted? ____ Yes ____ No

Accepted By: _____

Department Use Optional for Soil Samples

Disposition of unused portion of sample

Lab Should:

___ Dispose ____ Retain for ___ days

___ Return ____ Other

Comments/ Special Instructions

*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", etc.

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	6:30	6/28/02			
	5:40	6-28-02			

Received in Laboratory By: Terri Lemire Time: 1740 Date: 6/28/02

MICROSEEPS

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd

Oak Creek, WI 53154

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Sample Identification

Lab Sample #	Client Sample ID
P0206530-01	MW-D
P0206530-02	MW-E
P0206530-03	MW-11
P0206530-04	PZ-D
P0206530-05	PZ-11
P0206530-06	W-MW-10
P0206530-07	MPS-P-4
P0206530-08	MPS-P-5
P0206530-09	MPS-P-6
P0206530-10	MPS-P-7

Approved By: Debbie Hall

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-01

Sample Description	Matrix	Sampled Date/Time	Received
MW-D	Water	27 Jun. 02 13:20	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	3300	5.0	ng/L	AM18	pd	7/5/02
Ethene	8000	5.0	ng/L	AM18	pd	7/5/02
Methane	31	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-02

Sample Description	Matrix	Sampled Date/Time	Received
MW-E	Water	27 Jun. 02 14:20	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	16	5.0	ng/L	AM18	pd	7/5/02
Ethene	25	5.0	ng/L	AM18	pd	7/5/02
Methane	0.68	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-03

Sample Description	Matrix	Sampled Date/Time	Received
MW-11	Water	27 Jun. 02 8:50	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	560	5.0	ng/L	AM18	pd	7/5/02
Ethene	110	5.0	ng/L	AM18	pd	7/5/02
Methane	16	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-04

Sample Description	Matrix	Sampled Date/Time	Received
PZ-D	Water	27 Jun. 02 13:10	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	2500	5.0	ng/L	AM18	pd	7/5/02
Ethene	870000	5.0	ng/L	AM18	pd	7/5/02
Methane	1500	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-05

Sample Description	Matrix	Sampled Date/Time	Received
PZ-11	Water	27 Jun. 02 9:20	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	510	5.0	ng/L	AM18	pd	7/5/02
Ethene	900	5.0	ng/L	AM18	pd	7/5/02
Methane	6.8	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-06

Sample Description	Matrix	Sampled Date/Time	Received
W-MW-10	Water	27 Jun. 02 14:10	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	130	5.0	ng/L	AM18	pd	7/5/02
Ethene	53000	5.0	ng/L	AM18	pd	7/5/02
Methane	38	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-07

Sample Description	Matrix	Sampled Date/Time	Received
MPS-P-4	Water	27 Jun. 02 10:45	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	910	5.0	ng/L	AM18	pd	7/5/02
Ethene	37000	5.0	ng/L	AM18	pd	7/5/02
Methane	130	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-08

Sample Description	Matrix	Sampled Date/Time	Received
MPS-P-5	Water	27 Jun. 02 11:20	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	< 5.0	5.0	ng/L	AM18	pd	7/5/02
Ethene	64	5.0	ng/L	AM18	pd	7/5/02
Methane	0.52	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-09

Sample Description	Matrix	Sampled Date/Time	Received
MPS-P-6	Water	27 Jun. 02 9:50	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	520	5.0	ng/L	AM18	pd	7/5/02
Ethene	4400	5.0	ng/L	AM18	pd	7/5/02
Methane	4.4	0.015	ug/L	AM20GAX	pd	7/5/02

Order #: P0206530
Report Date: 07/08/02
Client Proj Name: 3125
Client Proj #: 3125

Client Name: Sigma Environmental
Contact: Mafizul Islam
Address: 220 East Ryan Rd
Oak Creek, WI 53154

Lab Sample #: P0206530-10

Sample Description	Matrix	Sampled Date/Time	Received
MPS-P-7	Water	27 Jun. 02 10:20	29 Jun. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Ethane	6600	5.0	ng/L	AM18	pd	7/5/02
Ethene	260000	5.0	ng/L	AM18	pd	7/5/02
Methane	550	0.015	ug/L	AM20GAX	pd	7/5/02

CHAIN - OF - CUSTODY RECORD

P0706530

Phone: (412) 826-5245 — Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238 — Fax No. : (412) 826-3433

Company : SIGMA ENVIRONMENTAL
Co. Address : 220 E. RYAN ROAD OAK CREEK, WI
Proj. Manager: MAFIZUL ISLAM
Proj. Location: GOOD HOPE LANDFILL MILWAUKEE, WI
Proj. Number: 3125
Phone # : 414-768-7144 Fax # : 414-768-7158

Sampler's signature :

Results to : MAFIZUL ISLAM @ SIGMA ENVIRONMENTAL

Invoice to :

Cooler ID	Cooler Temp.

	Sample ID	Sample Description	Date	Time	Comp.	Grab	# Cont.	Parameters Requested: METHANE	ETHANE	ETHENE						Remarks
01	MW-D	GROUNDWATER	6/27/02	13:20			2	X	X	X						
02	MW-E		6/27/02	14:20			2	X	X	X						
03	MW-11		6/27/02	8:50			2	X	X	X						
04	PZ-D		6/27/02	13:10			2	X	X	X						
05	PZ-11		6/27/02	9:20			2	X	X	X						
06	W-MW-10		6/27/02	14:10			2	X	X	X						
07	MPS: P-4		6/27/02	10:45			2	X	X	X						
08	MPS: P-5		6/27/02	11:20			2	X	X	X						
09	MPS: P-6		6/27/02	9:50			2	X	X	X						
10	MPS: P-7		6/27/02	10:20			2	X	X	X						

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
	SIGMA ENVIRONMENTAL	6/28/02	15:00		MICROSEEPS	6/29/02	0834
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Accompany Samples YELLOW COPY : Laboratory File PINK COPY : Submitter

ATTACHMENT C

SUMMARY OF LABORATORY DATA COLLECTED BY NRT

Table 3 - Groundwater Analytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																
		Petroleum VOCs (µg/L)					Chlorinated VOCs (µg/L)											
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total PVOCs	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	Isopropylbenzene	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Total CVOCs
Wisconsin Groundwater Quality Standards (Wisconsin Administrative Code NR 140, April 2001)																		
Preventive Action Limit		*0.5*	*140*	*200*	*1,000*	ns	*0.6*	*0.7*	*7*	*20*	*85*	ns	*0.5*	*0.5*	*40*	*0.5*	*0.02*	**ns**
Enforcement Standard		**5**	**700**	**1,000**	**10,000**	ns	**6**	**7**	**70**	**100**	**850**	ns	**5**	**5**	**200**	**5**	**0.2**	**ns**
GROUNDWATER MONITORING WELLS																		
MW-4	10/5/88	<1	<1	<1	<1	nd	nr	*3.6*	**1.3**	<1	<1	nr	<1	**400**	<1	**425**	<1	**830**
	11/10/88	<1	<1	<1	<1	nd	nr	<1	<1	<1	<1	nr	<1	**223**	<1	**341**	<1	**564**
	4/19/89	<1	<1	<1	<1	nd	nr	*2.3*	**229**	<1	**6**	nr	<1	**110**	<1	**264**	<1	**611**
	11/16/93	<0.2	<1	<1	<1	nd	nr	*1.0*	**212**	**2.2**	**2.3**	nr	nr	**87.1**	<0.5	**104**	**38.7**	**447**
	6/7/96	<6	<10	<10	<10	nd	<10	<10	**190**	<10	<10	<10	<10	**1,400**	<10	**1,100**	**18**	**2,708**
	6/20/97	<0.82	<0.46	<0.56	<1.56	nd	nr	*0.72*	**150**	nr	**1.6**	nr	nr	**270**	<0.54	**170**	**18**	**610**
MW-6	11/16/93	**0.3**	<1	<2.0	**1.0**	**1.3**	nr	<0.4	**0.9**	<0.5	<0.5	nr	nr	<0.5	<0.5	*0.7*	**1.3**	**2.9**
	6/7/96	<0.6	<1	<1	<1	nd	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	nd
	6/20/97	<0.41	<0.23	<.28	<0.79	nd	nr	<0.28	**0.45**	nr	<0.26	nr	nr	<0.27	<0.27	<0.20	**0.37**	**0.8**
MW-10	10/5/88	<1	<1	**24**	**10**	**34**	nr	**46**	<1	nr	**23**	nr	**8.2**	**138**	**30**	**2,630**	<1	**2,875**
	11/10/88	**3.9**	<1	**3.4**	<1	**7.3**	nr	**54**	<1	nr	**31**	nr	<1	**34**	<1	**877**	<1	**996**
	4/19/89	<1	**3.5**	**11.5**	<1	**15**	nr	**35.6**	**10,400**	nr	**18.8**	nr	<1	**477**	<1	**3,400**	**3,400**	**17,731**
	11/16/93	**0.3**	<1	<2.0	<1	nd	nr	**2.3**	**1,060**	*20.2*	**2.4**	nr	nr	**751**	<0.5	**2,740**	**303**	**4,879**
	6/7/96	<15	<25	<25	<25	nd	<25	<25	**740**	<25	<25	<25	<25	**300**	<25	**1,700**	**640**	**3,380**
duplicate	6/7/96	<15	<25	<25	<25	nd	<25	<25	**710**	<25	<25	<25	<25	**320**	<25	**1,700**	**610**	**3,340**
	6/20/97	<8.2	<4.6	<5.6	<15.6	nd	nr	<5.6	**1,400**	nr	<5.2	nr	nr	**460**	<5.4	**2,000**	**620**	**4,480**
MW-11	6/7/96	<150	*400*	**1,000**	**850**	**2,250**	<250	<250	**28,000**	<250	<250	<250	<250	<250	<250	<250	**7,500**	**35,500**
	6/20/97	nr	**45**	**110**	**69**	**224**	nr	<28	**9,300**	nr	**32**	nr	nr	<27	<27	<20	**2,100**	**11,432**
MW-18	4/19/89	<1	<1	**9.4**	<1	**9.4**	nr	**0.4**	--	**106**	**4.8**	nr	<1	<1	<1	**9.4**	<1	**121**
	11/16/93	**0.2**	<1	**3.2**	<1	**3.4**	nr	<0.4	**111**	**1.8**	**2.5**	nr	<2.5	<0.5	<0.5	*3.2*	**30.5**	**149**
	6/7/96	<0.6	<1	<1	<1	nd	<1	<1	*15*	<1	<1	<1	<1	<1	<1	*1.4*	**2.3**	**19**
	6/20/97	<0.41	<0.23	<0.28	<0.79	nd	nr	**0.33**	**83**	nr	**0.94**	nr	nr	<0.27	<0.27	*3.2*	**11**	**98**

Table 3 - Groundwater Analytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																
		Petroleum VOCs (µg/L)					Chlorinated VOCs (µg/L)											
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total PVOCs	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	Isopropylbenzene	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Total CVOCs
Wisconsin Groundwater Quality Standards (Wisconsin Administrative Code NR 140, April 2001)																		
Preventive Action Limit		*0.5*	*140*	*200*	*1,000*	ns	*0.6*	*0.7*	*7*	*20*	*85*	ns	*0.5*	*0.5*	*40*	*0.5*	*0.02*	**ns**
Enforcement Standard		**5**	**700**	**1,000**	**10,000**	ns	**6**	**7**	**70**	**100**	**850**	ns	**5**	**5**	**200**	**5**	**0.2**	**ns**
MW-22	4/19/89	**16.8**	**24.7**	**25.3**	**41.3**	**108**	nr	**82.3**	--	**22,200**	*165*	nr	<1	**36.4**	<1	**1,180**	**2,490**	**26,154**
	11/16/93	**13.8**	**3,680**	**2,310**	8,300	**14,304**	nr	**58.7**	**1,830**	**195**	*153*	nr	<12.5	**823**	**468**	**1,720**	**770**	**6,018**
duplicate	11/16/93	**15.4**	**14,000**	**3,330**	**55,300**	**72,645**	nr	**45.9**	**12,500**	**151**	*110*	nr	<25	**5,840**	**818**	**10,900**	**2,960**	**33,325**
	6/27/95	<40	**12,600**	**1,360**	**53,400**	**67,360**	<100	<80	**17,400**	<100	<100	<200	<500	**7,290**	**251**	**13,400**	**3,460**	**41,801**
	6/7/96	<600	**5,100**	**3,100**	**20,100**	**28,300**	<1,000	<1,000	**73,000**	<1,000	<1,000	<1,000	<1,000	**4,100**	**1,100**	**83,000**	**2,800**	**164,000**
MW-24S	6/7/96	<0.6	<1	<1	<1	nd	nr	<1	<1	<1	<1	nr	<1	<1	<1	<1	<1	nd
	8/18/98	<0.27	**0.43**	**0.29**	**1.63**	**2.4**	<0.35	<0.43	**0.7**	<0.79	<0.35	<0.26	<0.36	*1.2*	<0.30	*3.1*	<0.20	**5.0**
MW-24D	6/7/96	<0.6	<1	<1	<1	nd	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	nd
	8/18/98	<0.27	**0.68**	**0.45**	**2.8**	**3.9**	<0.35	<0.43	**0.96**	<0.79	<0.35	<0.26	<0.36	*2.1*	<0.30	**5.4**	<0.20	**8.5**
MW-25	6/27/95	<4	<20	<40	<20	nd	<10	<8	**632**	<10	<10	<20	<50	<10	<10	<4	**59.5**	**692**
	6/7/96	<0.6	<1	<1	<1	nd	<1	<1	*19*	<1	<1	<1	<1	<1	<1	<1	**1.8**	**21**
	6/20/97	<4.1	<2.3	<2.8	<7.9	nd	nr	**7.1**	**1,000**	nr	<2.6	nr	nr	<2.7	<2.7	<2.0	**250**	**1,257**
	8/18/98	<0.27	<0.32	<0.27	<0.43	nd	<0.35	*0.79*	**85**	<0.79	<0.35	<0.26	<0.36	<0.43	<0.30	<0.37	**16**	**102**
MW-26	6/27/95	<20	<100	<200	<100	nd	nr	<40	**3,070**	<50	<50	nr	<250	<50	<50	<20	**712**	**3,782**
	6/7/96	<6	<10	<10	<10	nd	<10	<10	**1,100**	*40*	<10	<10	<10	<10	<10	<10	**690**	**1,830**
	6/20/97	<4.1	<2.3	<2.8	<7.9	nd	nr	<2.8	**1,000**	nr	<2.6	nr	nr	<2.7	<2.7	<2.0	**350**	**1,350**
MW-27	6/27/95	*4.7*	<1	**10.6**	<1	**15**	nr	**8.8**	**4,270**	*80.6*	**40.8**	nr	<2.5	**7.5**	<0.5	**63.9**	**4,100**	**8,572**
duplicate	6/27/95	*4.5*	<1	**10.1**	<1	**15**	nr	**7.8**	**6,110**	*49.5*	**37.2**	nr	<2.5	**6.8**	<0.5	**57.4**	**4,100**	**10,369**
	6/7/96	<60	<100	<100	<100	nd	<100	<100	**7,700**	<100	<100	<100	<100	<100	<100	<100	**8,700**	**16,400**
	11/26/96	<30	<50	<50	<50	nd	<50	<50	**8,200**	<50	<50	<50	<50	<50	<50	<50	**6,800**	**15,000**
	6/19/97	<20	<12	**42**	<14	**42**	<12	**29**	**9,800**	*50*	**32**	<14	<11	<14	<14	<10	**7,500**	**17,411**
	8/18/98	<14	<16	**39**	<22	**39**	<18	**24**	**10,000**	*51*	**34**	<13	**30**	<22	<15	<18	**5,500**	**15,639**
	6/26/2002[9]	**10**	**0.51 Q**	**15**	**3.8**	**29**	<0.75	**24**	**8,800**	*57*	**27**	<0.43	<0.85	**1.1 Q**	<0.69	**3.2 Q**	**3,900**	**12,812**

Table 3 - Groundwater Analytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																
		Petroleum VOCs (µg/L)					Chlorinated VOCs (µg/L)											
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total PVOCs	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	Isopropylbenzene	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Total CVOCs
Wisconsin Groundwater Quality Standards (Wisconsin Administrative Code NR 140, April 2001)																		
Preventive Action Limit		*0.5*	*140*	*200*	*1,000*	ns	*0.6*	*0.7*	*7*	*20*	*85*	ns	*0.5*	*0.5*	*40*	*0.5*	*0.02*	**ns**
Enforcement Standard		**5**	**700**	**1,000**	**10,000**	ns	**6**	**7**	**70**	**100**	**850**	ns	**5**	**5**	**200**	**5**	**0.2**	**ns**
MW-101	11/26/96	<150	<250	<250	**970**	**970**	<250	<250	**8,800**	<250	<250	<250	<250	<250	<250	**57,000**	**1,200**	67,000
	6/19/97	<200	nd	nd	*1,130*	**1,130**	<130	<140	**26,000**	<130	<130	<140	<110	**390**	<140	**66,000**	**1,100**	93,490
	8/18/98	<140	*250*	<140	*1,210*	**1,460**	<170	<220	**56,000**	<400	<170	<130	**380**	**330**	<150	**52,000**	**1,400**	110,110
	6/26/02	<240	*220 Q*	<230	**380 Q**	**600**	<380	<430	**56,000**	<400	<240	<220	<430	<280	<340	**18,000**	**1,300**	75,300
Dup (QC-1)	6/26/02	<240	<220	<230	**380 Q**	**380**	<380	<430	**51,000**	<400	<240	<220	<430	<280	<340	**16,000**	**1,200**	68,200
P-101	11/26/96	<0.6	<1	**1.4**	<1	**1.4**	<1	<1	**3.4**	<1	<1	<1	<1	<1	<1	**5.4**	**30**	39
	6/19/97	<0.41	<0.23	<0.28	<0.51	nd	<0.25	<0.28	**3.4**	<0.25	<0.26	<0.27	<0.22	<0.27	<0.27	*3.9*	**38**	45
	8/18/98	<0.27	<0.32	<0.27	<0.43	nd	<0.35	<0.43	**0.79**	<0.79	<0.35	<0.26	<0.36	*1.2*	<0.30	*2.7*	**39**	44
	6/26/02	<0.48	<0.43	<0.47	<0.54	nd	<0.75	<0.85	**2.7**	<0.79	<0.48	<0.43	<0.85	<0.57	<0.69	*7.4*	**36**	46
MW-102	11/26/96	<6	<10	<10	<10	nd	<10	<10	**630**	<10	<10	<10	<10	<10	<10	**120**	**1,800**	2,550
	6/19/97	<4.1	<2.3	<2.8	<5.1	nd	<2.5	<2.8	**440**	**2.5**	**4.9**	<2.7	<2.2	<2.7	<2.7	**29**	**990**	1,466
	8/18/98	<2.7	<3.2	<2.7	<4.3	nd	<3.5	*5.2*	**1,200**	<7.9	**9.1**	<2.6	**5.5**	<4.3	<3.0	**22**	**1,200**	2,442
	6/26/02	<24	<22	<23	<27	nd	<38	<42	**4,000**	<40	<24	<22	<42	<28	<34	<44	**2,800**	6,800
P-102	8/18/98	<14	<16	<14	<22	nd	<18	<22	**4,800**	<40	<18	<13	**30**	<22	<15	<16	**4,200**	9,030
	6/26/02	<24	<22	<23	<27	nd	<38	<42	**4,500**	<40	<24	<22	<42	<28	<34	<44	**4,200**	8,700
MW-103	11/26/96	<150	**1,200**	**4,200**	*5,100*	**10,500**	<250	<250	**21,000**	<250	<250	<250	<250	**6,700**	<250	**45,000**	**3,100**	75,800
duplicate	11/26/96	<300	**1,200**	**4,100**	*5,000*	**10,300**	<500	<500	**22,000**	<500	<500	<500	<500	**6,600**	<500	**46,000**	**3,300**	77,900
	6/19/97	<82	**860**	**3,100**	*3,700*	**7,660**	<50	<56	**25,000**	*70*	<52	<54	<44	**4,500**	<54	**34,000**	**1,800**	65,370
duplicate	6/19/97	<200	**990**	**3,700**	*4,400*	**9,090**	<130	<140	**26,000**	<130	<130	<140	<110	**5,800**	<140	**44,000**	**2,000**	77,800
	8/18/98	<54	**2,500**	**4,400**	**10,900**	**17,800**	<70	<86	**20,000**	<160	<70	58	<72	**11,000**	<60	**41,000**	**2,800**	74,858
	6/26/02	<240	**4,700**	**8,300**	**19,100**	**32,100**	<380	<430	**41,000**	<400	<430	<220	<430	**18,000**	<340	**68,000**	**2,900**	129,900
Dup (QC-2)	6/26/02	<240	**3,800**	**7,300**	**16,300**	**27,400**	<380	<430	**37,000**	<400	<240	<220	<430	**14,000**	<340	**59,000**	**2,900**	112,900

Table 3 - Groundwater Analytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																
		Petroleum VOCs (µg/L)					Chlorinated VOCs (µg/L)											
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total PVOCs	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	Isopropylbenzene	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Total CVOCs
Wisconsin Groundwater Quality Standards (Wisconsin Administrative Code NR 140, April 2001)																		
Preventive Action Limit		*0.5*	*140*	*200*	*1,000*	ns	*0.6*	*0.7*	*7*	*20*	*85*	ns	*0.5*	*0.5*	*40*	*0.5*	*0.02*	**ns**
Enforcement Standard		**5**	**700**	**1,000**	**10,000**	ns	**6**	**7**	**70**	**100**	**850**	ns	**5**	**5**	**200**	**5**	**0.2**	**ns**
MW-104	11/26/96	<0.6	**6.0**	**3.0**	**4.3**	**13**	<1	<1	*19*	<1	**2.0**	**1.4**	<1	<1	<1	<1	**95**	**117**
	6/19/97	<0.41	<0.23	<0.28	<0.51	nd	<0.25	<0.28	*7.0*	**0.28**	**0.59**	<0.27	<0.22	<0.27	<0.27	**13**	**38**	**59**
	8/18/98	<0.27	<0.32	<0.27	<0.43	nd	<0.35	<0.43	**5.2**	<0.79	**1.2**	<0.26	<0.36	<0.43	<0.30	*0.56*	**57**	**64**
	6/26/02	<0.48	<0.43	<0.47	<0.54	nd	<0.75	<0.85	**2.3**	<0.79	<0.48	<0.43	<0.85	<0.57	<0.69	<0.89	**19**	**21**
MW-106	8/18/98	<0.27	<0.32	<0.27	<0.43	nd	<0.35	<0.43	*15*	<0.79	<0.35	<0.26	<0.36	*0.69*	<0.30	**6.1**	**1.2**	**23**
	6/26/02	<0.48	<0.43	<0.47	<0.54	nd	<0.75	<0.85	**2.5**	<0.79	<0.48	<0.43	<0.85	<0.57	<0.68	*2.6 Q*	<0.18	**5.1**
P-106	8/18/98	<14	<16	<14	<22	nd	<18	<22	**1,400**	<40	**23**	<13	**34**	<22	<15	<18	**4,300**	**5,757**
	6/26/02	<24	<22	<23	<27	nd	<38	<42	**980**	<40	<24	<22	<42	<28	<34	<44	**4,500**	**5,480**
MW-107	8/18/98	<27	<32	<27	<43	nd	<35	<43	**11,000**	<79	*120*	<26	**44**	<43	<30	<37	**2,200**	**13,364**
	6/26/02	<48	<43	<47	<54	nd	<75	<85	**14,000**	**100 Q**	**67 Q**	<43	<85	<57	<69	<89	**2,100**	**16,267**
P-107	8/18/98	<14	<16	<14	<22	nd	<18	<22	**3,900**	<40	**29**	<13	**27**	<22	<15	<18	**5,100**	**9,056**
	6/26/02	<48	<43	<47	<54	nd	<75	<85	**8,100**	<79	<48	<43	<85	<57	<69	<89	**7,400**	**15,500**
MW-108	8/18/98	<14	<16	<14	<22	nd	<18	**23**	**8,500**	<40	<18	<13	**31**	<22	<15	<18	**2,700**	**11,254**
	6/26/02	<24	<22	<23	<27	nd	<38	<42	**5,700**	<40	<24	<22	<42	<28	<34	<44	**2,800**	**8,500**
P-108	8/18/98	<1.4	<1.6	<1.4	<2.1	nd	<1.7	<2.1	**390**	<4.0	**3.4**	<1.3	*2.3*	<2.1	<1.5	<1.8	**890**	**1,286**
	1/11/99	<1.4	<1.6	<1.4	<2.1	nd	<1.7	<2.1	**270**	<4.0	**2.4**	<1.3	<1.8	<2.1	<1.5	<1.8	**740**	**1,012**
	6/26/02	<0.96	<0.86	<0.94	<1.1	nd	<1.5	<1.7	**120**	<1.6	**1.4 Q**	<0.86	<1.7	<1.1	<1.4	*1.8 Q*	**330**	**453**
MPS MW-1	8/19/98	<0.27	<0.32	<0.27	<0.43	nd	<0.35	<0.43	<0.28	<0.79	<0.35	<0.26	<0.36	<0.43	<0.30	<0.37	<0.20	nd
MPS P-1	8/19/98	<5.4	<6.4	<5.4	<8.6	nd	<7.0	<8.6	**2,600**	<16	**8.4**	<5.2	<7.2	<8.6	<6.0	<7.4	**820**	**3,428**
MPS P-2	8/19/98	<2.7	<3.2	<2.7	**4.6**	**5**	<3.5	<4.3	**1,000**	**8.9**	**5.2**	<2.6	*3.7*	<4.3	<3.0	<3.7	**810**	**1,828**
MPS P-3	8/19/98	<0.54	<0.64	<0.54	<0.86	nd	<0.70	<0.86	**320**	**1.7**	<0.70	<0.52	*1.0*	<0.86	<0.60	<0.74	**150**	**473**
MPS P-4	1/18/99	<2.7	<3.2	<2.7	<4.3	nd	<3.5	<4.3	**1,500**	**11**	7.9	<2.6	**7.2**	<4.3	<3.0	<3.7	**1,000**	**2,526**
MW-A	6/19/97	**0.45**	<0.23	<0.28	<0.79	**0.5**	nr	<0.28	<0.28	<0.25	<0.26	nr	nr	<0.27	<0.27	<0.20	<0.23	nd

Table 3 - Groundwater Analytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																
		Petroleum VOCs (µg/L)					Chlorinated VOCs (µg/L)											
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total PVOCs	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	Isopropylbenzene	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Total CVOCs
Wisconsin Groundwater Quality Standards (Wisconsin Administrative Code NR 140, April 2001)																		
Preventive Action Limit		*0.5*	*140*	*200*	*1,000*	ns	*0.6*	*0.7*	*7*	*20*	*85*	ns	*0.5*	*0.5*	*40*	*0.5*	*0.02*	**ns**
Enforcement Standard		**5**	**700**	**1,000**	**10,000**	ns	**6**	**7**	**70**	**100**	**850**	ns	**5**	**5**	**200**	**5**	**0.2**	**ns**
PZ-A	6/19/97	*2.1*	**0.59**	**0.74**	**2.59**	**6**	nr	<0.28	**0.64**	<0.25	<0.26	nr	nr	**1.0**	<0.27	*2.0*	0.79	**4**
MW-B	6/19/97	<0.41	<0.23	<0.28	<0.79	nd	nr	<0.28	**0.34**	<0.25	<0.26	nr	nr	<0.27	<0.27	<0.20	<0.23	**0.3**
PZ-B	6/19/97	<0.41	<0.23	<0.28	<0.79	nd	nr	<0.28	**0.48**	<0.25	<0.26	nr	nr	<0.27	<0.27	<0.20	<0.23	**0.5**
MW-C	6/19/97	<2.0	<1.2	<1.4	<3.9	nd	nr	<1.4	**270**	**3.4**	<1.3	nr	nr	**73**	<1.4	**540**	**14**	**900**
PZ-C	6/19/97	<0.41	<0.23	<0.28	<0.79	nd	nr	**0.62**	**110**	**2.3**	**0.89**	nr	nr	**0.27**	<0.27	**1.5**	**150**	**266**
MW-D	6/19/97	<100	**1,800**	*660*	*6,900*	**9,360**	nr	<70	**26,000**	*62*	*120*	nr	nr	**4,500**	**400**	**9,900**	**520**	**41,502**
PZ-D	6/19/97	<41	**36**	<28	**149**	**185**	nr	**42**	**19,000**	*84*	**81**	nr	nr	**51**	<27	**1,900**	**4,100**	**25,258**
MW-E	6/19/97	nd	<4.6	<5.6	<15.6	nd	nr	<5.6	**390**	<5.0	<5.2	nr	nr	**510**	<5.4	**2,700**	<4.6	**3,600**
SOIL BORING GRAB SAMPLES																		
SB-96 (10-15)	7/28/98	*1.5*	**12**	**8.9**	**33**	**55**	<0.35	<0.43	*11*	<0.79	**2.2**	<0.26	<0.36	<0.43	<0.30	<0.37	**40**	**53**
SB-96 (40-45)	7/30/98	<0.27	<0.32	**0.27**	<0.43	**0.3**	<0.35	<0.43	**2.6**	<0.79	<0.35	<0.26	<0.36	<0.43	<0.30	<0.37	**0.75**	**3.4**
SB-97 (10-15)	7/28/98	<27	<32	<27	<43	nd	<35	<43	**7,900**	<79	**74**	<26	<36	<43	<30	<37	**1,200**	**9,174**
SB-97 (40-45)	7/29/98	<5.4	<6.4	<5.4	<8.6	nd	<7	<8.6	**2,500**	**16**	**18**	<5.2	<7.2	<8.6	<6.0	<7.4	**1,500**	**4,034**
SB-98 (10-15)	7/28/98	<27	<32	<27	<43	nd	<35	<43	**10,000**	<79	<35	<26	<36	<43	<30	<37	**2,500**	**12,500**
SB-98 (25-30)	7/30/98	<6.8	<8	**12**	<11	**12**	<8.8	<11	**1,300**	<20	**9.8**	<6.5	<9.0	<11	<7.5	<9.2	**2,700**	**4,010**
SB-98 (40-45)	8/5/98	<2.7	<3.2	**3.2**	<4.3	**3**	<3.5	<4.3	**2,000**	**9.2**	<3.5	<2.6	<3.6	<4.3	<3.0	<3.7	**370**	**2,379**
SB-100	7/31/98	<14	<16	<14	<22	nd	<18	<22	**8,000**	<40	**24**	<13	<18	<22	<15	<18	**2,000**	**10,024**

Table 3 - Groundwater Analytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																
		Petroleum VOCs (µg/L)					Chlorinated VOCs (µg/L)											
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total PVOCs	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	Isopropylbenzene	Methylene Chloride	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride	Total CVOCs
Wisconsin Groundwater Quality Standards (Wisconsin Administrative Code NR 140, April 2001)																		
Preventive Action Limit		*0.5*	*140*	*200*	*1,000*	ns	*0.6*	*0.7*	*7*	*20*	*85*	ns	*0.5*	*0.5*	*40*	*0.5*	*0.02*	**ns**
Enforcement Standard		**5**	**700**	**1,000**	**10,000**	ns	**6**	**7**	**70**	**100**	**850**	ns	**5**	**5**	**200**	**5**	**0.2**	**ns**
SB-101	7/31/98	<27	<32	<27	<43	nd	<35	<43	**12,000**	<79	**45**	<26	<36	<43	<30	<37	**3,000**	**15,045**
SB-102	7/27/98	<27	<32	**28**	<43	**28**	<35	<43	**14,000**	<79	**48**	<26	<36	**210**	<30	**220**	**5,700**	**20,178**
SB-103	7/31/98	<14	<16	**120**	**41**	**161**	<18	<22	**3,700**	<40	<18	<13	<18	**3,800**	<15	**2,000**	**840**	**10,340**

[U-RJC/EPK-08/09/02]

Notes:

1) All detected concentrations are shown in bold.
2) Samples exceeding the NR 140 Preventive Action Limit are underlined and shown initalics and green.
3) Samples exceeding the NR 140 Enforcement Standard are boxed and shown in blue.
4) Village of Whitefish Bay groundwater analytical results are summarized from a data table obtained from the 1989 and 1992 STS and 1997 SIGMA reports.
5) Naphthalene was detected in the SB-96 (15) sample at a concentration of 2.2 µg/L
6) Methylene chloride is a common laboratory contaminant.
7) In historic samples 1,2-dichloroethene is reported as cis-1,2-dichloroethene when detected. **- prior to a date????**
8) SB-97 and SB-98 completed as piezometers P-107 and P-108, respectively.
9) Diisopropyl ether at 4.0 µg/L was identified in the 06/26/02 sample from MW-27. This constituent may be a laboratory contaminant.

nr : Analyte was not detected, detection limit not reported in referenced report(s).
nd : Analyte was not detected above laboratory detection limit (reference analytical reports).
ns : Standard has not been established
Duplicate : Field duplicate sample
Dup (QC-1) : Field duplicate sample with field identification

Table 4 - Laboratory Bioanalytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Sample Date	Ethane (µg/L)	Ethene (µg/L)	Methane (µg/L)	Iron, dissolved (µg/L)	Nitrate as N (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	TKN (ppm)	NH4-N (ppm)	Available P (ppm)	Total Organic Nitrogen (ppm)	C:N	Total Iron (mg/L)	Chloride (mg/L)
MW-101	6/19/97	1.2	25	51	--	0.8	108.5	25	2.5	0.2	<0.1	2.3	11	2.5	<10
	8/18/98	1.6	393	834	--	<0.004	111	104	--	--	--	--	--	47	956
	6/26/02	18	<10	19	--	--	--	--	--	--	--	--	--	--	--
Dup (QC-1)	6/26/02	24	<10	24	--	--	--	--	--	--	--	--	--	--	--
P-101	6/19/97	<5.0	7.6	130	--	0.5	121	6	2.4	0.1	<0.1	2.3	3	2.1	<0.21
	8/18/98	0.02	9.2	169	--	0.035	106	47	--	--	--	--	--	7.7	37
	6/26/02	16	<10	150	--	--	--	--	--	--	--	--	--	--	--
MW-102	8/18/98	0.7	44	>200	--	0.1	61	13	--	--	--	--	--	5.1	1,080
	6/26/02	87	<10	340	--	--	--	--	--	--	--	--	--	--	--
P-102	8/18/98	2.2	1,781	3,333	--	0.11	79	22	--	--	--	--	--	15	123
	6/26/02	710	<10	870	--	--	--	--	--	--	--	--	--	--	--
MW-103	8/18/98	3.2	29.3	138	--	<0.004	46	15	--	--	--	--	--	64	77
	6/26/02	28	<10	23	--	--	--	--	--	--	--	--	--	--	--
Dup (QC-2)	6/26/02	20	<10	15	--	--	--	--	--	--	--	--	--	--	--
MW-104	8/18/98	0.7	31.8	136	--	0.005	134	5.2	--	--	--	--	--	66	285
	6/26/02	<10	<10	13	130	<0.13	120	--	--	--	--	--	--	--	--
MW-106	8/18/98	0.01	0.1	1.3	--	1.2	203	18	--	--	--	--	--	41	593
	6/26/02	<10	<10	24	--	--	--	--	--	--	--	--	--	--	--
P-106	8/18/98	0.8	1,094	416	--	<0.004	57	9.1	--	--	--	--	--	2.7	158
	6/26/02	340	<10	130	120	<0.13	63	--	--	--	--	--	--	--	--
MW-107	8/18/98	5.5	86.4	183	--	<0.004	119	14	--	--	--	--	--	140	367
	6/26/02	83	<10	110	680	<0.13	110	--	--	--	--	--	--	--	--
P-107	8/18/98	12.1	1,167	3,183	--	0.038	46	14	--	--	--	--	--	44	138
	6/26/02	780	<10	2,300	140	<0.13	52	--	--	--	--	--	--	--	--

Table 4 - Laboratory Bioanalytical Summary

Remedial Action Options Report

Presidio Square Apartments, Village of Whitefish Bay, and Milwaukee Public School Properties - Milwaukee, Wisconsin

Sample Location	Sample Date	Ethane (µg/L)	Ethene (µg/L)	Methane (µg/L)	Iron, dissolved (µg/L)	Nitrate as N (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	TKN (ppm)	NH4-N (ppm)	Available P (ppm)	Total Organic Nitrogen (ppm)	C:N	Total Iron (mg/L)	Chloride (mg/L)
MW-108	8/18/98	**7.5**	**93.6**	**393**	--	**0.016**	**100**	**11**	--	--	--	--	--	**130**	**519**
	6/26/02	**45**	<10	**30**	**430**	<0.13	**88**	--	--	--	--	--	--	--	--
P-108	8/18/98	**12.0**	**386**	**1,162**	--	**0.11**	**62**	**3.2**	--	--	--	--	--	**6.5**	**22**
	6/26/02	**130**	<10	**190**	**37**	<0.13	**35**	--	--	--	--	--	--	--	--
MW-109	6/26/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-A	6/19/97	**0.4**	**0.2**	**342**	--	**0.9**	**196.5**	**20**	**31.4**	<0.1	<0.1	**31.4**	nl	**0.5**	--
MW-B	6/19/97	**0.1**	**0.06**	**170**	--	**0.5**	**90**	**8**	**5.8**	**0.2**	<0.1	**8**	nl	**0.5**	--
MW-D	6/19/97	**22.8**	**38**	**408**	--	**0.9**	**205**	**49**	**2.6**	**0.2**	<0.1	**49**	nl	**2.3**	--
MW-27	6/19/97	**1.3**	**230**	**310**	--	**0.4**	**58.0**	**13**	**1.7**	<0.1	<0.1	**1.7**	**8**	**0.7**	<0.21
	8/18/98	**2.2**	**378**	**603**	--	<0.004	**64**	**6.2**	--	--	--	--	--	**15**	**735**
	6/26/02	**490**	<10	**350**	--	--	--	--	--	--	--	--	--	--	--
MW-24S	8/18/98	**0.01**	**0.3**	**4.0**	--	**0.094**	**42**	**14**	--	--	--	--	--	**3**	**13**
MW-24D	8/18/98	**0.02**	**0.1**	**3.1**	--	<0.004	**53**	**19**	--	--	--	--	--	**3.3**	**12**
MW-25	8/18/98	**0.005**	**0.3**	**3.6**	--	**0.024**	**55**	**2.9**	--	--	--	--	--	**8.7**	**20**
MPS MW-1	8/18/98	**0.06**	**0.2**	**1.6**	--	**0.018**	**67**	**11**	--	--	--	--	--	**51**	**49**
MPS P-1	8/18/98	**1.2**	**121**	**539**	--	**0.22**	**146**	**52**	--	--	--	--	--	**82**	**266**
MPS P-2	8/18/98	**1.6**	**13.1**	**186**	--	**0.11**	**156**	**6**	--	--	--	--	--	**38**	**210**
MPS P-3	8/18/98	**1.9**	**4.5**	**201**	--	**0.15**	**136**	**4.8**	--	--	--	--	--	**82**	**258**

Notes:

1) All detected concentrations are shown in bold.

2) Village of Whitefish Bay groundwater analytical results are summarized from a data table obtained from the 1989 and 1992 STS and 1997 SIGMA reports.

-- : Analysis not performed

nl : Data not provided by Sigma

ppm : Parts per million

Dup (QC-1) : Field duplicate sample with field identification

C:N Carbon Nitrogen ratio (Total Organic Carbon/TKN)

mg/L milligrams per liter

µg/L micrograms per liter

Table 5 - Field Bioanalytical Summary
Remedial Action Options Report
Presidio Square Apartments and Village of Whitefish Bay Properties, Milwaukee, Wisconsin

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation / Reduction Potential (mV)	pH (SU)	Field Conductivity (µMhms)	Field Temperature (°C)	Carbon Dioxide (ppm)
MW-101	6/19/97	0.35	224	6.58	2255	10.56	70
	8/18/98	0.46	133	6.79	6106	16.77	45
	6/26/02	0.27	253.2	6.47	7668	14.58	--
P-101	6/19/97	0.86	408	7.61	693	10.75	40
	8/18/98	3.04	165	7.82	885	15.07	<11
	6/26/02	0.96	224.6	7.75	1071	11.72	--
MW-102	6/19/97	2.50	252	6.92	2256	10.98	--
	8/18/98	0.80	171	7.28	4164	16.75	50
	6/26/02	0.53	276.8	7.02	5752	13.17	--
P-102	8/18/98	3.75	205	7.60	1127	12.88	11
	6/26/02	7.90	323.10	7.53	2557	12.38	--
MW-103	6/19/97	0.49	179	6.90	691	9.05	--
	8/18/98	0.4	130	6.84	1068	15.35	17
	6/26/02	0.43	197.60	6.86	1703	9.93	--
MW-104	6/19/97	0.30	189	6.93	1475	10.14	--
	8/18/98	2.13	155	7.30	1879	15.64	30
	6/26/02	3.30	315.80	7.08	2460	13.43	--
MW-106	8/18/98	1.08	205	7.04	2713	15.18	40
	6/26/02	0.35	239.0	6.60	3552	12.37	--
P-106	8/18/98	3.34	213	7.66	836	17.82	12
	6/26/02	0.27	221.3	7.36	1544	11.04	--
MW-107	8/18/98	0.72	170	7.22	2074	17.28	20
	6/26/02	0.17	215.50	6.87	3321	13.42	--
P-107	8/18/98	2.55	210	7.48	1228	16.15	15
	6/26/02	0.20	214.0	7.25	2393	12.18	--
MW-108	8/18/98	0.39	204	7.17	2617	16.28	20
	6/26/02	0.29	244.2	6.95	3737	14.30	--
P-108	8/18/98	3.65	234	8.02	581	14.17	<11
	6/26/02	0.20	241	9.56	1297	12.09	--
MW-109	6/26/02	--	--	--	--	--	--
MPS MW-1	8/18/98	3.67	319	7.33	1060	16.61	16
MPS P-1	8/18/98	3.39	329	7.42	1664	11.57	18
MPS P-2	8/18/98	2.70	348	7.19	1702	13.23	18
MPS P-3	8/18/98	3.49	377	7.33	1450	15.67	20
MW-A	7/27/97	0.62	--	7.2	--	--	--
PZ-A	7/27/97	0.4	--	--	--	--	--
MW-B	7/27/97	0.45	--	7.1	--	--	--
PZ-B	7/27/97	0.62	--	--	--	--	--

Table 5 - Field Bioanalytical Summary
Remedial Action Options Report
Presidio Square Apartments and Village of Whitefish Bay Properties, Milwaukee, Wisconsin

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation / Reduction Potential (mV)	pH (SU)	Field Conductivity (µMhms)	Field Temperature (°C)	Carbon Dioxide (ppm)
MW-C	7/27/97	0.74	--	--	--	--	--
PZ-C	7/27/97	3.75	--	--	--	--	--
MW-D	7/21/97	0.27	--	7.3	--	--	--
	7/27/97	0.27	--	--	--	--	--
PZ-D	7/21/97	0.3	--	--	--	--	--
	7/27/97	0.22	--	--	--	--	--
MW-E	7/27/97	2.7	--	--	--	--	--
MW-4	7/27/97	0.55	--	--	--	--	--
MW-6	7/27/97	0.83	--	--	--	--	--
MW-10	7/27/97	2.5	--	--	--	--	--
MW-11	7/27/97	0.63	--	--	--	--	--
MW-18	7/27/97	0.82	--	--	--	--	--
MW-22	7/27/97	--	--	--	--	--	--
MW-24S	7/27/97	--	--	--	--	--	--
	8/18/98	3.68	275	7.39	875	13.99	<11
MW-24D	7/27/97	--	--	--	--	--	--
	8/18/98	4.31	274	7.62	644	12.5	<11
MW-25	7/27/97	--	--	--	--	--	--
	8/18/98	4.31	265	7.43	670	14.01	11
MW-26	7/27/97	0.27	--	--	--	--	--
MW-27	6/19/97	3.85	210	6.86	1511	10.56	35
	8/18/98	3.54	122	7.29	2498	15.52	21
	6/26/02	0.42	189.6	6.97	3915	13.15	--

[BJK/TLN-09/12/97][RJC/EPK-08/09/02]

Notes:

1) 1997 - MW-27 through MW-104 measurements taken by Natural Resource Technology, Inc.
   1997 MW-A through MW-26 measurements taken by Sigma
2) 1998 measurements taken by Natural Resource Technology., Inc.
3) 2002 measurements taken by Natural Resource Technology., Inc.

-- : not measured
SU : Standard Units
mg/L : micrograms per liter
mV : Millivolts
µMhms : Micromoes
°C : Degrees Celsius
ppm : Parts per million

ATTACHMENT D

RNA SCREENING RESULTS

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

Score: 26

Scroll to End of Table

* reductive dechlorination

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	◉	○	3
	>5mg/L	Not tolerated; however, VC may be oxidized aerobically	○	○	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	○	○	0
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	○	◉	0
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	○	○	0
Sulfide*	>1 mg/L	Reductive pathway possible	○	○	0
Methane*	<0.5 mg/L	VC oxidizes	◉	○	0
	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	◉	○	3
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	◉	○	1
	<-100mV	Reductive pathway likely	◉	○	2
pH*	5 < pH < 9	Optimal range for reductive pathway	○	◉	0
	5 > pH >9	Outside optimal range for reductive pathway	○	◉	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	○	○	0
Temperature*	>20°C	At T >20°C biochemical process is accelerated	○	◉	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	○	○	0
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	○	○	0
Chloride*	>2x background	Daughter product of organic chlorine	○	○	0
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	○	○	0
	<1 nM	VC oxidized	○	○	0
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	○	○	0
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	○	◉	0
PCE*		Material released	◉	○	0
TCE*		Material released	◉	○	0
		Daughter product of PCE [a/]	◉	○	2
DCE*		Material released	◉	○	0
		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE[a/]; 1,1-DCE can be a chem. reaction product of TCA	◉	○	2
VC*		Material released	◉	○	0
		Daughter product of DCE[a/]	◉	○	2
1,1,1-Trichloroethane*		Material released	◉	○	0
DCA		Daughter product of TCA under reducing conditions	◉	○	2
Carbon Tetrachloride		Material released	◉	○	0
Chloroethane*		Daughter product of DCA or VC under reducing conditions	◉	○	2
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene	◉	○	2
	>0.1 mg/L	Daughter product of VC/ethene	◉	○	3
Chloroform		Material released	○	◉	0
		Daughter product of Carbon Tetrachloride	○	◉	0
Dichloromethane		Material released	○	◉	0
		Daughter product of Chloroform	◉	○	2

* required analysis.

a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

SCORE | Reset

End of Form