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Supplemental Site Investigation and Remedial Action Options Report C&L Industrial Cleaners 8927 Sheridan Road Kenosha, WI WDNR BRRTS # 02-30-379474

City of Kenosha Department of City Development

STS Project No. 200603327 Volume 1: Text and Appendices A-D

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May 11, 2007

Ms. Sharon Krewson City of Kenosha - Department of City Development 625 - 52nd Street, Room 308 Kenosha, WI 53140

Supplemental Site Investigation Report and Remedial Action Options Plan for the C&L Re: Industrial Cleaners Property at 8927 Sheridan Road, in Kenosha, Wisconsin, WDNR BRRTS# 02-30-379474 -- STS Project No. 200603327

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Dear Ms. Krewson:

STS Consultants, Ltd. (STS) is pleased to provide the results of the supplemental site investigation conducted at the above-referenced site and the remedial actions option evaluation report. The site investigation was conducted under a Site Investigation Grant (SAG-398) awarded to the City of Kenosha for the C&L Industrial Cleaners site. The attached supplemental site investigation report provides the results of the additional site investigation work conducted to evaluate the extent of the subsurface solvent-related impacts at the site. The evaluation of the extent of subsurface impacts was limited to the subject property and the areas to west and immediately adjacent southern residence. Other adjacent property owners refused access to their property.

We have evaluated remedial options for the subject property to permit the City of Kenosha to continue to comply with our opinion of the minimum requirements to comply with the Local Governmental Liability Exemption (exemption from the "Spill Law" S. 292.11 Wis. Stats.) and to move the site in the direction of site closure. Our understanding is the liability exemption applies as long as the City of Kenosha "does not cause or exacerbate a discharge of a hazardous substance"; however, we recommend you consult with your legal counsel in regards to satisfying the exemption requirements.

We look forward to working with you on this project. If you have any questions with regard to the information contained in this report, or if we can be of any further service to you, please feel free to contact us at (414) 359-3030.

Sincerely,

STS CONSULTANTS LTD.

Lanette L. Altenbach, PG, C.P.G. Senior Project Scientist - Hydrogeologist

Kevin L. Brehm, P.E. Associate Engineer

414-944-6030

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"I, Lanette Altenbach, certify that I am a hydrogeologist as that term is defined in s.NR712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code."

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5-11-07

Date



Senior Project Scientist-Hydrogeologist

Lanette L. Altenbach



EXECUTIVE SUMMARY

The subject property is a three-acre parcel of land which was formerly developed with a small building and storage shed. The subject property is located at 8927 Sheridan Road in Kenosha, Wisconsin. Operations conducted historically at the facility included barrel manufacturing as well as industrial cleaning operations. The former building at the subject property had trenches in the concrete floor which were interconnected and fed to one larger and deeper trench which was plumbed for discharge to the sanitary sewer. These trenches were consistent with a large scale commercial washing (water-based) operation. While direct evidence of solvent-based cleaning was not identified at the subject property; it is likely that the commercial operation included the washing of solvent-laden rags.

The City of Kenosha acquired the subject property from the owner's estate in lieu of back taxes. The City of Kenosha has used state and federal grants to evaluate environmental conditions on the subject property. Four phases of investigation have been conducted at the former C & L Industrial Cleaners. These investigations have resulted in the advancement of 64 soil probes, seven soil borings, five test pits and the installation of 17 groundwater monitoring wells and one piezometer. Prior work conducted at the subject property included:

- A Phase I ESA conducted by STS Consultants under a U.S. EPA Brownfields Pilot Grant in 2001;
- A Phase II ESA conducted by STS Consultants under a U.S. EPA Brownfields Pilot Grant in 2002;
- A removal action conducted by the U.S. EPA under their Superfund Technical Assessment and Response Team (START) program in 2003;
- Demolition of the subject property building under SAG Grant # SAG-079 in 2003;
- A Targeted Brownfield Assessment conducted by the U.S. EPA's START contractor TN & Associates (TN&A) under START Contract No. 68-W-00-129 in 2004; and
- An NR 716 Site Investigation conducted by STS Consultants for the City of Kenosha, Department of City Development under a SAG Grant # SAG-197 in 2005.

This Supplemental Site Investigation and Remedial Action Options Report, was conducted by STS Consultants for the City of Kenosha, Department of City Development under a SAG Grant # SAG-398.



The subject property is underlain by up to eight feet of silty sand fill materials. Below the fill, layers of organic silt, silty fine sand, silty fine to coarse sand, silt and silty clay were observed. Groundwater is encountered at eight to ten feet below ground surface (bgs) and migrates in an east-southeast direction across the subject property on the approximately eastern two-thirds of the subject property. The groundwater flow direction on the approximately western one-third of the subject property is west-southwest toward Sheridan Road and Barnes Creek. The saturated-zone soils near the water table (7 to 15 feet below ground surface [bgs]) have a hydraulic conductivity on the order of 1 X 10^{-3} centimeters per second (cm/s). The hydraulic conductivity in the deeper soil (25 to 30 feet bgs) is on the order of 3 X 10^{-5} cm/s. Horizontal hydraulic gradients range from 0.0014 feet per foot to 0.0022 feet per foot or 9.6 feet per year to 12.3 feet per year. The vertical gradient calculated at the nested well pair, MW-5 and MW-5P was calculated to be 0.051 feet per foot downward based on August 2006 groundwater levels.

STS identified four potential source areas that required further assessment to define the extent of impacts in order to evaluate remedial options. These four areas are:

- Investigation Area 1, on the northwest portion of the subject property and along the sanitary sewer line for the former building.
- Investigation Area 3, near STS soil boring B-2 near the northern property line.
- Investigation Area 4, in the vicinity of monitoring well B-6 and adjacent to a former loading dock. This area was east of the former building.
- Investigation Area 6, near STS soil boring B-11 and the area to the east and southeast of B-11.

Investigation Areas 2 and 5 were identified as having reasonably defined the extent of subsurface impacts. Thus, further investigation was not conducted in these two areas.

Surface and subsurface impacts by chlorinated volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PAHs) have been identified at the subject property. The concentrations of PAHs have been calculated to be lower than the level which would constitute a risk to human health. Groundwater analyses indicate that PAHs are not adversely affecting groundwater. Metals were also detected in the soil, but at concentrations within normal limits for soil. Thus, the main impacts at the subject property requiring further action are the chlorinated VOCs.

The primary VOC impact to the soil is tetrachloroethene (PCE). Potential source areas were identified in three of the four areas evaluated by this supplemental site investigation. These source areas and the soil sample location where the highest concentrations were detected are: Area 1

- GP-101 Located on the north side of the building, this area is thought to be the result of a surface spill outside of the building because the highest concentrations (330,000 micrograms per kilogram [ug/kg]) were observed in the 1 to 2 foot bgs sample.
- G-1 Inside the former building footprint, G-1 was near the sanitary sewer lateral serving the toilets. High concentrations of PCE are detected in two samples collected from 4-6 feet bgs (132,000 ug/kg) and 6-8 feet bgs (322,000 ug/kg). These samples which are the depths at which the sanitary lateral would be encountered.

<u>Area 3</u>

 GP-301, GP-23 and GP-303 – On the north side of the subject property, near the property line and north of the former loading dock area, PCE has been detected at concentrations of 43,000 ug/kg, 14,000 ug/kg, and 20,000 ug/kg respectively in near surface sample, indicating a likely area for a surface release.

<u>Area 4</u>

 GP-22 and GP-404 – East of the building area, PCE was detected at 16,000 ug/kg at GP-22 and is bounded to the east at GP-404 with a concentration of 1,000 ug/kg. This area is likely representative of another smaller surface spill.

PCE was detected in one soil sample in the upper four feet bgs soil exceeding the industrial direct contact residual contaminant level (RCL). Twenty soil samples in the upper four feet bgs exceeded the non-industrial direct contact pathway RCL. All of the samples (89) in which PCE was detected exceeded the soil to groundwater pathway RCL for PCE.

PCE concentrations in soil samples collected between Areas 1, 3 and 4 were either not detected or of much lower concentrations. However, all of the detected soil impacts on the eastern onehalf of the subject property are much lower in concentration and somewhat widespread and diffuse, perhaps the result of physical particle transport by foot and vehicle traffic.



Petroleum VOCs were identified in one soil boring (B-9), ten soil probes (G-1, GP-24, GP-29, GP-31, GP-35, GP-38, GP-47, GP-401, GP-402, and GP-403) and in four monitoring well soil borings (B-5, B-6, MW-21 and MW-24). All of the concentrations were below SSRCLs except for benzene detected in the surface soil samples from GP-31, GP-401 and MW-21.

PCE, TCE, cisDCE, vinyl chloride and nickel were detected in groundwater samples above either the PAL or ES. PCE detected in groundwater appears to be primarily related to the two sources in Area 1 (G-1, and GP-23 to GP-101) on the western portion of the subject property. Some of the detected concentrations in groundwater in this area are 2,000 to 4,000 times the ES. The PCE concentrations in groundwater appear to have an increasing trend based on three sampling _ events. Groundwater impacts east of the former building are primarily degradation compounds associated with PCE. The concentration of these lesser chlorinated VOCs (e.g. cisDCE and vinyl chloride) are showing a decreasing trend. This decreasing trend implies that as the PCE migrates from the unsaturated soil to the groundwater natural attenuation processes break down the PCE and that further degradation continues within the groundwater.

We believe that further remedial action to address the areas of impacted soil and to limit migration of PCE to the groundwater may be necessary to manage the subject property under the local government liability exemption which requires the local government to "not cause or exacerbate a discharge of hazardous substances". We recommend you seek the advice of your legal counsel regarding satisfying the exemption requirements.

Remedial Action Options

The PCE concentrations present in near-surface soil in Areas 1 and 3 comprise more than 1,600 cubic yards of soils with PCE greater than 1,000 micrograms per kilogram. The PCE concentrations represent a direct contact exposure threat and a continued source of impact to groundwater. Based on the data available at this time, these areas warrant remedial action to mitigate risks. Vadose-zone soils present on the remaining portions of the subject property likely do not require specific action unless the property is to be used for non-industrial purposes.

The concentration of PCE in the vadose zone soils (0 to 8 feet bgs) was summed and contoured. The contours were based on order of magnitude. Soil excavation and disposal is recommended for the soil areas with PCE concentrations greater than 100,000 ug/kg because these soils are



more than twice the industrial direct contact RCL and four orders of magnitude greater than the soil to groundwater path RCL. Excavation of these source soils is necessary to prevent exacerbation of the groundwater impacts identified on the western portion of the subject property.

Similarly, groundwater remediation on the western portion of the subject property is recommended to immediately address the highest area of groundwater contamination to prevent off-site migration, which at this time is not occurring, but is likely to occur in the future given the high concentrations observed in some of the subject property's groundwater monitoring wells.

Finally, placement of a direct contact and infiltration barrier on the remaining areas with soil PCE concentrations greater than 1,000 ug/kg will limit both direct contact and lower infiltration through the contaminant mass. Long term monitoring will be required following the placement of a barrier.

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1.0 INTRODUCTION

The City of Kenosha acquired the former C&L Industrial Cleaners at 8927 Sheridan Road from the owner's estate in lieu of back taxes. Using a U.S. Environmental Protection Agency (EPA) Brownfields Pilot Assessment Grant and three Wisconsin Site Assessment Grants, the City has conducted investigation and demolition activities at this property. Chlorinated volatile organic compounds (VOCs) were identified as the primary soil and groundwater contaminant associated with past site uses.

The subject property is located in the Northwest ¼ of the Southeast ¼ of Section 18, Township 1 North, Range 23 East, in the City of Kenosha, Kenosha County Wisconsin. The location of the subject property is depicted in Figure 1. The site boundaries are depicted in Figure 2. The subject property is approximately three acres and is zoned M-1, Light Manufacturing District.

1.1 Purpose and Scope

The purpose of this report is to present the results of the site investigation activities conducted at the subject property and to provide an evaluation of remedial action options. The supplemental site investigation activities were conducted to further evaluate extent of soil and groundwater impacts on- and off-site for the subject property before evaluating remedial action options.

The supplemental site investigation scope of work included:

- the advancement of 20 additional soil probes on-site;
- the installation of three water table monitoring wells on-site and two water table monitoring wells off-site;
- the collection of soil samples from the soil probes and monitoring well soil borings; and
- the collection of two rounds of groundwater samples from the NR 141 monitoring wells.

The collected data was used to evaluate the magnitude and extent of on-site impacts and to evaluate remedial action options.

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2.0 SUMMARY OF PRIOR WORK

Prior work conducted at the subject property included in chronological order:

- A Phase I ESA conducted by STS Consultants under a U.S. EPA Brownfields Pilot Grant in 2001;
- A Phase II ESA conducted by STS Consultants under a U.S. EPA Brownfields Pilot Grant in 2002;
- A removal action conducted by the U.S. EPA under their Superfund Technical Assessment and Response Team (START) program in 2003;
- Demolition of the subject property building under SAG Grant # SAG-079 in 2003;
- A Targeted Brownfield Assessment conducted by the U.S. EPA's START contractor TN & Associates (TN&A) in 2004; and
- An NR 716 Site Investigation conducted by STS Consultants for the City of Kenosha, Department of City Development under a SAG Grant # SAG-197 in 2005.

The STS Phase II ESA identified soil and groundwater subsurface impacts at the subject property consistent with historic site uses. The data collected for the Phase II ESA are included on tables presented in this report. The sample locations are depicted on the Monitoring Well and Probe Locations diagram (Figure 2) in this report. These data were used in the development of the conclusions regarding subsurface conditions at the subject property and the assessment of remedial action options.

The 2003 removal action conducted by the US EPA's START program contractor addressed wastes which remained at the subject property. Sludges were removed from the commercial washing machine discharge pits located inside the building. The pits were emptied, cleaned and the waste materials were disposed as hazardous wastes due to elevated concentrations of metals and chlorinated volatile organic compounds (VOCs). At the same time, drums of non-hazardous solid waste and investigative waste soil from the Phase II ESA were also removed and disposed. Written documentation of the removal action is unavailable from US EPA.

The subject property buildings were demolished later in 2003 under a Wisconsin Department of Natural Resources (WDNR) SAG awarded to the City of Kenosha.



A Targeted Brownfield Assessment (TBA) was conducted under the US EPA's START program by TN&A in late 2003 after building demolition. The additional assessment included advancing 14 soil probes and installing three groundwater monitoring wells for the collection of soil and groundwater samples. This work was documented in a report prepared by TN&A dated August 2004. The data from this report are provided on the results tables included with this report and depicted on figures. These data were used in the development of the conclusions regarding subsurface conditions at the subject property and the assessment of remedial action options.

The 2005 NR 716 site investigation scope of work included:

- the advancement of 29 soil probes, of which 8 were completed as temporary wells;
- the installation of three water table monitoring wells;
- the installation of one piezometer;
- the collection of soil samples from the soil probes and monitoring well soil borings; and
- the collection of two rounds of groundwater samples from both temporary and NR 141 monitoring wells.

The NR 716 Site Investigation concluded the following;

- Surface and subsurface impacts by PAHs have been identified at the subject property. The concentrations of PAHs have been calculated to be lower than the level which would constitute a risk to human health. Groundwater analysis indicated that PAHs were not a threat to groundwater. No further assessment of PAHs was proposed nor conducted in the supplemental investigation.
- Metals were also detected in the soil, but at concentrations within normal limits for soil.
 No further assessment of metals was proposed nor conducted in the supplemental site investigation.
- Near surface and subsurface impacts by chlorinated VOCs are generally diffuse and widespread, although four areas were identified as potential soil source areas where much higher concentrations of chlorinated VOCs are present. The evaluation and selection of remedial options for this subject property require that the extent of soil impacts and the volume of the most-impacted soil be established. Additional investigation was recommended to obtain this information.
- Groundwater impacts across the subject property do not appear to be related to a single source. The groundwater plume on the west side of the former building appears to



extend westward, possibly along a sanitary sewer lateral. Groundwater impacts east of the former building location are tetrachloroethene and degradation compounds derived from tetrachloroethene and the plume extends east-southeastward.

- On-site impacts have been somewhat defined, but require further definition of the extent of soil impacts is necessary before comparing the cost of various remedial options.
- Off-site impacts to soil and groundwater need to be evaluated before evaluating remedial options. A potential for vapor impacts by vinyl chloride to the adjacent residence must also be evaluated.

Recommendations made in the site investigation report included the collection of additional soil samples on-site and the installation of on- and off-site groundwater monitoring wells for additional groundwater sampling and analysis. This recommendation formed the basis for the scope of work conducted during the supplemental site investigation. The results of the data collected in both 2005 and 2006 are presented in Sections 5.0 and 6.0.



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3.0 SUPPLEMENTAL SITE INVESTIGATION FIELD ACTIVITIES

STS identified four potential source areas that required further assessment to define the extent of impacts in order to evaluate remedial options. These four areas are:

- Investigation Area 1, on the northwest portion of the subject property and along the sanitary sewer line for the former building.
- Investigation Area 3, near STS soil boring B-2 and the northern property line.
- Investigation Area 4, in the vicinity of monitoring well B-6 and adjacent to a former loading dock. This area was east of the former building.
- Investigation Area 6, near STS soil boring B-11 and the area to the east and southeast of B-11.

Investigation Areas 2 and 5 were identified as having defined the extent of subsurface impacts. Thus, further investigation was not conducted in these two areas.

The proposed sample locations were selected to fill data gaps identified by the site investigation in the four areas identified above because the magnitude of the PCE impacts to the soil are likely contributing to the groundwater impacts. Investigation was also conducted in two additional areas to evaluate potential off-site receptors. These additional two areas were 1) south of the subject property, adjacent to the residence and 2) west of the subject property, in the median for Sheridan Road.

The investigation areas, prior sample locations, soil probes and monitoring wells are depicted on Figure 2. A description of the prior investigation results and the supplemental site investigation sample locations are provided below on a per area basis.

3.1 Prior Results Summary and Sample Location Rationale

<u>Area 1</u>

Area 1 is located on the western most portion of the subject property. Tetrachloroethene (PCE) concentrations in this area are the highest observed at the subject property. Soil concentration in this area commonly exceeded 1,000 mg/kg in surface (0 to 4 feet bgs), vadose zone (4 to 8 feet bgs) and saturated zone (greater than 8 feet bgs) samples. Concentrations of PCE exceeded 100,000 mg/kg in surface and vadose zone samples from probes G-1 and GP-23.

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City of Kenosha C&L Industrial Cleaners STS Project No. 200603327 May 11, 2007

Groundwater PCE impacts were observed primarily in Area 1 in the vicinity of the PCE soil impacts. The highest PCE concentration detected in groundwater was <u>27,200 mg/L</u> at G-1 (a temporary well), which was also the location with the highest soil PCE concentration. With the exception of B-3, PCE and in some cases trichloroethene (TCE) were the only chlorinated contaminants observed in groundwater. At B-3, vinyl chloride (VC) and cis-1,2-dichcloroethene (cisDCE) was also present in the groundwater.

Eleven additional soil probes (GP-101 to GP-111) were conducted in this area to further evaluate the horizontal and/or vertical extent of the PCE impacts in the soil. Four monitoring wells (MW-20 and MW-24) were advanced in Area 1 and off-site (MW-21 and MW-23) to the west and south of Area 1. MW-20 was installed in the far northwest corner of the subject property. MW-21 was installed off-site, to the west in the median for Sheridan Road. Monitoring well MW-23 was installed off-site, adjacent to the residence to the south of the subject property to evaluate the potential migration of impacts from Area 1 and Area 2. MW-24 was installed to evaluate the down gradient extent immediately east of Area 1.

Area 3

Area 3 is located near the northern property line east of the former buildings and is defined by borings B-2; probes GP-9, GP-10, GP-32, GP-30 and MW-1. Concentrations of PCE at GP-33 were greater than 10,000 mg/kg in surface soils (0 to 4 feet bgs) but were not detected in vadose zone (4 to 8 feet bgs) soil. The internal extent of the high surface soil PCE concentrations is defined by GP-32 to the west and MW-1 to the east. The extent to the south and to the north across the property line is not defined. Minimal groundwater impacts were identified at MW-1 and consisted mostly of PCE degradation compounds.

Three soil probe borings (GP-301, GP-302, and GP-303) were advanced to evaluate the extent of soil impacts to the south. The monitoring well (MW-25) planned to evaluate both soil and groundwater impacts off-site to the north of Area 3 was not installed because the property owner to the north did not provide access to his property.

Area 4

Area 4 is located northeast of well B-6 in the former loading dock area. GP-34, located at the loading dock, has surface soil (zero to four feet bgs) PCE concentrations of 7,800 mg/kg. At 4 to

6 feet the concentration dropped to 650 mg/kg. Groundwater impacts in this area were primarily PCE degradation compounds (cisDCE and VC); however the concentrations of VC exceed the state's Enforcement Standard concentration. Further evaluation of the extent of source soils was needed to evaluate remedial options.

Four soil probes (GP-401 through GP-404) were advanced to further define the magnitude and volume of impacted soils in Area 4.

<u>Area 6</u>

Area 6 is located along the southern property line approximately 500 feet east of the former buildings. PCE was detected in surface soils (zero to four feet bgs) at B-11 at a concentration of 737 mg/kg. The eastern and western lateral extents are defined by GP-47 and GP-45, respectively. GP-46, located north of B-11, had a surface soil PCE concentration of 1,200 mg/kg. The lateral extent of surface PCE impacts in this area is not defined to the north or south and south across the property line.

Groundwater impacts in this area generally consist of VC and cisDCE, although PCE and TCE were observed at GP-48. The source of the groundwater impacts is not apparent at that time because chlorinated solvent impacts were observed only at GP-48 in the area, and not below a depth of two feet bgs. Further definition of groundwater impacts is required in all directions in this area.

Two soil probes (GP-601 and GP-602) were advanced to define the extent of soil impacts to the north and south. One monitoring well (MW-27) was planned to evaluate the off-site extent of soil and/or groundwater impacts to the south, but the property owner refused access to his property.

Non-Source Area Wells

Monitoring well MW-26 was installed approximately 600 feet east of the former subject property buildings and 28 feet south of the north property line as depicted on Figure 2. Due south of MW-26 and south of the property line, MW-28 was planned to evaluate potential off-site impacts in the downgradient direction of groundwater flow, but the access was denied by the property owner.



3.2 Soil Probe Sampling Methods

Twenty soil probe locations were advanced to collect soil samples to further define the extent of on-site soil impacts as depicted on Figure 2. The probes advanced in each investigation area include:

- Investigation Area 1, probe locations labeled GP-101 through GP-111
- Investigation Area 3, probe locations GP-301, GP-302 and GP-303
- Investigation Area 4, probe locations GP-401, GP-402, GP-403, and GP-404
- Investigation Area 6, probe locations GP-601 and GP-602

At each probe location, the soil probe unit hydraulically advanced a 2-inch diameter drive rod to collect soil samples. Soil samples were collected inside of a 4-foot polyethylene sheath inserted into the end of the drive rod. When the selected sample depth was reached, a spring release allowed the soil sample to be collected inside of the sheath. A new sheath was used to collect each sample at the specified depth. To extract the soil sample, the sheath was cut open using a razor blade. Upon opening the sheath, each soil sample to be submitted for analytical testing was placed in containers provided by the project laboratory. The soil samples were described in the field with respect to the soil types, grain size distribution, and color (or discoloration), odor, and moisture content. The observations were recorded on soil boring logs which are included as Appendix A.

A portion of the soil samples was field screened using a photoionization detector (PID). The PID yields a semi-quantitative headspace analysis of the concentration of the VOCs in the samples that have ionization potentials equal to or less than 11.7 electron volts (eV). The PID was calibrated in the field according to manufacturer's instructions, using 100 parts per million (ppm) isobutylene span gas and air (zero gas), and checked between each screening event for proper response. The peak instrument readings were recorded on the soil boring logs. The PID does not allow for a differentiation of individual VOCs, and has a useful detection limit of approximately 1 ppm for select VOCs.

Two soil samples per soil probe were collected to evaluate prior near surface impacts. Three soil samples per soil probe or monitoring well were collected where deeper impacts had been identified previously. The sampling intervals were:

Within the top four feet below the ground surface, generally from one to two feet bgs;

- In the middle of the borehole, typically at approximately six to eight feet bgs; and
- From the base of the borehole.

The soil samples submitted to Pace Analytical were accompanied by a chain-of-custody form. When transferring samples, the individuals relinquishing and receiving the samples signed and dated the forms. The original chain-of-custody form accompanied the shipment. A copy was retained by the field sampler and filed immediately upon return to the office. The forms include the following information: sample identification, date collected, source of sample (including type of sample and site identification), and name of sampler. The forms were completed in a legible manner using waterproof ink and signed by the sampler. Similar information was provided on the sample labels, which were securely attached to the sample containers. The soil probe soil samples submitted to Pace Analytical were analyzed for volatile organic compounds (VOCs).

Each probe hole advanced for the supplemental investigation at the subject property was abandoned in accordance with the procedures outlined in WAC NR 141. The abandoned probe holes were backfilled with bentonite chips from the bottom of the boring to the surface. A copy of WDNR Form 3300-5B was prepared for each location; these forms are provided in Appendix A.

3.3 Groundwater Monitoring Well Installation Methods

Five groundwater monitoring wells were installed for this supplemental site investigation as depicted on Figure 2. The additional water table monitoring wells were advanced in the following locations:

- One well installed in the northwest corner of the subject property. (MW-20)
- One well installed in the median of Sheridan Road, west of the subject property. (MW-21)
- One well installed to the south of the subject property near the adjacent residence. (MW-23)
- One well installed just east of the source area identified in Area 1. (MW-24)
- One well installed near the north property line, north of GP-48. (MW-26)

The monitoring wells were installed in general accordance with WAC Chapter NR 141. Hollow stem augers (4¹/₄-inch inner diameter) were utilized (ASTM Method D1586) to advance boreholes during auger drilling. The augers were advanced using a truck-mounted auger drilling rig.

Soil samples were collected at two-foot intervals from the monitoring well installation borings. The soil samples were collected using a two-inch diameter split-spoon sampler (ASTM Method D1587) and visually classified in the field by an STS geologist. Soil boring logs for the monitoring wells and piezometer are also provided in Appendix A.

The soil sampler was decontaminated prior to each soil-sampling event using laboratory-grade detergent and tap water rinse. Upon retrieval of the sampler, visual observations of the recovered material were documented in accordance with ASTM Method D-2488-93 (as indicated in Section 3.2). A portion of the soil sample collected from each sampling interval was subjected to in-field screening using a PID and samples were collected at the intervals described in Section 3.2. Three soil samples per well boring were submitted to EnChem and were transported using the chain-of-custody procedures identified in Section 3.2. The soil samples were analyzed for VOCs.

The monitoring wells were constructed of 2-inch diameter, flush-thread, schedule 40 polyvinyl chloride (PVC) riser pipe with 10-slot screens. Monitoring well screen lengths were 10 feet. Coarse silica filter sand packs were placed to depths of approximately 2 feet above the top of each well screen. Following placement of the coarse sand pack, an approximate two foot fine sand pack was placed, followed by bentonite chips to one foot bgs. A concrete surface seal was placed above the bentonite to the ground surface. The monitoring wells were completed with locking protective casings.

Prior to groundwater sampling, the new monitoring wells were developed in general accordance with WAC Chapter NR 141. Monitoring well construction details and monitoring well development forms are provided in Appendix A. Monitoring well purge water and soil cuttings generated as part of this investigation were stored on-site in 55-gallon drums. The monitoring well elevations were documented by differential leveling relative to local datum tied to mean sea level.

3.4 Groundwater Sampling Methods

Groundwater sampling procedures were in substantial conformance with the WDNR "Groundwater Sampling Field Manual" (PUBL-DG-03896). Prior to sampling, depth to groundwater measurements were obtained from the monitoring wells to an accuracy of 0.01-feet using an electronic water level indicator. These measurements were referenced to the top of the

PVC casing at each well. The depth to groundwater measurements and calculated water table elevations are shown on Table 1. Pre-sampling well purging consisted of the removal of a minimum of three volumes of water from each well. Groundwater sampling was then conducted using low-flow sampling techniques. Volatile organic analysis (VOA) vials were securely capped with a Teflon-lined lid and observed to verify that no headspace existed within the laboratory-supplied sample container. The groundwater samples submitted to EnChem were transported using the chain-of-custody procedures identified in Section 3.2. The groundwater samples were analyzed for VOCs. Selected groundwater samples were also analyzed for nickel.

3.5 Investigative Waste

Soil cuttings from the monitoring well soil borings were containerized in 55-gallon drums. A composite soil sample was collected and analyzed to characterize the waste. The soil cuttings were managed as solid waste and the groundwater was managed as a hazardous waste. Badger Disposal conducted waste disposal for the City of Kenosha. A copy of the waste disposal manifests/bills of lading are included as Appendix B.

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4.0 PHYSICAL SITE CHARACTERISTICS

Published geologic and hydrogeologic information was reviewed to assess soil and bedrock types in the area, regional groundwater flow direction, and groundwater sources. The United States Geological Survey 7.5-minute quadrangle map was used to determine general land features in the area of the subject property, to evaluate the local topography and to estimate water table groundwater flow direction. The sources reviewed for geologic and hydrogeologic information are referenced in the text and are listed in Section 8.0 (References).

4.1 Topographic Setting

The 7.5-Minute topographic map of the Kenosha, Wisconsin Quadrangle (dated 1958, photo revised 1971) shows the parcel and vicinity features including the area topography and surface water features. Lake Michigan is located approximately 0.5 miles east of the subject property. The closest river to the subject property is Barnes Creek. Barnes Creek is located approximately 0.5 miles southwest of the subject property.

4.2 Geologic Setting

The native surface soils in the vicinity of the subject property consist of the Boyer-Granby Association. The Boyer-Granby Association consists of well drained to very poorly drained soils that have a loam to sand subsoil. The Boyer-Granby Association is underlain by sandy glacial outwash on ridges and knobs and in drainageways and depressions (USDA Soil Conservation Service, 1970). Specifically, the western portion of the subject property is mapped as loamy sand and the eastern portion of the subject property is mapped as fine sandy loam.

Glacial till deposits found below the surface soils in the subject vicinity are mapped as the Pleistocene Age Oak Creek Formation (Mickelson, 1984). The glacial ice of the Lake Michigan lobe deposited the till of the Oak Creek Formation. The Oak Creek Formation consists of finegrained glacial till, lacustrine clay, silt, sand, and some glaciofluvial sand and gravel. The underlying bedrock is the Silurian Niagara Dolomite. Bedrock is anticipated to be between 50 and 100 feet below ground surface (Trotta and Cotter, 1973).

Based on the soil samples collected from the test pits, soil probes and soil borings conducted previously as well as the additional soil probes and borings as part of this investigation, the subject property is underlain by up to eight feet of silty sand fill materials. Surface soils (zero to

four feet bgs) were generally silty sand and fine sand. Vadose zone (four to eight feet bgs) fill materials were primarily silt and silty sand but some thin (one foot or less) layers of silty clay were occasionally encountered. The native soil observed below the fill (greater than eight feet bgs) was generally silt or silty fine sand which were denser and siltier with depth. Geologic cross sections have been prepared for the subject property as shown on Figures 3, 4, 5, and 6.

4.3 Hydrogeologic Setting

Groundwater is encountered at eight to ten feet bgs and migrates in an east-southeast direction across the subject property on the approximately eastern two-thirds of the subject property. This is the expected regional direction for groundwater flow (toward Lake Michigan). The groundwater flow direction on approximately the western one-third of the subject property is west-southwest toward Sheridan Road. Approximately 2000 feet southeast of the subject property is Barnes Creek. Barnes Creek is a local feature, topographically lower than the subject site which may explain the apparent groundwater flow direction to the southeast. The saturated zone soils near the water table (seven to 15 feet bgs) have a hydraulic conductivity on the order of 1 X 10^{-3} centimeters per second (cm/s). The hydraulic conductivity in the deeper soil (25 to 30 feet bgs) is on the order of 3 X 10^{-5} cm/s. A summary of groundwater elevations is provided on Table 1. Contoured groundwater elevations for two different years are shown on Figures 7 and 8.

Horizontal hydraulic gradients range from 0.0014 feet per foot to 0.0022 feet per foot or 9.6 feet per year to 12.3 feet per year. The vertical gradient calculated at the nested well pair, MW-5 and MW-5P was calculated to be 0.051 feet per foot downward based on August 2006 groundwater levels. A copy of the calculations is included in Appendix C.

4.4 Conceptual Site Model

The subject property is serviced by the City of Kenosha municipal water supply and sanitary sewer. The City of Kenosha uses Lake Michigan for its potable water supply.

Land use in the vicinity of the subject property is primarily commercial or light industrial to the north and along Sheridan Road to the south except for the immediately adjacent residential duplex on the south side of the subject property. An active railroad line is present to the east. The area west of the subject property is primarily residential.

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A wetland is present along the southern border of the subject property immediately east of the residential property. One part of the wetland is open water, approximately one-half acre in size.

- Receptors to subsurface impacts identified at the subject property include:
- Humans potential VOC vapor intrusion into the adjacent duplex;
- Human potential direct contact to VOCs, PAHs and lead above non-industrial site specific RCLS;
- Humans, ecological and the environment potential impacts by VOCs to the subsurface and surface water in the wetland.

4.4.1 Utility Corridor Potential Migration Pathway

Subsurface utilities are present under both the northbound and southbound lanes of Sheridan Road (State Highway 32). The road was reconstructed and widened in the early 2000's using state and federal funds. Because of the newness of the roadway, investigation through the new pavement was not permitted. STS has conducted an evaluation of the subsurface utilities in the vicinity of the subject property and obtained the following information.

Under the northbound lanes (east side of Sheridan Road-immediately adjacent to the subject property)

- An eight-inch water line lies parallel to the eastern Sheridan Road curb line in a north-south direction. The bottom of the water pipe is approximately seven feet bgs.
- A natural gas line lies parallel to the eastern Sheridan Road curb line in a north-south direction. The depth of the pipe is unknown, but is typically buried at three feet bgs.
- A 15-inch sanitary sewer runs parallel to the eastern Sheridan Road curb line in a northsouth direction. The bottom of the sewer pipe is approximately 15 feet bgs and the pipe has a gradient to the north of 0.1%.

Under the median of Sheridan Road

- A 12-inch water line and a telephone line run parallel and under the Sheridan Road median. Under the southbound lanes (west side of Sheridan Road)
- A 36-inch storm sewer lies parallel to the western Sheridan Road curb line in a north-south direction. The bottom of the pipe is approximately 10 feet bgs and the pipe has a gradient to the north of 0.2%.



A wetland is present along the southern border of the subject property immediately east of the residential property. One part of the wetland is open water, approximately one-half acre in size.

- Receptors to subsurface impacts identified at the subject property include:
- Humans potential VOC vapor intrusion into the adjacent duplex;
- Human potential direct contact to VOCs, PAHs and lead above non-industrial site specific RCLS;
- Humans, ecological and the environment potential impacts by VOCs to the subsurface and surface water in the wetland.

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Under the northbound lanes (east side of Sheridan Road-immediately adjacent to the subject property)

- An eight-inch water line lies parallel to the eastern Sheridan Road curb line in a north-south direction. The bottom of the water pipe is approximately seven feet bgs.
- A natural gas line lies parallel to the eastern Sheridan Road curb line in a north-south direction. The depth of the pipe is unknown, but is typically buried at three feet bgs.
- A 15-inch sanitary sewer runs parallel to the eastern Sheridan Road curb line in a northsouth direction. The bottom of the sewer pipe is approximately 15 feet bgs and the pipe has a gradient to the north of 0.1%.

Under the median of Sheridan Road

- A 12-inch water line and a telephone line run parallel and under the Sheridan Road median. Under the southbound lanes (west side of Sheridan Road)
- A 36-inch storm sewer lies parallel to the western Sheridan Road curb line in a north-south direction. The bottom of the pipe is approximately 10 feet bgs and the pipe has a gradient to the north of 0.2%.

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The bottom of the eight-inch water line is near or above the water table. Thus, the likelihood for contaminated groundwater transport in the backfill of the water line is low. The sanitary sewer is completely located within the saturated zone and its gradient for flow transport is very low because the pipeline gradient is 0.1% or 0.001 feet per foot. Therefore, the likelihood of contaminant transport in the backfill is low.



5.0 CHEMICAL CHARACTERISTICS OF SOIL

Soil samples were collected from all soil probes and monitoring well soil borings for this supplemental investigation and select soil samples were analyzed for VOCs. Site-specific residual contaminant levels (SSRCLs) were calculated using the US Environmental Protection Agency web page soil screening level calculator with standard default Wisconsin input parameters (WDNR 2002) and a site-specific total organic carbon (TOC) value obtained from chemical analyses during the NR 716 Site Investigation, 2004. The site-specific values were recalculated because the EPA web page was updated in 2006. The revised values are included on the soil result tables and a copy of the 2006 calculations is included as Appendix D. The soil VOC results are provided in Table 2 and a copy of the laboratory analytical reports are included as Appendix E.

A total of 181 soil samples were collected and analyzed for VOCs from five test pits, seven soil borings, 18 monitoring well soil borings and 64 soil probe locations during all of the phases of assessment of the subject property. The results discussed below include all of the soil samples collected at the subject property to date that were analyzed for VOCs, including results from prior investigations in order to provide a more complete picture of the VOC impacts identified at the subject property. Early investigation soil samples were previously analyzed for polynuclear aromatic hydrocarbons (PAH) and metals. These analytes were discussed in detail in the Site Investigation Results Report (May 2005, STS Consultants, Ltd.). Further testing during this Supplemental Investigation for these compounds was not considered necessary and remedial actions to address PAHs and metals are not necessary.

5.1 Volatile Organic Compounds in Soil

Three chlorinated VOCs, tetrachloroethene (PCE), trichloroethene (TCE) and cis-1,2dichloroethene (cisDCE) were the primary VOC constituents identified in soil samples. PCE was identified in 89 of the 181 soil samples collected at the subject property. PCE was detected in one soil sample in the upper four feet bgs soil exceeding the industrial direct contact residual contaminant level (RCL). Twenty soil samples in the upper four feet bgs exceeded the nonindustrial direct contact pathway RCL. All of the samples (89) in which PCE was detected exceeded the soil to groundwater pathway RCL for PCE.

Vinyl chloride was detected in one soil sample from monitoring well soil boring B-6 above the non-industrial direct contact RCL and soil to groundwater pathway RCL.

Petroleum VOCs were identified in one soil boring (B-9), ten soil probes (G-1, GP-24, GP-29, GP-31, GP-35, GP-38, GP-47, GP-401, GP-402, and GP-403) and in four monitoring well soil borings (B-5, B-6, MW-21 and MW-24). All of the concentrations were below SSRCLs except for benzene detected above the soil to groundwater pathway RCL in surface soil samples from GP-31, GP-401 and MW-21.

Figures 9, 10, and 11 depict the concentrations of PCE from all the site investigations at three different depth intervals; zero to four feet below ground surface (bgs); four to eight feet bgs; and greater than eight feet bgs, respectively. Figure 12 depicts all of the detected PCE concentrations. To further evaluate the detected PCE concentrations, the sum of the PCE concentrations from each sample location detected in the vadose zone samples were plotted on the subject property at their respective locations as shown on Figure 13. The concentrations of PCE detected in the surface and vadose zone (zero to eight feet bgs), where the majority of the detected concentrations exists, was summed and the resultant number contoured on Figure 13 to aid in identifying source areas. The contour intervals were chosen to represent order of magnitude of PCE impact.

Potential source areas in Area 1 are depicted by the red contours that indicate PCE concentrations are greater than 100,000 micrograms per kilograms (ug/kg). The other potential source areas in Areas 3 and 4 are outlined by the blue contour which depicts the extent of soil concentrations greater than 10,000 ug/kg. PCE concentrations that are greater than 1,000 ug/kg are enclosed within the green contour.

PCE concentrations in soil outside the contours are much lower to non-detected than the area enclosed within the contours.

Area 1

Area 1 is located on the northwestern quarter of the developed portion of the subject property. PCE concentrations in this area are the highest and most pervasive observed at the subject property. Two apparent source areas are located within Area 1. The first source area is located

from GP-101 to GP-23 where the highest single sample concentration of PCE at 330,000 µg/kg was measured in a surface soil sample (GP-101, one to two feet bgs). The second source area is located in a soil sample (four to eight feet bgs) directly below the sanitary sewer that served the former building's toilets (G-1). Concentrations of PCE measured at a depth of six to eight feet below ground surface were 322,000 µg/kg. Concentrations greater than 10,000 µg/kg were detected in the vadose zone across the western fourth of the subject property. Within the saturated zone (below eight feet bgs), two areas of higher PCE concentrations were detected near GP-1 and GP-106. The impacts appear to be contained on-site although testing was not conducted in Sheridan Road near the western property boundary. Sheridan Road is also State Highway 32, which was recently reconstructed (2000-2001) and because of the newness of the road breaching of the pavement was not permitted by the City of Kenosha.

Off-site and further west, at MW-21 in the median for Sheridan Road, soil impacts were not identified.

<u>Area 2</u>

Area 2 is located on the southwestern quarter of the developed portion of the subject property. Area 2 was identified as a potential source area because the industrial sanitary sewer lateral from the former cleaning area within the building to Sheridan Road ran parallel to the southern property boundary. Relatively lower concentrations of PCE were identified in this area and it has been ruled out as a source area for PCE impact.

Off-site and further south, at MW-23, adjacent to the residence, soil impacts were not identified.

Area 3

Area 3 is located near the northern property line east of the former building and north of the loading dock and is generally defined by borings B-2; soil probes GP-9, GP-10, GP-32, GP-30 and monitoring well MW-1. Three additional borings (GP-301, GP-302 and GP-303) were advanced on the southern portion of this area to define the extent of impact observed at GP-33. Concentrations of PCE at GP-33 were greater than 10,000 mg/kg in surface soil (zero to four feet bgs), but not detected in the vadose zone (four to eight-feet bgs). The internal extent of the elevated surface soil PCE concentrations is defined by GP-32 to the west and MW-1 to the east. The extent to the south was defined by GP-302, but other, higher, surface impacts were identified

at GP-301 and GP-303. However, these impacts were limited to surface soil and PCE was not detected in the vadose zone.

Off-site and to the north, potential impacts were not evaluated because the property owner refused access.

Area 4

Area 4 is located north and east of monitoring well B-6 in the former loading dock area. GP-34, located at the loading dock, has surface soil PCE concentrations of 7,800 ug/kg. Concentrations of PCE to the west at GP-401 were approximately half of the concentration at GP-34 and to the east at GP-402 was less than 1,000 μ g/kg. PCE concentrations at GP-22 were 16,000 μ g/kg and further east at GP-404 were 1,000 μ g/kg. Thus, the extent of impact is reasonably defined in Area 4.

Area 5

Area 5 is located along the southern property line approximately 200 feet east of the buildings. TP-5 had PCE and breakdown products present at 4-6 feet below ground surface. The east and west extent was defined by GP-42 and GP-43, where PCE was not detected in soil samples at either location. GP-43, located between TP-5 and GP-44, had a PCE concentration of 140 ug/kg in the surface soil sample (zero to four feet bgs). The southern extent across the property line was not defined and the property owner to the south refused access to their property. However, the extent of impact is defined on-site to the north.

Area 6

Area 6 is located along the southern property line approximately 500 feet east of the former buildings. PCE was detected in surface soils (zero to four feet bgs) at B-11 at a concentration of 737 ug/kg. The eastern and western lateral extent of impact is generally defined by GP-47 and GP-45, respectively. GP-46, located north of B-11, had a surface soil PCE concentration of 1,200 ug/kg. The lateral extent of surface soil PCE impacts in this area was further defined to the north by GP-601 and to the south by GP-602. A PCE concentration of 110 μ g/kg was measured in the surface (zero to four feet bgs) soil sample from GP-601, but PCE was not detected in the surface or vadose zone soil samples from either GP-601 or GP-602.



Soil Results Summary

In summary, the information obtained from the investigations completed to date suggests the following conclusions.

- The extent of unsaturated zone impacts is sufficiently defined to evaluate remedial options.
- One area has a near surface soil PCE concentration which exceeds the industrial direct contact RCL.
- Unsaturated zone impacts exceed the soil to groundwater risk pathway RCLs in the formerly developed portion of the subject property (Areas 1, 2, 3, and 4) and thus, may represent a continued source for groundwater impact.
- Shallow saturated zone soil impact in Area 1 represents a continued source for groundwater impact.

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6.0 CHEMICAL CHARACTERISTICS OF GROUNDWATER

Groundwater analytical results are compared to NR 140.10 WAC, Table 1, Groundwater Quality Public Heath Enforcement Standards (ESs) and Preventive Action Limits (PALs). Copies of the laboratory analytical data for groundwater are included as Appendix F.

Wisconsin has two levels of groundwater quality standards. The first level, the PAL, is a concentration that is 10% (for carcinogenic, mutagenic or teratogenic compounds) to 20% of the enforcement standard. Remedial action is not always required if a PAL is exceeded. The ES is a health-risk based concentration and exceedances of ESs require further subsurface investigation, remedial action and/or natural attenuation monitoring.

Summary tables of the groundwater laboratory analytical results for groundwater samples collected at the subject property from the NR 141 monitoring wells are provided in Table 3 for detected VOCs, Table 4 for nickel and Table 5 for field parameters. VOCs and nickel detected in the groundwater samples above groundwater quality standards are depicted on Figure 14.

6.1 Volatile Organic Compounds in Groundwater

Tetrachloroethene (PCE) and its lesser chlorinated breakdown products, trichloroethene (TCE), cis-1,2-dichloroethene (cisDCE), and vinyl chloride were the VOCs detected above regulatory standards in the monitoring wells. PCE was detected in six of the 18 groundwater monitoring wells, B-3, B-6, MW-4, MW-5, MW-5P and MW-20. The highest detected PCE concentration occurred in the far northwest corner of the subject property at MW-20. This location is down gradient of one of the areas of highest soil impact.

The PCE concentrations versus time were graphed for three wells B-3, MW-4 and MW-5 for which there were at least three data points at each location. Data from other monitoring wells was not graphed because either the PCE concentrations were below the detection limit or less than three sample events had been conducted. At each location the groundwater concentrations exhibit apparent increasing PCE concentration trends. MW-5 is located within a source area. B-3 and MW-4 are both in the downgradient direction from MW-5.

Further east, on the eastern half of the subject property, the detected VOCs were cisDCE and VC. The concentrations of cisDCE and VC have been graphed versus time for those wells with

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four or more rounds with detected cisDCE and VC concentrations. The cisDCE trends for two of the wells (B-6 and B-12) were analyzed using a linear regression curve. The concentrations in the groundwater at B-6 were stable and the concentrations in the groundwater at B-12 are decreasing. Similarly, the VC groundwater concentrations were analyzed by linear regression. The three wells evaluated, B-6, B-12 and MW-3 all exhibited decreasing concentrations.

The concentration graphs are included as Appendix G.

VOCs were not detected in off-site monitoring wells MW-21 and MW-23. MW-21 is located in the median for Sheridan Road and is downgradient from both MW-5 and MW-4. MW-23 is located adjacent to the residence to the south. Based on two sampling events, the residential receptor is currently not at risk to VOCs either by direct contact or vapor intrusion, because VOCs are not present in the groundwater. Thus, groundwater impacts appear to be contained on-site.

A discussion of groundwater impacts by soil investigation areas is provided below.

Groundwater Results in Area 1

The highest soil concentrations were detected in Area 1 in two sub-source areas. The first source is at GP-101 a soil probe located north of the building in a former parking lot. MW-20 is directly down gradient (west) from GP-101 and the detected PCE concentrations in the groundwater are likely directly associated with this source.

Similarly, MW-5 is located near G-1, a soil probe with high subsurface soil concentrations associated with a former source within the building (likely the sanitary sewer serving the toilets). Concentrations of PCE at MW-5 and MW-4 (located further west adjacent to the sanitary sewer lateral) although not as high at the concentration at MW-20 are likely associated with this second source area. PCE concentrations in piezometer MW-5P, the piezometer associated with MW-5 to evaluate vertical migration, are just above the method detection limit. Thus, vertical migration within the aquifer appears to be limited.

Little to no degradation of the PCE has been detected in the groundwater at wells located in Area 1 as may be expected since natural attenuation processes are less effective at these

concentrations. Additionally, the groundwater impacts associated with the two source areas appear to be contained on-site at this time.

Groundwater Results in Area 2

Area 2 is located immediately south of Area 1 and was identified separately to evaluate the industrial sanitary discharge lateral associated with the former water washing operations in the former facility. Lower concentrations of PCE were detected in both the soil and groundwater samples collected in this area. PCE and lesser chlorinated VOCs (TCE cisDCE and VC) have been detected in the groundwater samples from monitoring well B-3. The PCE concentration is stable and the other VOC concentrations are decreasing in this area.

Groundwater Results in Area 3

Area 3 is an area north of the loading dock where PCE concentrations in the soil were detected as high as 14,000-20,000 µg/kg. PCE has not been detected in the groundwater samples from MW-1, but lesser chlorinated VOCs such as cisDCE and VC are detected in the groundwater. The concentration trend for these compounds is decreasing.

Groundwater Results in Area 4

Area 4 is south-southeast of Area 3 and a secondary area identified as a drum storage area. PCE has been detected in soil samples in this area, but groundwater concentrations are low, near the method detection limit.

Groundwater Results in Areas 5 and 6

PCE concentrations in soil samples were limited to the upper two feet. PCE was not detected in deeper soil samples and previous groundwater testing in temporary wells had not detected PCE. Therefore, permanent monitoring wells were not installed in these areas.

6.2 Nickel in Groundwater

Nickel was the only metal detected in the initial investigations which exceeded the PAL. Nickel was detected above the PAL in the groundwater from monitoring wells B-5, B-6, MW-1, MW-4, MW-5P and MW-6. Nickel was not detected in the water table well (MW-5) adjacent to the deep well (MW-5P).

Nickel was detected above the ES in monitoring well MW-24, installed in the eastern down gradient direction of Area 1. Nickel was also detected above the ES in MW-2 but in subsequent samples the concentration has dropped below the ES, but still exceeds the PAL. The significance of the nickel in the groundwater is undetermined at this time. The source of the nickel is likely associated with the industrial cleaning operations. The groundwater concentrations are stable or decreasing in the groundwater as depicted on the concentration versus time graph included in Appendix G.

6.3 Field-Measured Groundwater Parameters

Field measured groundwater parameters included pH, dissolved oxygen (DO), oxidationreduction potential (ORP), conductivity and temperature. The pH was generally neutral ranging from 6.51 to 7.7. Temperature was ranged form 15 to 16 degrees celcius in summer to 12 to 14 degrees celcius in the winter. Dissolved oxygen was low, generally less than 1 mg/l except for monitoring wells B-3, MW-4, MW-20, MW-21 and MW-23 whose DO values were generally less than 3 mg/l. In general, the DO values indicate a reducing condition in the groundwater at the subject property. ORP readings were consistent with the DO readings. ORP ranged from -143 to 114 millivolts. Conductivities ranged from 0.65 to 2.14 michoohms/cm.

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7.0 SITE INVESTIGATION CONCLUSIONS

The former C&L Industrial Cleaners is a three-acre parcel of land which was formerly developed with a small building and storage shed. Operations conducted historically at the facility included barrel manufacturing as well as industrial cleaning operations. The former building at the subject property had trenches in the concrete floor which were interconnected and fed to one larger and deeper trench which was plumbed for discharge to the sanitary sewer. These trenches were consistent with a large scale commercial washing (water-based) operation. While direct evidence of solvent-based cleaning was not identified at the subject property; it is likely that the commercial operation included the washing of solvent-laden rags.

Four phases of investigation have been conducted at the former C & L Industrial Cleaners. These investigations have resulted in the advancement of 64 soil probes, seven soil borings, five test pits and the installation of 17 groundwater monitoring wells and one piezometer.

The subject property is underlain by up to eight feet of silty sand fill materials. Below the fill, layers of organic silt, silty fine sand, silty fine to coarse sand, silt and silty clay were observed. Groundwater is encountered at eight to ten feet bgs and migrates in an east-southeast direction across the subject property on the eastern approximately two-thirds of the subject property. The groundwater flow direction on the western approximately one-third of the subject property is west-southwest toward Sheridan Road. The saturated zone soils near the water table have a hydraulic conductivity on the order of 1 X 10^{-3} cm/s. The hydraulic conductivity in the deeper soil is on the order of 3 X 10^{-5} cm/s. Horizontal hydraulic gradients range from 0.0014 feet per foot to 0.0022 feet per foot which equals a groundwater travel velocity of 9.6 feet per year to 12.3 feet per year. The vertical gradient calculated at the nested well pair, MW-5 and MW-5P was calculated to be 0.051 feet per foot downward based on August 2006 groundwater levels.

Vadose zone impacts by chlorinated VOCs and PAHs have been identified at the subject property. The concentrations of PAHs have been calculated to be lower than the level which would constitute a risk to human health. Groundwater analysis indicated that PAHs were not a threat to groundwater. Metals were also detected in the soil, but at concentrations within normal limits for soil. Thus, the main impact at the subject property requiring remediation is the chlorinated VOCs.



The primary VOC impact to the soil is PCE. These impacts have been identified in the direct contact zone (zero to four feet bgs) in Areas 1, 3 and 4. Vadose and saturated zone impacts in soil occur in Area 1. Deeper vadose zone and saturated zone impacts were generally not identified in Areas 3 and 4.

PCE was detected in one soil sample in the upper four feet bgs soil exceeding the industrial direct contact residual contaminant level (RCL). Twenty soil samples in the upper four feet bgs exceeded the non-industrial direct contact pathway RCL. All of the samples (89) in which PCE was detected exceeded the soil to groundwater pathway RCL for PCE.

PCE concentrations in soil samples collected outside of Areas 1, 3 and 4 were either not detected or of much lower concentrations. All of the detected soil impacts on the eastern one-half of the subject property (east of the former building location) are much lower in concentration and somewhat widespread and diffuse, perhaps the result of physical transport by foot and vehicle traffic.

Where detected in the unsaturated soil, TCE and PCE generally exceed their respective groundwater pathway SS RCL. However, empirical data suggests that concentrations less than 1000 ug/kg are not impacting groundwater above the ES as evidenced by groundwater results for B-5, B-6, and MW-6. Thus, in the eastern portion of the subject property, active remediation does not appear warranted to address the sporadic TCE and PCE concentrations detected in soil.

PCE, TCE, cisDCE, vinyl chloride and nickel were detected in groundwater samples above either the PAL or ES. PCE detected in groundwater appears to be primarily related to the two sources in Area 1 on the western portion of the subject property where some of the detected concentrations in groundwater are 2,000 to 4,000 times the ES. The PCE concentrations in groundwater appear to have an increasing trend based on three sampling events. Groundwater impacts east of the former building are primarily degradation compounds associated with PCE. The concentration of these lesser chlorinated VOCs (cisDCE and vinyl chloride) are showing a decreasing trend. This decreasing trend implies that as the PCE migrates from the unsaturated soil to the groundwater natural attenuation processes break down the PCE and that further degradation continues within the groundwater.

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The highly-elevated PCE concentrations present in near-surface soil in Areas 1, 3 and 4, comprising more than 2,600 cubic yards of soils with PCE greater than 1,000 micrograms per kilogram, represent a direct contact exposure threat and a continued source of impact to groundwater. Remedial actions may be necessary for the City of Kenosha to comply with the Local Governmental Liability Exemption (exemption from the "Spill Law" S. 292.11 Wis. Stats.). Our understanding is the liability exemption applies as long as the City of Kenosha "does not cause or exacerbate a discharge of a hazardous substance"; however, we recommend you consult with your legal counsel in regards to satisfying the exemption requirements.

Based on the data presented in this report, Areas 1, 3 and 4 warrant remedial action to mitigate the following risks.

- Soil exceeding the industrial direct contact pathway in Area 1;
- Soil exceeding the soil to groundwater pathway RCL in the vadose zone;
- Soil exceeding the soil to groundwater pathway RCL in the satuated zone; and
- A dissolved groundwater contaminant plume with potential for expansion or migration off-site.

Vadose-zone soils with lesser impacts outside Areas 1, 3 and 4 of the subject property likely do not require specific action unless the property is redeveloped and/or to be used for non-industrial purposes.

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8.0 REMEDIAL ACTION OPTIONS EVALUATION

Remedial Action Options (RAO) are evaluated for the subject property based on the findings described above in Section 7.0. Remedial action technologies for soil and groundwater are identified and screened based on their effectiveness, implementability and cost, in accordance with NR 722 WAC for applicability to the subject property's conditions and the needs of the City of Kenosha for maintaining the property and to comply with the Local Governmental Liability Exemption (exemption from the "Spill Law" S. 292.11 Wis. Stats.). Our understanding is the liability exemption applies as long as the City of Kenosha "does not cause or exacerbate a discharge of a hazardous substance"; however, we recommend you consult with your legal counsel in regards to satisfying the exemption requirements. Remedial technologies were identified and evaluated using information available from literature sources, applicable vendors, and professional experience.

8.1 Constituents of Interest and Remedial Objectives

Identification of constituents of interest is a necessary prerequisite to screening of applicable remedial action technologies. The following sections identify the constituents of interest in subject property soil and groundwater, and their respective remedial objectives.

8.1.1 Soil

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Based on a comparison of constituent concentrations detected in soil samples collected as part of the NR 716 WAC Site Investigation with NR 720 WAC site-specific residual contaminant levels (SS RCLs), the following constituents of interest in soil and their associated SS RCLs are identified:

	Groundwater Pathway	Industrial Direct
Soil Constituent	SS RCL	Contact SS RCL
PCE	12 µg/kg	55,000 µg/kg
TCE	12 µg/kg	7,150 µg/kg
cis-DCE	100 µg/kg	1.02X10 ⁷ µg/kg

Where detected in the unsaturated soil, TCE and PCE generally exceed their respective groundwater pathway SS RCL. However, empirical data suggests that concentrations less than 1000 ug/kg are not impacting groundwater above the ES. Thus, in the eastern portion of the

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subject property, active remediation does not appear warranted to address the sporadic TCE and PCE concentrations detected in soil.

On the western portion of the subject property, in the area of the former building and loading dock, the industrial direct contact SSRCLs is exceeded in two areas (totaling approximately 400 square feet) as shown on Figure 13. Soil impacts exceeding 1000 mg/kg that are an apparent threat to groundwater quality are present in Areas 1, 2, and 4.

8.1.2 Groundwater

Based on a comparison of constituent concentrations detected in groundwater samples collected as part of the NR 716 WAC Site Investigation with NR 140 ES values, the following constituents of interest in groundwater and their associated ES and PAL are identified:

Groundwater Constituent	<u>NR140 ES</u>	NR140 PAL
PCE	5 μg/L	0.5 μg/L
TCE	5 μg/L	0.5 μg/L
cis-1,2-DCE	70 μg/L	7 μg/L
Vinyl chloride	0.2 μg/L	0.02 μg/L

Groundwater impacts above the ES for PCE are primarily observed on the western portion of the subject property. Groundwater impacts above the ES for cis-1,2-DCE and vinyl chloride, both PCE degradation products, are observed on the eastern approximately two-thirds of the subject property, where active reductive dechlorination appears to occur naturally.

8.2 Identification and Evaluation of Remedial Action Technologies

Remedial action technologies that are potentially applicable to source control and contaminant plume management to address the four risk pathways requiring remedial action at the subject property are identified below. The no action and institutional control alternatives apply to each of the four risk pathways to be addressed.

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- Area 1 Direct Contact Pathway Mitigate soil exceeding the industrial direct contact pathway at (G-1 and GP-23 to GP-101)
 - No action
 - o Institutional control
 - o Engineering Controls
 - Excavation/Off-Site Landfill Disposal
 - o Natural Attenuation
 - o Ex-situ Thermal Treatment

 Areas 1, 3 and 4 Unsaturated Zone Soil to Groundwater Pathway - Mitigate soil exceeding the groundwater pathway RCL in the vadose zone (within the 1,000 ug/kg contour line)

- No action
- Institutional control
- Engineering Controls Infiltration control
- Excavation/Off-Site Landfill Disposal
- o Natural Attenuation
- o Soil Vapor Extraction
- o Ex-situ Thermal Treatment
- Area 1 Saturated Zone Soil to Groundwater Pathway Mitigate soil exceeding the soil to groundwater pathway in the saturated zone
 - o No action
 - o Institutional control
 - Natural Attenuation
 - Excavation/Off-Site Landfill Disposal
 - o In-situ Bioremediation
 - o In-situ Chemical Oxidation
 - o Ex-situ Thermal Treatment
- Area 1 Dissolved Groundwater Contamination Mitigate the dissolved groundwater contaminant plume
 - o No action
 - o Institutional control

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- Natural Attenuation
- o Groundwater Extraction and Treatment
- Air Sparging
- o In-situ Bioremediation
- o In-situ Chemical Oxidation
- o In-situ Thermal Treatment

Brief descriptions of identified remedial action technologies for soil and groundwater at the subject property are presented in the sections that follow below.

After remedial action technologies are identified, they are screened against the criteria of effectiveness, implementability, restoration time frame and cost. The purpose for this preliminary screening is to eliminate technologies from further consideration if they are unable to satisfy the criteria, in accordance with NR 722 WAC. The definition of the screening criteria is as follows:

Effectiveness

- Long term effectiveness evaluating the degree to which the toxicity, mobility and volume of contaminants are reduced and if implemented will protect the public health, safety and welfare and the environment over time; and
- Short term effectiveness evaluating the potential for adverse impacts on public health, safety
 and welfare and the environment that may occur during the construction and implementation
 through case closure.

Implementability

- The technical feasibility with which the remedial option can be constructed, operated, and maintained.
- The potential constraints associated with the remedial option.
- The difficulties associated with monitoring the effectiveness of the remedial option.
- The ability to obtain needed permits.
- The availability of materials, equipment and technology to conduct the remedial option.

It should be noted that limited information as to the effectiveness of innovative technologies is not recognized by the USEPA as sufficient reason to eliminate them from consideration if they are



judged to be implementable. Therefore, if available information indicated that a technology was able to provide better treatment, with few or less adverse affects, or lower cost than other options, it was retained for evaluation (USEPA, 1988b).

Restoration Time Frame

- The expected time frame needed to achieve the necessary restoration and including the following qualitative criteria:
 - o Proximity of receptors;
 - o Presence of sensitive receptors;
 - o Presence of threatened, endangered species or habitats;
 - o Current and potential use of the aquifer;
 - o Magnitude, mobility and toxicity of the contamination;
 - o Geologic and hydrogeologic conditions; and
 - o Effectiveness, reliability and enforceability of institutional controls.

<u>Cost</u>

- Capital costs;
- Annual operation and maintenance (O&M) costs;
- Total present worth; and
- Cost of potential future liability.

A screening of the identified remedial action technology type and process options was conducted based on the criteria described above, to eliminate from further consideration technologies that may fall short, as compared with other options, in achieving remedial objectives. The result is a select, manageable number of technologies from which the preferred remedial alternatives can be chosen.

The following subsections, 8.2.1 to 8.2.12 present a description of various remedial technologies that may be applicable to one or more of the risk pathways identified at the beginning of Section 8.2. A brief summary of these technologies relative to the evaluation criteria of short term effectiveness, long term effectiveness, implementability and cost is presented on Table 6. The rationale for retaining or rejecting certain technology types and process options are also provided in the sections below.



8.2.1 No Action

The no action response involves no treatment or monitoring of contaminated soil and groundwater at the subject property. This response typically serves as a baseline against which the other technologies and process options and/or alternatives can be compared. If prevailing site conditions lead to the determination that the subject property poses no significant risk to human health or the environment, the no action response can be used as the sole remedial action. In that event, implementation of other types of action becomes unnecessary.

The no action alternative is retained to serve as a baseline against which the effectiveness of other response actions is measured.

8.2.2 Institutional Controls

Institutional controls are responsible party or agency-mandated controls that are legally binding. Such controls include access restriction and groundwater use restriction until remedial objectives are met. In instances where the contaminant plume is threatening water supply sources, institutional controls can limit the use of, or access to, contaminated groundwater.

Institutional controls may include actions such as deed restrictions, deed notifications, or restricting the use of groundwater by law. Institutional controls for soil prohibit direct contact with residual soil impacts, and often include cap maintenance plans to verify integrity of caps designed to restrict direct contact or groundwater protection from infiltration. Institutional controls for groundwater are usually for a given set of conditions and groundwater monitoring is usually recommended to verify that prevailing conditions do not change to the extent that revisions to the controls are required. Beginning in November 2001, all such affected properties in Wisconsin have been shown on a Geographical Information System (GIS) Registry of Closed Remediation Sites.

The institutional control alternative is retained as it may represent a necessary component of case closure.

8.2.3 Excavation/Off-Site Landfill Disposal

As a remedial alternative, impacted soils are excavated and transported off-site for landfill disposal. The disposition of the excavated soils would be based on regulatory waste characterization under the Resource Conservation and Recovery Act (RCRA). Soil with concentrations of PCE less than 55,000 ug/kg can be managed as a solid waste for landfilling with the Wisconsin Department of Natural Resources (WNDR) approval. Soil that has a concentration of PCE greater than 60,000 ug/kg is land-banned by federal rule. Thus, some pre-treatment may be required if landfill disposal is used.

The excavation/off-site disposal alternative may be cost-effectively implemented in whole or part and is therefore retained for further evaluation

8.2.4 Engineering Controls

Engineering controls include on-site and off-site containment methods, such as an impermeable cover for soils and groundwater containment for contaminant plume management. The individual option for both soil and groundwater are describe below.

8.2.4.1 Barrier

The placement of a barrier as a remedial alternative uses low permeability soils and/or a lowpermeable membrane placed over the contaminated areas at the subject property to prevent direct contact and to reduce infiltration of precipitation through the contaminant mass.

The barrier alternative may be cost-effectively implemented in whole or part and is therefore retained for further evaluation.

8.2.4.2 Containment

The containment response minimizes the spread of the groundwater contaminants through active or passive hydraulic gradient controls. The direct consequence of the application of a containment response is the prevention of contaminants from migrating beyond an acceptable and well-defined boundary. Active gradient control can be accomplished with vertical or horizontal pumping wells or interceptor trenches, while passive gradient control can be achieved using slurry cut-off walls, sheet pile walls, or grout curtains. According to the guidance document

for conducting Remedial Investigation/Feasibility Study (RI/FS) for Superfund sites (EPA, 1988), conditions that favor the use of containment include the following:

- Low mobility contaminants;
- Low aquifer transmissivity;
- Low contaminant concentrations;
- Low potential for exposure; and,
- Low projected demand for future use of the groundwater.

The containment response minimizes the spread of the groundwater contaminants through active or passive hydraulic gradient controls. Maximum concentrations of PCE (13,000 μ g/L) in groundwater samples exceed their ES values by approximately three orders-of-magnitude. These high contaminant concentrations violate the assumption of the technology for low contaminant concentrations and as such, the containment remedial action option is not retained for further evaluation.

8.2.5 Soil Vapor Extraction

Soil vapor extraction (SVE) is a remediation technology in which a vacuum is applied to induce a controlled subsurface air flow to remove VOCs from the unsaturated zone. The SVE system is constructed using vertical wells, horizontal (or directionally drilled) wells, or pipes enclosed in trenches and the pipes are then connected to a blower to withdraw air from the soil pores, and with this air, vaporized contamination. The performance of an SVE system depends on the properties of both the contaminants and the soil.

The number, location and type of wells are dependent upon the size of the impacted area, the thickness of the unsaturated zone and the air permeability of the unsaturated soil. This technique is most successful in areas where the soil permeabilities are generally 10⁻³ cm/sec or greater, however, it has been used in lower and mixed permeability soils. Heterogeneities or soil zones with differing permeabilities can lead to preferential air flow pathways that can bypass contaminated areas resulting in less contaminant mass removal. This technique can also be combined with groundwater treatment technologies for combined treatment of the unsaturated and saturated soils as well as groundwater.

SVE is effective, readily implementable, and can have a short to moderate restoration time frame depending upon initial soil concentrations and can be cost effective. This remedial technology is retained for further evaluation.

8.2.5.1 Dual Phase Vacuum Extraction

A common method for removing VOCs from both the unsaturated and saturated soil contamination zones is known as dual phase vacuum extraction. This alternative involves a dual phase (vapor and groundwater) vacuum extraction technique to effectively extract both soil vapor and groundwater from the impacted aquifer using vertical dual phase extraction wells. The flow of air through impacted soils results in adsorbed VOCs to be removed by volatilization. Dissolved VOC concentrations are reduced by extraction of sufficient volumes of water. In addition, extraction of water exposes the saturated zone to air flow, thereby allowing for removal of VOCs by vapor extraction. The resulting vapor and contaminated groundwater is separated aboveground and treated prior to discharge.

Dual phase vacuum extraction remedial action option has been cost-effectively implemented at similar sites with similar contaminants and soil conditions, and is therefore retained for further evaluation.

8.2.6 Natural Attenuation

Natural attenuation processes, especially intrinsic bioremediation, can account for significant improvements in groundwater quality and can prevent the contaminant plume from spreading. Intrinsic bioremediation is the use of a scientific approach to demonstrate the occurrence of degradation of contaminants by monitoring the geochemical and biological properties of the groundwater, including pH, temperature, conductivity, oxidation/reduction potential, electron acceptors (e.g., dissolved oxygen, nitrate, nitrite, sulfate, etc.), carbonate, bicarbonate, carbon dioxide, methane, alkalinity, cations, TDS, chloride, sulfide, etc.

Natural attenuation in the subsurface occurs due to a combination of processes including the following: biodegradation, adsorption, dilution, and dispersion. Depending on the properties of the chemicals in the groundwater, and physical or biological processes controlling attenuation, the contaminant plume will eventually shrink or narrow over time, as the edges of the plume will degrade to insignificant concentrations. Natural attenuation is not appropriate for addressing

highly-affected areas of groundwater impacts, rather natural attenuation is appropriate where low concentrations occur, or as a supplementary method post-remediation.

Soluble hydrocarbon plumes containing petroleum hydrocarbons and chlorinated solvents are amenable to natural attenuation processes. Natural attenuation has limited effectiveness for contaminant plumes that have migrated to receptors or are present in an area where future groundwater extraction/use is likely. The ideal goal of intrinsic bioremediation is to demonstrate that active remediation is unnecessary because groundwater plumes will not reach potential receptors or other points of compliance before being remediated by organisms that occur naturally in groundwater.

The soil concentrations at the subject property have already impacted groundwater, thus natural attenuation of the soil in the four areas of interest is not a viable option for managing the risks posed by the soil impacts. Similarly, the groundwater impacts are above the ES at the subject property's boundary and the concentrations are unlikely to naturally attenuate before migrating off-site. However, reductive dechlorination appears to be occurring on some portions of the subject property. As indicated in NR 726.05 WAC, natural attenuation alternative is retained as it may represent a necessary component of case closure.

8.2.7 Groundwater Extraction and Treatment

Collection of groundwater is conducted as part of pump-and-treat systems. Groundwater is extracted from the subsurface for the purpose of aboveground treatment prior to reinjection, reuse or discharge. Collection techniques include use of vertical or horizontal extraction wells or interceptor trenches, as described in the previous section. Unlike containment, where the goal is to isolate contaminated groundwater in the subsurface, the goal of collection is to remove the contaminants from the aquifer.

It is widely established that contaminated aquifers cannot be restored through simple groundwater extraction and treatment (Keely, 1990; Travis and Doty, 1990; and McKay and Cherry, 1989). The limitations associated with pump-and-treat methodology include the following:

 Organic contaminants generally have low solubility in groundwater. Therefore, only a small fraction of the total contaminant mass is accessible to the pump-and-treat process;

- Contaminants sorb onto sediments, further restricting their removal by the pump-and-treat process;
- The geology of most sites is complex, consisting of soils with both high and low hydraulic conductivities. Although removal of contaminants from high-hydraulic conductivity zones can be enhanced by increasing groundwater extraction rates, the rate of mass removal of contaminants from low hydraulic conductivity zones is often limited by desorption rates; and
- Many pumping systems create stagnation zones or lead to contamination of previously uncontaminated areas.

At sites where contaminant removal is desorption controlled, intermittent (pulsed) groundwater pumping can be used to increase the concentrations of contaminants in the extracted groundwater. Intermittent pumping may be necessary or more cost-effective in cases where extraction wells cannot sustain yields, where desorption and/or dissolution of contaminants in the subsurface is relatively slow, or where heterogeneity is high. Because intermittent pumping systems treat smaller quantities of groundwater, capital and operation/maintenance costs can be reduced.

The groundwater collection alternative using conventional groundwater extraction and treatment is effective for removing contaminants at sites where the aquifer hydraulic conductivity exceeds 10^{-5} centimeters per second (cm/s). The hydraulic conductivity of water table (7 to 15 feet bgs) saturated zone silts is approximately 1 X 10^{-3} cm/s and the hydraulic conductivity of the deep (25 to 30 feet bgs) saturated zone silts is approximately 3 X 10^{-5} cm/s at the subject property. Based on this information, the conventional groundwater extraction remedial action option is not retained for further evaluation because it is likely that preferential flow zones will develop that will not address deeper impacts in the lower permeability silts.

8.2.7.1 Air and Groundwater Treatment

Extracted air may require treatment prior to discharge to meet Wisconsin air discharge standards. Groundwater will also require treatment prior to discharge. Treatment technologies can either be physical or chemical treatment methods. A brief discussion of treatment technologies is provided below.

Air stripping

Air stripping is a proven, effective means to remove VOCs from groundwater. The air stripping process commonly used to remove VOCs from groundwater consists of a randomly packed tower through which contaminated water flows in a downward direction while ambient air is blown counter currently to the direction of water flow. The VOCs are transferred from the water phase to the air phase, typically with 99% removal efficiency. The exhaust air then exits the air stripper near the top of the unit.

Steam Stripping

Steam stripping is very similar to traditional air stripping with the exception that steam is used to enhance the volatilization of the VOCs instead of ambient air. This technology is very energy intensive. Therefore, steam stripping is typically used for treatment of water with high levels of organic contamination (greater than 10 ppm strippable organics) or regeneration of spent granular activated carbon.

Reverse Osmosis

In the reverse osmosis (RO) process, contaminated groundwater is pumped under pressure along a membrane module where the permeate (or clean water) will pass through the membrane and the concentrated waste solutions will be rejected and disposed.

Activated Carbon Adsorption

Activated carbon can be used to adsorb organic contaminants from impacted groundwater onto the carbon surface. Extremely low contaminant concentrations in the discharged effluent may be achieved in this manner. A typical carbon adsorption system consists of a large vessel partially filled with activated carbon adsorbent, with an inlet for impacted water and an outlet for treated water. Inflow enters the vessel and is in contact with the activated carbon for a specified period of time; it is then discharged through the outlet where it is available for collection, discharge, or further treatment. Once the carbon is saturated with contaminants, it must be replaced or regenerated. This is an effective and reliable method for removing low-solubility contaminants from water.

Limitations of this technology include the need for pre-treatment of groundwater, the resistance of certain contaminants to removal by carbon, the relatively high cost of carbon, and disposal or

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regeneration of the spent carbon. Pre-treatment may sometimes be necessary to remove suspended solids, oils, and heavy metals, and to adjust the pH. Other remediation techniques may also be used as pre-treatments to reduce the organic load on the carbon.

UV/Oxidation

The UV/oxidation process employs ultraviolet (UV) radiation in combination with oxidants such as hydrogen peroxide. The UV light cleaves the oxidants to form hydroxyl radicals, which have a very strong oxidation potential. These radicals then oxidize the dissolved organic pollutants in groundwater and initiate free radical chain reactions, yielding carbon dioxide, chloride, and water as end products.

Chemical oxidation

Chemical oxidation typically uses ozonation/peroxidation to degrade chemicals into relatively innocuous compounds. Most chemical oxidation technologies are fairly well developed and have been successfully applied to industrial wastewater, and in laboratories on numerous organic chemicals. Applications have generally been on dilute (less than 1 percent oxidizable) waste streams. Ozone, hydrogen peroxide, and chlorine are the major oxidation agents used to treat these systems.

Ozone is generated on-site to treat contaminated groundwater, as there is no practical method to store or ship it. Electricity is the only input to the process and no chemicals are used. The main process applications for this process are as follows:

- Treatment of groundwater as a stand-alone system or in a treatment train;
- Pre-treatment of wastewater prior to disposal to a POTW; and
- Final polishing prior to discharge.

Ozone and hydrogen peroxide are sometimes used in conjunction with biological and/or carbon adsorption processes to treat a diverse range of organic chemicals in groundwater. The ozonation process may include chemical coagulation for metals removal and sedimentation or filtration of suspended solids or precipitate removal. Ozone is not selective and will oxidize cyanide and organics present in wastewater. The degree of oxidation determines post-treatment requirements.

Biological Treatment Systems (Bioreactors)

Contaminants in extracted groundwater are put into contact with microorganisms through attached growth or suspended growth bioreactors. In suspended growth systems, such as activated sludge, contaminated groundwater is circulated in an aeration basin where a microbial population aerobically degrades organic matter and produces new cells. The new cells form a sludge, which is settled out in a clarifier, and the sludge biomass is recycled to the aeration basin. In attached growth systems, such as fixed-film or rotating biological contactors, microorganisms are established on an inert support matrix to aerobically degrade groundwater contaminants. The microbial population may either be derived from the contaminant source or from an inoculum of organisms specific for a contaminant. Attached and suspended systems are often used together.

The following factors may limit the applicability and effectiveness of the process:

- Solid residuals from sludge processes may require treatment or disposal;
- Microbiologists are required to start and maintain the biological systems;
- Metals may need to be removed prior to treatment in the bioreactors;
- The precipitation of iron may clog treatment systems;
- Treatability studies should be conducted to determine if contaminants are biodegradable and to estimate the rate of biodegradation;
- Air pollution controls may need to be applied if there is volatilization from activated sludge processes; and
- Low temperatures significantly decrease biodegradation rates, resulting in longer cleanup times or increased costs for heating.

Bioreactors are used primarily to treat non-halogenated volatile and semi-volatile organics and fuel hydrocarbons. Halogenated volatiles and semi-volatiles, and pesticides can also be treated; however, the process may be less effective and may be applicable only to some compounds within these groups. Successful pilot-scale field studies have been conducted on some halogenated compounds, such as chlorobenzene and dichlorobenzene isomers.

Selection of a treatment method can vary the cost of remediation. These various treatment options with the exception of bioreactors are retained for consideration with the dual-phase vapor

extraction option. Biorreactors are not retained because other treatment options are more readily available and easily implementable.

8.2.8 Air Sparging

Air sparging is a process during which air is injected into the saturated zone below or within the areas of contamination. Air injection can be performed through vertical wells, horizontal (directionally-drilled) wells or sparging probes. As the injected air rises through the saturated soil and groundwater, it may volatilize and remove adsorbed VOCs from saturated soils as well as strip dissolved contamination from the groundwater. Air sparging is most effective in higher permeability soils, but has been used successfully in moderately permeable soil. Air sparging also oxygenates the groundwater and soils, thereby enhancing the potential for aerobic biodegradation.

Air sparging is often used in conjunction with and SVE system to collect stripped VOCs as well as treat the unsaturated soils. This technology is effective, readily implementable and has a reasonable restoration time frame when applied in the appropriate situations. Therefore, this technology is retained for further evaluation.

8.2.9 Enhanced Bioremediation

Enhanced bioremediation is also known as enhanced anaerobic dechlorination and has been shown to be potentially effective at degrading or transforming a large number of organic compounds to environmentally acceptable or less mobile compounds. Classes of compounds considered amenable to biodegradation include chlorinated and aromatic VOCs. Enhanced bioremediation uses injection techniques to deliver an edible vegetable oil substrate combined with surfactants, buffers and other amendments (such as macro and micronutrients, and vitamins) to stimulate the natural microorganisms to dechlorinate contaminants. In some cases, active cultures may be added to speed the dechlorination after the anaerobic status of the aquifer has been achieved.

Injection treatments generally start at the bottom of the contaminated area and proceeds with occasional lifts of the rod to ensure complete treatment coverage through the saturated contaminant zone. Once injected, the vegetable oil droplets stick to the sediment surfaces providing a residual oil film. The residual oil film then serves as a carbon source for cell growth

and an electron donor for energy generation, supporting long-term anaerobic biodegradation of the target contaminants.

The following factors limit the applicability of this remedial alternative:

- Remedial objectives may not be met if the soil matrix prohibits contaminantmicroorganism contact;
- Preferential colonization by microbes may occur in low permeability formations, causing clogging of nutrient and water injection wells;
- Preferential flow paths may severely decrease contact between injected fluids and contaminants through the contaminated zones. This remedial alternative should not be used in clay or heterogeneous subsurface environments because of electron acceptor or donor transfer limitations; and
- High concentrations of chlorinated VOCs are likely to be toxic to the microorganisms.

Based on current uses of this technology, particularly at dry cleaning sites where it has been effective, this remedial action option is retained for further evaluation.

8.2.10 In-Situ Chemical Oxidation

As indicated in preceding sections, chemical oxidation processes have been widely used for treatment of organic contaminants in wastewaters. In-situ chemical oxidation is achieved by delivering chemical oxidants to contaminated subsurface media so that the contaminants are either completely oxidized to carbon dioxide or converted to innocuous compounds commonly found in nature. The chemical oxidants that have been frequently used in such applications are Fenton's reagent, sodium persulfate, and permanganate.

Hydrogen peroxide (H_2O_2) is typically used together with ferrous (reduced) iron to form Fenton's reagent. In Fenton's reagent, hydrogen peroxide is decomposed by reduced iron to produce highly reactive hydroxyl radicals that can non-selectively attack the carbon-hydrogen bonds of organic molecules, thereby degrading many solvents to inert substances such as carbon dioxide, chloride and water.

Sodium persulfate is a stable, highly soluble, crystalline material, which upon activation generates the sulfate radical, a very strong oxidant, capable of oxidizing a broad range of recalcitrant

compounds. Laboratory studies in water have shown favorable destruction of PCE, TCE, and cis/trans- 1,2-dichloroethene using catalyzed persulfate. The formation of the sulfate radical is critical for the destruction of volatile organic compounds. One way to activate persulfate to the sulfate radical is by adding a catalyst such as ferrous iron (Fe^{+2}).

Potassium permanganate has been used for treatment of wastewater for decades because it can effectively oxidize many impurities, including phenol, ferrous iron, sulfide, and taste and odor producing compounds (Weber, 1972). Injection of permanganate is effective in remediation of groundwater affected with relatively low concentrations (on the order of 1,000 µg/L) of certain VOCs, where substantial masses of VOCs are not adsorbed onto the soil matrix (such as within low organic carbon content soils). Reaction of potassium permanganate with organic compounds produces manganese dioxide and either carbon dioxide or intermediate organic compounds. The compounds that can be oxidized by permanganate include alkenes, aromatics, PAHs, phenols, pesticides, and organic acids. The optimum pH range is 7 to 8, but is effective over a wide range (Siegrist, 1998).

Recent studies have shown that encrustation of magnesium oxides can and do form around the injection site and on the soil matrix. This reduces the effectiveness of the oxidation techniques. Therefore, chemical oxidation is not retained for further evaluation.

8.2.11 In-Situ Thermal Treatment

Steam injection or electrical resistance heating is used to increase the volatilization rate of VOCs in in-situ soils to facilitate extraction.

The steam injection technology uses steam injected below the contaminated zone to heat up contaminated soil. The heating enhances the release of contaminants from the soil matrix. Some VOCs and SVOCs are stripped from the contaminated zone and brought to the surface through soil vapor extraction, followed by vapor phase treatment. This technology is generally not effective at site where hydraulic conductivities are less than 10⁻⁵ centimeters per second (cm/s).

Electrical resistance heating uses an electrical current to heat less permeable soils such as clays and fine-grained sediments, creating an in-situ source of steam to volatilize contaminants from the subsurface followed by removal of the contaminants using soil vapor extraction (SVE).

Electrodes are placed directly into the less permeable soil matrix and activated so that electrical current passes through the soil, creating a resistance which then heats the soil to the boiling point of water. As the temperature increases, dissolved contaminants partition to the vapor phase. Steam, created from boiling groundwater, acts as a carrier gas for stripping the VOCs from the soil and saturated zone.

As indicated above, steam injection or electrical resistance heating is used to increase the volatilization rate of VOCs in in-situ soils to facilitate extraction. Because steam injection is generally only effective at sites with aquifer hydraulic conductivities that are greater than 10⁻⁵ cm/s and the subject property has a heterogeneous hydraulic conductivity, the steam injection remedial action option is not retained for further evaluation. As indicated above, electrical resistance heating uses an electrical current to heat less permeable and mixed permeable soils such as silts and clays, such that this remedial alternative is retained for further evaluation.

8.2.12 Ex-Situ Thermal Treatment

Under this remedial alternative, impacted soils are excavated, treated at the excavation site, and re-deposited into the excavation. An example of this approach is known as "Indirect Heat Volatilization Steam InjectionTM" (IHV), which is a portable, self-contained, "closed loop" emission free cleaning/stripping/ flushing/ thermal extraction system. The IHV system uses pressurized steam to remove VOCs from the excavated soils. Since steam is the heat source, there is no direct flame in contact with the contaminants, such that the possibility for combustion or incineration does not exist as it does with conventional direct fired technologies. This feature facilitates permitting of this remedial alternative.

This remedial action option has been cost-effectively implemented at similar sites with similar contaminants, and is therefore retained for further evaluation.

Refer to Table 6 for the Summary of Retained Remedial Technologies. The technologies are compared relative to the identified criteria.

8.3 Evaluation of Remedial Action Alternatives

The remedial action options identified by the initial screening are evaluated based on the requirements specified in NR 722 WAC listed below.

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The technical feasibility of appropriate remedial action options are evaluated using the following criteria:

- 1. Long-term effectiveness. The long-term effectiveness of appropriate remedial action options, taking into account the following:
 - The degree to which the toxicity, mobility and volume of the contamination is expected to be reduced.
 - The degree to which a remedial action option, if implemented, will protect public health, safety and welfare and the environment over time.
- Short-term effectiveness. The short-term effectiveness of appropriate remedial action options, taking into account any adverse impacts on public health, safety and welfare and the environment that may be posed during the construction and implementation period until case closure under ch. NR 726.
- Implementability. The implementability of appropriate remedial action options, taking into account the technical and administrative feasibility of construction and implementation of the remedial action options.
- 4. Restoration time frame. The expected time frame needed to achieve the necessary restoration.

The economic feasibility of each appropriate remedial action option is evaluated, using the following criteria: capital costs, initial costs, annual operation and maintenance costs, total present worth of the costs, and costs associated with potential future liability. The economic feasibility of a remedial action option is determined by comparing the costs to what is expected to be technically achieved by that option, taking into account long-term effectiveness, short-term effectiveness, implementability, and the time until restoration is achieved for each option.

8.4 Recommended Remedial Action Option

Based on the results of the evaluation of applicable remedial action options conducted herein, STS recommends a combination of the remedial options to achieve the objectives of source control and eventual groundwater standard achievement. The justification for this recommendation is discussed in the following paragraphs. A summary of the recommended remedial strategy is presented in Table 7.



Area 1 Direct Contact Pathway

Off-site landfill disposal of the soils within Area 1 at G-1 and GP-23 to GP-101 where soil exceeds 100,000 ug/kg is recommended for direct contact protection and contaminant mass source control, amounting to 2,700 cubic yards (cyd). This would immediately remove the bulk of the source of PCE contamination in the vadose zone. Coupled with groundwater action, the threat of direct contact exposure and off-site migration would be greatly reduced. The areas for hot spot removal are depicted on Figure 15.

Some of the former building foundation (concrete slab) will need to be removed to gain access to one of the areas of highest impacts under the former building floor. The sanitary lateral existing in this area should be removed or capped.

Areas 1, 3 and 4 Unsaturated Zone Soil to Groundwater Pathway

The remainder of the areas within Areas 1, 3 and 4, with PCE concentrations above 1000 ug/kg would be addressed with an Engineering Control – Infiltration Control Barrier. An infiltration control barrier addresses infiltration through the contaminant mass, thereby offering increased groundwater protection. The area proposed for the infiltration barrier is depicted on Figure 15.

The barrier would be constructed of a low permeable soil approximately two feet thick at the property boundaries with a 20% slope to the top of the cap. Drainage swales would be constructed along the north and south property lines to direct surface water run off toward the east side of the property. Prior to placement of the infiltration barrier, the remnants of the former building floor slab would be removed and disposed and the existing vegetation stripped.

Area 1 Impacted Saturated Zone Soil to Groundwater Pathway and Dissolved Groundwater Contamination

Groundwater that has impacts more than 2000 times the ES should be treated, at a minimum, to reduce the contaminant load the groundwater which will limit the potential for off-site migration. At the current time, off-site migration does not appear to be occurring, but in all likelihood will occur as the contaminants are released from the soil and migrate downward through the groundwater. Enhanced Bioremediation would provide a cost effective method to treat the bulk of the contaminant mass in the groundwater in Area 1. Additional groundwater monitoring prior to implementation of the remedial action may be necessary to evaluate the groundwater for electron

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donors and the current concentrations of contaminants to establish the correct formulation for effective treatment. The area to be treated would be limited to the area from MW-20 on the north side to B-3 on the south side to MW-5 on the east side and Sheridan Road on the west side.

The area to be treated is shown on Figure 16.

8.4.1 Remedial Costs Estimate

The following presents our estimate of probable costs for completing the selected remedial scenario. Costs for preparing a Remedial Design Report to comply with the requirements of NR 724 WAC and for groundwater natural attenuation monitoring after treatment and capping are included in the cost estimate below. The following identified the expected cost for the scenario described for contaminant management at C&L Industrial Cleaners.

Activity	Estimated Consulting	Estimated Subcontractor
	Fees	Costs
Remedial Design Report	\$10,000-\$12,000	N/A
Bid Documents and Bidding	\$12,000-\$15,000	N/A
Source Removal (150 cyd)	\$8,000	\$20,000-\$30,000
Direct Contact Barrier (Cap) (2,700 cyd)	\$8,000-\$10,000	\$75,000-\$125,000
In-situ Enhanced Bioremediation (includes pre-implementation groundwater monitoring)	\$15,000-\$20,000	\$40,000-\$70.000
Remediation Totals	\$53,000-\$65,000	\$135,000-\$225,000
Post-Remedial Activity		
Groundwater Natural Monitoring (3 years-quarterly)	\$15,000	\$35,000

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9.0 GENERAL QUALIFICATIONS

The purpose of this environmental assessment is to investigate possible soil and/or groundwater impacts, and related liabilities, associated with past and current property uses. The extent of the investigation is limited to the area and location described in this report.

The scope of the investigation described in this report was selected based upon available information regarding site operations, conditions, and test data. This information was obtained, in part, from the client, outside agents and third parties, including utility locations and record drawings. STS has assumed this information to be correct and complete. This report reflects the conditions, operations, and practices as observed on the date of the site investigation. Changes or modifications to these conditions, operations, and practices made after the site investigation have the potential to affect the conclusions of this report, and should therefore be brought to the attention of STS when they become known by the client.

STS has prepared this report at the request of its client. STS assumes responsibility for the accuracy of the report's content, subject to what is stated elsewhere in this section. STS recommends the report be used only for the purpose intended by the client and STS, as stated in the report. STS disclaims responsibility for the application or interpretation of the results by anyone other than the client. Reliance on the contents of this report by anyone other than the client, without the prior expressed written consent of STS, is done at the sole risk of the user

The results, conclusions, and recommendations presented in this report are based on the data obtained from a limited number of soil boring locations and at the soil sample and groundwater sample locations as indicated in this report. Variations in conditions can occur between these boring, soil sample, and groundwater sample locations. In addition, seasonal and annual fluctuations of the groundwater table, which may influence the distribution of contaminants, can occur. Actual groundwater flow rates may vary from those estimated in this report based on soil conditions.

All opinions of cost are based on estimates from our experience with similar projects, subject to the limitations and accuracy identified in this report. Actual costs may vary depending on site conditions, weather, monitoring requirements, and changes in regulatory standards.



This report has been prepared in conformance with the care and skill ordinarily exercised by reputable members of the professional engineering community practicing under similar conditions at the same time in the same or similar locality. No other warranty of any kind, expressed or implied, at common law or created by statute, is extended, made, or intended.

Compliance with the recommendations and/or suggestions contained in this report in no way assures the elimination of hazards or the fulfillment of a property owner's obligation under local, state, or federal laws or any modifications or changes thereto. It is the responsibility of the property owner to notify authorities of any conditions that are in violation of current regulatory standards, laws or regulations. Your decision regarding the regulatory agency you notify and the selection of the cleanup program you enter, if appropriate, may affect your ability to seek cost recovery from responsible parties or to benefit from the proceeds of insurance policies. We recommend you contact legal counsel to obtain professional legal advice related to reporting.

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Table 1 Groundwater Measurements and Elevations STS Project No. 200603327

Well Number	E	B-3 B-5			B-6		E	3-7	B-12		E	3-16		
Ground Elevation (ft)	60	8.26	60	8.36	608.79		60	5.40	60	4.37	60	2.43		
Top of PVC Casing (TOC) Elevation (ft)	61	0.82	611.25 10		611.90 10 17.45		608.13 10 18.00		60	7.18	60	5.18		
Screen Length (ft)		10							10 17.05			10		
TOC to Bottom of Well (ft) ^A	m of Well (ft) ^A 17.65		15	7.77							18.11			
Date	Depth to GW from TOC (ft)	Groundwater Elevation (ft)	Depth to GW from TOC (ft)	Groundwater Elevation (ft)	Depth to GW from TOC (ft)	Groundwater Elevation (ft)	Depth to GW from TOC (ft)	Groundwater Elevation (ft)	Depth to GW from TOC (ft)	Groundwater Elevation (ft)	Depth to GW from TOC (ft)	Groundwater Elevation (ft)		
5/14/2001	7.97	602.85	7.78	603.47	8.38	603.52	4.89	603.24	5.94	601.24	7.69	599.49		
12/11/2003	7.25	603.57	10.64	600.61	11.74	600.16	5.59	602.54	6.33	600.85	7.69	599.49		
9/16/2004	10.75	600.07	11.27	599.98	11.90	600.00	7.85	600.28	9.82	597.36	11.75	595.43		
11/8/2004	11.27	599.55	11.26	599.99	11.89	600.01	7.21	600.92	7.79	599.39	10.09	597.09		
11/30/2004	11.17	599.65	11.07	600.18	11.66	600.24	6.70	601.43	7.47	599.71	9.69	597.49		
8/14/2006	11.31	599.51	12.06	599.19	12.60	599.30	9.50	598.63	10.71	596.47	13.04	594.14		
11/13-14/2006	9.52	601.30	8.93	602.32	9.51	602.39	5.25	602.88	5.86	601.32	7.57	599.61		
Well Number	M	W-1	M	W-2	м	W-3	M	w-4	м	W-5	M	N-5P	M	W-6
Well Number Ground Elevation (ft)		W-1 7.34		W-2 8.45		W-3 2.80		W-4 8.35		W-5		N-5P		W-6
	60		60		60		60		60		60		60	
Ground Elevation (ft)	60 60	7.34	60 61	8.45	60 60	2.80	60 61	8.35	60 61	8.47	60 61	8.47	60 60	7.52
Ground Elevation (ft) Fop of PVC Casing (TOC) Elevation (ft)	60 60	7.34 9.91	60 61	8.45 1.00	60 60	2.80 5.33	60 61	8.35 0.17	60 61	8.47 0.44	60 61	0.47 0.47	60	9.50
Ground Elevation (ft) Fop of PVC Casing (TOC) Elevation (ft) Screen Length (ft)	60 60	7.34 9.91 10	60 61	8.45 1.00 10	60 60	2.80 5.33 10	60 61	8.35 0.17 10	60 61	8.47 0.44 10	60 61	0.47 5	60	07.52 09.50 10
Ground Elevation (ft) Fop of PVC Casing (TOC) Elevation (ft) Screen Length (ft) FOC to Bottom of Well (ft) ^A	60 60 17 Depth to GW from	7.34 9.91 10 7.65 Groundwater	60 61 17 Depth to GW from	8.45 1.00 10 7.90 Groundwater	60 60 11 Depth to GW from	2.80 5.33 10 7.66 Groundwater	60 61 17 Depth to GW from	8.35 0.17 10 7.05 Groundwater	60 61 18 Depth to GW from	8.47 0.44 10 3.06 Groundwater	60 61 3: Depth to GW from	8.47 0.47 5 3.10 Groundwater	60 60 1' Depth to GW from	17.52 19.50 10 7.17 Groundwate
Ground Elevation (ft) Fop of PVC Casing (TOC) Elevation (ft) Screen Length (ft) FOC to Bottom of Well (ft) ^A Date	60 60 17 Depth to GW from TOC (ft)	7.34 9.91 10 7.65 Groundwater Elevation (ft)	60 61 17 Depth to GW from TOC (ft)	8.45 1.00 10 7.90 Groundwater Elevation (ft)	60 60 11 Depth to GW from TOC (ft)	2.80 5.33 10 7.66 Groundwater Elevation (ft)	60 61 17 Depth to GW from TOC (ft)	8.35 0.17 10 7.05 Groundwater Elevation (ft)	60 61 18 Depth to GW from TOC (ft)	8.47 0.44 10 3.06 Groundwater Elevation (ft)	60 61 3: Depth to GW from TOC (ft)	8.47 0.47 5 3.10 Groundwater Elevation (ft)	60 60 1 Depth to GW from TOC (ft)	17.52 19.50 10 7.17 Groundwate Elevation (ft
Ground Elevation (ft) Top of PVC Casing (TOC) Elevation (ft) Screen Length (ft) TOC to Bottom of Well (ft) ^A Date 5/14/2001	60 60 17 Depth to GW from TOC (ft) NI	7.34 9.91 10 7.65 Groundwater Elevation (ft)	60 61 17 Depth to GW from TOC (ft) · NI	8.45 1.00 10 7.90 Groundwater Elevation (ft)	60 60 11 Depth to GW from TOC (ft) NI	2.80 5.33 10 7.66 Groundwater Elevation (ft)	60 61 17 Depth to GW from TOC (ft) NI	8.35 0.17 10 7.05 Groundwater Elevation (ft)	60 61 18 Depth to GW from TOC (ft) NI	8.47 0.44 10 3.06 Groundwater Elevation (ft)	60 61 3: Depth to GW from TOC (ft) NI	8.47 0.47 5 3.10 Groundwater Elevation (ft)	60 60 1' Depth to GW from TOC (ft) NI	17.52 19.50 10 7.17 Groundwate Elevation (ft
Ground Elevation (ft) Top of PVC Casing (TOC) Elevation (ft) Screen Length (ft) TOC to Bottom of Well (ft) ^A Date 5/14/2001 12/11/2003	60 60 17 Depth to GW from TOC (ft) NI 9.71	7.34 9.91 10 7.65 Groundwater Elevation (ft) - 600.20	60 61 17 Depth to GW from TOC (ft) · NI 10.76	8.45 1.00 10 7.90 Groundwater Elevation (ft) 600.24	60 60 17 Depth to GW from TOC (ft) NI 7.06	2.80 5.33 10 7.66 Groundwater Elevation (ft) 598.27	60 61 17 Depth to GW from TOC (ft) NI NI	8.35 0.17 10 7.05 Groundwater Elevation (ft)	60 61 18 Depth to GW from TOC (ft) NI NI	8.47 0.44 10 3.06 Groundwater Elevation (ft)	60 61 3: Depth to GW from TOC (ft) NI NI	8.47 0.47 5 3.10 Groundwater Elevation (ft) 	60 60 1 Depth to GW from TOC (ft) NI NI	7.52 19.50 10 7.17 Groundwate Elevation (ft
Ground Elevation (ft) Fop of PVC Casing (TOC) Elevation (ft) Screen Length (ft) FOC to Bottom of Well (ft) ^A Date 5/14/2001 12/11/2003 9/16/2004	60 60 17 Depth to GW from TOC (ft) 9.71 9.83	7.34 9.91 10 7.65 Groundwater Elevation (ft) 600.20 600.08	60 61 17 Depth to GW from TOC (ft) • <u>Ni</u> 10.76 10.97	8.45 1.00 10 7.90 Groundwater Elevation (ft) 600.24 600.03	60 60 17 Depth to GW from TOC (ft) NI 7.06 9.28	2.80 5.33 10 7.66 Groundwater Elevation (ft) 598.27 596.05	60 61 17 Depth to GW from TOC (ft) NI NI NI	8.35 0.17 10 7.05 Groundwater Elevation (ft)	60 61 14 Depth to GW from TOC (ft) NI NI NI	8.47 0.44 10 3.06 Groundwater Elevation (ft)	60 61 33 Depth to GW from TOC (ft) NI NI NI	8.47 0.47 5 3.10 Groundwater Elevation (ft)	60 60 1' Depth to GW from TOC (ft) NI NI NI	7.52 19.50 10 7.17 Groundwate Elevation (ft
Bround Elevation (ft) Fop of PVC Casing (TOC) Elevation (ft) Screen Length (ft) FOC to Bottom of Well (ft) ^A Date 5/14/2001 12/11/2003 9/16/2004 11/8/2004	60 60 11 Depth to GW from TOC (ft) NI 9.71 9.83 9.72	7.34 9.91 10 7.65 Groundwater Elevation (ft) 600.20 600.08 600.19	60 61 17 Depth to GW from TOC (ft) · Ni 10.76 10.97 11.11	8.45 1.00 10 7.90 Groundwater Elevation (ft) 600.24 600.03 599.89	60 60 11 Depth to GW from TOC (ft) NI 7.06 9.28 7.96	2.80 5.33 10 7.66 Groundwater Elevation (ft) 598.27 596.05 597.37	60 61 17 Depth to GW from TOC (ft) NI NI NI NI 10.65	8.35 0.17 10 7.05 Groundwater Elevation (ft) 599.52	60 61 18 Depth to GW from TOC (ft) NI NI NI 11.30	8.47 0.44 10 3.06 Groundwater Elevation (ft) 599.14	60 61 3: Depth to GW from TOC (ft) NI NI NI NI 11.73	8.47 0.47 5 3.10 Groundwater Elevation (ft) 598.74	60 60 1 Depth to GW from TOC (ft) NI NI NI 9.97	7.52 9.50 10 7.17 Groundwate Elevation (ft

Table 1
Groundwater Measurements and Elevations
STS Project No. 200603327

Well Number	MV	V-20	MV	V-21	MV	V-23	MV	V-24	MW-26		
Ground Elevation (ft)	607.95		60	7.39	60	8.03	608	8.43	603.61		
Top of PVC Casing (TOC) Elevation (ft)	607.57		606.93		607.54		611.31		60	6.53	
Screen Length (ft)	10		10		10		10		10		
TOC to Bottom of Well (ft) ^A	14.53		17.71		14.25		18.14		18.31		
	Depth to		Depth to		Depth to		Depth to		Depth to		
	GW from	Groundwater	GW from	Groundwater	GW from	Groundwater	GW from Groundw	Groundwater	er GW from	Groundwate	
Date	TOC (ft)	Elevation (ft)	TOC (ft)	Elevation (ft)	TOC (ft)	Elevation (ft)	TOC (ft)	Elevation (ft)	TOC (ft)	Elevation (f	
8/14/2006	7.69	7.69 599.88		598.22	8.16 599.38		11.68 599.63		10.62	595.91	
11/13-14/2006	/2006 6.48 601.09		7.51 599.42		6.49 601.05		9.55 601.76		5.49	601.04	

.

Notes:

ft = feet

A = as measured inside well

NI = Not Installed

-- no elevation

All groundwater montioring well elevations were re-surveyed on 11/8/2004.

All water table elevations were calculated using the survey data from 11/8/2004.

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Table 2 Soil Analytical Results - Detected VOCs (2001-2004) Kenosha Brownfield Investigation - C&L Industrial Cleaners STS Project No. 200603327

Sample Location/ Sample Number	Depth (feet bgs)	Benzene (µg/kg)	n-Butyl benzene (µg/kg)	sec-Butyl benzene (µg/kg)	cis-1,2- Dichloro ethylene (µg/kg)	Ethyl benzene (µg/kg)	lsopropyl Ether (µg/kg)	Naphthalene (µg/kg)	n-Propyl benzene (µg/kg)	p-isopropyi toluene (µg/kg)	Tetrachioro ethylene (µg/kg)	Toluene (µg/kg)	trans-1,2- Dichloro ethylene (µg/kg)	Trichloro ethylene (µg/kg)	1,2,4- Trimethyl benzene (µg/kg)	1,3,5- Trimethyl benzene (µg/kg)	o-Xylene (µg/kg)	m- & p- Xylene (µg/kg)	Vinyl Chloride (µg/kg)
TS April 2001 Soil Probes																			
G-1 (CL-G1-SO3)	4-6'	<1000	<1000	<1000	<1000	<1000	<1220	<1000	<1000	<1000	132,000 ^{A,C}	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
G-1 (CL-G1-SO4)	6-8'	<2000	<2000	<2000	<2000	<2000	<2410	<2000	<2000	<2000	322,000 ^{A,C}	<2000	<2000	<2000	<2000	<2000	<2000	<2000	<2000
G-2 (CL-G2-SO3)	4-6'	<25	<25	<25	<25	<25	<25	<25	<25	<25	94.4 ^C	<25	<25	<25	<25	<25	<25	<25	<25
G-2 (CL-G2-SO4)	6-8'	<25	· <25	<25	<25	<25	<24	<25	<25	<25	48.1 ^C	<25	<25	<25	<25	<25	<25	<25	<25
G-3 (CL-G3-SO3)	4-6'	<25	<25	<25	<25	<25	<23	-<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
G-3 (CL-G3-SO4)	6-8'	<25	<25	<25	<25	<25	<22	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
G-4 (CL-G4-SO3)	4-6'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
G-4 (CL-G4-SO4)	6-8'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
G-5 (CL-G5-SO1)	. 0-2'	<25	<25	<25	<25	<25	<22	334	<25	<25	420 ^C	<25	<25	<25	<25	<25	<25	<25	<25
G-5 (CL-G5-SO3)	4-6'	<25	<25	70.1	<25	<25	<24	<25	<25	<25	112 ^C	<25	<25	<25	<25	<25	<25	<25	<25
TS April 2001 Soil Borings																			
B-1 (CL-B01-SO2)	2.5-4.5	<25	<25	<25	<25	<25	<23	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-1 (CL-B01-SO3)	5-7'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-2 (CL-B02-SO1)	0-2'	<25	<25	<25	<25	<25	<24	<25	<25	<25	4,130 ^{A,C}	<25	<25	52.1 ^c	<25	<25	<25	<25	<25
B-2 (CL-B02-SO2)	2-4'.	<25	<25	<25	485 ^C	<25	<25	<25	<25	<25	<25	<25	32	<25	<25	<25	<25	<25	<25
GP-44	2-4'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
B-3 (CL-B03-SO3)	5-7'	<25	<25	<25	<25	<25	<24	<25	<25	<25	59.4 ^C	<25	<25	<25	<25	<25	<25	<25	<25
B-4 (CL-B04-SO2)	2.5-4.5	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-4 (CL-B04-SO4)	7.5-9.5	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-5 (CL-B05-SO1)	0-2'	<25	174	121	<25	<25	<22	<25	<25	<25	327 ^C	<25	<25	<25	45.2	<25	<25	34.1	<25
B-5 (CL-B05-SO2)	2.5-4.5'	<25	319	166	<25	<25	<23	828	<25	<25	<25	<25	<25	<25	64	<25	<25	<25	<25
B-6 (CL-B06-S01)	0-2'	<25	<25	<25	361 ^C	<25	255	<25	<25	<25	595 ^C	<25	31	271 ^{A,C}	<25	<25	<25	<25	<25
B-6 (CL-B06-S02)	2.5-4.5	<25	<25	<25	10,800 ^C	65	<23	<25	<25	<25	138 ^C	683	399 ^c	36.4 ^C	<25	<25	34.1	41.5	221 ^{A,C}
B-7 (CL-B07-S02)	2.5-4.5'	<25	<25	<25	<25	<25	<23	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-9 (CL-B09-S03)	5-7'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	34.2	<25	<25	<25	<25
B-11 (CL-B11-S01)	0-2'	<25	<25	<25	<25	<25	<22	<25	<25	<25	737 ^C	<25	<25	<25	<25	<25	<25	<25	<25
B-12 (CL-B12-SO3)	5-7'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	• <25	<25	<25
B-15 (CL-B15-S03)	5-7'	<25	<25	<25	<25	<25	<27	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-16 (CL-B16-S03)	5-7'	<25	<25	<25	<25	<25	<27	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-17 (CL-B17-S02)	2.5-4.5'	<25	<25	<25	<25	<25	<27	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
B-17 (CL-B17-S03)	5-7'	<25	<25	<25	<25	<25	<27	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
TS April 2001 Test Pit Samp	ies																		
CL-TP1-S03	5-6'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
CL-TP2-S03	5-6'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
CL-TP3-S02	8-10'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
CL-TP4-S04	5-7'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
CL-TP5-S04	4-6'	<25	<25	<25	<25	<25	<23	<25	<25	<25	810.5 ^c	<25	<25	84 ^C	<25	<25	<25	<25	<25
Non-Industrial RCL	A	1,160	NE	NE	156,000	1.56x10 ⁶	NE	313,000	NE	NE	1,230	1.25x10 ⁶	313,000	160	782,000	782,000	3.13x10 ⁶	3.13x10 ⁶	42.6
Industrial RCL ^B		52,000	NE	NE	1.02X10 ⁷	1.02x10 ⁸	NE	2.04x10 ⁷	NE	NE	55,000	8.18x10 ⁷	2.04x10 ⁷	7,150	5.11x10 ⁷	5.11x10 ⁷	2.04x10 ⁸	2.04x10 ⁸	1,910
Groundwater Pathway I	RCL ^C	5.8	NE	NE	110	6,600	NE	1,951	NE	NE	12	5,100	200	12	43,733	19,200	94,000	100,000	0.17

Table 2 Soil Analytical Results - Detected VOCs (2001-2004) Kenosha Brownfield Investigation - C&L Industrial Cleaners STS Project No. 200603327

Sample Location/ Sample Number	Depth (feet bgs)	Benzene (µg/kg)	n-Butyl benzene (µg/kg)	sec-Butyl benzene (µg/kg)	cis-1,2- Dichloro ethylene (µg/kg)	Ethyl benzene (µg/kg)	lsopropyl Ether (µg/kg)	Naphthaiene (µg/kg)	n-Propyl benzene (µg/kg)	p-lsopropyl toluene (µg/kg)	Tetrachloro ethylene (μg/kg)	Toluene (µg/kg)	trans-1,2- Dichloro ethylene (µg/kg)	Trichloro ethylene (µg/kg)	1,2,4- Trimethyl benzene (μg/kg)	1,3,5- Trimethyl benzene (μg/kg)	o-Xylene (µg/kg)	m- & p- Xylene (µg/kg)	Vinyl Chloride (µg/kg)
TNA December 2003 Soil Prol	bes																		
GP-1 (2003TN01S13)	11-12'	<25	<25	<25	<25	<25	<24	<25	<25	<25	50,000 ^{A,C}	<25	<24	<25	<25	<25	<25	<25	<25
GP-5 (2003TN01S08)	11-12'	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<24	<25	<25	<25	<25	<25	<25
GP-6 (2003TN01S06)	9'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-7 (2003TN01S10)	10-12'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-8 (2003TN01S07)	10-12'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-9 (2003TN01S04)	8-9'	<25	<25	<25	448 ^C	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-10 (2003TN01S03)	8-9'	<25	<25	<25	768 ^C	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-11 (2003TN01S02)	9-10'	<25	<25	<25	1,071.8 ^c	<25	<25	<25	<25	<25	<25	<25	<25	504 ^{A,C}	<25	<25	<25	<25	<25
GP-12 (2003TN01S01)	9-10'	<25	<25	<25	<25	<25	<25	<25	<25	. <25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-13 (2003TN01S05)	11-12'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
TNA December 2003 Monitori	I	<25	<25	<25	<28	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25		<25	<25
MW-1 (2003TN01S16)	4-6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25
MW-1 (2003 TN01S17)	12-14	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25 <25	<25 <25	<25	<25	<20	<25	<25
MW-2 (2003TN01S18)	6-8	<25	<25	<25	<25	<25	<25	<25	<25	. <25	<25	<25			<25	<25	<25	<25	<25
MW-2 (2003TN01S19)	12-14	<25	<25	<25	<25	<25	<25	<25	<25	<25 <25	<25	<25 <25	<25 <25	<25 <25	<25	<25	<25	<25	<25
MW-3 92003TN01S14)	6-8	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25 <25	<25	<25	<25	<25	<25	<25	<25	<25
MW-3 (2003TN01S15)	12-14	<25	<25	<25	<25	<25	<25	<25	<25	420	~20	~20	~20	~20	-20	~20	-20	120	~20
STS September 2004 Soil		.05	.05	.05	.0.5	-05	-05	-05	1515	-75	1,700 ^{AC}	<25	<25	<25	<25	<25	<25	<50	<25
GP-20	0-2.5'	<25	<25	<25	<25	<25	<25	<25	<25	<25	1,700							<50	<25
GP-20	4-6'	<25	<25	<25	<25	<25	<25	<25	<25	<25	1,800 ^{AC}	<25	<25	<25	<25	<25	<25		
GP-21	0.5-1.5'	<50	<50	<50	1,800 ^C	<50	<50	<50	<50	<50	12,000 ^{AC}	<50		2,880 ^{AC}		<50	<50	<100	<50
GP-21	4-6'	<.25	<25	<25	<25	<25	<25	<25	<25	<25	490 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-22	0.5-2'	<100	<100	<100	230 QC	<100	<100	<100	<100	<100	16,000 ^{AC}	<100	<100	2,100 ^{AC}	<100	<100	<100	<200	<100
GP-22	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	350 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-23	0.5-2'	<25	<25	<25	<25	<25	<25	<25	<25	<25	8,900 ^{AC}	<25.	<25	<25	<25	<25	<25	<50	<25
GP-23	4-6'	<1.000	<25	<25	<1.000	<1.000	<1,000	<1,000	<1.000	<1,000	320,000 ^{ABC}	<1.000	<1,000	<1.000	<1.000	<1.000	<1,000	<2,000	<1.000
GP-24	0.5-2'	<25	<25	<25	<25	<25	<.25	320	<25	· <25	2,400 ^{AC}	40 ^Q	<25	<25	34 ^Q	<25	<25	<50	<25
GP-24	4-5'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	79 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-25	0.5-2'	<25	<25	<25	<25	<25	<25	<25	<25	<25	1,900 ^{AC}	<25	<25	<25	<25	<25	<25	<50	<25
GP-25	4-5.3'	<62	<25	<25	<62	<62	<62	<62	<62	<62	11,000 ^{AC}	<62	<62	<62	<62	<62	<62	<120	<62
GP-26	4-6'	<25	<25	<25	<25	<25	<25	<25	<25	<25	1,500 ^{AC}	<25	<25	<25	<25	<25	<25	<50	<25
GP-27	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	690 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-27	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	200 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-28	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	71 [°]	<25	<25	<25	<25	<25	<25	<50	<25
										<25	55 ^{QC}	<25	<25	<25	<25	<25	<25	<50	<25
GP-28	4-5.3'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	350 ^C	<25	<25	<25	31 ^Q	55 ^Q	39 ^Q	94 ^Q	<25
GP-29	0-5.2' 4-6'	<25	<25	<25	<25	<25	<.25 <.25	<25 <25	<25 <25	<25	<25	<25 <25	<25	<25	<25	<25	<25	<50	<25
GP-29		<25	<25	<25	<25	<25					400 ^C		<25	<25	<25	<25	<25	<50	<25
GP-30	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	400 [°]	<25	1				<25	<50	<25
GP-30	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25		<25	<25	<25	<25	<25			
Non-Industrial RCL		1,160	NE	NE	156,000	1.56x10 ⁶	NE	313,000	NE	NE	1,230	1.25x10 ⁶	313,000	160	782,000	782,000	3.13x10 ⁶	3.13x10 ⁶	42.6
Industrial RCL ^B		52,000	NE	NE	1.02X10 ⁷	1.02x10 ⁸	NE	2.04x10 ⁷	NE	NE	55,000	8.18x10 ⁷	2.04x10 ⁷	7,150	5.11x10 ⁷	5.11x10 ⁷	2.04x10 ⁸	2.04x10 ⁸	1,910
Groundwater Pathway F	KUL-	5.8	NE	NE	110	6,600	NE	1,951	NE	NE	12	5,100	200	12	43,733	19,200	94,000	100,000	0.17

Table 2 Soil Analytical Results - Detected VOCs (2001-2004) Kenosha Brownfield Investigation - C&L Industrial Cleaners STS Project No. 200603327

Sample Location/ Sample Number	Depth (feet bgs)	Benzene (µg/kg)	n-Butyl benzene (µg/kg)	sec-Butyl benzene (µg/kg)	cis-1,2- Dichloro ethylene (µg/kg)	Ethyl benzene (µg/kg)	isopropyi Ether (µg/kg)	Naphthalene (µg/kg)	n-Propyl benzene (µg/kg)	p-lsopropyl toluene (µg/kg)	Tetrachloro ethylene (µg/kg)	Toluene (µg/kg)	trans-1,2- Dichloro ethylene (µg/kg)	Trichloro ethylene (µg/kg)	1,2,4- Trimethyl benzene (µg/kg)	1,3,5- Trimethyl benzene (μg/kg)	o-Xylene (µg/kg)	m- & p- Xylene (μg/kg)	Vinyl Chloride (µg/kg)
GP-31	0.5-2'	96 ^C	<25	<25	<25	57 ^Q	<.25	280	28 ^Q	66 ^Q	170 ^C	830	<25	<25	550	490	430	760	<25
GP-31	4-5'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-32	0.5-1.7'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-32	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-33	0.5-2'	<62	<62	<62	<62	<62	<62	<62	<62	<62	14,000 ^{AC}	<62	<62	280 ^{AC}	<62	<62	<62	<120	<62
GP-33	4-5'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-34	0.5-2'	<50	<25	<25	<50	<50	<50	<50	<50	<50	7,800 ^{AC}	<50	<50	<50	<50	<50	<50	<100	<50
GP-34	4-6'	<25	<25	<25	<25	<25	<25	<25	<25	<25	650 ^C	<25	<25	190 ^{AC}	<25	<25	<25	<50	<25
GP-35	0.5-2'	<25	<25	<25	<25	<25	<.25	59 ^Q	<25	<25	280 ^c	52 ^Q	<25	<25	38 ^Q	<25	28 ^Q	<50	<25
GP-35	4-6'	<25	. <25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50 .	. <25
GP-36	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<50	<25
GP-36	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	34QAC	<25	<25	<25	<50	<25
		<25	<25	<25	<25	<25	<.25	<25	<25	<25	300 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-37	0.5-2' 4-6'			<25	<25 <25	<25		<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-37		<25	<25				<.25				640 ^C	38 ^Q	1					<50	<25
GP-38	0.5-2	<25	<25	<25	<25	<25	<.25	<25	<25	<25			<25	<25	<25	<25	<25		
GP-38	4.5-6'	<25	<25 ·	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-39	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	170 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-39	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-40	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-40	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-41	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-41	4-5'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25.
GP-42	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-42	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-43	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	140 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-43	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-44	0.5-2'	<25	<25	. <25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
B-3 (CL-B03-SO2)	2-4'	<25	.<25	<25	<25	<25	<23	<25	<25	<25	120 ^{A,C}	<25	<25	<25	<25	<25	<25	<25	· <25
GP-45	0.5-2'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-45	2.5-4'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-46	0.5-2'	<25	<25	<25	52 ^Q	<25	<25	<25	<25	<25	1,200 ^{AC}	<25	<25	120 ^C	<25	<25	<25	<50	<25
GP-47	0.5-2'	<25	<25	<25	<25	<25	<25	130	<25	<25	<25	150	<25	<25	140	52 ^Q	92	220	<25
GP-47	4-6'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-48	0.5-2'	<25	<25	<25	570 ^C	<25	<.25	<25	<25	<25	580 ^C	<25	<25	210 AC	<25	<25	<25	<50	<25
GP-48	2.5-4'	<25	<25	<25	<25	<25	<.25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
		-20	-20	-20	-20	~20	1.20	-20	-20	-20	-20	-20	-4-0	-20	-20	20	20		
November 2004 Monitor	1	-05	-05	-07	-05	-05	-75	-05	105	-05	14 000 AC	-05	-05	-25	<2E	<25	<25	<50	<25
MW-4	4-5.5'	<25	<25	<25	<25	<25	<25	<25	<25	<25	11,000 AC	<25	<25	<25	<25	<25	<25		
	14-15'	<25	<25	<25	<25	<25	<25	<25	<25	<25	930 ^C	<25	<25	<25	<25	<25	<25	<50	<25
MW-5	4-5.5'	<250	<250	<250	<250	<250	<250	<250	<250	<250	69,000 ^{ABC}		<250	<250	<250	<250	<250	<500	<250
	14-15'	<25	<25	<25	<25	<25	<25	<25	<25	<25	49 ^c	<25	<25	<25	<25	<25	<25	<50	<25
MW-5P	18-20'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
	28-30'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-6	4-6'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
	14-15'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
Non-Industrial RCI	A	1,160	NE	NE	156,000	1.56x10 ⁶	NE	313,000	NE	NE	1,230	1.25x10 ⁶	313,000	160	782,000	782,000	3.13x10 ⁶	3.13x10 ⁶	42.6
Industrial RCL ^B		52,000	NE	NE	1.02X10 ⁷	1.02x10 ⁸	NE	2.04x10 ⁷	NE	NE	55,000	8.18x10 ⁷	2.04x10 ⁷	7,150	5.11x10 ⁷	5.11x10 ⁷	2.04x10 ⁸	2.04x10 ⁸	1,910
Groundwater Pathway	RCL ^C	5.8	NE	NE	110	6,600	NE	1,951	NE	NE	12	5,100	200	12	43,733	19,200	94,000	100,000	0.17

Table 2 (continued) Soll Analytical Results - Detected VOCs (2006) Kenosha Brownfield Investigation - C&L Industrial Cleaners STS Project No. 200603327

Sample Location/ Sample Number	Depth	Benzene	n-Butyl benzene	sec-Butyl benzene	cis-1,2- Dichloro ethylene	1,4-Dichloro- benzene	Ethyl benzene	lsopropyl benzene	Naphthalene	n-propyl benzene	p-isopropyl toluene	Tetrachlor o ethlene	Toluene	trans-1,2- Dichloro ethene	Trichloro ethlene	1,2,4- Trimethyl benzene	1,3,5- Trimethyl benzene	o-Xylene	m- & p- Xylene	Vinyl Chloride
	(feet bgs)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
STS 2006 Soll Probe	and Monito	oring Wells																		
GP-101	1-2'	<2,100	<2,100	<2,100	<2.100	<2100	<2.100	<2,100	<2,100	<2,100	<2.100	330,000 ABC	<2,100	<2.100	3,200 ACC	<2,100	<2,100	<2,100	<4,100	<2100
GP-101	6-7'	<110	<110	<110	<110	<110	<110	<110	<110	<110	<110	19,000 AC	<110	<110	<110	<110	<110	<110	<210	<110
GP-101	16-14'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<u>32Q</u>	<25	<25	<50	<25
GP-102	1-2'	<200	<200	<200	<200	<200	<200	<200	<200.	<200	<200	35,000 AC	<200	<200	450 ^{AC}	<200	<200	<200	<400	<200
GP-102	6-7'	<25	<25	<25	.<25	<25	<25	<25	<25	<25	<25	3,600 ^{AC}	<25	<25	<25	<25	<25	<25	<50	<25
GP-102	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	.<25
GP-103	1-2'	<27	<27	<27	<27	<27	<27	<27	<27	<27	<27	280 ^C 22,000 ^{AC}	<27	<27	<27	<27	<27	<27	.<54	<27
GP-103 GP-103	6-7' 16-17'	<120 <200	<120 <200	<120 <200	<120 <200	<120 <200	<120 <200	<120 <200	<120 <200	<120 <200	<120 <200	22,000 29,000 ^{AC}	<120 <200	<120 <200	<120 430 ACC	<120 <200	<120 <200	<120 <200	<250 <400	<120 <200
GP-103 GP-104	1-2'	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	29,000 AC	<100	<100	<100	<100	<100	<100	<200	<100
GP-104 GP-104	6-7'	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	27,000 AC	<200	<200	<200	<200	<200	<200	<400	<200
GP-104	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	3,000 AC	<25	<25	<25	<25	<25	<25	<50	<25
GP-105	1-2'	<25	<25	<25	<25	<25	<25	<25	<25 -	<25	<25	4,700 AC	· <25	<25	<25	<25	<25	<25	<50	<25
GP-105	6-7'	<310	<310	<310	<310	<310	<310	<310	<310	<310	<310	52,000 AC	<310	<310	<310	<310	<310	<310	<620	<310
GP-105	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	210 ^c	<25	<25	<25	<25	<25	<25	<50	<25
GP-106	1-2'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	3,400 AC	<25	<25	<25	<25	<25	<25	<50	<25
GP-106	6-7'	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	2,400 AC	<28	<28	<28	<28	<28	<28	<57	<28
GP-106	16-17'	<510	<510	<510	<510	<510	<510	<510	<510	<510	<510	96,000 ^{AC}	<510	<510	1,300 ACC	<510	<510	<510	<1.000	<510
GP-107	1-2'	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	69 ^{QC}	<30	<30	<30	<30	<30	<30	<60	<30
GP-107	6-7'	<110	<110	<110	<110	<110	<110	<110	<110	<110	· <110	16,000 AC	<110	<110	<110	<110	<110	<110	<220	<110
GP-107	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	1,100 ^c	<25	<25	110 ^c	<25	<25	<25	<50	<25
GP-108	1-2'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	310 ^C	<25	<25	<25	<25	<25	<25	<50	<25
GP-108	6-7'	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	31,000 AC	<200	<200	<200	<200	<200	<200	<400	<200
GP-108	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-109	1-2'	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	150 ^C	<26	<26	<26	<26	<26	<28	<52	<26
GP-109	6-7'	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	18,000 AC	<100	<100	<100	<100	<100	<100	<200	<100
GP-109 GP-110	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50 <52	<25 <20
GP-110	1-2' 6-7'	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<26	<26 1,300 AC	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<26 <26	<52	<26
GP-110	16-17'	<20	· <26	<26	<26	~26 <26	<20 <20	<26	<26	<26	<26 <26	<26	<26	<20	<26	<26	<26	<26	<52	<26
GP-111	1-2'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	130 °	<25	<25	<25	<25	<25	<25	<50	<25
GP-111	6-7'	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	5,500 AC	<26	<26	<26	<26	<26	<26	<53	<26
GP-111	16-17'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-301	1-2'	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	43,000 AC	<120	<120	780 AC	<120	<120	<120	<250	<120
GP-301	7-8'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP302	1-2'	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<52	<26
GP-302	7-8'	<25	<25	<25	48	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP303	1-2'	<130	<130	<130	<130	<130	<130	<130	<130	<130	<130	20,000 AC	<130	<130	170 AC	<130	<130	<130	<260	<130
GP-303	7-8'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-401	1-2'	26 ^c	<25	<25	1,700 ^c	<25	<25	<25	79	<25	<25	3,500 AC	150	39	380 AC	<25	<25	69	110	<25
GP-401	7-8'	<25	<25	<25	130 ^c	<25	<25	<25	<25	<25	<25	890 °	<25	<25	230 AC	<25	<25	<25	<60	<25
GP-402	1-2'	<27	<27	32	53	<27	1,100	32	<27	42	56	890 ^C	<27	<27	250 AC	160	160	170	1,700	<27
GP-402	8-9'	<25	<25	<25	68 Q	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-403	1-2'	<25 <25	<25	<25	42 °	<25 <25	<25	~<25 25	35 °	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25 <05
GP-403	7-8'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25 47 ^C	<25	<25	<25	<50	<25
GP-404 GP-404	1-2' 7-8'	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25	<25 <25	1,000 ^C <25	<25	<25 <25	4 / - <25	<25 <25	<25 <25	<25 <25	<50 <50	<25 <25
Non-Industrial RCL ^A	1-0	1,160	-	< <u>-</u> -	156,000	2,660	<20 1.56x10 ⁶	<25	313,000	< <u>25</u>		1,230	<25 1.25x10 ⁶	313,000	160	782,000	782,000	3.13x10 ⁶	3.13x10 ⁶	42.6
Industrial RCL ^B		52.000			1.02x10 ⁷	119,000	1.02x10 ⁸	-	2.04x10 ⁷	-		55,000	8.18x10 ⁷	2.04x10 ⁷	7,150	5.11x10 ⁷	5.11x10 ⁷	2.04x10 ⁸	2.04x10 ⁸	1,910
Groundwater Pathway	RCLC	5.2			100	580	6,600	-	1,951			12	5,100	2.04x10	12	43,733	19,200	94,000	100,000	0.17

Table 2 (continued) Soli Analytical Results - Detected VOCs (2006) Kenosha Brownfield Investigation - C&L Industrial Cleaners STS Project No. 200603327

Sample Location/ Sample Number	Depth	Benzene	n-Butyl benzene	sec-Butyl benzene	cis-1,2- Dichloro ethylene	1,4-Dichloro- benzene	Ethyl benzene	lsopropyl benzene	Naphthalene	n-propyl benzene	p-isopropyl toluene	Tetrachlor o ethlene	Toluene	trans-1,2- Dichloro ethene	Trichloro ethlene	1,2,4- Trimethyl benzene	1,3,5- Trimethyl benzene	o-Xylene	m- & p- Xylene	Vinyl Chloride
	(feet bgs)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
STS 2006 Soil Prob	e and Monit	toring Wells								·······										
GP-601	1-2'	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	110 ^C	<26	<28	<28	<28	<28	<28	<50	<28
GP-601	7-8'	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
GP-602	1-2'	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<52	<26
GP-602	7-8'	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<52	<26
MW-20	1-2'	<25	<40	<25	<25	<25	<25	<25	<25	<25	<25	1800 AC	<25	<25	<25	<25	<25	<25	<50	<25
MW-20	6-7'	<200	<320	<200	<200	<200	<200	<200	<200	<200	<200	89000 ABC	<200	<200	<200	<200	<200	<200	<400	<200
MW-20	14-15'	<25	<40	<25	<25	<25	<25	<25	<25	<25	<25	770 ^c	<25	<25	<25	<25	<25	<25	<50	<25
MW-21	2-3'	40 ^{Q C}	<40	<25	<25	77	<25	<25	44 ^Q	<25	<25	<25	<25	<25	<25	41 °	<25	<25	<50	<25
MW-21	6-7'	<25	. <40	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-21	17-18'	<25	<40	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-23	1-2'	~25	<40	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-23	6- 7'	<26	<42	<26	<26	<20	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	<52	<20
MW-23	14-15'	<25	<40	<25	<25	. <25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-24	1-2	<25	<40	<25	<25	<25	83 ^c	<25	140	66 ^Q	31 0	770 ^c	76	<25	<25	440	160	100	320	<25
• MW-24	6-7'	<25	<40	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-24	14-15'	<27	<43	<27	<27	<27	<27	<27	<27	<27	<27	140 ^C	<27	<27	<27	<27	<27	<27	<53	<27
MW-26	1-2'	<27	<43	<27	<27	<27	<27	<27	<27	<27	<27	52 ^{C Q}	<27	<27	<27	<27	<27	<27	<54	<27
MW-26	6-7'	<25	<4()	<25	360 ^c	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
MW-26	14-15'	<25	<40	<25	<25	· <25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25
Non-Industrial RCL ^A		1,160			156,000	2,660	1.56x10 ⁶					1,230	1.25x10 ⁶	313,000	160	782,000	782,000	3.13x10 ⁶	3.13x10 ⁶	42.6
Industrial RCL ^B		52,000		-	1.02x10 ⁷	119,000	1.02x10 ⁸		2.04x10 ⁷	-	-	55,000	8.18x10 ⁷	2.04x10 ⁷	7,150	_5.11x10 ⁷	<u>5.11x10⁷</u>	2.04x10 ⁸	2.04x10 ⁸	1,910
Groundwater Pathwa		5.2		-	100	580	6,600	-	1,951			12	5,100	200	12	43,733	19,200	94,000	100,000	0.17
Notes:	VOCs = Vol	atile Organic (Compounds.					Standard for	nt = Detected, r	no exceedan	ces.	- = Not Establi	shed, human l	health criteria	not available o	on USEPA we	b page.			

RCL = Residual Contaminant Level.

<25 = Not detected at the detection limit shown.

A = Generic direct contact RCL for non industrial site calculated from USEPA web page using WDNR default values and site specific TOC on 9-19-06. Exceedances are bold.

^B = Generic direct contact RCL for industrial site calculated from USEPA web page using WDNR default values and site specific TOC on 9-18-06. Exceedances are **bold**.

^c = Generic RCL for soil to groundwater risk path calculated from USEPA web page using WDNR default values and site specific TOC on 9-18-06. Exceedances are **bold**. Note: Sample depth for TN & A probe samples were taken from the bore logs-not the TN & A produced tables.

TABLE 3 Summary Groundwater Analytical Results - Detected VOCs Former C&L Industrial Cleaners - Kenosha, Wisconsin STS Project No. 200603327

Sample Location	Sample Date	Benzene µg/L	Dichloro- difluoro- methane µg/L	cis-1,2- Dichloro- ethene μg/L	trans-1,2- Dichloro- ethene µg/L	1,1-Dichloro- ethylene µg/L	1,1-Dichloro propene µg/L	Tetrachloro- ethene μg/L	Trichloro- ethene µg/L	1,2,4- Trimethyl benzene µg/L	1,3,5- Trimethyl benzene µg/L	Vinyl Chloride µg/L	Groundwater Elevation (feet msl)
		Top of We	Il Screen In Feet	MSL: 603.07			Length of Well S	creen: <u>10 ft.</u>					
B-3	5-14-01	<0.15	<0.15	0.524	<0.15	<0.15	<0 25	3.41 A	0.486	<0 1	<0.15	<0.12	602.85
	12-12-03	<0.1	<0.1	19.4 ^A	<0.1	<0.1	<0.2	56.5 ^B	1.39 A	<0.15	<0.15	<0.1	603.57
	9-16-04	<0.15	< 0.27	28 ^A ·	<0 21	<0 27	<0.19	62 ^B	3.3 A	<0.21	<() 11	0.71 ^B	600.07
	12-1-04	<0.41	<(1.95)	28 ^A	<0.89	<0.57	< 0.75	57 ^B	2.1 A	<0.97	<0.83	1.7 ^B	599.65
	8-30-06	0 41	<0.99	29 ^A	<0.89	< 0.57	<0.75	37 ^B	2.2 A	< () 51	<0.83	0.32 QB	599.51
	11/13/2006	- 0.41	<0.99	14 ^A	<0.89	<0.57	<0 75	17 ^B	7.5 ^B	<0.97	< 0.83	0.21 QB	601.30
B-3 Dup	9-16-04	<0 15	<0.27	29 ^A	<0 21	<0.27	<0.19	64 ^B	3.4 ^A	<0 24	<0 11	0.73 ^B	
	12-1-04	<0.41	:0.99	27 ^A	<0 89	<0 57	<0 75	57 ^B	2.0 A	<0.97	<0.83	1.6 ^B	
	8-30-2006	<0.41	<0.99	28 ^A	<0.89	<0.57	<0.75	38 ^B	2.2 A	<0.97	<0.83	0.26 QB	
	11/13/2006	<() 11	<0,99	13 ^A	<0 89	<0 57	<0.75	16 ^B	11 ^B	<0.97	<0.83	<0.18	
		Top of Wel	I Screen in Feet	MSL: 603.48			Length of Well S	creen: <u>10 ft.</u>					
B-5	5-14-01	<0.15	< 0.15	1.28	<0,15	<0.15	<0 25	<0.15	<0.1	<0 1	<0.15	1.16 ^B	603.47
	12-12-03	<0.1	<0 1	0.252 ^Q	<0.1	<0.1	<0.2	<0.1	< 0.2	<0 15	<0.15	0.272 QZB	600.61
	9-16-04	<0.15	< 0.27	<0.23	< 0.21	<0.27	<0.19	<0.33	<0.18	<(),24	<0.11	0.23 ^B	599.98
	12-1-04	<() 41	<0.88	<0.83	<0 89	<0 57	<0 75	<0.45	<0.48	<0.97	<0.83	0.37 ^{QB}	600.18
	8/30/06	< 0.41	<0.88	<0.83	<0.89	<0.57	<0.75	<0.45	<0.48	<0.97	<0.83	0.48 QB	599.19
	11/13/06	<0.41	< 0 98	<0.83	<0 89	<0.57	<0 75	<0.45	<0.48	<0.97	<0.83	0.68 ^B	602.32
			Screen in Feet	MSL: 604.45			Length of Well S	creen: <u>10 ft.</u>					
B-6	5-14-01	0.375 °	<0.15	6.65	0.415 ^Q	<0.15	<0.25	<0.15	<0.1	<0.4	<0 15	4.51 ^B	603.52
	12-12-03	0.319 ^{qz}	0.15	14.2 ZA	0.751	<0 1	<() 2	0.1	<0.2	<0 15	<0.15	2.45 ^B	600.13
	9-16-04	0.45 ^Q	0.27	19 ^A	0.95	<0.27	<0 19	<0.33	<0.18	<0 2.1	<0.11	2.3 ^B	600.00
	12-1-04	<0.41	<0.99	20 ^A	1.1 ^Q	<0 57	<0 75	<0.45	<0.48	<0.97	< 0.83	2.3 ^B	600.24
	8-30-2006	<0.41	<0.99	9.5 ^A	<0.89	<0.57	<0.75	<0.45	<0.48	<0.97	<0.83	2.5 ^B	599.30
	11-13-06	<0.41	0.99	6.7	<0 89	<0.57	<0 75	<0.45	0.77 ^{QA}	<0.97	<0.83	1.8 ^B	602.39
			Screen In Feet	1			Length of Well S						
B-7	5-14-01	0.216 ^Q	<0.15	<0.15	<0.15	<0.15	<0.25	<0.15	<0.1	<0.4	<0.15	<0.12	603.24
	12-11-03	<0.1	0.1	<0.1	<01	<0.1	<0.2	<0.1	<0.2	<0.15	<0 15	<0.1	602.54
	9-16-04	<0.15	<0 27	<0.23	<0 21	<0 27	<0.19	< 0.33	<018	<0.24	<0 11	<0.18	600.28
	12-1-04	<0.41	<0.99	<0.83	<0.89	<0 57	<0 75	<0.45	0.48	<() 97	<0.83	0.18	601.43
	8-31-06	<() 41	<0.99	<0.83	<0.89	<0.57	<0.75	<(),45	<0.48	<1),97	<0 83	<0.18	598.63
PAL		0.5	200	7	20	0.7	NE	0.5	0.5	96	96	0.02	
ES		5	1000	70	100	7	NE	5	5	480	480	0.2	

TABLE 3
Summary Groundwater Analytical Results - Detected VOCs
Former C&L Industrial Cleaners - Kenosha, Wisconsin
STS Project No. 200603327

Sample Location	Sample Date	Benzene µg/L	Dichloro- difluoro- methane µg/L	cis-1,2- Dichloro- ethene µg/L	trans-1,2- Dichloro- ethene μg/L	1,1-Dichloro- ethylene µg/L	1,1-Dichloro propene µg/L	Tetrachloro- ethene μg/L	Trichloro- ethene µg/L	1,2,4- Trimethyl benzene µg/L	1,3,5- Trimethyl benzene µg/L	Vinyl Chloride µg/L	Groundwater Elevation (fegt msl)
		Top of We	Il Screen in Feet	MSL: 600.13			Length of Well S	creen: <u>10 ft.</u>					
B-12	5-14-01	<0.15	<145	138 ^B	6.10	<0.15	<0.52	05.15	40.1	· e (<0.15	10.3 ^B	601.24
	12-11-03	_ 1¥1	0.1	152 ^{Z B}	7.43	: D. 1	es 2	13.1	- 11	- 20 J.2	:0.1S	8.03 ^B	600.85
	9-16-04	so 15	<0.02	170 ^B	10	-11-27	<0.10	-11.75	≈ 0.18	-0.21	<0.11	7.7 ^B	597.36
	11-30-04	14 d \$. 11 (NG)	160 ⁸	11	- 12 f g	10 g.M.	11 IN	. O 18	.n.e.		7.9 ^B	597.49
	8-31-06	. (n. 44	- 1 No	170 ^B	9.8	199 A.C	100 Tex	9.45	ry 191	·1 ·1 '	-0.43	11 ^B	596.47
	11-14-06	- () .14	 €0.40 	83 ^B	5.9	-13-07	-0.75	-0.16	<() 1()	-9.95	<0.33	2.9 ^B	601.32
		Top of We	ell Screen in Feet I	MSL: <u>597.07</u>			Length of Well S	creen: <u>10 ft.</u>					
B-16	5-14-01	-n 10) +1 [™]	5 f.	0.15	11.112	11.25	0.1%	- 11 - 1	11 F	 49.15 	6.42	599.49
	12-11-03	- 19-1		n +	r. 1	.() [تي الهم	01	.0 Q	-(E45	~0.15	.0.1	599.49
	9-16-04	10 1 C	<0.27	S. C.	- 10 M (10 A	. a 67	-19 -19 -	20.23	-010	$\{i\}_{i=1}^{n-1}$	r a , a a	0.18	595.43
	11-30-04	-0 EF	5101	$\sim 10^{-5}$ M $_\odot$	-1 - 5203	$\mathcal{F}(Y) \supset \overline{\mathcal{F}}$	8.75	< (4.1, 1).	-0.1 <u>0</u>	+0.27	$c(\hat{U}, G, \hat{f})$	-0.18	597.49
	8-31-06	- 0.11	-01-30	50 C.S	-6.60	es (C.C.	0 ad	10, 1% -	-0 1g	: n. n. 1	-Ú -GA	-0.18	594.14
		Top of We	I Screen in Feet I				Length of Well S	creen: <u>10 ft.</u>				<u>_</u>	
MW-1	12-11-03	£1. †	0.186	188 ^B	26.4 ^{Z A}	-1 (P	0.413 ^Q	0.1	- 19- 2-	0.203 ^Q	0.15	3.33 ^B	600.20
Dup	12-11-03	0.1	0.178 ^Q	186 ^B	26.2 ^{Z A}	11.1	0.326 ^Q		<n.2< td=""><td>0.166 ^Q</td><td><0.15</td><td>3.11 ^B</td><td></td></n.2<>	0.166 ^Q	<0.15	3.11 ^B	
	9-16-04	0.1°	i =	200 ^B	19	- 17 * *	-11-10	9.55	:0.19	1 · · 1	- 0.11	3.3 ^B	600.08
	12-1-04	n [!		180 ^B	18	an,	2017/4	2 H (-0.1h	6.3.3	Ú.D. y	2.1 ^B	600.41
	8-30-06	0.11	<0.00	190 ^B	16	- n 1.7	- C 75	- 0 HS	-0.19	-0 °°	10 Q 2	1.8 ^B	599.51
	11-13-06	0.00	20	150 ^B	13	- 1-1	1.5	≤ 0.00	(1) (1)	. 1. 19	-st 7 -	1.1 ^{QB}	602.31
		Top of We	II Screen in Feet I	MSL: 603.10			Length of Well S	creen: <u>10 ft.</u>					
MW-2	12-12-03	0.1	P.1		.10.1	11.1	0.5	::1	10 Z - 1	01.	<0.1%	-15-1	600.24
	9-16-04	-10, 15	19.27	100.23	-16-24	S (1. 57	-10 ID	.n 22	<0.18	. n. 1	n [1	-0.18	600.03
	12-1-04	en 11	, 4 60	. (p. 43	. 0.23	- 0. CT	< 0.15	20. M	c(1.48	~g.o.t	:0.93	- 0.48	600.04
	8-30-06		1.00	-(145) -(145)	-11 đợ	2141 载菜	$(i_{ij}, -i_{i})$	-b-to	<n 19<="" td=""><td>. 6 11) -</td><td>-4143</td><td>0.18</td><td>599.41</td></n>	. 6 11) -	-4143	0.18	599.41
		Top of We	II Screen in Feet I				Length of Well S	creen: <u>10 ft.</u>					
MW-3	12-11-03	t et	0.132 ^Q	224 ^{Z B}	1.76	0.213 ^Q	L		eft 🗍	0.579	0.154 ^Q	28.0 ^B	598.27
	9-16-04	-0 1 T	1 N 117	220 ^B	1.8	< <u>n 27</u>	20-1Q	<() 2.1	<0.13	< 0.124	<0.11	38 ^B	596.05
	12-1-04	(G. E.C.	1.13	100 ^B	1.0 ^Q	10 TU -	204 M 10	, 11 tr. 1	. n. 16	$D(\Omega)^*$	13 O 3	7.5 ^B	597.76
	8-31-06		1.1.1	120 ^B	1.5 ^Q	13.2	$(N^{-1})^{(1)}$	11.15	J. 10	1.12	51.42.5	10 ^B	595.43
	11-14-06	23.11	9,30	42 ^	Ú rio	 D [57] 	. e. 175	-13C	0.55 ^Q	n n	- 11-11-3	8.3 ^B	600.21
PAL		0.5	200	7	20	0.7	NE	0.5	Û.5	96	96	<u>0.02</u>	
ES		5	1000	70	100	7	NE	5	و	480	480	0.2	

TABLE 3 Summary Groundwater Analytical Results - Detected VOCs Former C&L Industrial Cleaners - Kenosha, Wisconsin STS Project No. 200603327

Sample Location	Sample Date	Benzene µg/L	Dichloro- difluoro- methane µg/L	cis-1,2- Dichloro- ethene µg/L	trans-1,2- Dichloro- ethene μg/L	1,1-Dichloro- ethylene µg/L	1,1-Dichloro propene µg/L	Tetrachloro- ethene µg/L	Trichloro- ethene µg/L	1,2,4- Trimethyl benzene µg/L	1,3,5- Trimethyl benzene µg/L	Vinyl Chloride µg/L	Groundwater Elevation (feet msl)
		Top of We	II Screen in Feet	MSL: 603.12			Length of Well S						
MW-4	12-1-04	<10	<25	<21	<22	<14	<19	4300 ^B	30 QB	<24	<21	<4.5	599.65
	8-31-06	<51	<120	<100	<110	<71	<94	12000 ^B	<60	<120	<100	<22	599.74
	11-13-06	<⁄11	<99	<83	<89	<57	<75	6700 ^B	<48	<97	<83	<18	601.17
		Top of We	II Screen in Feet	MSL: <u>602.38</u>			Length of Well S						
MW-5	12-1-04	<4.1	<9.9	<8.3	<8.9	<5.7	<7.5	970 ^B	13 ^{Q B}	<9.7	<8.3	<1.8	599.74
	8-31-06	<8.2	<20	<17	<18	<11	<15	1400 ^B	< 9.6	<19	<17	<3.6	599.79
	11-13-06	<10	<25	<21	<22	<14	<19	2200 ^B	<12	<24	<21	<4.5	601.26
		Top of We	I Screen In Feet	MSL: <u>582.37</u>			Length of Well S						
MW-5P	12-1-04	< 0.41	<0.99	<0.83	<0.89	< 0.57	<0.75	6.3 ^B	<0.48	<0.97	< 0.83	<0.18	598.74
	8-31-06	< 0.41	<().99	<0.83	< 0.89	<0.57	<0.75	0.99 °	<0.48	< 0.97	<0.83	<0.18	598.51
	11-13-06	<0.41	<0.99	. <0.83	<0.89	<0.57	<0.75	0.74 [°]	<0.48	<0.97	< 0.83	<0.18	600.23
		Top of We	I Screen in Feet I	MSL: <u>602.33</u>			Length of Well S	creen: <u>10 ft.</u>					
MW-6	12-1-04	< 0.41	<0.99	5.0	<0.89	<0.57	<0.75	<0.45	<0.48	<0,97	< 0.83	1.0 8	600.42
	11-13-06	<0.41	<0.99	0.86 ^Q	<0.89	<0.57	<0.75	< 0.45	1.4 QA	<0.97	<0.83	<0.18	602.70
MW-20		Top of We	Il Screen In Feet I	MSL: <u>607.57</u>			Length of Well S						
	8-31-06	<82	<200	<170	<180	<110	<150	20000 ^B	<96	<190	<170	<36	599.88
	11-14-06	<51	<120	<100	<110	<71	<94	13000 ^B	60 ^{QB}	<120	<100	<22	601.09
MW-20		Top of We	Il Screen In Feet I	MSL: <u>607.57</u>			Length of Well S						
Duplicate	8-31-06	<82	<200	<170	<180	<110	<150	18000 ^B	<96	<190	<170	<36	599.88
	11 -14-06	<51	<120	<100	<110	<71	<94	13000 ^B	<60	<120	<100	<22	601.09
PAL		0.5	200	7	20	0.7	NE	0.5	0.5	96	96	<u>0.02</u>	
ES		5	1000	70	100	7	NE	5	5	480	480	0.2	

TABLE 3 Summary Groundwater Analytical Results - Detected VOCs Former C&L Industrial Cleaners - Kenosha, Wisconsin STS Project No. 200603327

Sample Location	Sample Date	Benzene µg/L	Dichloro- difluoro- methane µg/L	cis-1,2- Dichloro- ethene μg/L	trans-1,2- Dichloro- ethene μg/L	1,1-Dichloro- ethylene µg/L	1,1-Dichloro propene µg/L	Tetrachloro- ethene µg/L	Trichloro- ethene µg/L	1,2,4- Trimethyl benzene µg/L	1,3,5- Trimethyl benzene µg/L	Vinyl Chloride	Groundwater Elevation (feet msl)
MW-21		Top of We	Il Screen in Feet I	WSL: <u>606.93</u>			Length of Well S	creen: <u>10 ft.</u>					
	8-30-06	. 17. 17	13-142	-11 (*)	0.89	0.51	: 1) Th	2.0 ^A	(1 13)	2 (J. () "	<0.8.7	-9.49	598.22
	11-13-06	-11.11	< () (31)	20 G S	su dō	<(),07	<0.15	<() !5	<0.48	:n 97	<0.83	<0.18	599.42
MW-23		Top of We	I Screen in Feet I	WSL: 607.54			Length of Well S	creen: <u>10 ft.</u>					
	8-30-06	78-31	22. (26.)	4.6.5	(1.427)	20132	£5 - 5	1.3.8	0.10	<i>a a</i>	(x - 5 3	- n 19	599.38
	11-13-06	n at	<() 119	2 <u>1</u> 1 2	0.30	.6,57	⊴0.15		- (+ 15 <u>)</u>	(j. S.	-() <u><</u> }	0.18	601.05
MW-24		Top of We	II Screen in Feet I	WSL: <u>611.31</u>			Length of Well S	creen: <u>10 ft.</u>				· · · · · · · · · · · · · · · · · · ·	
	8-30-06	15-33	· (Y - (Y/)	0.03	0.00	0.5	100 TV.	6. M	11-115	· J · P _	< 0.0 °	10 T.P	599.63
	11-14-06	· 1 · 1 ·	11 11	(T, G, Z)	11.55	0.57	20 - 18 - 18 - 18 - 18 - 18 - 18 - 18 - 1	÷.	0.96 94	1.2	-17 tr 7	0.15	601.76
MW-26		Top of We	Il Screen in Feet I	WSL: <u>606.53</u>			Length of Well S	creen: <u>10 ft.</u>					
	8-31-06	. 13 E1	(1) (1) (1)	120 ^B	4.9	, o gr	20 ° 9	, 6, 15	(1) 423	0.0.	() ¹ (13 ^B	595.91
	11-14-06	11.17	<i></i>	170 ^B	6.4			5 gA	0.00	• •	1	23 ^B	601.04
PAL		0.5	200	7	20	0.7	NE	0.5	0.5	96	96	<u>0.02</u>	
ES		5	1000	70	100	7	NE	5	5	480	480	0.2	

² Analytical method SW-846 8021B results were reported because analyte was not detected by the 8260 method or was detected at a higher concentration in the 8021B method.

* PAL and ES values are for total trimethylebenzenes (both 1,2,4- and 1,3,5-)

Dup = Duplicate sample

^A PAL = Preventive action limit established under Wisconsin Administrative Code NR140.10 Table 1, November 2006, Exceedances are Italic.

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^B ES = Enforcement standard established under Wisconsin Administrative Code NR140.10 Table 1, November 2006, Exceedances are Bold.

^Q = Estimated concentration below the laboratory practical quantitation limit, but above the method detection limit.

µg/L = Micrograms per Liter.

TABLE 4Groundwater Analytical Results - MetalsKenosha Brownfield Investigation - C&L Industrial CleanersSTS Project No. 200603327

Sample			Groundwater	Sample			Groundwater
Location	Sample Date	Nickel	Elevation	Location	Sample Date	Nickel	Elevation
		ug/L	(feet msl)			ug/L	(feet msl)
B-3	5-14-01	<3	612.87	MW-2	9-16-04	34 ^A	600.03
					12-1-04	200 ^B	600.04
B-5	5-14-01	8 ^Q	613.42	1	8-30-06	44 ^A	599.41
	9-16-04	31	599.98				
	12-1-04	21	600.18	MW-3	12-11-03	12.9	598.27
	8-30-06	16	599.19		9-16-04	5.4	596.05
	11-13-06	19	602.32		12-1-04	7.3	597.76
					8-31-06	6.6	595.43
B-6	5-14-01	23 ^A	613.44				
	12-12-03	6.2 ^Q	610.08	MW-4	12-1-04	28 ^A	599.65
	8-30-06	61 ^A	599.30		8-31-06	22 ^A	599.74
	11-13-06	25 [^]	602.39		11-13-06	12 ^Q	601.17
l							
B-6 Dup	12-12-03	9.6 ^Q	610.08	MW-5	12-1-04	19	599.74
	9-16-04	28 ^A	600.28		8-31-06	27 ^	599.79
	12-1-04	43 ^A	601.43		11-13-06	31 ^A	601.26
	8-30-06	60 ^A	599.30				
	11-13-06	25 ^A	602.39	MW-5P	12-1-04	22 ^A	598.92
					8-31-06	20 ^A	598.61
B-7	5-14-01	4 ^Q	613.13		11-13-06	21 ^A	
	5-14-01	4 ^Q	613.13				
	8-31-06	1.7 ^Q	598.63	MW-6	12-1-04	30 ^A	600.42
1			Í				
B-12	5-14-01	<2	611.17	MW-20	8-31-06	23 ^A	599.88
					11-14-06	16	601.09
B-16	5-14-01	4 ^Q	609.42				
	12-12-03	20.1 ^A	609.42	MW-20	8-31-06	22 ^A	598.88
	9-16-04	1.7	595.43	Duplicate	11-14-06	17	601.09
	11-30-04	2.3	597.49				
	8-31-06	1.7 ^Q	594.14	MW-21	8-30-06	17	598.22
					11-13-06	6.8 ^Q	599.42
MW-1	12-11-03	48.10 ^A	600.20				
	12-11-03	48.10 ^A	600.20	MW-23	8-30-06	11	599.38
	9-16-04	62 ^A	600.08				
	12-1-04	42 ^A	600.41	MW-24	8-30-06	150 ^B	599.63
	8-30-06	30 ^A	599.51		11-14-06	110 ^B	601.76
	11-13-06	9.8 ^Q	602.31				
				MW-26	8-31-06	17	595.91
MW-1D	12-1-04	44 ^A	600.41				
				PAL		20	
PAL		20		ES		100	
ES		100					

Notes: D or Dup = Duplicate sample

NT = Not Tested

- ^A PAL = Preventive action limit established under Wisconsin Administrative Code NR140.10 Table 1, November 2006, Exceedances are *italic*.
- ^B ES = Enforcement standard established under Wisconsin Administrative Code NR140.10 Table 1, November 2006, Exceedances are **bold**.

^Q = Estimate concentration below the laboratory practical quantitation limit, but above the method detection limit.

Table 5 Field-Measured Groundwater Parameters C & L Industrial Cleaners Kenosha, WI STS Project No, 200603327

	Sample Date	pH Units	Dissolved Oxygen (mg/l)	ORP (Milivolts)	Conductivity (Microohm/cm)	Temperature (° Celcius)	Groundwate Elevation (f
B-3	Top of Well Screen in Fe	t MSL: 603.07		Length of Well Scr	een: <u>10 ft.</u>		
	8/30 & 31/06	7.62	0.86	-29	1.05	15.3	599.19
	11/13/2006	6.79	2.56	-103	1.10	13.3	601.30
B-5	Top of Well Screen in Fe	MSL: 603.48		Length of Well Scr	reen: 10 ft.		
D-3	8/30 & 31/06	7.48	0.50	62	0.79	16.5	599.19
	11/13/2006	6.51	0.46	-22	1.10	12.6	602.32
	11/13/2000	0.51	0.40	-22	1.10	12.0	002.32
					<u> </u>		
B-6	Top of Well Screen in Fe		0.40	Length of Well Scr	the second s	45.0	500.00
	8/30 & 31/06	7.21	0.40	-78	1.68	15.8	599.30
	11/13/2006	6.57	0.25	-114	1.41	13.1	602.39
					I		
B-7	Top of Well Screen in Fe	t MSL: 600.03		Length of Well Scr	een: <u>10 ft.</u>		
	8/30 & 31/06	7.40	0.69	66	1.02	14.6	598.63
B-12	Top of Well Screen in Fe	t MSL: 600.13		Length of Well Scr	een: <u>10 ft.</u>		
	8/30 & 31/06	7.31	0.85	-113	1.16	15.5	596.47
	11/14/2006	6.71	0.28	-178	2.14	12.9	601.32
	11/14/2000	0.71	0.20	-110	<u> </u>	12.0	001.02
D 40	Top of Wall Comments	MSI - 507 07		Length of Well Scr	1		
B-16	Top of Well Screen in Fe		0.67			43.0	50444
	8/30 & 31/06	7.33	0.67	63	1.20	13.9	594.14
				L			
MW-1	Top of Well Screen in Fe			Length of Well Scr			
	8/30 & 31/06	7.38	0.42	26	1.17	15.8	599.51
	11/13/2006	6.76	0.90	-55	1.36	12.8	602.31
				1			
MW-2	Top of Well Screen in Fe	at MSL: 603.10		Length of Well Scr	een: 10 ft.		
14144-2	8/30 & 31/06	7.42	0.93	56	1.54	15.8	599.41
	0/30 a 31/00	1.42	0.93	50	1.04	10.0	555.41
		L		<u> </u>			
MW-3	Top of Well Screen in Fe			Length of Well Scr			
	8/30 & 31/06	7.12	0.56	-91	1.43	14.8	595.43
	11/14/2006	6.57	0.49	-111	1.35	11.6	600.21
MW-4	Top of Well Screen in Fe	et MSL: 603.12		Length of Well Scr	een: <u>10 ft.</u>		
	8/30 & 31/06	7.65	1.05	52	0.91	16.0	599.74
	11/13/2006	6.79	2.94	51	0.63	13.5	601.17
MW-5	Top of Well Screen in Fe	at MSI : 602 38		Length of Well Scr	men: 10 ft.		
10100-5	8/30 & 31/06	7.35	0.50	-67	1.71	17.3	599.79
	11/13/2006	6.73	0.49	-80	1.92	13.8	601.26
	11/13/2006	0.73	0.49	-00	1.92	13.0	001.20
					1		
MW-5P	Top of Well Screen in Fe			Length of Well Scr		-	
	8/30 & 31/06	7.89	0.40	-132	0.97	14.2	598.51
	11/13/2006	7.18	0.35	-198	0.97		
					0.97	12.3	600.23
					0.97	12.3	600.23
MW-6	Top of Well Screen in Fe	et MSL: 602.33		Length of Well Scr		12.3	600.23
MW-6	Top of Well Screen In Fe		0.40	Length of Well Scr -78	een: <u>10 ft.</u>		
MW-6	8/30 & 31/06	7.21	0.40	-78	reen: <u>10 ft.</u> 1.68	15.8	599.22
MW-6	and the second sec		0.40 0.55		een: <u>10 ft.</u>		
	8/30 & 31/06 11/13/2006	7.21 6.97		-78 -138	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u>	15.8	599.22
MW-6	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe	7.21 6.97 et MSL: <u>607.57</u>	0.55	-78 -138 Length of Well Scr	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u> een: <u>10 ft.</u>	15.8 12.5	599.22 602.70
	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 et MSL: <u>607.57</u> 7.33	0.55	-78 -138 Length of Well Scr -59	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u> een: <u>10 ft.</u> <u>1.41</u>	15.8 12.5 16.8	599.22 602.70 599.88
	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe	7.21 6.97 et MSL: <u>607.57</u>	0.55	-78 -138 Length of Well Scr	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u> een: <u>10 ft.</u>	15.8 12.5	599.22 602.70
	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 et MSL: <u>607.57</u> 7.33	0.55	-78 -138 Length of Well Scr -59	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u> een: <u>10 ft.</u> <u>1.41</u>	15.8 12.5 16.8	599.22 602.70 599.88
	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 ot MSL: <u>607.57</u> 7.33 6.75	0.55	-78 -138 Length of Well Scr -59	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u> <u>1.68</u> <u>1.68</u> <u>1.41</u> <u>1.85</u>	15.8 12.5 16.8	599.22 602.70 599.88
MW-20	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe	7.21 6.97 ot MSL: <u>607.57</u> 7.33 6.75	0.55	-78 -138 Length of Well Scr -59 -81	een: <u>10 ft.</u> <u>1.68</u> <u>1.68</u> <u>1.68</u> <u>1.68</u> <u>1.41</u> <u>1.85</u>	15.8 12.5 16.8	599.22 602.70 599.88
MW-20	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 7.33 6.75 t MSL: <u>606.93</u> 7.70	0.55	-78 -138 Length of Well Scr -59 -81 Length of Well Scr	een: <u>10 ft.</u>	15.8 12.5 16.8 13.8	599.22 602.70 599.88 601.99
MW-20	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe	7.21 6.97 01 MSL: <u>607.57</u> 7.33 6.75 01 MSL: <u>606.93</u>	0.55 0.62 1.78	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18	15.8 12.5 16.8 13.8 14.9	599.22 602.70 599.88 601.99 598.22
MW-20 MW-21	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006	7.21 6.97 7.33 6.75 et MSL: <u>606.93</u> 7.70 6.79	0.55	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97	15.8 12.5 16.8 13.8 14.9	599.22 602.70 599.88 601.99 598.22
MW-20	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe	7.21 6.97 ••• MSL: <u>607.57</u> 7.33 6.75 ••• MSL: <u>606.93</u> 7.70 6.79 ••• MSL: <u>607.54</u>	0.55	-78 -138 Length of Well Scr -59 -81 Length of Well Scr 50 Length of Well Scr	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u>	15.8 12.5 16.8 13.8 14.9 13.8	599.22 602.70 599.88 601.99 598.22 599.42
MW-20 MW-21	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 et MSL: <u>607.57</u> 7.33 6.75 et MSL: <u>606.93</u> 7.70 6.79 et MSL: <u>607.54</u> 7.74	0.55 0.62 1.78 1.22 1.04 1.09	-78 -138 Length of Well Scr -59 -81 Length of Well Scr 50 Length of Well Scr 38	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59	15.8 12.5 16.8 13.8 14.9 13.8 16.1	599.22 602.70 599.88 601.99 598.22 599.42 599.38
MW-20 MW-21	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe	7.21 6.97 ••• MSL: <u>607.57</u> 7.33 6.75 ••• MSL: <u>606.93</u> 7.70 6.79 ••• MSL: <u>607.54</u>	0.55	-78 -138 Length of Well Scr -59 -81 Length of Well Scr 50 Length of Well Scr	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u>	15.8 12.5 16.8 13.8 14.9 13.8	599.22 602.70 599.88 601.99 598.22 599.42
MW-20 MW-21	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006	7.21 6.97 ••• MSL: <u>607.57</u> 7.33 6.75 ••• MSL: <u>606.93</u> 7.70 6.79 ••• MSL: <u>607.54</u> 7.74 6.99	0.55 0.62 1.78 1.22 1.04 1.09	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50 Length of Well Scr 38 114	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59 0.65	15.8 12.5 16.8 13.8 14.9 13.8 16.1	599.22 602.70 599.88 601.99 598.22 599.42 599.38
MW-20 MW-21	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 ••• MSL: <u>607.57</u> 7.33 6.75 ••• MSL: <u>606.93</u> 7.70 6.79 ••• MSL: <u>607.54</u> 7.74 6.99	0.55 0.62 1.78 1.22 1.04 1.09	-78 -138 Length of Well Scr -59 -81 Length of Well Scr 50 Length of Well Scr 38	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59 0.65	15.8 12.5 16.8 13.8 14.9 13.8 16.1 12.3	599.22 602.70 599.88 601.99 598.22 599.42 599.42 599.38 601.05
MW-20 MW-21 MW-23	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006	7.21 6.97 ••• MSL: <u>607.57</u> 7.33 6.75 ••• MSL: <u>606.93</u> 7.70 6.79 ••• MSL: <u>607.54</u> 7.74 6.99	0.55 0.62 1.78 1.22 1.04 1.09	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50 Length of Well Scr 38 114	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59 0.65	15.8 12.5 16.8 13.8 14.9 13.8 16.1	599.22 602.70 599.88 601.99 598.22 599.42 599.38
MW-20 MW-21 MW-23	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006	7.21 6.97 7.33 6.75 et MSL: <u>606.93</u> 7.70 6.79 et MSL: <u>607.54</u> 7.74 6.99	0.55 0.62 1.78 1.22 1.04 1.09 2.43	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50 Length of Well Scr 38 114 Length of Well Scr	een: <u>10 ft.</u>	15.8 12.5 16.8 13.8 14.9 13.8 16.1 12.3	599.22 602.70 599.88 601.99 598.22 599.42 599.42 599.38 601.05
MW-20 MW-21 MW-23	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06	7.21 6.97 ot MSL: <u>607.57</u> 7.33 6.75 ot MSL: <u>606.93</u> 7.70 6.79 ot MSL: <u>607.54</u> 7.74 6.99 ot MSL: <u>611.31</u> 7.31	0.55 0.62 1.78 1.22 1.04 1.09 2.43 0.52	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50 Length of Well Scr 38 114 Length of Well Scr -7	een: <u>10 ft.</u>	15.8 12.5 16.8 13.8 14.9 13.8 16.1 12.3 17.2	599.22 602.70 599.88 601.99 598.22 599.42 599.42 599.38 601.05 599.63
MW-20 MW-21 MW-23 MW-24	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006	7.21 6.97 7.33 6.75 7.70 6.79 et MSL: <u>607.54</u> 7.70 6.79 et MSL: <u>607.54</u> 7.74 6.99 et MSL: <u>611.31</u> 7.31 6.74	0.55 0.62 1.78 1.22 1.04 1.09 2.43 0.52	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50 Length of Well Scr 38 114 Length of Well Scr -7 -54	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59 0.65 een: <u>10 ft.</u> 2.13 2.49	15.8 12.5 16.8 13.8 14.9 13.8 16.1 12.3 17.2	599.22 602.70 599.88 601.99 598.22 599.42 599.42 599.38 601.05 599.63
MW-20 MW-21 MW-23	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe	7.21 6.97 7.33 6.75 7.70 6.79 et MSL: <u>606.93</u> 7.70 6.79 et MSL: <u>607.54</u> 7.74 6.99 et MSL: <u>611.31</u> 7.31 6.74 et MSL: <u>606.53</u>	0.55 0.62 1.78 1.22 1.04 1.09 2.43 0.52 0.78	-78 -138 Length of Well Scr -59 -81 Length of Well Scr 38 114 Length of Well Scr -7 -54 Length of Well Scr	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59 0.65 een: <u>10 ft.</u> 2.13 2.49 een: <u>10 ft.</u>	15.8 12.5 16.8 13.8 14.9 13.8 16.1 12.3 16.1 12.3 17.2 14.4	599.22 602.70 599.88 601.99 598.22 599.42 599.38 601.05 599.63 601.76
MW-20 MW-21 MW-23 MW-24	8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/13/2006 Top of Well Screen in Fe 8/30 & 31/06 11/14/2006	7.21 6.97 7.33 6.75 7.70 6.79 et MSL: <u>607.54</u> 7.70 6.79 et MSL: <u>607.54</u> 7.74 6.99 et MSL: <u>611.31</u> 7.31 6.74	0.55 0.62 1.78 1.22 1.04 1.09 2.43 0.52	-78 -138 Length of Well Scr -59 -81 Length of Well Scr -95 50 Length of Well Scr 38 114 Length of Well Scr -7 -54	een: <u>10 ft.</u> 1.68 1.68 een: <u>10 ft.</u> 1.41 1.85 een: <u>10 ft.</u> 3.18 1.97 een: <u>10 ft.</u> 0.59 0.65 een: <u>10 ft.</u> 2.13 2.49	15.8 12.5 16.8 13.8 14.9 13.8 16.1 12.3 17.2	599.22 602.70 599.88 601.99 598.22 599.42 599.38 601.05 599.63

Notes:

NM = Not Measured mg/l = milligrams per liter.

ft = feet

msi = mean sea level

Table 6 Summary of Retained Remedial Technologies Former C & L Industrial Cleaners - Kenosha, Wisconsin STS Project No. 200603327

Evaluation Criteria Alternatives	Short Term Effectiveness	Long Term Effectiveness	Implementability	Cost
No Action	No short-term impact due to no remedial action.	Long-term effectiveness is limited to natural attenuation.	Technically implementable; however, if the plume is expanding, the City could lose its limited liability protection. No major permitting involved; therefore, administrative feasibility is fair.	No capital and O&M cost required.
Institutional Controls	No short-term impact due to no remedial action.	Long-term effectiveness is limited to natural attenuation.	Technically implementable; administratively simple to implement.	Low capital costs; no O&M costs.
Excavation/Off-Site Landfill Disposal	Short-term impacts due to construction.	Long-term effectiveness is good.	Technical implementability is good. Administrative implementability may require more lead time due to site concentrations.	High to very high capital costs; low O&M costs.
Engineering Control - Infiltration Control Barrier	Short-term impacts due to construction.	Long-term effectiveness is good.	Technically implementable; administratively simple to implement.	Moderate capital costs; moderate O&M costs.
Soil Vapor Extraction	Short-term impacts due to construction.	Long-term effectiveness is good.	Technical implementability is adversely impacted by low permeability subsurface soils or shallow depth to groundwater.	Moderate capital costs; moderate to high O&M costs.
Dual Phase Extraction	Short-term impacts due to construction.	Long-term effectiveness is good.	Technical implementability is adversely impacted by low permeability subsurface soils.	Moderate capital costs; high O&M costs.
Natural Attenutation	Minor short-term impact due to data collection from impacted media.	Long-term effectiveness could be good.	Technically implementable; no major permitting involved; therefore, administrative feasibility is fair.	Low capital costs; moderate O&M costs.
Air Sparging	Short-term impacts due to construction.	Long-term effectiveness is good.		Moderate capital costs; high O&M costs.
Enhanced Bioremediation	Short-term impacts due to injection of substrate oil and odors created by	Long-term effectiveness is good.	Technical implementability may be slowed by low permeability subsurface soils.	Moderate to high capital costs; low O&M costs.
In-Situ Thermal Treatment	Short-term impacts due to construction.	Long-term effectiveness is good.	Technical implementability is good. Administrative implementation may be difficult due to site constraints.	High capital costs; low O&M costs.
Ex-Situ Thermal Treatment	Short-term impacts due to construction.	Long-term effectiveness is good.	Technical implementability is good. Administrative implementability may be difficult due to site constraints.	High to very high capital costs; low O&M costs.

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Table 7 Recommended Remedial Strategy Summary and Estimated Costs Former C & L Industrial Cleaners - Kenosha, Wisconsin STS Project No. 200603327

Selected Remedial Alternative	Alternative Implementation	Capital Cost	Annual Operations and Maintenance Cost	Annual Groundwater Monitoring Cost
Area 1 - Direct Contact Zone - Soil Exceeding th	ne Industrial RCL			
Off-site landfill disposal of the soils within Area 1 at G-1 and GP-23 to GP-101 where soil exceeds 100,000 ug/kg is recommended for source control. This would immediately remove the bulk of the source of PCE contamination in the vadose zone.	Excavate approximately 150 cubic yards of soil. The soil would be placed into roll-off boxes and a composite sample would be prepared from the excavated soil for laboratory analysis of VOCs to evaluate by Toxicity Characteristic Leaching Procedure (TCLP) testing to determine if the soil is non-hazardous waste.	Excavation costs would be \$21 per yard.		None
	If the soil is non-hazardous, then the roll-off boxes would be transported to a sanitary landfill for disposal.	\$50/ton disposal. Assumed 10 roll-off boxes	None	None
	If the soil is hazardous (PCE concentration greater than 60 mg/kg), then the soil would be treated by SVE (inside each box) until the concentrations are less than 60 mg/kg. Assuming 45 days of treatment.	Cost for treatment and disposal (assume 8 roll-off boxes) includes transportation to landfill is \$29,000 plus about \$10,000 in engineering and lab fees.	None	None, included with long term monitoring for cap
Areas 1, 3 and 4 Unsaturated Zone Soil Exceed	ing the Soil to Groundwater Pathway			
barrier placed over the areas with PCE	A clay cap approximately 2 foot thick with six-inches top soil would be placed over the western portion of the subject property. The area to be capped is approximately 24,000 square feet.	Construction costs \$75,000 to \$125,000, plus engineering costs of \$8,000 to \$10,000	Approximately \$10,000	One-half of the total annual cost \$25,000
Area 1 - Saturated Zone Sail Exceeding the Sai	to Groundwater Pathway and Dissolved Groundwate	r Contamination		· · · · · · · · · · · · · · · · · · ·
Area 1 - Saturated Zone Soil Exceeding the Soi Enhanced bioremediation would be used to treat both the saturated zone soils and the dissolved phase groundwater contamination within this source area.	Additional groundwater monitoring for electron donors and receptors may be necessary to evaluate the proper ratio of injectant. A remedial design report and underground injection permit (UIC) application may be required for WDNR review and	Pre-design groundwater	None	One-half of the total annual cost \$25,000

STS CONSULTANTS

FIGURES

Figure 1 – Site Topographic Map

Figure 2 – Site Layout & Sample Locations

Figure 3 – Cross Section Location Diagram

Figure 4 - Cross-Section A-A""

Figure 5 - Cross-Section B-B'

Figure 6 - Cross-Section C-C'

Figure 7 – Groundwater Potentiometric Surface, August 2006

Figure 8 – Groundwater Potentiometric Surface, November 2006

Figure 9 – Tetrachloroethene in Soil, 0 to 4 feet Below Ground Surface

Figure 10 - Tetrachloroethene in Soil, 4 to 8 feet Below Ground Surface

Figure 11 – Tetrachloroethene in Soil, 8 to 15 feet Below Ground Surface

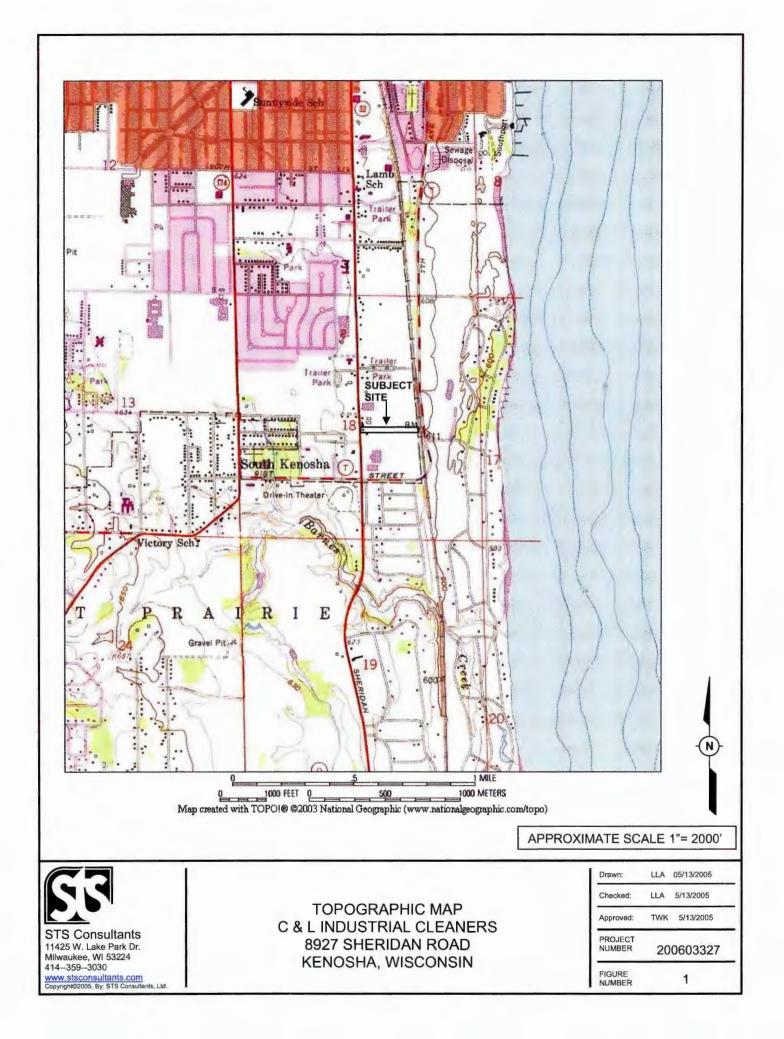
Figure 12 - Summary Tetrachloroethene in Soil

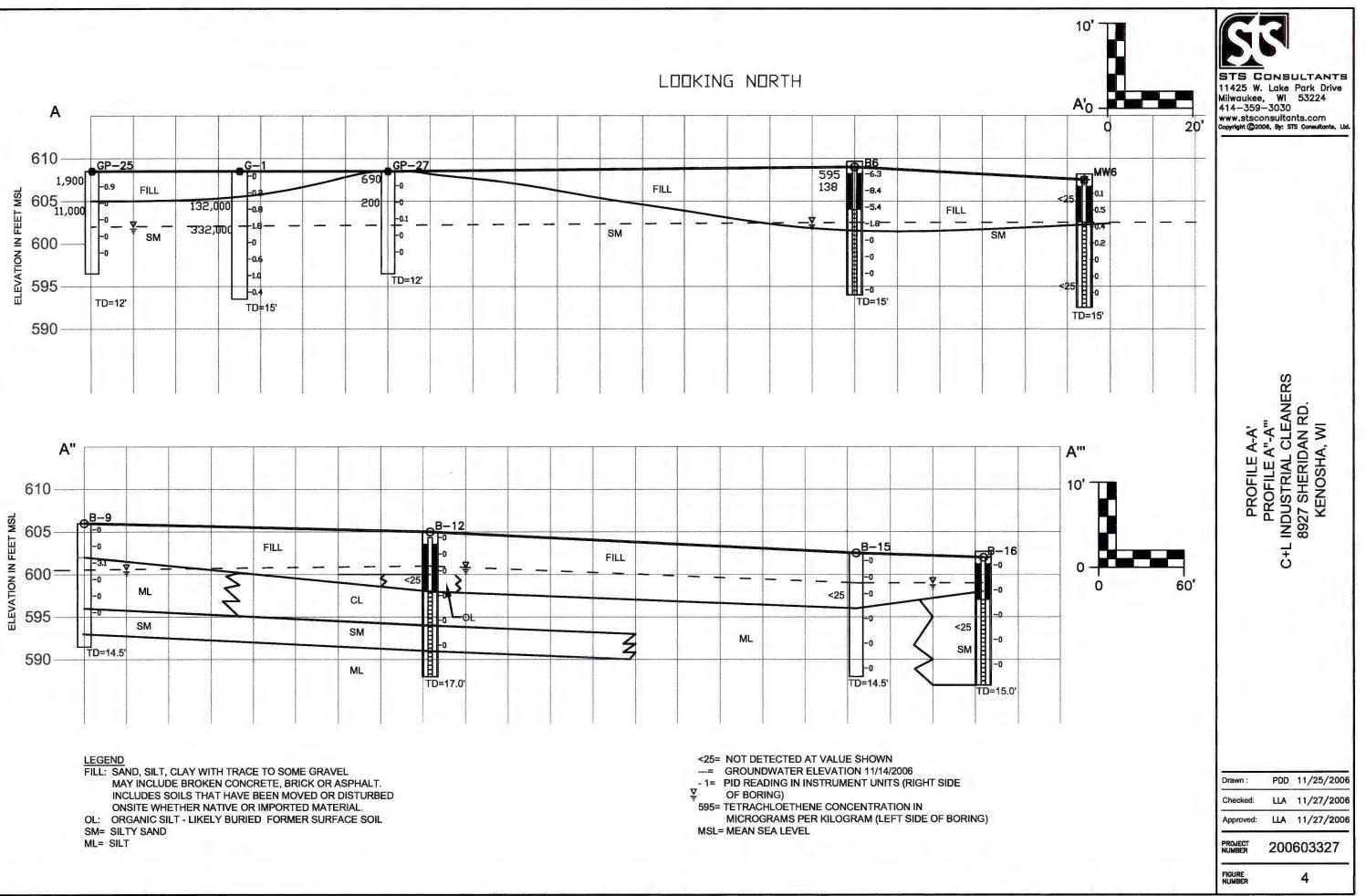
Figure 13 - Sum of Tetrachloroethene Concentrations in Unsaturated Soil

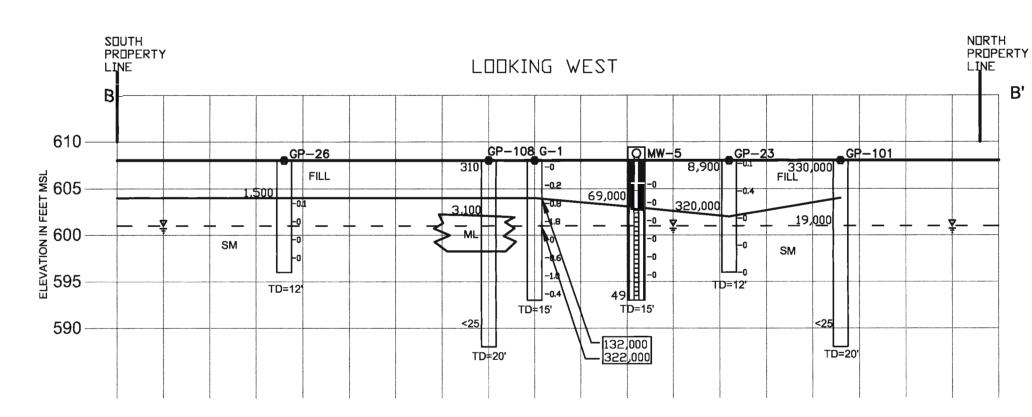
Figure 14 – Volatile Organic Compounds in Groundwater, Above Standards

Figure 15 - Remedial Excavation Area and Proposed Extent of Infiltration Barrier

Figure 16 - Estimated Area for Groundwater Source Control Treatment







LEGEND

FILL: SAND, SILT, CLAY WITH TRACE TO SOME GRAVEL MAY INCLUDE BROKEN CONCRETE, BRICK OR ASPHALT. INCLUDES SOILS THAT HAVE BEEN MOVED OR DISTURBED ONSITE WHETHER NATIVE OR IMPORTED MATERIAL. SM= SILTY SAND

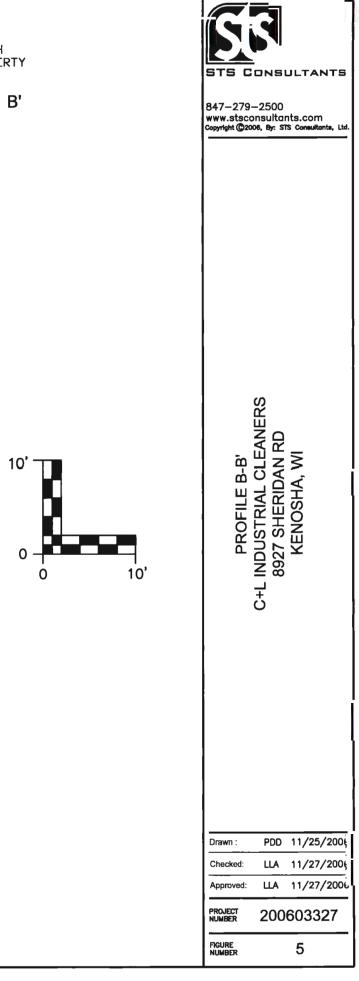
ML= SILT

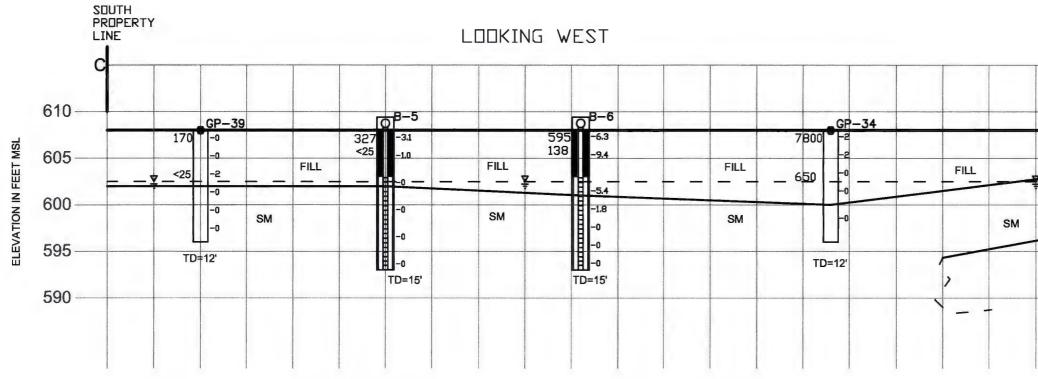
<25= NOT DETECTED AT VALUE SHOWN

---= GROUNDWATER ELEVATION 11/14/2006

120,000 = TETRACHLOETHENE CONCENTRATION IN MICROGRAM PER KILOGRAM (LEFT SIDE OF BORING)

MSL= MEAN SEA LEVEL





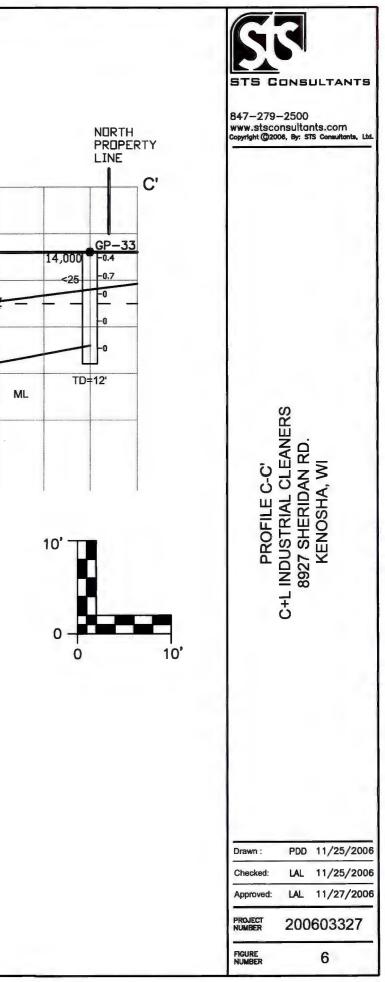
LEGEND

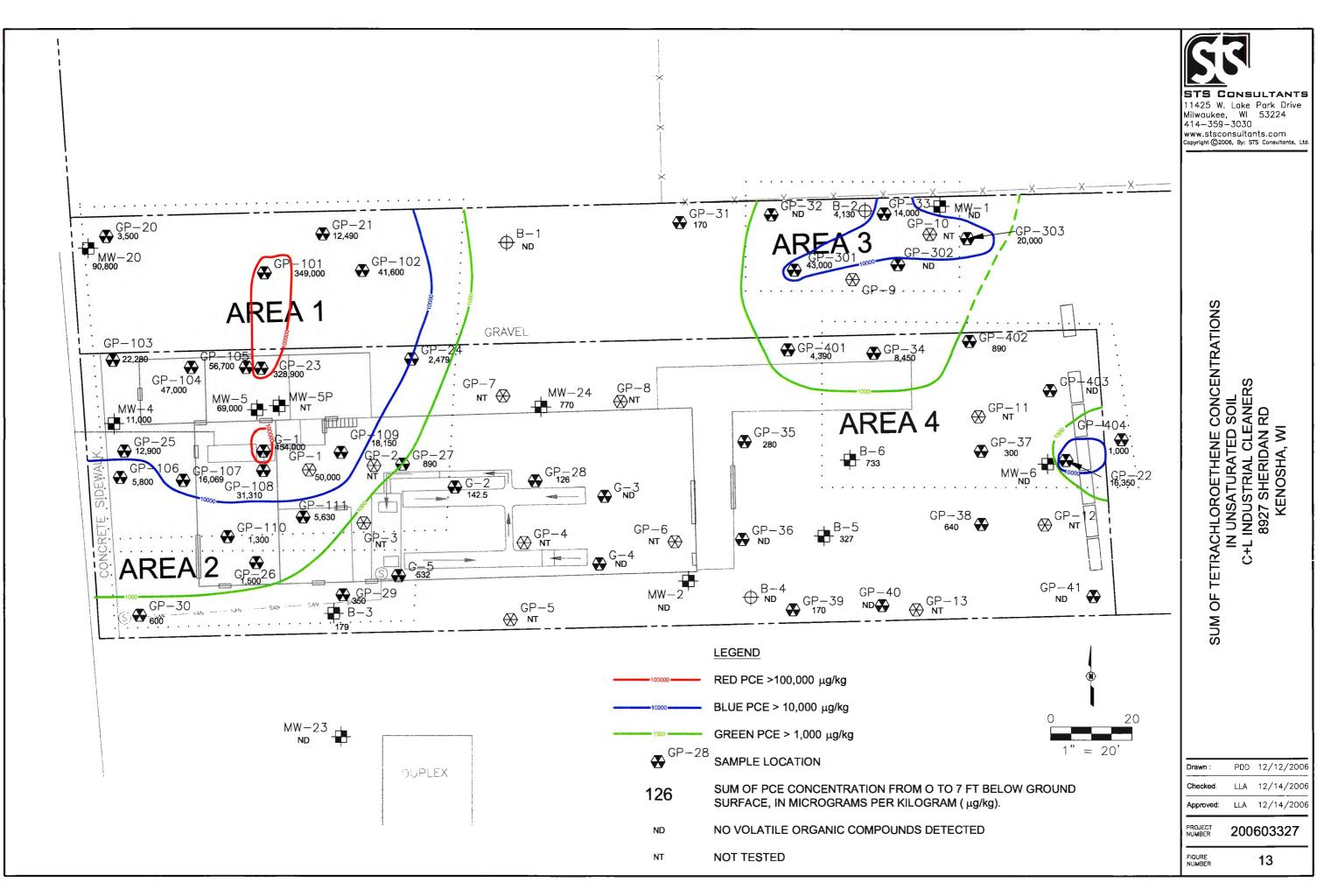
FILL: SAND, SILT, CLAY WITH TRACE TO SOME GRAVEL MAY INCLUDE BROKEN CONCRETE, BRICK OR ASPHALT. INCLUDES SOILS THAT HAVE BEEN MOVED OR DISTURBED ONSITE WHETHER NATIVE OR IMPORTED MATERIAL. SM= SILTY SAN

ML= SILT

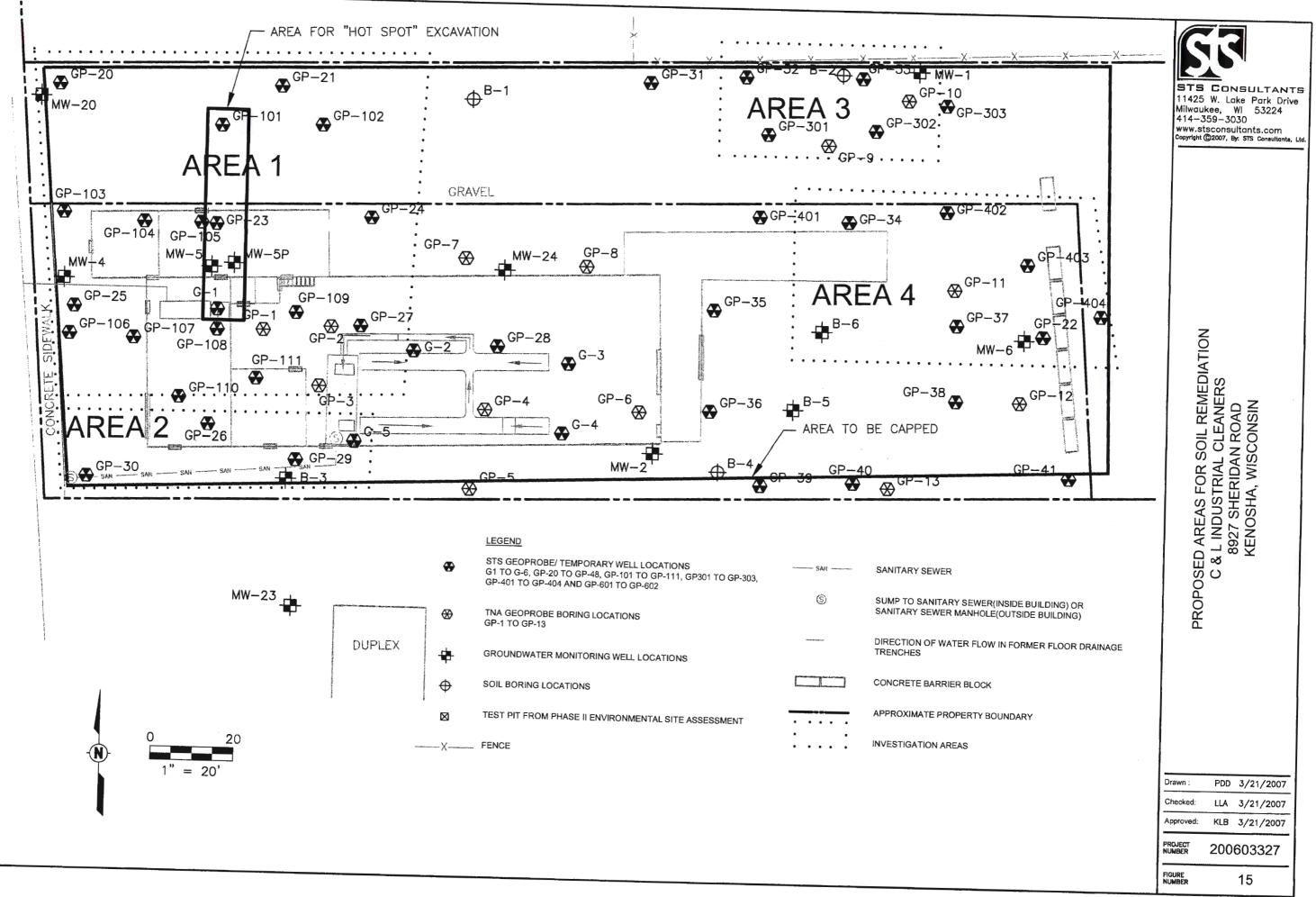
- <25= NOT DETECTED AT VALUE SHOWN
- ---= GROUNDWATER ELEVATION 11/14/2006

14,000 = TETRACHLOETHENE CONCENTRATION IN MICROGRAM PER KILOGRAM (LEFT SIDE OF BORING) MSL= MEAN SEA LEVEL

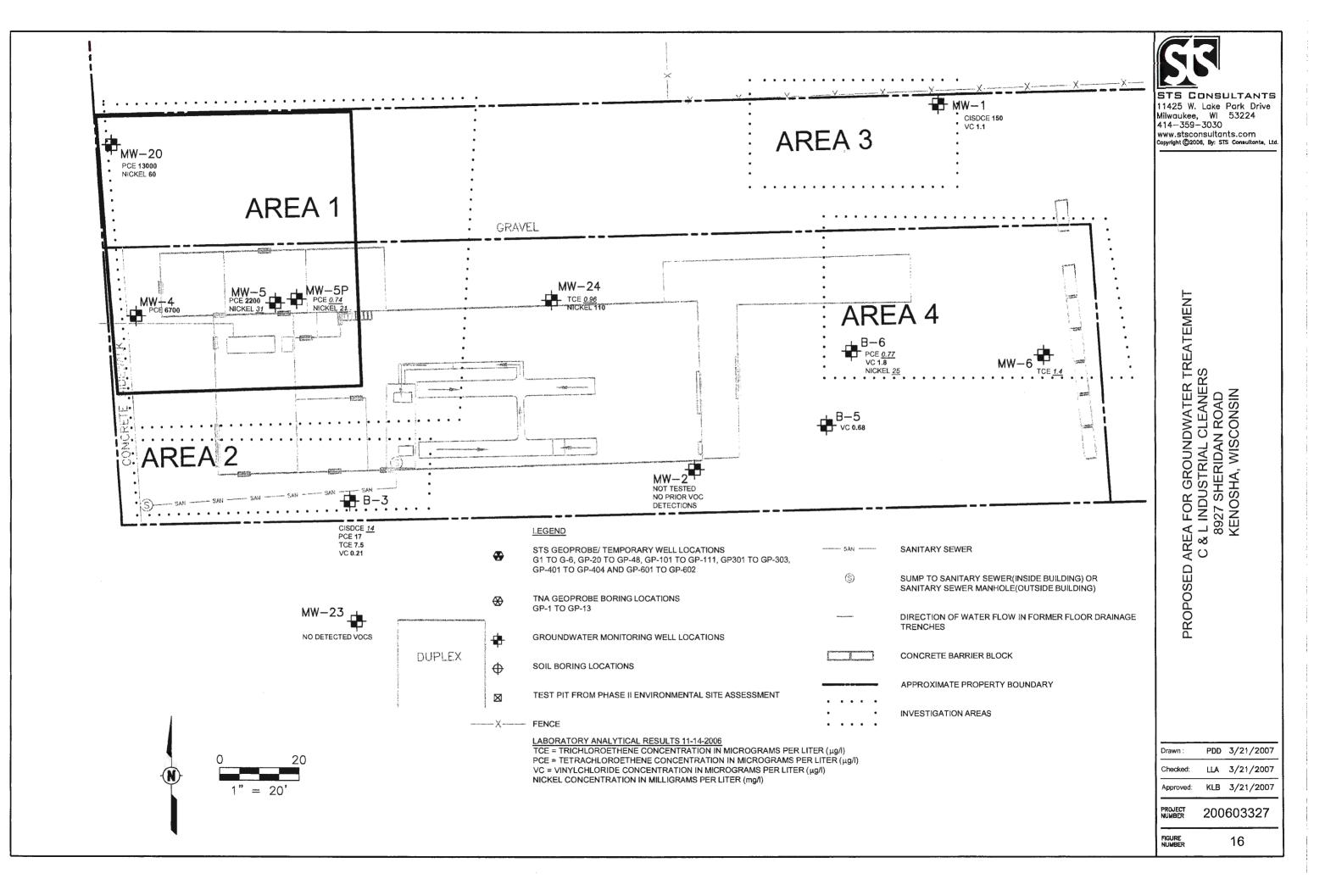




:\Projecte\200603327\Dwg\12-01-2006-PD\G200803327-FIGURE-14.dwg; 5/10/2007 10:40:30 AN; PIERING, MICHAE



PAUL AM; DREW, 8:15:07 X:\Projects\200603327\Dwg\12-01-2006-PD\G200603327-REMEDIATION-15.dwg; 3/21/2007





APPENDIX A

Soil Probe and Monitoring Well Boring Logs, Soil Probe Abandonment Forms, Monitoring Well Construction and Development Forms

Signature

SOIL BORING	LOG INFORMATION
Form 4400-122	Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment

Waste Management Other

													Pag	ge 1	of	1
	y/Proje					License/	Permit	/Monito	ring Nı	ımber		Boring	Numb	er	1.01	
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Pro	be Tee	chnol						/2006				6/8/2	006			il probe
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State					E S/C/N	La	.t —	<u> </u>	<u> </u>	"			□ N	l		ПЕ
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	· · · · ·		L	Soil/R	ock Description											
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Type	Length Att. Recovered (°°,	th In	Eac	h Major Unit		CS	phic	l gram	PID/FID	ngth	Moisture Content	it d	Plasticity Index	9)/
Number and Type	Leng	Blov	Dep				U S	Graphic Log	Well Diagram	PID	Compress Strength	Moisture Content	Liquid	Plastic Index	P 200	RQD/ Comments
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				Fill: Sand, fine to media	um - reddish brown - moi	st	Fill									
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			Ē				SM									
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			E 12							0.0						
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5	48		-16							0.0						
GP	48															
. L			E20													
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					advanced to 20.0' feet by filled with chipped bentor	nite.										
				rmation on this form is tr												

Firm STS Consultants Ltd. Tel: U Fax:

Signature

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SOIL BORING	LOG INFORMATION
Form 4400-122	Rev. 7-98

Rev. 7-98

Tel:

Fax:

Route To:

Remediation/Redevelopment

Watershed/Wastewater

Waste Management Other 🗌

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	y/Projec				() 	License/I	Permit/	Monito	ring N	umber		Boring	Numbe		100	
				arners STS No. 200		Data Dail	line Ct	outod			o Dmille	ng Con	mlated	GP	-102	ing Method
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	nique W			DNR Well ID No.	Common Well Name	Final Sta			el 🛛	Surfac	e Elevat			Bo		Diameter
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San	nple									Soil	Prope	rties				
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Number and Type	Length Att. & Recovered (in)	Blow Counts	Dep				U S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ . Comments
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3 GP	48		F							0.0						
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			E-12	Clayey Silt with Fine S	and - gray - wet											
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				End of Boring, Boring	advanced to 20.0' feet by	,										
				GeoProbe. Boring bac	kfilled with chipped bento	onite.										
												l				
I here	by certi	fy that	the info	ormation on this form is t	true and correct to the be	est of my ki	nowled	ge.								

Firm STS Consultants Ltd. nette abtenba

SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Watershed/Wastewater Route To:

Remediation/Redevelopment

Waste Management Other

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	y/Projec				CTC N					License/I	Permit/	Mon	itori	ing Nu	mber		Boring	Numbe		-103	
					STS N hief (firs					Date Dri	ling St	arted			Da	te Drilli	ng Con	npleted	GP		ing Method
-	Bend	•																-p			
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Local	Grid Or	igin	<u>П (е</u>	timated	· [])	or Bor	ringLo	GP-103			Feet 1	MSL	-			Fee Local C	t MSI			2.0	inches
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NE		of SI	E 1	/4 of Se	ction	18,	т1	n, r 23	Е	Long		°					Feet			J	Feet 🗍 W
Facilit	cility ID County								County Co	de				ty/ or \	/illage						
	Kenosha							3	30		Ker	nos	ha				-				
San	nple																Soil	Prope	erties		
	&. (in)	Its	eet					escription								ve					
r pe	Length Att. & Recovered (in)	Blow Counts	Depth In Feet				+	Origin For			s	0		Е	D.	Compressive Strength	t re		ity		RQD/ Comments
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			-2								Fill	\otimes	\bigotimes								
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			<u>–</u> 6								CL										
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3	48		E-8												0.0						
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			20																		
				End o GeoPi	f Boring. robe. Bo	Boring ring bacl	advanc kfilled v	ed to 20.0' fe with chipped	et by benton	ite.											
						_															

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

Signature

Firm STS Consultants Ltd. Tel: Andai Fax:

SOIL BORING LOG INFORMATION

Form 4400-122

Rev. 7-98

Route To:

Watershed/Wastewater

Waste Management

	<u></u>								Pag		of	1
Facility/Project Name C & L Industrial Clearners STS No. 2006	03327	License/P	ermit/	Monitor	ring Nı	umber		Boring	Numbe		-104	
Boring Drilled By: Name of crew chief (first, last) and		Date Dril	ling St	arted		Da	te Drilli	ng Con	npleted			ing Method
Dan Bendorf Braha Tashnalagian			6/17	/2006				6/12/2	0006			il mecho
Probe Technologies WI Unique Well No. DNR Well ID No. 0	Common Well Name	Final Stat				Surfac	e Elevat		2008	Bo		il probe Diameter
	GP-104	I	Feet I	MSL				t MSI			2.0	inches
Local Grid Origin (estimated:) or Borin State Plane N, E		Lat		°	<u> </u>	"	Local C	irid Loc				
-	Г1 N, R 23 E	Long		o	·	"		Feet	и П S		1	Feet 🗆 W
Facility ID County	,	County Coo	ie	Civil To		ity/ or `	Village					
Sample Kenosha	5	30		Keno	sna		1	Soil	Prope	rties		
	ck Description											
	logic Origin For						ssive	υ		Y		nts
Number and Type Length Att. & Number Recovered (in) Each Blow Counts Each Each	Major Unit		cs	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	00	RQD/ Comments
			υs	Grap Log	Well Diagi		Str Col	Co Wo	Liquic Limit	Plastic Index	P 200	Co RQ
1 48 - Fill: Sand, fine to medium GP 48 - Fill: Sand, fine to medium	m - brown - moist					0.0						
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			гш		а — а							
2 48 -4 GP 36 -						0.0						
6 Sand, fine to medium - br	rown to gray - wet											
3 48 58			SP			0.0						
GP 48 5 10												
- 10 Silt, clayey with fine sand	l, little medium sand - gra	ay - wet										-
						0.0						
\vec{GP} $\vec{48}$ \vec{E}						0.0						
			ML							-		
5 48 F 60 F						0.0						
End of Boring. Boring ac GeoProbe. Boring backfi	lvanced to 20.0' feet by illed with chipped benton	ite.										
						. •						
I hereby certify that the information on this form is tru	e and correct to the best	t of my kn	owled	ge.	I	.l		I				

Signature Nauel altenbar Firm STS Consultants Ltd. Tel: Fax:

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SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Watershed/Wastewater Route To:

Remediation/Redevelopment

Waste Management Other

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Facility	-					<u>, , , , , , , , , , , , , , , , , , , </u>		Lic	cense/F	ermit/	Monito	ring Nı	ımber		Boring		er		
					STS No. 200												GP	-105	
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	Bend e Tec		ogies							6/12	/2006				6/12/2	2006			il probe
WIUni	ique W	ell No.	56100	DNR V	Well ID No.	Common	Well Name	Fin	nal Stat		er Lev		Surfac	e Elevat			Bo		Diameter
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Local (Grid Or	igin	📋 (es	stimated:) or Bor		on 🗌				0			Local C					
State F	lane				N,	E S/	C/N		Lat			<u> </u>				D N			ĒΕ
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Facility	'ID				County				nty Co			own/Ci	ity/ or \	Village					
					Kenosha			30			Kend	osha							<u>.</u>
Sample													1		Soil	Prope	rties		
	ઝ 🗐	S	et		Soil/R	ock Descri	ption							e					
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Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet							Ω	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
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			-2							Fill	\bigotimes	ŝ							
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			£ 10	Silt. cl	ayey with fine sa	nd. little me	dium sand -	grav -	wet		$\left\{ 1 \right\}$	2							
			E -12			,		5)											
4	48		E										0.0						
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			⊢ ¹⁴										1						
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GP	48		Ē																
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L			-20								╇┺┸┹	-							
				Endo	f Boring. Boring	advanced to	20 0' faat h												
				GeoPr	obe. Boring back	cfilled with	chipped ben	tonite.											
I hereb	v certi	fv that	the info	ormation	on this form is t	rue and cor	rect to the h	pest of	mv kr	owled	ge.	_1	1						1
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SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

Route To:

Watershed/Wastewater

Waste Management
Other

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	y/Projec			arners STS No. 200	602227	License/F	ermit/	Monitor	ring N	umber		Boring	Numb		-106	
				f crew chief (first, last) a		Date Dril	ling St	arted		Da	te Drilli	ng Con	pleted			ing Method
Dan	Bend	lorf										U	1			Ş
	be Tec						_	/2006				6/12/2	2006			il probe
WIUn	ique W	eli No		DNR Well ID No.	Common Well Name GP-106	Final Stat	tic Wa Feet I		el	Surfac	e Elevat	tion t MSI	r	Bo		Diameter inches
Local	Grid Or	igin	(es	timated: 🔲) or Bo	ring Location	<u> </u>					Local C				2.0	menes
State		•			E S/C/N	Lat		°					🗆 N	ſ		Ε
NE		of S	E 1	/4 of Section 18,	T 1 N, R 23 E	Long		0	<u>'</u>			Feet	🗆 s		J	Feet 🗌 W
Facilit	y ID			County Kenosha	1	County Coo 30	de	Civil To Keno		ity/ or \	Village					
San	nple			Kenosha		50		Keno	5114	1	1	Soil	Prope	erties		
	· · · · ·		L L	Soil/F	Rock Description											
0	۸tt. گ ed (i	Blow Counts	Depth In Feet		eologic Origin For						sive					ts
lber Typé	gth A overe	ŝ	th In		ch Major Unit		C S	hic	ram	FID	pres	sture	pi t	icity		o/ men
Number and Type	Length Att. & Recovered (in)	Blov	Dept				U S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
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			÷ ۲				1.111									
	40		-4	E'll Olle Ch. H. E												
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			F	Silty Sand fine to med	ium - brown to gray - wet			XXXX								
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GP	48		Ē				SM									
			E ¹⁰	Cilt alayers with fine a	and, little medium sand - g			$\left \right $								
			Ē	wet	and, fille medium sand - g	ray -										
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Gr	42		-14							ĺ						
			F 1													
			E16				ML									
5 GP	48 36									0.0						
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L			-20					+++++++++++++++++++++++++++++++++++++++	-							
				End of Boring. Boring	advanced to 20.0' feet by											
				GeoProbe. Boring bac	kfilled with chipped benton	nite.										
		L							<u> </u>	- 1	· · · · ·		.1			1

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

Signature

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Firm STS Consultants Ltd.

Tel: Fax:

NE

and Type

Number

1 GP

2

GP

3

GP

4

GP

5

GP

Signature

OIL BORING I	LOG INFORMATIO
rm 4400-122	Rev. 7-98

Form 4400-122

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Route To:

Watershed/Wastewater

Waste Management Other 🔲

Remediation/Redevelopment Page 1 of 1 Facility/Project Name License/Permit/Monitoring Number Boring Number GP-107 C & L Industrial Clearners STS No. 200603327 Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Started Date Drilling Completed Drilling Method Dan Bendorf Probe Technologies 6/12/2006 6/12/2006 soil probe DNR Well ID No. Common Well Name Final Static Water Level WI Unique Well No. Surface Elevation Borehole Diameter GP-107 Feet MSL 2.0 inches Feet MSL Local Grid Location or Boring Location Local Grid Origin (estimated:) 0 . State Plane N. E S/C/N Lat ΠE ΠN o . Feet 🛛 S Feet 🗌 W 1/4 of SE 1/4 of Section 18, т1 N, R 23 E Long Civil Town/City/ or Village Facility ID County County Code Kenosha 30 Kenosha Sample Soil Properties Length Att. & Recovered (in) Soil/Rock Description Compressive Strength Depth In Feet Blow Counts RQD/ Comments And Geologic Origin For . Moisture PID/FID Plasticity Diagram S Content Graphic SCS Each Major Unit Liquid P 200 Limit Index Well Log Concrete Fill: Sand, fine to medium - brown to dark brown - moist 0.0 48 48 2 Fill 4 48 Fill: Silty Clay with Fine to Medium Sand, trace coarse 0.0 48 sand - brown to gray - moist Fill ·6 SIlty Sand, fine to medium - gray - wet 8 48 0.0 SM 48 -10 Clayey Silt, with fine sand, little medium sand - gray - wet -12 0.0 48 48 -14 ML ·16 0.0 48 36 ·18 -20

End of Boring. Boring advanced to 20.0' feet by GeoProbe. Boring backfilled with chipped bentonite.

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

Firm STS Consultants Ltd. ЮŨ

Tel:

Fax:

SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

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	y/Projec			675 N. 00		License/I	Permit/	Monito	ring Nu	umber		Boring	Numb		-108	
				arners STS No. 200 f crew chief (first, last)		Date Dril	lling St	arted		Dat	e Drilli	ng Con	npleted			ing Method
	n Bend	•	tane o													
Pro	be Teo	chnol						/2006				6/12/2	2006			il probe
WIU	nique W	ell No.		DNR Well ID No.	Common Well Name	Final Stat			2	Surface				Bo		Diameter
Local	Grid Or	igin	П (es	stimated: 🗋) or Bo	GP-108	i	Feet 1	MSL			Fee Local C	t MS			2.0	inches
	Plane	ıgın		N,	E S/C/N	Lat		°	<u>'</u>	"	Local C		N D			Ε
NE		of SI	E 1	/4 of Section 18,	t 1 n, r 23 e	Long		°	<u>'</u>			Feet			1	Feet 🗌 W
Facilit	y ID			County		County Co 30		Civil T		ty/ or V	/illage					
Kenosha								Keno	sha			0.1	D			
Sar	nple											Soil	Prope	erties		
	. & (in)	ıts	eet	Soil/				l		ve						
be be	th Att	Cour	In F	And G		s	.ല	E E	9	th	it it		ity		ients	
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Ea	ch Major Unit		sc	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ ·
		BI	ă	D Gamerata			⊃ Noncre		≥ä	E 0.0	ŭΫ	Σŭ	ĒĒ	<u>5</u> 1	4	ž č
1 GP	48 36		Ē	Fill: Sand, fine to med	lium - brown - moist			***		0.0						
			-2				Fill									
			F													
2	48		-4	Clavey Silt with Fine to	o Medium Sand, little coar	se sand -		PXXX I		0.0						
ĞΡ	48		E	grayish brown - moist	, , ,		ML									
			F- 6													
			E		and and little medium sand	- gray -			1							
3	48		-8	wet			SM			0.0						
GP	42		Ē						1							
			E ¹⁰		Sand, little medium sand -	gray -			1							
			È 12	wet					ĺ							
4 GP	48 36		-12 -							0.0						
OF	50		-14													•
			- 14				ML									
			E_16													
5 GP	48 30		F							0.0						
			E-18													
			- 18													
L			⊨20													
				End of Boring Boring	advanced to 20.0' feet by											
				GeoProbe. Boring bac	kfilled with chipped bento	nite.				1						

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

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SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Watershed/Wastewater Route To:

Remediation/Redevelopment

Waste Management Other 🗌

													Pag	·	of	1
	y/Projec			arners STS No. 200	603327	License/I	Permit/	Monito	ring Nu	ımber		Boring	Numb		-109	
			-	f crew chief (first, last) a		Date Dri	lling St	arted		Dat	e Drilli	ng Con	npleted			ing Method
	Bend		i				6/17	/2006				6/12/2	0006			il probe
	be Tea			DNR Well ID No.	Common Well Name	Final Sta				Surface	Elevat		.000	Bo		Diameter
	-				GP-109		Feet l	MSL				t MSI			2.0	inches
Local State	Grid Or Plane	igin	[] (es	stimated: 🗋) or Bor N,	E S/C/N	Lat	-	0	•		Local C	irid Loo				
NE		of SI	E 1	/4 of Section 18,	T 1 N, R 23 E			0	•	"		Feet]	⊟ E Feet ⊡ W
Facilit				County		County Co	de	Civil T		ity/ or V	/illage					
				Kenosha		30		Keno	sha	r –	r	Soil	Prope	tion		
Sar	nple			Soil/P							5011	Flope	rues			
	tt. & d (in	unts	Depth In Feet		lock Description cologic Origin For						sive					ts
lber Type	gth A overe	Blow Counts	th In		ch Major Unit		CS	shic	tam _	FID	Compressive Strength	sture	e, e	x	0)/ Imen
Number and Type	Length Att. & Recovered (in)	Blov	Dept				U S	Graphic Log	Well Diagram	PID/FID	Compres	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 GP	48 48		F	Concrete Fill: Sand, fine to medi	um - brown - moist	/	Soncre	* ****		0.0						
	-10		-2				Fill									
			Ē													
2	48		4	Silt, clayey, fine to med	ium sand, little coarse sar	nd - gray		FXXX		0.0						
2 GP	48	-	Ē	- moist	,,	87	ML									
			E 6													
			-8	Silty Sand, fine to medi	um - gray - wet											
3 GP	48 48		Ē				SM			0.0						
			-10	Silt, clayey with fine sa	nd - grav - wet											
	•		E		na Bray not											
4	48		E ⁻¹²							0.0						
GP	48		-14													
			F 14				ML									
	40		-16							0.0						
5 GP	48 48		Ē							0.0			·			
			-18									-				
			Ē													
L.			-20						1							
				End of Boring. Boring GeoProbe. Boring back	advanced to 20.0' feet by cfilled with chipped bento	nite.		1.								

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

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SOIL BORING I	LOG INFORMATION
Form 4400-122	Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment

Waste Management Other

													Pag	-	of	1	
	y/Projec			arners STS No. 200	0603327	License/I	Permit/	Monito	ring Nu	umber	Boring Number GP-110						
						Date Dri	Date Drilling Started Date Dri						npleted		Drilling Method		
Dan Bendorf Probe Technologies							6/12	/2006				6/12/2	2006		., ,		
	ique W			DNR Well ID No.	Common Well Name	Final Sta				Surface	e Elevat		2000	Bo		il probe Diameter	
	-				GP-110		Feet 1	MSL				t MS			2.0 inches		
Local State	Grid Or Plane	igin	[] (es	stimated: 🗋) or Bo N,	ring Location	Lat	t	•	*	"	Local C	irid Loo				— –	
NE		of SH	Ξ 1	/4 of Section 18,	T 1 N, R 23 E			0	•	"		Feet	N 🗆 s		Feet 🔲 W		
Facilit				County		County Co	de	Civil T		ty/ or \	/illage						
				Kenosha		30		Keno	sha			C _11	Deser				
Sar	nple			Soil	Real Decemintion						·	501	Prope		<u> </u>		
	Length Att. & Recovered (in)	unts	Depth In Feet		Rock Description eologic Origin For			-			sive					s	
lber Гуре	Length Att. Recovered (Blow Counts	h In		ich Major Unit		CS	hic	ram	FID	Compressive Strength	sture	t E	Plasticity Index		o/ men	
Number and Type	Leng	Blov	Dept				U S	Graphic Log	Well Diagram	PID/FID	Compress	Moisture Content	Liquid	Plastic Index	P 200	RQD/ Comments	
1 GP	48 48		5	Concrete Fill: Sand, fine to med	ium - brown - moist	^	Soncre			0.0							
	70		-2				Fill										
			Ē			-											
2	48 48		-4	Clayey SIlt with Fine to	o Medium Sand, little coar	rse sand -		KXXX		0.0							
GP			Ē	brown - moist	,		ML										
			6 -				IVIL										
			-8	Silty Sand, fine to med	ium - gray - wet												
3 GP	48 36		Ē							0.0				[
			-10				SM										
				-													
4	48		-12 E	Clayey Silt, with fine s	and, little medium sand -	gray - wet			1	0.0							
GP	48		-14														
			È '														
5	48		-16				ML			0.0				Ì			
GP	42		E				[0.0							
			-18														
			E														
			-20														
				End of Boring. Boring GeoProbe. Boring bac	advanced to 20.0' feet by kfilled with chipped bento	onite.											
				1						1			1	1			

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

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Route To:

Watershed/Wastewater Remediation/Redevelopment

Waste		
Other		

SOIL BORING LOG INFORMATION Form 4400-122

Rev. 7-98

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Facility				arners STS No. 200	603327	License/F	Permit/	Monitor	ring Nu	mber		Boring Number GP-111						
				f crew chief (first, last) a		Date Drilling Started Date D						ng Con	npleted		Drilling Method			
	Bend	-										-	-					
Prot WI Un	ique W	chnol	ogies	DNR Well ID No.	Common Well Name	Final Stat		$\frac{2006}{2006}$		Surface	e Elevat	5/12/2	2006	D-		il probe Diameter		
WI OII	ique w		•		GP-111		Feet N			Surrace		t MSI	L	DO		inches		
		igin	🗋 (es		ing Location	1		0	· 1.	"	Local G		cation					
State I NE		of SI	F 1	N, /4 of Section 18,	E S/C/N T1 N, R 23 E	Lat		°	,			Fact			E Feet D W			
Facility		01 01		County		Long County Co	de	Civil T	own/Ci	ty/ or \	/illage	reet						
				Kenosha		30		Keno	sha			-						
San	· · · · ·											Soil	Prope	erties				
	tt. & 1 (jn)	nts	feet		ock Description						ive							
ber ype	th At vered	Cou	l II I		ologic Origin For h Major Unit		s	lic	am	QI	oressi ġth	ture	р	city		nents		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	La	in major Onit		usc	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments		
1 GP	48			Concrete Fill: Sand, fine to medi	m brown moint	/€	loncre			0.0		20				<u> </u>		
GP	48		-2	Fill: Sand, fine to medi	um - brown - moist		Ell							-				
			Ęź				Fill											
2	48			Clavey Silt with Fine to	Medium Sand and Some	Coarse		₩₩		0.0								
2 48 -4 Clayey Silt with Flue to Medium Sand and Some (GP 48 -4 Sand - brown to gray - moist					Coarse				0.0									
			E -6				ML											
			E_8	Silty Sand, fine to medi	um - gray - wet													
3 GP	48 48		Ê		0					0.0								
			E-10				SM											
			E															
4	48		-12	Silt, clayey with fine da	nd - gray - wet					0.0								
GP	48		Ē.,															
			-14															
_	10		E_16				ML											
5 GP	48 42		Ē							0.0								
			-18															
			Ē															
L			-20	·····				+										
				End of Boring. Boring GeoProbe. Boring back	advanced to 20.0' feet by filled with chipped bento	onite.												
				Stor root is soning bud														
				rmation on this form is t									<u> </u>					

Firm STS Consultants Ltd. Jac

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SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

Route To:

Watershed/Wastewater

Waste Management

Page 1 of 1 Boring Number Facility/Project Name License/Permit/Monitoring Number C & L Industrial Clearners STS No. 200603327 GP-301 Boring Drilled By: Name of crew chief (first, last) and Firm Drilling Method Date Drilling Started Date Drilling Completed Dan Bendorf Probe Technologies 6/8/2006 6/8/2006 soil probe WI Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Surface Elevation Borehole Diameter GP-301 Feet MSL 2.0 inches Feet MSL Local Grid Location Local Grid Origin (estimated:) or Boring Location 0 State Plane N, Ε S/C/N Lat N 🗆 E o . NE Feet 🗌 W 1/4 of SE 1/4 of Section 18. т1 N, R 23 E Feet 🗌 S Long Civil Town/City/ or Village Facility ID County County Code 30 Kenosha Kenosha Sample Soil Properties Soil/Rock Description Recovered (in) ઝ In Feet Blow Counts Length Att. RQD/ Comments And Geologic Origin For Compressi Number and Type Diagram PID/FID Strength Moisture S Graphic Content Plasticit Depth I Each Major Unit SC Liquid Limit Index P 200 Well Log 48 Fill: Clayey Silt with Fine to Medium Sand, trace coarse 0.0 1 48 GP sand - brown 1.5 Fill 3.0 Fill: Sand, fine to medium, some coarse sand, trace foundry sand and slag - brown and black Fill 2 48 0.0 4 5 GP 48 Sand, silty, fine to medium - brown to gray at 8.0' - wet 6.0 7.5 SM 3 48 0.0 GF 48 9.0 10.5 Silty, clayey with fine sand - gray - wet 12.0 4 36 0.0 GP 36 ML 13.5 -15.0 End of Boring. Boring advanced to 15.0' feet by GeoProbe. Boring backfilled with chipped bentonite.

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

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orm 4400-122	Rev. 7-98

Form 4400-122

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Route To:

Watershed/Wastewater Remediation/Redevelopment

Waste Management Other

Page 1 of 1 Boring Number Facility/Project Name License/Permit/Monitoring Number GP-302 C & L Industrial Clearners STS No. 200603327 Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Completed Drilling Method Date Drilling Started Dan Bendorf Probe Technologies 6/8/2006 6/8/2006 soil probe WI Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Borehole Diameter Surface Elevation GP-302 Feet MSL Feet MSL 2.0 inches Local Grid Location (estimated:) or Boring Location Local Grid Origin 0 . 1 State Plane N, E S/C/N Lat ΠN ΠE 0 . Feet 🛛 S Feet 🗌 W NE 1/4 of SE 1/4 of Section 18. т 1 N, R 23 E Long Civil Town/City/ or Village Facility ID County County Code 30 Kenosha Kenosha Soil Properties Sample Soil/Rock Description જ Recovered (in) In Feet Blow Counts Compressive RQD/ Comments Length Att. And Geologic Origin For and Type Diagram PID/FID Moisture Plasticity Number Graphic Strength S Content Depth I Each Major Unit SCS Liquid P 200 Index Well Limit Log Fill: Clayey Silt with Fine to Medium Sand, trace coarse 0.0 48 1 48 sand, foundry sand 3.3' to 3.4' - brown - moist GP 1.5 ·3.0 Fill 2 48 0.0 4.5 GP 48 6.0 Silty Sand, fine to medium - brown to gray - wet 7.5 3 48 0.0 GF 48 SM 9.0 10.5 Clayey Silt with Fine to medium Sand - gray - wet 12.0 4 36 0.0 GP 36 ML 13.5 15.0 End of Boring. Boring advanced to 15.0' feet by GeoProbe. Boring backfilled with chipped bentonite.

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

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SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

			Page 1 of 1												
Facility/Project Name	License/Permit/Monitoring Number Boring Number														
		mers STS No. 200		Date Drilling Started Date Drilling Completed Drilling											
• ·	ume of a	crew chief (first, last) ar	na riim	Date Dril	ling St	arted		Da	te Drilin	ng Con	pleted		Dnll	ing Method	
Dan Bendorf Probe Technolog		6/8/2006 6/8/200						006		so	il probe				
WI Unique Well No.		DNR Well ID No.	Common Well Name	Final Stat			1	Surfac	e Elevat			Bo	rehole	Diameter	
			GP-303]	Feet 1	MSL				t MSI			2.0	inches	
Local Grid Origin	(esti		ing Location	.		0	,	"	Local G	irid Loc			d		
State Plane NE 1/4 of SE	• • •	,	E S/C/N T1 N, R 23 E	Lat		o	,			Fast	и П S		1	⊟ E Feet ⊡ W	
NE 1/4 of SE Facility ID	1/4	4 of Section 18, County		Long County Co	de l	Civil To	own/C	ity/ or V	Village	reet					
		Kenosha	1	30		Kenos		<i>.</i>							
Sample			······································		1					Soil	Prope	rties			
	5	Soil/R	ock Description						0						
Number and Type Length Att. & Recovered (ii Blow Counts	Depth In Fcct		ologic Origin For			•			Compressive Strength	6		Z		nts	
Typ v Cc	th Ir		h Major Unit		CS	phic	l tranı	FID	ngth	sture	it di	Plasticity Index	2)/	
Number and Type Length Att. & Recovered (in) Blow Counts	Dep				N S	Graphic Log	Well Diagram	PID/FID	Compres: Strength	Moisture Content	Liquid Limit	Plastic Index	P 200	RQD/ Comments	
1 48 -			ne to Medium Sand - bro	own to				0.0							
GP 48	-1.5	gray - moist													
	1.5				Fill										
	-3.0														
2 48 = GP 36 =	-4.5	Silty Sand, fine to media	um - brown to gray at 8.0)' - wet at				0.0							
		5.0													
	-6.0														
	-7.5				SM										
3 48 GP 48	-9.0							0.0							
	9.0														
	-10.5														
										•					
	-12.0-	Silty Clay with Fine Sar	nd, little medium sand - g	rav . wet				0.0							
4 36 GP 36		Sity Clay with Fine Sal	ia, mue meatum sand - g	uay - wei				0.0							
	-13.5				CL										
	-15.0-		····												
		End of Boring. Boring	advanced to 15.0' feet by	,											
		GeoProbe. Boring back	filled with chipped bento	onite.											

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

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SOIL BORING LOG INFORMATION Form 4400-122

Rev. 7-98

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

					Page 1 of 1												
							License/Permit/Monitoring Number Boring Number										
				arners STS No. 200		Date Drilling Started Date Dril							mlated	GP	P-401		
•			ame of	f crew chief (first, last) an	a rim	Date Dri	ling St	arted		Da	le Drilli	ng Con	ipieted			ing Method	
Dan Bendorf Probe Technologies							6/8/	2006				6/8/20	006		so	l probe	
WIUn				DNR Well ID No.	Common Well Name	Final Sta]	Surfac	e Elevat			Bo		Diameter	
	-				GP-401		Feet N	MSL				t MSI			2.0	inches	
Local (igin	🗌 (es	timated: 🗋) or Bor		1.		0	,	"	Local G	rid Loc	ation				
State I		• OT		,	E S/C/N	Lat	t	。	 ,			Γ.	м П		□ E Feet □ W		
NE Facility		of SE	2 1	/4 of Section 18, County	T 1 N, R 23 E	Long		Civil To	own/C	ity/ or	Village	Feet	🗆 s			eet 🗆 w	
raemty				Kenosha		30		Keno			inage						
San	ple									1		Soil	Prope	rties			
	·		÷	Soil/R	ock Description												
	d (i	unts	Fee		ologic Origin For						sive					its	
ber Type	th A vere	Ĉ	h In		h Major Unit		CS	Graphic Log Well Diagram			Compressive Strength	Moisture Content	ii d	icity K	0)/ men	
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet				U S O	Grap Log	Well Diagi	PID/FID	Compress Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments	
1	48	<u> </u>	-	Fill: Sand, fine to coars	e, little fine gravel, trace f	oundry		×××		0.0							
GP	36			sand - brown and black						1							
			-1.5				.Fill										
			-3.0														
			= 5.0				ĺ										
2	48		-4.5	Silty Clay with Fine to M	Medium Sand - gray - moi	st	CL	V/////		0.0							
GP	48				um - brown to gray at 8.0'	- wet at											
			-6.0	5.0'													
1			-														
			-7.5				SM					1					
3 GP	48 48		E			-				0.0							
Ur	40		9.0 E														
			- 10.5 -	Silt, clayey with fine sar	nd - grav - wet											, , , , , , , , , , , , , , , , , , ,	
. –			- 12.0		n - Elay - wet												
4 GP	36 36		-				ML			0.0							
			-13.5				IVIL										
			F														
Ŀ			-15.0	<u> </u>													
				End of Boring Boring	advanced to 15.0' feet by												
				GeoProbe. Boring back	filled with chipped bentor	nite.											

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

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SOIL BORING LOG INFORMATION Form 4400-122

Rev. 7-98

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

				Kancalanois	Kedevelopment L	Other							Pag	e 1	of	l
	y/Projec					License/I	Permit/	Monitor	ing Nu	mber		Boring	Numbe	er		
	C & L Industrial Clearners STS No. 200603327 Boring Drilled By: Name of crew chief (first, last) and Firm				D. to D. i	Date Drilling Started Date Dri					GP-402				Mathe	
		-	vame of	crew chief (first, last) at	id Firm	Date Dri	lling St	arted		Dat	Date Drilling Completed				Drilli	ng Method
	i Bend be Tec		ogies				6/8/	2006			-	6/8/2	006		soi	l probe
	ique W			DNR Well ID No.	Common Well Name	Final Sta			1	Surface	Elevat			Bo	rehole l	Diameter
					GP-402		Feet 1	MSL				t MSI			2.0	inches
	Grid Or Plane	igin	🗋 (es		ng Location			0	•		Local G	rid Loo				—
NE		of SH	7 1	$/4 \text{ of Section} \qquad 18,$	T1 N, R 23 E	Lat		0	,	"		Foot			Ţ	E Feet 🗌 W
Facilit		01 51	<u>ا</u> د	County	II N, K 25 E	County Co	de	Civil To	own/Ci	ty/ or V	illage	reet			1	
				Kenosha		30		Keno	sha	-	_					
Sar	nple											Soil	Prope	rties		
	Е. &	s	et	Soil/R	ock Description		1				υ					
. 9	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	And Ge	ologic Origin For				-		Compressive Strength	e .		Σ		RQD/ Comments
Typ	Length Att. Recovered (« C	oth I	Eac	h Major Unit		CS	Graphic Log	Well Diagram	PID/FID	npre	Moisture Content	Liquid Limit	Plasticity Index	00	D/
Number and Type		Blo	Del				U S	Grap Log	Well Diagr		Col Stre	Co Wo	Lin	Plasti Index	P 200	Co Co S
1 GP	48 48		-	Fill: Clayey Silt with FI Gravel - brown to black	ne to Coarse Sand and	Trace				0.0						
	10		-1.5													
			Ē				Fill									
			- 3.0													
2	48			No Recovery		·	·			0.0						
ĞΡ	-10		-4.5	noncostry						0.0						
			E 6.0													
			E													
			-7.5													
3	48		Ē	Silty Sand, fine to medi	um - gray - wet		-			0.0						
GP	48		- 9.0				SM					ļ				
			Ē													
			E ^{10.5}	Clayey Silt and Fine to	Medium Sand - gray - w	vet		TTT								
			E-12.0													
4 GP	36 36		E				ML			0.0			-			
			-13.5													
			E													
L	-		-15.0													
				End of Boring. Boring	advanced to 15.0' feet h	v										
				GeoProbe. Boring back	filled with chipped bent	tonite.										

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

Signature

Firm STS Consultants Ltd.

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SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

1 Page of 1 Facility/Project Name License/Permit/Monitoring Number Boring Number GP-403 C & L Industrial Clearners STS No. 200603327 Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Started Date Drilling Completed Drilling Method Dan Bendorf Probe Technologies 6/8/2006 6/8/2006 soil probe WI Unique Well No. DNR Well ID No. Final Static Water Level Common Well Name Surface Elevation Borehole Diameter GP-403 Feet MSL Feet MSL 2.0 inches Local Grid Origin (estimated:) or Boring Location Local Grid Location Π o Ε State Plane N, S/C/N Lat ΠN ΠE o Feet 🛛 W NE 18, Feet 🛛 S 1/4 of SE 1/4 of Section т1 N, R 23 E Long Facility ID Civil Town/City/ or Village County County Code Kenosha 30 Kenosha Soil Properties Sample Recovered (in) Soil/Rock Description જ Feet Blow Counts Compressive Length Att. RQD/ Comments And Geologic Origin For and Type E Strength Moisture Number S Diagram PID/FID Plasticity Graphic Content Each Major Unit SC Liquid Depth P 200 Limit Index Well Log 0.0 1 48 Fill: Silty Clay with Fine to Medium Sand, some coarse GP 48 sand and fine gravel, little foundry sand - brown and black 1.5 Fill ·3.0 2 48 Silty Sand, fine to medium - brown to gray at 8.0' - wet at 0.0 4.5 GP 39 6.0 6.0 SM 7.5 3 48 0.0 GP 48 9.0 10.5 Clayey Silt, with fine to medium sand - gray - wet 12.0 4 36 0.0 GP 36 ML 13.5 -15.0 End of Boring. Boring advanced to 15.0' feet by GeoProbe. Boring backfilled with chipped bentonite.

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

Signature Firm STS Consultants Ltd. Tel: Fax:

SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

	<i>(</i>)					1							Pag		of	1
Facility	-			arners STS No. 200	603327	License/Permit/Monitoring Number						Boring Number GP-404				
				f crew chief (first, last) ar		Date Dril	ling St	arted		Da	te Drilli	ng Corr	pleted	Uf		ing Method
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	be Tec				· · · · · · · · · · · · · · · · · · ·	6/8/2006						6/8/20	006			il probe
WI Un	ique W	ell No.		DNR Well ID No.	Common Well Name	Final Stat]	Surfac	e Elevat			Bo		Diameter
Local	Grid Or	igin	(es	timated: 🔲) or Bor	GP-404	<u> </u>	Feet N					t MSI			2.0	inches
State]		.5			E S/C/N	Lat		0	<u>'</u>	"	Local C					ΠE
NE		of SE	E 1.	/4 of Section 18,	T 1 N, R 23 E	Long		°	<u> </u>	"		Feet]	Feet 🗌 W
Facilit	y ID			County		County Co	de	Civil To		ity/ or \	/illage					1.
				Kenosha		30		Keno	sha							
San	<u> </u>											Soil	Prope	rties	T	
	& . (in)	ıts	eet		ock Description						ve					
er Pe	Length Att. Recovered	Blow Counts	Depth In Feet		ologic Origin For		s	J	E		Compressive Strength	rt e		Σŗ.		RQD/ Comments
Number and Type	ngth cove) wo	pth	Eac	h Major Unit		SC	Graphic Log	Well Diagram	PID/FID	mpr	Moisture Content	Liquid Limit	Plasticity Index	P 200)Q
		Bl	De				D	Grap	Well Diagr		st C	C ^o M ^c	Lic	Pla Ind	P 2	S S
1 GP	48 43		E	Gravel - brown	ne to Coarse Sand and Tr	race				0.0						
			-1.5													
			-				Fill									
			-3.0													
2	48		Ē	Silty Sand, fine to medi	um - brown to gray at 6.0	'- wet at		\boxtimes		0.0						
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			-6.0	-												
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			-7.5				DIVI									
3	48		E.		-					0.0						
GP	48		-9.0							· ·						
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			-10.5													
			Ē										ĺ			
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GP	36		-13.5										1			
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			E 15.0													
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				End of Boring. Boring GeoProbe, Boring back	advanced to 15.0' feet by filled with chipped bento:	nite										
				Contractor Dennig out												
											· ·					

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

Signature Firm STS Consultants Ltd. Tel: 5ae Fax:

SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Route To: Watershed/Wastewater

Remediation/Redevelopment

Waste Management Other

														Pag	ge 1	of	1
Facilit	-			050	NI 000		Licen	se/Permit/	Monito	ring Nu	mber		Boring		er	(01	
				arners STS			Date	Drilling St	arted		Det	o Deili	rilling Completed				ing Method
-	Bend	-		t thew third (I		4R4 1/1111	Date	Date Drilling Started Date Dr					ng Con	ipieted			ing method
	be Tec		ogies					6/8/2006					6/8/2	006		so	il probe
	ique W			DNR Well	ID No.	Common Well Name	e Final	Static Wa		el l	Surface	Elevat			Bo		Diameter
<u> </u>						GP-601		Feet 1	MSL				t MS			2.0	inches
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NE		of SH	÷ 1	/4 of Section	18,	T 1 N, R 23 E		Lat —	0	,	**		Foot	и 🗆 s			E Feet 🔲 W
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Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet					U S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid	Plasticity Index	P 200	RQD/ Comments
1	48		E	Fill: Clayey	Silt with F	ine to medium Sand - b	rown		Ŵ		0.0						
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L			-7.5			······											
3 GP	48 48		E			ium - gray - wet		SM			0.0	}					
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4 GP	36 36		E .								0.0						
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				GeoProbe.	Boring bac	kfilled with chipped ben	tonite.										
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I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Firm STS Consultants Ltd. Tel: U 10 Fax:

SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

Route To:

Remediation/Redevelopment

Watershed/Wastewater

Waste Management Other

														Pag	-	of	1
	Facility/Project Name C & L Industrial Clearners STS No. 200603327				License/I	License/Permit/Monitoring Number Boring Number GP-602											
	Boring Drilled By: Name of crew chief (first, last) and Firm				Date Dri	Date Drilling Started Date Drillin				ng Cor	nnleted			ing Method			
	n Bend	-	i vanie	01	crew enter (msc, last) a		Date Di	inig 5				te Dinn		iipicica			ing wienioù
	Probe Technologies				6/8/	2006				6/8/2	006		so	il probe			
WIU	nique W	ell No).		DNR Well ID No.	Common Well Name	Final Sta				Surfac	e Elevat			Bo		Diameter
,	0.110					GP-602		Feet 1	MSL				t MS			2.0	inches
	Grid Or Plane	ıgın		est		E S/C/N	Lat	•	0	1	"	Local C	ind Lo				
NE		of S	E	1/4	4 of Section 18,	T 1 N, R 23 E			0	,	"		Feet				□ E Feet □ W
Facili					County		Long County Co	de	Civil T	own/Ci	ty/ or	Village					
					Kenosha		30		Keno	sha							
Sat	nple												Soil	Prope	erties		
	& (in)	ts	get		Soil/R	Rock Description						e.					
be t	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		And Ge	eologic Origin For		s.		 E		Compressive Strength	e -		L7		RQD/ Comments
Number and Type	ngth cove	M C	pth J		Eac	ch Major Unit		sca	Graphic Log	Well Diagram	PID/FID	Compress Strength	Moisture Content	Liquid	Plasticity Index	00) D
		BIc	Ď					ñ	Grap Log	Well Diagi		Str Co	νŜ	Liquid	Plastic Index	P 200	CoRQ
1 GP	48 48		E		Fill: Clayey Silt and Fin gravel - brown	ne to Coarse Sand, trace	fine				0.0						
			E-1.5					Fill									
			F														
			= 3.0	יך	Fill: Sand, fine to coars black	se, some foundry sand - b	prown and	Fill									
2 GP	48 48		-4.5		Clayey Silt and Flne to brown to gray - moist	Medium Sand, little coar	se sand -		$\overline{\mathbb{M}}$	1	0.0						
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			E-7.5	Ĭ	Silty Sand, fine to medi						0.0						
3 GP	48 48		E-9.0		Sitty Sand, the to medi	lum - gray - wet]	0.0						
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4 GP	36		Ē					ML			0.0						
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L	-		-15	.0-	· · · · · · · · · · · · · · · · · · ·												
					End of Boring. Boring	advanced to 15.0' feet by	,										
					GeoProbe. Boring back	cfilled with chipped bento	onite.										
	1							1	1	1	1	1	1	1	1	1	

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

Signature Firm STS Consultants Ltd. Tel: Fax:

(1) GENERAL INFO		d/Wastewater Waste Man			Y /OWNER			
WI Unique Well No.	DNR Well ID No	County	Facility					
		Kenosha	C&	L Ind	ustrial Clean	ners STS N	No. 2006033	27
Common Well Name	GP-101	Gov't Lot (if applicable)	Facility	ID		Licens	se/Permit/Mor	hitoring No.
NE 1/4 of SE	14 of Sec. 18	т 1 м. р. 23 🕅	E Street A	ddres	s of Well			a contraction of a final sector
Grid Location	/4 01 Sec.	; T. <u>1</u> N; R. <u>23</u>	W 8927	Sher	idan Road			
n [V City, Vi	illage,	or Town			
) or Well Location	Kend	osha				
e e			Present	Well (Owner		Original O	wner
Lat	Long	o ' " or					C&LI	industrial Cleaners
State Plane	ft. N	ft. E. SCN Zone		ddres	s or Route of C)wner		
Reason For Abandonment	t WI	Unique Well No.	City, St	ate, Zi	p Code			
Site investigation		Replacement Well		_				
(3) WELL/DRILLHO	DLE/BOREHOL	E INFORMATION	(4) PUN	1P, L	INER, SCR	EEN, CAS	SING, & SE	ALING MATERIAL
Original Construction Monitoring Well Water Well D D June (Dependent)		a Wéll Construction Report available, please attach.	Lin	ner(s) l reen R	Piping Remov Removed? emoved? eft in Place?	ed?	Yes Yes Yes Yes Yes Yes Yes	No Not Applicable No Not Applicable No Not Applicable No Not Applicable
Drillhole / Boreh Construction Type: Drilled Other (Specify)	-	(Sandpoint) Dug	Di Di	d Seali d Mate	ing Cut Off Be ing Material R trial Settle Afte Was Hole Rete	ise to Surfac er 24 Hours	ce?	Yes No Yes No Yes No Yes No
Formation Type: Unconsolidated F Total Well Depth (ft)	20.0	Bedrock		Con Scre	Method of Pla ductor Pipe - C eened & Poured entonite Chips	Gravity	Condu	ctor Pipe - Pumped (Explain)
(From ground surface		Casing Depth (ft.)	Se	Nea	Materials t Cement Grou d-Cement (Cor		mor	monitoring wells and hitoring well boreholes only
	hat Depth?	Yes No Unkno		Con Clay Ben	crete -Sand Slurry tonite-Sand Sh oped Bentonite	шту		 Bentonite Chips Granular Bentonite Bentonite-Cement Grout Bentonite - Sand Slurry
(5)	Sealing Mater	al Used	From (I	Ft.)	To (Ft.)			Mix Ratio or Mud Weight
Chipped bentonite			Surfa	ce	20.0			
(6) Comments								
(7) Name of Person or Fin	m Doing Sealing W	ork Date of Aban	donment					
Probe Technologies		6/8/06			FO	R DNR OF	R COUNTY I	JSE ONLY
Signature of Person Doin	ball_	Date Signed - 11- 200	2	Date	Received	N	loted By	
Street or Route		Telephone Number		Com	ments			
City, State, Zip Code								
,				1 P			and a strike	the strength of a second strength of the

Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well Name GP-102 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
$\underbrace{\frac{\text{NE}}{\text{Grid Location}}}_{I/4 \text{ of } \underline{\text{SE}}} 1/4 \text{ of } \underline{\text{Sec.}} \underbrace{18}_{I/4}; T. \underbrace{1}_{V} N; R. \underbrace{23}_{V} \boxtimes U$	Street Address of Well
	8927 Sheridan Road City, Village, or Town
ft. \Box N. \Box S.,ft. \Box E. \Box W. Local Grid Origin \Box (estimated: \Box) or Well Location \Box	Kenosha
	Present Well Owner Original Owner C & L Industrial Cleaners
Lat ' Long ' or	Street Address or Route of Owner
State Plane ft. N ft. E Zone Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	, c.,, c,, c
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date6/8/2006	Pump & Piping Removed? Yes No Not Applicable
Monitoring Well	Liner(s) Removed?
If a Well Construction Report	Screen Removed? Yes No Not Applicable
Water Well is available, please attach.	Casing Left in Place? Ves No
Construction Type:	Was Casing Cut Off Below Surface? Yes Ves No Did Sealing Material Rise to Surface? Yes No
Driven (Sandpoint) Dug	Did Sealing Material Rise to Surface? Yes Vo Did Material Settle After 24 Hours? Ves No
Other (Specify)	If Yes, Was Hole Retopped?
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? Yes No Unknown	Concrete Bentonite Chips Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Chipped bentonite	Surface 20.0
	· · · · · · · · · · · · · · · · · · ·
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonr	and a second s
Prove Technologies 6/8/06	FOR DNR OR COUNTY USE ONLY
Signifure of Person Dolde Work Date Signed	Date Received Noted By
Street or Route Telephone Number	Comments
City, State, Zip Code	
1	

Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
CP 102	Facility ID License/Permit/Monitoring No.
Common Well Name GP-103 Gov't Lot (if applicable)	
$\underbrace{NE}_{\text{Grid Location}} 1/4 \text{ of } \underbrace{SE}_{1/4 \text{ of } \text{Sec.}} \underbrace{18}_{1/4 \text{ of } \text{Sec.}} ; \text{T.} \underbrace{1}_{N; \text{ R.}} N; \text{ R.} \underbrace{23}_{N} \boxtimes \underbrace{E}_{N}$	Street Address of Well
Grid Location	8927 Sheridan Road
ft. □ N. □ S.,ft. □ E. □ W.	City, Village, or Town
	Kenosha
Local Grid Origin 🗌 (estimated: 🗌) or Well Location 🗌	Present Well Owner Original Owner
Lat Long or	C & L Industrial Cleaners
Lat Long or	Street Address or Route of Owner
State Plane ft. N ft. E. D Zone	
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
(5) WELL/DRILLHOLE/BOREHOLE INFORMATION	
Original Construction Date6/12/2006	Pump & Piping Removed? Yes No X Not Applicable
Monitoring Well	Liner(s) Removed? Yes Vo X Not Applicable
If a Well Construction Report	Screen Removed? Yes Vot Applicable
Water Well is available, please attach.	Casing Left in Place? Yes No
Drillhole / Borehole	Was Casing Cut Off Below Surface?
Construction Type:	Did Sealing Material Rise to Surface? Yes 🗌 No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes X No
F7	If Yes, Was Hole Retopped? Yes No
Other (Specify)	
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? Yes No Unknown	Concrete Bentonite Chips
	Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite Bentonite - Sand Slurry
	From (Et) To (Et) Mix Ratio
(5) Sealing Material Used	From (Ft.) To (Ft.) or Mud Weight
Chipped bentonite	Surface 20.0
	ing a state of the
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonm	nent
	TOD INNE OD COMUNITY LISE ONE A
Probe Technologies 6/12/06 Signature of Person Doing Work Date Signed	Date Received Noted By
Supporte of Ferson Doing work Date Signed	I TOLCU DY
Street or Route Telephone Number	
relephone Number	Comments
City, State, Zip Code	
City, State, Lip Coue	

Route to: Drinking Water Watershed/Wastewater Waste Managem	nent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well Name GP-104 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \text{SE}}{1/4 \text{ of Sec.}} \frac{18}{1.4 \text{ of Sec.}}; \text{T.} \frac{1}{1.4 \text{ N}; \text{R.}} \frac{23}{1.4 \text{ W}} \stackrel{\text{E}}{\longrightarrow} \text{W}$	Street Address of Well
	8927 Sheridan Road
ft. 🗋 N. 🗋 S.,ft. 🗋 E. 🗋 W.	City, Village, or Town
Local Grid Origin (estimated:) or Well Location	Kenosha Present Well Owner Original Owner
Lat Long or	C & L Industrial Cleaners
S C N	Street Address or Route of Owner
State Plane ft. N ft. E Zone	
Reason For Abandonment . WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date6/12/2006	Pump & Piping Removed? Yes No X Not Applicable
	Liner(s) Removed? Yes No No Applicable
Monitoring Well If a Well Construction Report	Screen Removed?
Water Well is available, please attach.	Casing Left in Place? Yes No
Drillhole / Borehole	Was Casing Cut Off Below Surface? Yes No
Construction Type:	Did Sealing Material Rise to Surface?
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours?
Other (Specify)	If Yes, Was Hole Retopped?
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured Dther (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? 🗌 Yes 🗌 No 🔲 Unknown	Concrete
If Yes, To What Depth? Feet	Clay-Sand Slurry
	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite I Bentonite - Sand Slurry
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Chipped bentonite	Surface 20.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonr	nent
Probe Technologies 6/12/06	FOR DNR OR COUNTY USE ONLY
Signature of Person Døing Work Date Signed	Date Received Noted By
A Winbure 4-11-07	
Street or Route Telephone Number	Comments
City, State, Zip Code	
,	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5 2/2000 Page 1 of 2

Will Lingue Well No. DNK Well DD No. County Facility Name Common Well Name GP-105 Govi Lot (if applicable) Net C. & L. Industrial Clearmers STS No. 200603327 Estility ID Local Grid Origin I. S	Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
Common Well Name CP-105 Govi Lot (if appliable) NE 1/4 of SE 1/4 of SE<		(2) FACILITY /OWNER INFORMATION
Common Well Name GP-105 Govi Lot (if applicable) NE [JA of SE 14 of Sec. IS At Load Grid Origin (estimated:	WI Unique Well No. DNR Well ID No. County	Facility Name
Common Well Name	Kenosha	C & L Industrial Clearners STS No. 200603327
n. n. <td< td=""><td>Common Well Name GP-105 Gov't Lot (if applicable)</td><td>Facility ID License/Permit/Monitoring No.</td></td<>	Common Well Name GP-105 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
n. n. <td< td=""><td>NE 14 - 5 SE 14 - 55- 18 - T 1 N. B 23 XE</td><td>Street Address of Well</td></td<>	NE 14 - 5 SE 14 - 55- 18 - T 1 N. B 23 XE	Street Address of Well
n. n. <td< td=""><td>$\frac{142}{\text{Grid Location}} \frac{1}{14 \text{ of Sec.}} \frac{1}{14 of Se$</td><td>8927 Sheridan Road</td></td<>	$\frac{142}{\text{Grid Location}} \frac{1}{14 \text{ of Sec.}} \frac{1}{14 of Se$	8927 Sheridan Road
Lead Grid Origin () (estimatet []) or Well Location [] Lead Grid Origin () (estimatet []) or Well Location [] Lat		
Lack of Original Construction Class (estimated: Classical Cl		
State Plane f. N. f. E C Street Address or Route of Owner Resson For Abandoament WU Unique Well No. City, State, Zip Code City, State, Zip Code Site investigation of Replacement Well City, State, Zip Code Next Construction Date No. Original Construction Date 6/12/2006 Hurn & Priping Remover? Yes No.	Local Grid Origin (estimated:) or Well Location	Present Well Owner Original Owner
State Plane f. N. f. E C Street Address or Route of Owner Resson For Abandoament WU Unique Well No. City, State, Zip Code City, State, Zip Code Site investigation of Replacement Well City, State, Zip Code Next Construction Date No. Original Construction Date 6/12/2006 Hurn & Priping Remover? Yes No.		C & L Industrial Cleaners
Reason for Ahandoament WI Unique Well No. of Replacement Well Chry, State, Zip Code (3) WELL/DRILLHOLE/BOREHOLE INFORMATION (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL. Original Construction Date	S C N	Street Address or Route of Owner
Reason for Ahandoament WI Unique Well No. of Replacement Well Chry, State, Zip Code (3) WELL/DRILLHOLE/BOREHOLE INFORMATION (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL. Original Construction Date	State Plane ft. N ft. E Zone	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL Original Construction Date	Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Original Construction Date		
Onionicing Well If a Well Construction Report is available, please attach. Liner(s) Removed? Yes No No A Applicable Water Well If a Well Construction Report is available, please attach. Liner(s) Removed? Yes No No A Applicable Construction Type: Dillhole? Bornhole Driven (Sandpoint) Dug Did Saeling Material Sette After 24 Hours? Yes No No No Applicable Construction Type:	(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Onionicing Well If a Well Construction Report is available, please attach. Liner(s) Removed? Yes No No A Applicable Water Well If a Well Construction Report is available, please attach. Liner(s) Removed? Yes No No A Applicable Construction Type: Dillhole? Bornhole Driven (Sandpoint) Dug Did Saeling Material Sette After 24 Hours? Yes No No No Applicable Construction Type:	6/12/2006	Pump & Piping Removed? Yes No X Not Applicable
↓ Monitoring Well If a Well Construction Report is available, please attach. Screen Removed? ↓ Ves No No Applicable ↓ Drilled // Driven (Sandpoint) □ Dug Screen Removed? ↓ Ves No No □ Drilled // Driven (Sandpoint) □ Dug If a Well Cashing Material Rise to Surface? ↓ Ves No □ Drilled // Driven (Sandpoint) □ Dug If a Well Cashing Material Rise to Surface? ↓ Ves No □ Other (Specify)	Original Construction Date	
Water Well is available, please attach. Casing Left in Place? Yes No Drillbole / Borehole Construction Type: Was Casing Cut Of Below Surface? Yes No Drillbole / Borehole Driven (Sandpoint) Dug Dug If Yes, Was Hole Retopped? Yes No Portilled Driven (Sandpoint) Dug If Yes, Was Hole Retopped? Yes No Formation Type: Conductor Pipe - Canductor Pipe - Pumped Screened & Pourced Conductor Pipe - Pumped Material State After 24 Hours? Yes No No Total Well Depth (fl) 20.0 Casing Depth (fl.) Easting Materials For monitoring wells and monitoring wells and monitoring wells on the conductor Pipe - Pumped Lower Drillhole Diameter (in.)	Monitoring Well	
Construction Type: Was Casing Cut Of Below Surface? Yes No Drilled Driven (Sandpoint) Dug Did Material Rise to Surface? Yes No Other (Specify)	Water Well is available, please attach.	Casing Left in Place? Yes No
Construction Type: Drilled Driven (Sandpoint) Dug Did Scaling Material Rise to Surface? Yes No Dother (Specify) Did Material Stet After 24 Hours? Yes No Formation Type: Did Material Rise to Surface? Yes No If Yes, Was Hole Retopped? Conductor Pipe - Gravity Conductor Pipe - Pumped Streened & Poured Other (Explain) Other (Explain) (From ground surface) Casing Diameter (in.) Beating Materials For monitoring wells and monitoring wells and monitoring wells and monitoring well sond Lower Drillhole Diameter (in.) Beationite Chips For monitoring wells and monitoring wells and monitoring wells and monitoring well boreholes only Mas Well Annular Space Grouted? Yes No Unknown If Yes, To What Depth? Feet Beatonite Chips Granular Bentonite Depth to Water (Feet) Sealing Material Used From (FL) To (FL) Mix Ratio (5) Sealing Material Used From (FL) To (FL) or Mud Weight (6) Comments Groupe Stephenologies Gr12/06 Noted By Signade Coherson Poing Work Date of Abandomment Telephone Number Not	Drillhole / Borehole	Was Casing Cut Off Below Surface?
□ Drilled ☑ Driven (Sandpoint) □ Dug □ Other (Specify)	Construction Type:	
□ Other (Specify) If Yes, Was Hole Retopped? □ Yes No Formation Type: □ Unconsolidated Formation □ Bedrock □ Required Method of Placing Sealing Material □ Other (Specify)	Drilled Driven (Sandpoint) Dug	
□ Other (Specify)		
Pormation Type: Conductor Pipe - Gravity Conductor Pipe - Pumped Munconsolidated Formation Bedrock Screened & Poured Other (Explain) Total Well Depth (ft) 20.0 Casing Diameter (in.) Screened & Poured Other (Explain) Lower Drillhole Diameter (in.) Casing Depth (ft.) Screened & Poured Screened & Poured Other (Explain) Was Well Annular Space Grouted? Yes No Unknown Screened & Sturry Bentonite Chips If Yes, To What Depth? Feet Feet Bentonite Sand Slurry Bentonite - Sand Slurry Bentonite - Sand Slurry (5) Scaling Material Used From (Ft.) To (Ft.) Mix Ratio (6) Comments Surface 20.0 Surface 20.0 (7) Name of Person or Firm Doing Sealing Work Date of Abandonment FOR DNR OR COUNTY USE ONLY Probe Openhono Firm Joing Work Date Signed Noted By Gingradue Of Person Poing Work Date Signed Noted By Gradue Conternet Telephone Number Comments	U Other (Specify)	
Image: Second	Formation Type:	
Total Well Depth (ft) 20.0 Casing Diameter (in.) (Bentonite Chips) Grow ground surface) Casing Depth (ft.) Sealing Materials For monitoring wells and monitoring wells and monitoring wells only Lower Drillhole Diameter (in.)	Unconsolidated Formation Bedrock	
(from ground surface) Casing Depth (ft.)	20.0	
Casing Depth (ft.) Image Matterials For Monitoring well boreholes only monitoring well boreholes only monitoring well boreholes only monitoring well boreholes only sand-Cement (Concrete) Grout Lower Drillhole Diameter (in.) Image Matterial Start Image Matterial Start Image Matterial Start Was Well Annular Space Grouted? Yes No Unknown Image Matterial Start Image Matterial Start If Yes, To What Depth? Feet Entonite-Sand Slurry Image Bentonite - Sand Slurry Image Bentonite - Sand Slurry (5) Sealing Material Used From (Ft.) To (Ft.) Mix Ratio or Mud Weight Chipped bentonite Surface 20.0 Mix Ratio or Mud Weight (6) Comments Granuar Bentonite Image Matterial Start Yrobe Apschnologies 6/12/06 FOR DNR OR COUNTY USE ONLY Signature of Person or Firm Doing Sealing Work Date of Abandonment FOR DNR OR COUNTY USE ONLY Yrobe Apschnologies Granuar Beitonite Image Material Start Image Material Start Signature of Person or Firm Doing Sealing Work Date Signed Image Material Start Image Material Start Yrobe Apschnologies Granuar Beitonite Image Material Start Image Material Start	Total Well Depth (ft) Casing Diameter (in.)	
Lower Drillhole Diameter (in.)	(From ground surface) Casing Depth (fl.)	
Was Well Annular Space Grouted? Yes No Unknown Image: Chipsed Sturry Bentonite Chipsed Sturry If Yes, To What Depth? Feet Clay-Sand Slurry Bentonite Chipsed Sturry Bentonite Chipsed Sturry Depth to Water (Feet) Chipped Bentonite State-Cement Grout Bentonite - Sand Slurry Bentonite - Sand Slurry (5) Sealing Material Used From (FL) To (FL) Mix Ratio or Mud Weight Chipped bentonite Surface 20.0 Mix Ratio or Mud Weight (6) Comments Granular Bentonite - Sand Slurry Image: State	Lower Drillhole Diameter (in)	
Was weit Annuar space Grouted? If Yes, To What Depth? Granular Bentonite If Yes, To What Depth? Feet Bentonite-Sand Slurry Bentonite-Sand Slurry Depth to Water (Feet) Mix Ratio (5) Sealing Material Used From (Ft.) To (Ft.) Mix Ratio Chipped bentonite Surface 20.0 Mix Ratio (5) Sealing Material Used From (Ft.) To (Ft.) Mix Ratio (6) Comments Surface 20.0 Image: Comments in the image: Comment in the image: Com		
If Yes, To What Depth? Feet Bentonite-Sand Slurry Bentonite-Cernent Grout Depth to Water (Feet) Chipped Bentonite Bentonite-Cernent Grout Bentonite - Sand Slurry (5) Sealing Material Used From (FL) To (FL) Mix Ratio or Mud Weight Chipped bentonite Surface 20.0 Mix Ratio or Mud Weight (6) Comments Surface 20.0 Signature (7) Name of Person or Firm Doing Sealing Work Date of Abandonment 6/12/06 FOR DNR OR COUNTY USE ONLY Signature of Person Poing Work Date Signed Noted By Signature of Route Telephone Number Comments	Was Well Annular Space Grouted? 📙 Yes 📙 No 📙 Unknown	
Depth to Water (Feet)	If Yes. To What Depth? Feet	
(5) Sealing Material Used From (FL) To (FL) Mix Ratio or Mud Weight Chipped bentonite Surface 20.0		
(5) Sealing Material Used From (FL) 16 (FL) or Mud Weight Chipped bentonite Surface 20.0		
(6) Comments (7) Name of Person or Firm Doing Sealing Work Probe Dechnologies (7) Name of Person or Firm Doing Sealing Work Probe Dechnologies Signature of Person Poing Work Date Signed	(5) Sealing Material Used	
(6) Comments (7) Name of Person or Firm Doing Sealing Work Probe Dechnologies (7) Name of Person or Firm Doing Sealing Work Probe Dechnologies Signature of Person Poing Work Date Signed	Chinned bentonite	Surface 20.0
(7) Name of Person or Firm Doing Sealing Work Date of Abandonment 6/12/06 Probe Texhnologies Date Signed Signature of Person Poing Work Date Signed Multiplication Telephone Number Comments	Chipper benonne	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonment 6/12/06 Probe Texhnologies Date Signed Signature of Person Poing Work Date Signed Multiplication Telephone Number Comments		
(7) Name of Person or Firm Doing Sealing Work Date of Abandonment 6/12/06 Probe Texhnologies Date Signed Signature of Person Poing Work Date Signed Multiplication Telephone Number Comments		
(7) Name of Person or Firm Doing Sealing Work Date of Abandonment 6/12/06 Probe Texhnologies Date Signed Signature of Person Poing Work Date Signed Multiplication Telephone Number Comments	(1) Commente	
Probe Dechnologies 6/12/06 Signature of Person Poing Work Date Signed	(6) Comments	· · · · · · · · · · · · · · · · · · ·
Signatic of Person Poing Work Date Signed Multiplication Telephone Number Comments	(7) Name of Person or Firm Doing Sealing Work Date of Abandonr	
Signature of Person Boing Work Date Signed Multiplication 1-11-01 Street or Route Telephone Number Comments		Comparing the second of the second
Street or Koute Telephone Number Comments	Signature of Person Poing Work Date Signed	Date Received Noted By
	Street or Koute Telephone Number	Comments
	City, State, Zip Code	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5 2/2000 Page 1 of 2

Route to: Drinking Water Watershee	d/Wastewater 🔲 Waste Managem	ent 🗌 Rem	ediation/Redevelo	opment 🔲 O	ther	
(1) GENERAL INFORMATION		(2) FACILI	FY /OWNER I	NFORMAT	ION	
WI Unique Well No. DNR Well ID No.	County	Facility Nam	e			
	Kenosha	C&LIn	dustrial Clearne	rs STS No. 2	00603327	
Common Well Name GP-106	Gov't Lot (if applicable)	Facility ID		License/Per	mit/Monito	oring No.
<u>NE</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>18</u>	; T. <u>1</u> N; R. 23 🖾 E	Street Addres	ss of Well			
Grid Location			ridan Road			
ft. 🖸 N. 🗌 S.,		City, Village Kenosha	, or Town			
Local Grid Origin (estimated:	·	Present Well	Owner	Or	riginal Own	er
Lat Long	o '' '' OT				C & L Ind	lustrial Cleaners
State Plane ft. N	ft. E. $\Box \Box \Box$ Zone	Street Addres	ss or Route of Ow	vner		
1	Unique Well No.	City, State, Z	Cip Code			
	eplacement Well	-				
(3) WELL/DRILLHOLE/BOREHOLE	E INFORMATION	(4) PUMP, 1	JNER, SCREI	EN, CASINO	J. & SEA	LING MATERIAL
Original Construction Date6/12/2	2006	Pump &	Piping Removed	1?	Yes 🗋 1	No Not Applicable
Monitoring Well		Liner(s)	Removed?			No X Not Applicable
	a Well Construction Report		Removed?			No 🛛 Not Applicable
Drillhole / Borehole	available, please attach.	Casing 1	Left in Place?		Yes []	No
Construction Type:			sing Cut Off Belo			Yes No
Drilled Driven (Sandpoint) Dug		ling Material Rise terial Settle After			Yes 📙 No Yes 🖾 No
			, Was Hole Retop			Yes 🖾 No Yes 🗌 No
U Other (Specify)	· ,		d Method of Placi	-		
Formation Type:			nductor Pipe - Gra	ĭ ī	1	or Pipe - Pumped
Unconsolidated Formation	Bedrock		eened & Poured		Other (E:	
Total Well Depth (ft) 20.0	Casing Diameter (in.)	(E	Bentonite Chips)			-
(From ground surface)	Casing Depth (ft.)	Sealing	Materials		For mo	onitoring wells and
Lower Drillhole Diameter (in.)			at Cement Grout		monito	oring well boreholes only
			nd-Cement (Conci ncrete	rete) Grout	1 🗆	Denter in Chine
•	Yes No Unknown		iy-Sand Slurry		iН	Bentonite Chips Granular Bentonite
If Yes, To What Depth?	Feet		ntonite-Sand Sluri	rv		Bentonite-Cement Grout
Depth to Water (Feet)			ipped Bentonite		ΙŪ	Bentonite - Sand Slurry
(5) Sealing Materia	al Used	From (Ft.)	To (Ft.)			Mix Ratio
						or Mud Weight
Chipped bentonite		Surface	20.0			
	·····					
(6) Comments						
(7) Name of Person or Firm Doing Sealing We	ork Date of Abandonn	1ent	····			
Probe Technologies	6/12/06		FOR	DNR OR CO	UNTY US	E ONLY
Signative of Person Poing Work	Date Signed	Date	e Received	Noted	generalist source	
11 altrabal	- 4-11-07	A straining the second				
Speet or Route	Telephone Number	Con	oments			
City, State, Zip Code						
, suc, zip couc						

WELL/DRILLHOLE	/BOREHOLE A	BANDONMENT
Form 3300-5	2/2000	Page 1 of 2

Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well Name GP-107 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \text{SE}}{1/4 \text{ of Sec.}} \frac{18}{18} ; \text{T.} \frac{1}{1} \text{ N; R.} \frac{23}{10} \bigotimes_{\text{W}}^{\text{E}} \text{W}$	Street Address of Well
Grid Location	8927 Sheridan Road
f N S.,f E W.	City, Village, or Town
Local Grid Origin (estimated:) or Well Location	Kenosha
	Present Well Owner Original Owner
Lat ' ' Long ' ' or	C & L Industrial Cleaners
State Plane ft. N ft. E. $\Box \Box \Box \Box$ Zone	Street Address or Route of Owner
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
	Pump & Piping Removed? Yes No X Not Applicable
	Liner(s) Removed? Yes Vis Vis Vis Vis Vis Vis Vis Vis Vis Vi
Monitoring Well If a Well Construction Report	Screen Removed? Yes Vot Applicable
Water Well is available, please attach.	Casing Left in Place? Ves No
Drillhole / Borehole	Was Casing Cut Off Below Surface?
Construction Type:	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours?
Other (Specify)	If Yes, Was Hole Retopped?
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured U Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? 🔲 Yes 🔲 No 🔲 Unknown	Concrete Bentonite Chips
•	Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Concrete	Surface 0.5
Chipped bentonite	0.5 20.0
Chipped benionne	0.5 20.0
· · · · · · · · · · · · · · · · · · ·	
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonm	
Probe Technologies 6/12/06	FOR DNR OR COUNTY USE ONLY
Signstore of Person Doing Work Date Signed	Date Received Noted By
Alltenbach 4-11-07	
Street or Route ' Telephone Number	Comments
City, State, Zip Code	
,	

Route to: Drinking Water Watershed/Wastewater Waste Managem	nent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
CP 108	Facility ID License/Permit/Monitoring No.
Common Well Name GP-108 Gov't Lot (if applicable)	
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \underline{\text{SE}}}{1/4 \text{ of Sec.}} \frac{18}{1/4}; \text{T.} \frac{1}{1} \text{ N; R.} \frac{23}{10} \text{ W}$	Street Address of Well
Grid Location	8927 Sheridan Road
ft. \[N. \[S.,ft. \[E. \[W.	City, Village, or Town
	Kenosha
Local Grid Origin (estimated:) or Well Location	Present Well Owner Original Owner
Lat Ung or	C & L Industrial Cleaners
S C N	Street Address or Route of Owner
State Plane fl. N fl. E Zone	
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date 6/12/2006	Pump & Piping Removed? Yes No X Not Applicable
Original Construction Date6/12/2006	Liner(s) Removed?
Monitoring Well	Screen Removed? Yes No No Not Applicable
Water Well If a Well Construction Report is available, please attach.	Casing Left in Place?
Drillhole / Borehole	
Construction Type:	Was Casing Cut Off Below Surface?
	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
Other (Specify)	If Yes, Was Hole Retopped?
Formation Type:	Required Method of Placing Sealing Material
	Conductor Pipe - Gravity Conductor Pipe - Pumped
Unconsolidated Formation 🗌 Bedrock	Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	
(From ground surface)	Sealing Materials For monitoring wells and
Casing Depth (ft.)	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
	Concrete Bentonite Chips
Was Well Annular Space Grouted? 🗌 Yes 🗌 No 🗌 Unknown	Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite
	Mix Patio
(5) Sealing Material Used	From (Ft.) To (Ft.) or Mud Weight
Concrete	Surface 0.5
Chipped bentonite	0.5 20.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonn	ment
	FOR DNR OR COUNTY USE ONLY
Probe Technologies 6/12/06 Signardscer Person Doing Work Date Signed	Date Received Noted By
Signade of fisch Duffe work Jac Signad	
Street br Rotte Telephone Number	Comments
City, State, Zip Code	

WELL/DRILLHOLI	E/BOREHOLE AE	BANDONMENT
Form 3300-5	2/2000	Page 1 of 2

Route to: Drinking Water Watershed/Wastewater Waste Manageme	ent 🗌 Rem	ediation/Redeve	lopment [_ Other	
(1) GENERAL INFORMATION	(2) FACILI	ΓY /OWNER	INFORM	1ATION	
WI Unique Well No. DNR Well ID No. County	Facility Nam	e			
Kenosha		dustrial Clearn			
Common Well Name GP-109 Govt Lot (if applicable)	Facility ID		Licens	e/Permit/Monito	oring No.
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \text{SE}}{1/4 \text{ of Sec.}} \frac{18}{18} ; \text{T.} \frac{1}{10} \text{ N; R.} \frac{23}{100} \text{ W}$	Street Addres	ss of Well			
Grid Location	8927 She	ridan Road			
f. 🗌 N. 🗌 S.,f. 🗌 E. 🗌 W.	City, Village Kenosha	, or Town			
Local Grid Origin (estimated:) or Well Location	Present Well	Owner		Original Owr	ner
Lat Long or				-	lustrial Cleaners
SCN	Street Addres	ss or Route of O	wner		
State Plane ft. N ft. E Zone					
Reason For Abandonment WI Unique Well No.	City, State, Z	ip Code			•
Site investigation of Replacement Well					
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, I	LINER, SCRI	EEN, CAS	<u>SING, & SEA</u>	LING MATERIAL
Original Construction Date6/12/2006		Piping Remove	d?		No 🛛 Not Applicable
Monitoring Well	.,	Removed?			No Not Applicable
If a Well Construction Report		Removed?			No 🖾 Not Applicable
Water Well is available, please attach. Drillhole / Borehole	Casing I	Left in Place?			No .
		sing Cut Off Bel			Yes No
Construction Type:		ling Material Ri			Yes II No
Drilled Driven (Sandpoint) Dug		terial Settle Afte			Yes No
Other (Specify)		, Was Hole Reto			Yes I No
Formation Type:		d Method of Pla	- ,		
Unconsolidated Formation Bedrock		nductor Pipe - G	-		or Pipe - Pumped
-		eened & Poured		U Other (E	xplain)
Total Well Depth (ft) Casing Diameter (in.) (From ground surface)		Bentonite Chips)	- <u> </u>		· · · · · · · · · · · · · · · · · · ·
Casing Depth (ft.)		Materials			onitoring wells and
Lower Drillhole Diameter (in.)		at Cement Grou nd-Cement (Con			oring well boreholes only
		ncrete		" I 🗆	Bentonite Chips
Was Well Annular Space Grouted? 🗌 Yes 🗌 No 🗌 Unknown		y-Sand Slurry		1	Granular Bentonite
If Yes, To What Depth? Feet		ntonite-Sand Slu	rry		Bentonite-Cement Grout
Depth to Water (Feet)		ipped Bentonite		i 🗆	Bentonite - Sand Slurry
(5) Sealing Material Used	From (Ft.)	To (Ft.)			Mix Ratio or Mud Weight
Concrete	Surface	0.5			· · · · · · · · · · · · · · · · · · ·
Chipped bentonite	0.5	20.0			
	•				
(6) Comments					
(7) Name of Person or Firm Doing Sealing Work Date of Abandonn	nent				·····
Probe Zechnologies 6/12/06		FO	R DNR OI	R COUNTY US	EONLY
Signature of Person Doing Work	Dat	e Received	I.	loted By	
Allenbal 4-11-07	And a second sec				
Spreet br Route Telephone Number	Con	nments			
City, State, Zip Code		toligingester Subisingen	stolen en		
City, State, Lip Code	A LONG AND				
•		0.0000000000000000000000000000000000000	0-0-86389771	a na ana ang sa	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5 2/2000 Page 1 of 2

State of Wisconsin Department of Natural Resources

Route to: Drinking Water Watershed/Wastewater Waste Managem	nent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
	Facility ID License/Permit/Monitoring No.
Common Well Name GP-110 Gov't Lot (if applicable)	
NE $(1 \times 1)^{12} \times 10^{12} \times 10^{12$	Street Address of Well
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of Sec.}}{1/4 \text{ of Sec.}} \frac{18}{1.4 \text{ of Sec.}}; \text{T.} \frac{1}{1.4 \text{ N}; \text{R.}} \frac{23}{1.4 \text{ W}} W$	8927 Sheridan Road
	City, Village, or Town
ft. \[N. \] S.,ft. \[E. \] W.	
Local Grid Origin (estimated:) or Well Location	Kenosha Present Well Owner Original Owner
<u> </u>	C & L Industrial Cleaners
Lat Long or	Street Address or Route of Owner
State Plane fl. N fl. E Zone	
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	(4) NUMB LINED CODEEN CACING & SEALING MATERIAL
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date6/12/2006	Pump & Piping Removed? Yes No X Not Applicable
	Liner(s) Removed? Yes No X Not Applicable
Monitoring Well If a Well Construction Report	Screen Removed? Yes No Not Applicable
Water Well is available, please attach.	Casing Left in Place? Yes No
Drillhole / Borehole	Was Casing Cut Off Below Surface?
Construction Type:	
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours?
Other (Specify)	If Yes, Was Hole Retopped?
Formation Type:	Required Method of Placing Sealing Material
	Conductor Pipe - Gravity Conductor Pipe - Pumped
Unconsolidated Formation Bedrock	Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface)	Sealing Materials For monitoring wells and
Casing Depth (ft.)	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
	Concrete Bentonite Chips
Was Well Annular Space Grouted? Yes No Unknown	
If Yes, To What Depth? Feet	
	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite I Bentonite - Sand Slurry
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
	or Mad weight
Concrete	Surface 0.5
Chipped bentonite	0.5 20.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonr	ment
Probe Dechnologies 6/12/06	FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work Date Signed	Date Received Noted By
1 4 4 mbail 4-4-07	
Street or Route Telephone Number	Comments
And the second sec	
City, State, Zip Code	
City, outer, zip code	
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Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report 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 this form 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. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Managem	
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well Name GP-111 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \text{SE}}{1/4 \text{ of Sec.}} \frac{18}{1.4 \text{ of Sec.}}; \text{T.} \frac{1}{1.4 \text{ N}}; \text{R.} \frac{23}{1.4 \text{ W}} \overset{\text{E}}{\longrightarrow} \text{W}$	Street Address of Well
Grid Location W	8927 Sheridan Road
	City, Village, or Town
Local Grid Origin (estimated:) or Well Location	Kenosha
	Present Well Owner Original Owner
Lat Long or	C & L Industrial Cleaners
State Plane ft. N ft. E. \square \square \square Zone	Street Address or Route of Owner
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date6/12/2006	Pump & Piping Removed? Yes No Not Applicable Liner(s) Removed? Yes No Not Applicable
Monitoring Well If a Well Construction Report	Screen Removed? Yes Vo Vo Not Applicable
Water Well is available, please attach.	Casing Left in Place?
Drillhole / Borehole	
Construction Type:	Was Casing Cut Off Below Surface? Yes Yes No Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) L Dug	
U Other (Specify)	
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? 🔲 Yes 🔲 No 💭 Unknown	Concrete Bentonite Chips
If Yes, To What Depth? Feet	Clay-Sand Slurry Granular Bentonite
	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite Bentonite - Sand Slurry
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Concrete	Surface 0.5
Chipped bentonite	0.5 20.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonn	nent
Probe/Technologies 6/12/06	FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work/ Date Signed	Date Received Noted By
Allabart 4-11-07	
Freet br Route Telephone Number	Comments
City, State, Zip Code	

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WELL/DRILLHOL	.E/BOREHOLE AB	ANDONMENT
Form 3300-5	2/2000	Page 1 of 2

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Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well Name GP-301 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
NE $(1, 2, 5)$ $(1, 2, 2)$ $(1, 2, 3)$ $(2, 3)$	Street Address of Well
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of Sec.}}{1/4 \text{ of Sec.}} \frac{18}{1.4}; \text{T.} \frac{1}{1.4} \text{ N; R.} \frac{23}{1.4} \bigotimes \frac{1}{1.4} \text{ W}$	8927 Sheridan Road
	City, Village, or Town
f. 🛛 N. 🗋 S.,f. 🗋 E. 🔲 W.	Kenosha
Local Grid Origin 🗌 (estimated: 🗌) or Well Location 🗌	Present Well Owner Original Owner
0 1 11 0 1 11	C & L Industrial Cleaners
Lat Long or	Street Address or Route of Owner
State Plane ft. N ft. E. D Zone	
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	
Original Construction Date6/8/2006	Pump & Piping Removed? Yes Ves No X Not Applicable
	Liner(s) Removed? Yes Ves No X Not Applicable
Monitoring Well If a Well Construction Report	Screen Removed?
Water Well is available, please attach.	Casing Left in Place? L Yes No
Drillhole / Borehole	Was Casing Cut Off Below Surface? Yes No
Construction Type:	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes X No
	If Yes, Was Hole Retopped? Yes Vo
Other (Specify)	
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured Other (Explain)
Total Well Depth (ft) 15.0 Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? Yes No Unknown	Concrete Bentonite Chips
	Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite
	Mix Patio
(5) Sealing Material Used	From (Ft.) To (Ft.) or Mud Weight
· · · · · · · · · · · · · · · · · · ·	
Chipped bentonite	Surface 15.0
······································	
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonn	and a statement of the second statement of the second statement of the second statement of the second statement of the
Probe Technologies 6/8/06	FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work Date Signed	Date Received Noted By
1 alterbar 9-11-07	
Street or Route Telephone Number	Comments '
City, State, Zip Code	

Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well NameGP-302 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \text{SE}}{1/4 \text{ of Sec.}} \frac{18}{18} ; \text{T.} \frac{1}{1} \text{ N; R.} \frac{23}{10} \text{ W}$	Street Address of Well
	8927 Sheridan Road City, Village, or Town
	Kenosha
Local Grid Origin (estimated:) or Well Location	Present Well Owner Original Owner
Lat Long or	C & L Industrial Cleaners
S C N	Street Address or Route of Owner
State Plane ft. N ft. E Zone	
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date <u>6/8/2006</u>	Pump & Piping Removed? Yes . No X Not Applicable
Monitoring Well	Liner(s) Removed? Yes No X Not Applicable
If a Well Construction Report	Screen Removed? Yes No X Not Applicable
Water Well is available, please attach. Drillhole / Borehole	Casing Left in Place? Yes No
Construction Type:	Was Casing Cut Off Below Surface?
	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
U Other (Specify)	If Yes, Was Hole Retopped?
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.) (From ground surface)	(Bentonite Chips)
Casing Depth (ft.)	Sealing Materials For monitoring wells and
Lower Drillhole Diameter (in.)	Image: Neat Cement Grout monitoring well boreholes only Image: Sand-Cement (Concrete) Grout
	Concrete Bentonite Chips
Was Well Annular Space Grouted? 📙 Yes 🛄 No 📙 Unknown	Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite
(5) Sealing Material Used	From (Ft.) To (Ft.)
(5) Sealing Material Used	or Mud Weight
Chipped bentonite	Surface 15.0
	<u> </u>
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonn	
Probe Technologies 6/8/06	FOR DNR OR COUNTY USE ONLY
Signifure of Person Doing Work Date Signed	Date Received Noted By
Talashan Number	
Street of Route Telephone Number	Comments
City, State, Zip Code	

WELL/DRILLHOI	E/BOREHOLE	ABANDONMENT
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(1) GENERAL INFORMATION WI Unique Well No. DNR Well ID No. County Kenosha Common Well Name GP-303 Gov't Lot (if applicable) NE 1/4 of SE 1/4 of Sec. 18 ; T. 1 N; R. 23 E Grid Location	(2) FACILITY /OWNER INFORMATION Facility Name C & L Industrial Clearners STS No. 200603327 Facility ID License/Permit/Monitoring No. Street Address of Well 8927 Sheridan Road City, Village, or Town Kenosha Present Well Owner Original Owner C & L Industrial Cleaners Street Address or Route of Owner City, State, Zip Code
Kenosha GP-303 Gov't Lot (if applicable) NE 1/4 of SE 1/4 of Sec. 18 ; T. 1 N; R. 23 E Grid Location ft. N. S., ft. E W	C & L Industrial Clearners STS No. 200603327 Facility ID License/Permit/Monitoring No. Street Address of Well 8927 Sheridan Road City, Village, or Town Kenosha Present Well Owner Original Owner C & L Industrial Cleaners Street Address or Route of Owner
Common Well Name GP-303 Gov't Lot (if applicable) NE 1/4 of SE 1/4 of Sec. 18 ; T. 1 N; R. 23 E Grid Location . N. S., ft. E. W ft. N. S., ft. E. W. Local Grid Origin (estimated:) or Well Location	Facility ID License/Permit/Monitoring No. Street Address of Well 8927 Sheridan Road City, Village, or Town Kenosha Present Well Owner Original Owner Street Address or Route of Owner C & L Industrial Cleaners
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Street Address of Well 8927 Sheridan Road City, Village, or Town Kenosha Present Well Owner Original Owner C & L Industrial Cleaners Street Address or Route of Owner
Grid Docation ft. N. S., ft. E. W. Local Grid Origin (estimated:) or Well Location	8927 Sheridan Road City, Village, or Town Kenosha Present Well Owner Original Owner C & L Industrial Cleaners Street Address or Route of Owner
Image: Construction Type: Image: Construction Type:	City, Village, or Town Kenosha Present Well Owner Original Owner C & L Industrial Cleaners Street Address or Route of Owner
Local Grid Origin (estimated:) or Well Location Lat ' ' long ' or State Plane ft. N. ' ft. E. Zone Reason For Abandonment WI Unique Well No. Site investigation of Replacement Well (3) WELL/DRILLHOLE/BOREHOLE INFORMATION	Kenosha Present Well Owner Original Owner C & L Industrial Cleaners Street Address or Route of Owner
Lat Long	Present Well Owner C & L Industrial Cleaners Street Address or Route of Owner
State Plane ft. N. ft. E. C N Reason For Abandonment WI Unique Well No. of Replacement Well Of Replacement Well (3) WELL/DRILLHOLE/BOREHOLE INFORMATION Original Construction Date 6/8/2006 Monitoring Well If a Well Construction Report is available, please attach. Drillhole / Borehole Driven (Sandpoint) Dug Other (Specify) Formation Type:	C & L Industrial Cleaners Street Address or Route of Owner
State Plane ft. N. ft. E. C N Reason For Abandonment WI Unique Well No. of Replacement Well Of Replacement Well (3) WELL/DRILLHOLE/BOREHOLE INFORMATION Original Construction Date 6/8/2006 Monitoring Well If a Well Construction Report is available, please attach. Drillhole / Borehole Driven (Sandpoint) Dug Other (Specify) Formation Type:	Street Address or Route of Owner
Reason For Abandonment WI Unique Well No. Site investigation of Replacement Well (3) WELL/DRILLHOLE/BOREHOLE INFORMATION Original Construction Date 6/8/2006 Monitoring Well If a Well Construction Report is available, please attach. Drillhole / Borehole Driven (Sandpoint) Dug Other (Specify) Formation Type:	City, State, Zip Code
Site investigation of Replacement Well (3) WELL/DRILLHOLE/BOREHOLE INFORMATION Original Construction Date 6/8/2006 Monitoring Well If a Well Construction Report is available, please attach. Drillhole / Borehole Driven (Sandpoint) Drilled Driven (Sandpoint) Other (Specify) Formation Type:	City, State, Zip Code
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION Original Construction Date 6/8/2006 Monitoring Well If a Well Construction Report is available, please attach. Water Well If a Well Construction Report is available, please attach. Drillhole / Borehole Driven (Sandpoint) Drilled Driven (Sandpoint) Other (Specify) Formation Type:	
Original Construction Date 6/8/2006 Monitoring Well If a Well Construction Report is available, please attach. Water Well If a Well Construction Report is available, please attach. Drillhole / Borehole Driven (Sandpoint) Drilled Driven (Sandpoint) Other (Specify)	
Image: Construction Bate If a Well Construction Report Image: Construction Type: If a Well Construction Report Image: Construction Type: Image: Construction Type: Image: Construction Type: Image: Construction Type:	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Drilled Driven (Sandpoint) Dug Other (Specify)	Pump & Piping Removed? Yes No Not Applicable Liner(s) Removed? Yes No Not Applicable Screen Removed? Yes No Not Applicable Casing Left in Place? Yes No Not Applicable
Other (Specify) Formation Type:	Was Casing Cut Off Below Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Material Settle After 24 Hours? Yes No
Formation Type:	If Yes, Was Hole Retopped? Yes No
	Required Method of Placing Sealing Material
	Conductor Pipe - Gravity Conductor Pipe - Pumped Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.) (From ground surface)	
Casing Depth (ft.)	Sealing Materials For monitoring wells and
Lower Drillhole Diameter (in.)	Neat Cement Grout monitoring well boreholes only Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? Yes No Unknown If Yes, To What Depth? Feet Depth to Water (Feet)	
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Chipped bentonite	Surface 15.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandon	nment
Probe 762hnologies 6/8/06	FOR DNR OR COUNTY USE ONLY
Signature of Person points Work Dater Signed	Date Received Noted By
Street or Route Telephone Number	
City, State, Zip Code	Comments

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report 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 this form 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. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
Common Well Name GP-401 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of Sec.}}{18} ; \text{T.} \frac{1}{1} \text{ N; R.} \frac{23}{10} \bigotimes E$	Street Address of Well 8927 Sheridan Road
f. □ N. □ S.,f. □ E. □ W.	City, Village, or Town
	Kenosha
Local Grid Origin (estimated:) or Well Location	Present Well Owner Original Owner
Lat ' Long ' or	C & L Industrial Cleaners
State Plane ft. N ft. E. $\Box \Box \Box$ Zone	Street Address or Route of Owner
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well	
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date <u>6/8/2006</u> Monitoring Well Water Well If a Well Construction Report is available, please attach.	Pump & Piping Removed? Yes No Not Applicable Liner(s) Removed? Yes No Not Applicable Screen Removed? Yes No Not Applicable Casing Left in Place? Yes No Not Applicable
 ➢ Drillhole / Borehole Construction Type: ☐ Drilled ☑ Driven (Sandpoint) ☐ Dug ☐ Other (Specify) 	Was Casing Cut Off Below Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Material Settle After 24 Hours? Yes No If Yes, Was Hole Retopped? Yes No
Formation Type:	Required Method of Placing Sealing Material
	Conductor Pipe - Gravity Conductor Pipe - Pumped
Unconsolidated Formation 📙 Bedrock	Screened & Poured Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? 🗌 Yes 🗌 No 🗍 Unknown	Concrete Bentonite Chips
•	Clay-Sand Slurry · Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite I Bentonite - Sand Slurry
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Chipped bentonite	Surface 15.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonr	nent
Probe/Technologies 6/8/06	FOR DNR OR COUNTY USE ONLY
Signature of Person Poing Work Date Signed	Date Received Noted By
Street or Route Telephone Number	Comments
V	
City, State, Zip Code	
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	ent Remediation/Redevelopment Other							
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION							
WI Unique Well No. DNR Well ID No. County	Facility Name							
Kenosha	C & L Industrial Clearners STS No. 200603327							
Common Well Name GP-402 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.							
$\underbrace{\frac{\text{NE}}{\text{Grid Location}}}_{I/4 \text{ of Sec.}} \underbrace{18}_{I/4 \text{ of Sec.}}; \text{T.} \underbrace{1}_{N; \text{ R.}} \underbrace{23}_{W} \bigcup_{W}$	Street Address of Well							
Grid Location W	8927 Sheridan Road							
f. 🗋 N. 🗋 S.,ft. 🗋 E. 🗋 W.	City, Village, or Town							
Local Grid Origin (estimated:) or Well Location	Kenosha							
	Present Well Owner Original Owner							
Lat Long or	C & L Industrial Cleaners							
State Plane ft. N ft. E. $\Box \Box \Box \Box$ Zone	Street Address or Route of Owner							
Reason For Abandonment WI Unique Well No.	City, State, Zip Code							
Site investigation of Replacement Well								
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL							
Original Construction Date6/8/2006	Pump & Piping Removed? Yes No Not Applicable							
	Liner(s) Removed? Yes Ves No Not Applicable							
Monitoring Well If a Well Construction Report	Screen Removed? Yes No Not Applicable							
Water Well is available, please attach.	Casing Left in Place? L Yes No							
Drillhole / Borehole	Was Casing Cut Off Below Surface? Yes 🔲 No							
Construction Type:	Did Sealing Material Rise to Surface? Yes No							
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes Yes No							
Other (Specify)	If Yes, Was Hole Retopped? Yes No							
Formation Type:	Required Method of Placing Sealing Material							
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped							
	Screened & Poured Other (Explain)							
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips) Sealing Materials For monitoring wells and							
(From ground surface) Casing Depth (ft.)								
Lower Drillhole Diameter (in.)	Neat Cement Grout monitoring well boreholes only Sand-Cement (Concrete) Grout							
Was Well Annular Space Grouted? Yes No Unknown	Concrete Bentonite Chips							
	Clay-Sand Slurry Granular Bentonite							
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grou							
Depth to Water (Feet)	Chipped Bentonite Bentonite - Sand Slurry							
(5) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight							
Chipped bentonite	Surface 15.0							
Chipped bentonne								
(6) Comments								
(6) Comments								
(7) Name of Person or Firm Doing Sealing Work Date of Abandom								
Probe Technologies 6/8/06	FOR DNR OR COUNTY USE ONLY							
Signature of Person Doing Work Date Signed	Date Received Noted By							
Street or Route Telephone Number	Comments							
City State Zin Code								
City, State, Zip Code								

Route to: Drinking Water Watershe	d/Wastewater 📃 Waste Managem		Remediation/Redevel		Other	
(1) GENERAL INFORMATION		(2) FACI	LITY /OWNER	INFORM	IATION	
WI Unique Well No. DNR Well ID No.	County	Facility N	lame			
	Kenosha	C&L	Industrial Clearne	ers STS N	lo. 200603327	
CP 402		Facility I	D	Licens	e/Permit/Monito	oring No.
Common Well NameGP-403	Gov't Lot (if applicable)					
NE 1/4 of SE 1/4 of Sec. 18	.т. I N. P. 23 🛛 E	Street Ad	dress of Well			· · · · · · · · · · · · · · · · · · ·
Grid Location	, 1. <u> </u>	8927	Sheridan Road			
ft. 🛛 N. 🗌 S.,			age, or Town			
		Kenos	tha			
Local Grid Origin (estimated:) or Well Location		Vell Owner		Original Own	ner
Lat' Long	0 1 11				C&LInc	dustrial Cleaners
	01	Street Ad	dress or Route of Ov	vner		
State Plane ft. N						
Reason For Abandonment . WI	Unique Well No.	City, Stat	e, Zip Code			
Site investigation of F	Replacement Well					
(3) WELL/DRILLHOLE/BOREHOL		(4) PUM	P. LINER. SCRE	EN. CAS	SING. & SEA	LING MATERIAL
Original Construction Date6/8/2	2006		p & Piping Remove	a ?		No Not Applicable
Monitoring Well		1	r(s) Removed?			
	a Well Construction Report available, please attach.		en Removed?			No 🛛 Not Applicable
Drillhole / Borehole	avanable, please attach.	Casi	ng Left in Place?			No
		Was	Casing Cut Off Belo	ow Surface		Yes 📙 No
Construction Type:		Did	Sealing Material Ris	e to Surfac	xe? 🛛	Yes 📙 No
Drilled Driven	(Sandpoint) Dug	Did	Material Settle After	24 Hours	, Ц	Yes 🖾 No
Other (Specify)		If	Yes, Was Hole Reto	pped?		Yes 🗌 No
Formation Type:		Requ	uired Method of Plac	ing Sealing	g Material	
			Conductor Pipe - Gr	ravity	Conducte	or Pipe - Pumped
Unconsolidated Formation	Bedrock		Screened & Poured		Other (E	xplain)
Total Well Depth (ft)15.0	Casing Diameter (in)		(Bentonite Chips)			
(From ground surface)		Seal	ing Materials		For m	onitoring wells and
	Casing Depth (ft.)	n n	Neat Cement Grout			pring well boreholes only
Lower Drillhole Diameter (in.)			Sand-Cement (Cond			sing wen bereneles only
	Yes No Unknown		Concrete	,		Bentonite Chips
1			Clay-Sand Slurry		! 🗖	Granular Bentonite
If Yes, To What Depth?	Feet		Bentonite-Sand Slur	TV	1	Bentonite-Cement Grout
Depth to Water (Feet)			Chipped Bentonite			Bentonite - Sand Slurry
						Mix Ratio
(5) Sealing Materi	al Used	From (Ft	.) To (Ft.)			or Mud Weight
Chipped bentonite		Surface	15.0			
(6) Comments						
(.)						
(7) Name of Person or Firm Doing Sealing W	ork Date of Abandonm					
	6/8/06		FOI	DNR OP	COUNTY US	EONLY
Probe Technologies Signature of Person Doing Work	Date Signed	—— h	Date Received		oted By	
The Icle is Brul	1-11-i7			A CARACTER STATE		1941년 - 19 1 91
Spreet br Route	Telephone Number	ha	Comments	in de la compañía de Compañía de la compañía		
V						
City, State, Zip Code	· · · · · · · · · · · · · · · · · · ·					
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WELL/DRILLHOL	.E/BOREHOLE AB	ANDONMENT
Form 3300-5	2/2000	Page 1 of 2

Route to: Drinking Water Watershe	d/Wastewater 🔲 Waste M	lanagement	🗌 Ren	nediation/Redeve	lopment	Other			
(1) GENERAL INFORMATION		(2) F	ACILI	TY /OWNER	INFOR	MATION			
WI Unique Well No. DNR Well ID No.	County	Fac	lity Narr	ne					
	Kenosha		&LIn	dustrial Clearn	ers STS	No. 200603327	,		
		Fac	lity ID			nse/Permit/Monito			
Common Well Name GP-404	Gov't Lot (if applicab	ole)					-		
NE un SE un co 18	m 1 N D 23	X E Stre	et Addre	ss of Well					
<u>NE</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>18</u> Grid Location	; 1 N; K	iw s	977 She	ridan Road					
				e, or Town					
ft. 🛛 N. 🗍 S.,			enosha						
Local Grid Origin (estimated:) or Well Location		ent Well			Original Owr	ner		
0 1 1	° ' "			owner					
Lat Long Long	or	Stre	et Addre	ss or Route of O	wner	Calm	lustrial Cleaners		
State Plane ft. N.	fl. E. 🗋 🗖 🗖 Zo		et Muure	33 01 Route 01 0	when the				
	Unique Well No.		State	Zip Code					
	•	Ch	, State, I	Lip Code					
	Replacement Well		I III AD	INCD CODE		CINC & CEA			
(3) WELL/DRILLHOLE/BOREHOL	E INFORMATION	(4) 1					LING MATERIAL		
Original Construction Date6/8/2	2006		Pump &	& Piping Remove	ed?		No X Not Applicable		
			Liner(s)) Removed?			No 🛛 Not Applicable		
Monitoring Well	a Well Construction Report		Screen	Removed?		∐ Yes ∐	No Not Applicable		
Water Well is	available, please attach.		Casing	Left in Place?		🗌 Yes 🗌	No		
Drillhole / Borehole			Was Ca	ising Cut Off Bel	low Surfa	ce?	Yes No		
Construction Type:				aling Material Ri			Yes I No		
Drilled Driven	(Sandpoint) Du			tterial Settle Afte			Yes \boxtimes No		
		45					$\frac{1}{2} \frac{1}{2} \frac{1}$		
Other (Specify)			_	s, Was Hole Reto					
Formation Type:				ed Method of Pla					
				nductor Pipe - G	iravity	Conduct	or Pipe - Pumped		
Unconsolidated Formation	L Bedrock	:	Screened & Poured Other (Explain)						
Total Well Depth (ft)15.0	Casing Diameter (in.)		0	Bentonite Chips)	1				
(From ground surface)			Sealing	Materials		For m	onitoring wells and		
	Casing Depth (ft.)			at Cement Grou	+		oring well boreholes only		
Lower Drillhole Diameter (in.)		•	_	nd-Cement (Con			oring wen obtenoies only		
F							Bentonite Chips		
Was Well Annular Space Grouted?	Yes No Unk	known	Clay-Sand Slurry Granular Be						
If Yes, To What Depth?	Feet		Bentonite-Sand Slurry						
						: 남			
Depth to Water (Feet)				ipped Bentonite	ı — —		Bentonite - Sand Slurry		
(5) Sealing Mater	al Used	Fro	m (Ft.)	To (Ft.)			Mix Ratio or Mud Weight		
							or which weight		
Chipped bentonite		Si	rface	15.0					
(6) Comments									
(7) Name of Person or Firm Doing Sealing W	/ork Date of Al	bandonment							
Probe Technologies	6/8/06			FO	R DNR (OR COUNTY US	EONLY		
Signature of Person Doing Work/	Date Signed		Dat	e Received	348-358	Noted By			
1X / Clentral	4-11-0	7				No Marka			
Street or Route	Telephone Number		Co	nments					
· · · · · · · · · · · · · · · · · · ·				ang i su					
City, State, Zip Code									
, 5 mile, Lap 0000									
			- 20 Sec		A REPORT OF A R	A REPORT OF A REPORT OF A REPORT OF A	 Contraction and the set of the designmentation of the set of the		

Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report 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 this form 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. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

	ent Remediation/Redevelopment Other						
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION						
WI Unique Well No. DNR Well ID No. County	Facility Name						
Kenosha	C & L Industrial Clearners STS No. 200603327						
Common Well Name GP-601 Gov't Lot (if applicable)	Facility ID License/Permit/Monitoring No.						
$\frac{\text{NE}}{\text{Grid Location}} \begin{array}{c c} 1/4 \text{ of } \underline{\text{SE}} & 1/4 \text{ of } \text{Sec.} & \underline{18} & ; \text{T.} & \underline{1} & \text{N}; \text{R.} & \underline{23} & & E \\ \hline & & & & & \\ \end{array} \begin{array}{c} W \end{array}$	Street Address of Well						
Grid Location	8927 Sheridan Road						
ft. N. S.,ft. E. W.	City, Village, or Town Kenosha						
Local Grid Origin (estimated:) or Well Location	Present Well Owner Original Owner						
Lat Long or	C & L Industrial Cleaners						
State Plane fl. N ft. E. $\Box \Box \Box \Box$ Zone	Street Address or Route of Owner						
Reason For Abandonment WI Unique Well No.	City, State, Zip Code						
Site investigation of Replacement Well							
(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL						
Original Construction Date6/8/2006	Pump & Piping Removed? Yes No X Not Applicable						
Monitoring Well	Liner(s) Removed? Yes Vot Applicable						
If a Well Construction Report	Screen Removed? Yes No Not Applicable						
Water Well is available, please attach. Drillhole / Borehole	Casing Left in Place? L Yes No						
Construction Type:	Was Casing Cut Off Below Surface? Yes Vo Did Sealing Material Rise to Surface? Yes No						
Driven (Sandpoint) Dug	Did Sealing Material Rise to Surface? Yes No Did Material Settle After 24 Hours? Yes No						
Other (Specify) Other (Specify)	If Yes, Was Hole Retopped?						
Formation Type:	Required Method of Placing Sealing Material						
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped						
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)						
(From ground surface)	Sealing Materials For monitoring wells and						
Casing Depth (fl.)	Neat Cement Grout monitoring well boreholes only						
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout						
Was Well Annular Space Grouted? 🗌 Yes 🗌 No 🗌 Unknown	Churcher Bentonite Chips						
If Yes, To What Depth? Feet	Clay-Sand Slurry Granular Bentonite Bentonite-Sand Slurry Bentonite-Cement Grout						
Depth to Water (Feet)	Chipped Bentonite						
	From (Et) To (Et) Mix Ratio						
(5) Sealing Material Used	or Mud Weight						
Chipped bentonite	Surface 15.0						
	▲						
(6) Comments							
(7) Name of Person or Firm Doing Sealing Work	FOR DNR OR COUNTY USE ONLY						
Probe Pechnologies 6/8/06 Signature Person Demo/Work () () Date Signed	Date Received Noted By						
Signature of esofi Dane/work Datesigned	Totel by						
Street or Route Telephone Number	Comments						
City, State, Zip Code							
,							

Route to: Drinking Water Watershed/Wastewater Waste Managem	ent Remediation/Redevelopment Other
(1) GENERAL INFORMATION	(2) FACILITY /OWNER INFORMATION
WI Unique Well No. DNR Well ID No. County	Facility Name
Kenosha	C & L Industrial Clearners STS No. 200603327
••••••••••••••••••••••••••••••••••••••	Facility ID License/Permit/Monitoring No.
Common Well Name GP-602 Gov't Lot (if applicable)	
NE 14 C SE 14 CC 18 T 1 N R 23 \square E	Street Address of Well
$\frac{\text{NE}}{\text{Grid Location}} \frac{1/4 \text{ of } \text{Sec.}}{14 \text{ of Sec.}} \frac{18}{14}; \text{T.} \frac{1}{1} \text{ N; R.} \frac{23}{10} \text{ W}$	8927 Sheridan Road
f. □ N. □ S.,f. □ E. □ W.	City, Village, or Town
	Kenosha
Local Grid Origin (estimated:) or Well Location	Present Well Owner Original Owner
_ 0 1 11 0 1 11	C & L Industrial Cleaners
Lat Long or	Street Address or Route of Owner
State Plane ft. N ft. E. DD D Zone	
Reason For Abandonment WI Unique Well No.	City, State, Zip Code
Site investigation of Replacement Well (3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
(5) WELL/DRILLHOLE/BOREHOLE INFORMATION	
Original Construction Date6/8/2006	Pump & Piping Removed? Yes No X Not Applicable
	Liner(s) Removed? I Yes No X Not Applicable
Monitoring Well.	Screen Removed? Yes No Not Applicable
Water Well is available, please attach.	Casing Left in Place?
Drillhole/Borehole	Was Casing Cut Off Below Surface?
Construction Type:	Did Sealing Material Rise to Surface? Yes 🗌 No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours?
	If Yes, Was Hole Retopped?
Other (Specify)	
Formation Type:	Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped
	Screened & Poured U Other (Explain)
Total Well Depth (ft) Casing Diameter (in.)	(Bentonite Chips)
(From ground surface) Casing Depth (ft.)	Sealing Materials For monitoring wells and
	Neat Cement Grout monitoring well boreholes only
Lower Drillhole Diameter (in.)	Sand-Cement (Concrete) Grout
Was Well Annular Space Grouted? 🗌 Yes 🗌 No 🗍 Unknown	Concrete Bentonite Chips
	Clay-Sand Slurry Granular Bentonite
If Yes, To What Depth? Feet	Bentonite-Sand Slurry Bentonite-Cement Grout
Depth to Water (Feet)	Chipped Bentonite I Bentonite - Sand Slurry
	Mix Ratio
(5) Sealing Material Used	From (Ft.) To (Ft.) or Mud Weight
Chipped bentonite	Surface 15.0
(6) Comments	
(7) Name of Person or Firm Doing Sealing Work Date of Abandonn	a second
Probe Technologies 6/8/06	FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work Date Signed	Date Received Noted By
1) alfabail 9-11-01	
Street or Route Telephone Number	Comments
City, State, Zip Code	

SOIL BORING LOG INFORMATION Rev. 7-98

Form 4400-122

Route To: Watershed/Wastewater

Remediation/Redevelopment

Waste Management Other

					· · · · · · · · · · · · · · · · · · ·										Pag	<u> </u>	of	1
Facility/Project Name I C & L Industrial Clearners STS No. 200603327					License/Permit/Monitoring Number Boring Nu				Numbe	lumber MW-20								
					ew chief (first, last) ar			Date Dril	ling St	arted		Da	te Drilli	ng Con	pleted	IVI		ing Method
Ray					(, , , ,										-p			llow stem
STS	Expl						_			/2006				8/10/2	2006			ger
WI Un	-			D	NR Well ID No.	Common Well Nam	e	Final Stat			el 👘	Surfac	e Elevat			В		Diameter
Local (1097	П (e	tim	ated: 🗋) or Bori	MW-20			Feet 1	MSL				t MSI			8.0	inches
State F		igm		sum		E s/C/N		Lat	·	o 	•		Local C	ma Loc		,		— –
NE		of SI	E 1	/4 o		T1 N, R 23 E	:	Long		o	•	"		Feet				⊟ E Feet ⊡ W
Facility					County			County Co		Civil To	own/C	ity/ or	Village					
					Kenosha			30		Keno	sha		_					
Sam	ple_													Soil	Prope	erties		
	s (ij	ts	set		Soil/Re	ock Description							ø					
r g	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		And Ge	ologic Origin For			.s	6	=		sssiv h	9		Ā		RQD/ Comments
Number and Type	ngth sove	N C	pthI		Eac	h Major Unit			U	Graphic Log	Well Diagram	PID/FID	npre	Moisture Content	Liquid	Plasticity Index	8	D/
Nu and			De						U S	Grap Log	Well Diagr	PIE	Compressive Strength	C No	Liquic Limit	Plastic Index	P 200	RQ Coi
$\frac{1}{\text{ss}}$	24 21.6	8 6	F	F	ill: Fine to Medium Sa	ind						0.3						
~~ \	2110	7	E-1.5						Fill									
2	24	9 6	Ē	F	ine to Medium Sand - I	brown and light brown	1 - п	noist		∞		0.2				1		
ss	24	4 4	-3.0			C			SP									}
		4	E															
$\frac{3}{\text{ss}}$	24 18	3 2 2	-4.5		Clayey Silt, Trace Fine t Travel - brown and gray	o Medium Sand, Trac	e Fi	ne				0.2						
W		2	F						ML									
4	24	4 2	F-6.0	s	ilty Fine to Medium Sa	nd - brown and gray -	we	t			1	.85						
ss	24	1 1	Ē															
		1	-7.5						SM		1							
5 SS	24 24	2 4	Ē								1	35.7						
Ň	2.	6	-9.0 E									1				1		
6	24	9 8	-10.5	c	Clayey Silt, Trace Fine t	o Medium Sand - gray	y - v	vet			}	23.9						
ss	20.4	9 10	E ^{10.3}		• •				ML						Í			
\wedge		12	E-120															
			F 12.0	F	ine Sand, Trace Silt - g	gray - wet			1		1							
7	36	6 7	E-13.5	5							1	113						
ss	24	8	E						SP									
ΙΛ		10	-15.0												-			
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				F	and of Boring. Boring a	advanced to 15.5 feet l	bv h	ollow										
				s	tem auger. Groundwat 5.0 feet.													
				1	5.0 1001.													
														-				
	1						_				1	4		1		1.		1

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

Signature

Firm STS Consultants Ltd.

Tel: Fax:

State of Wisconsin Department of Natural Resources <u>Route To:</u>	Watershed/Wast Remediation/Re	tewater 🔲 development 🗀	Waste Mar Other	nagement	MONITORING WEL Form 4400-113A	L CONSTRUCI Rev. 7-98	TION
Facility/Project Name	Local Grid Locati			# ·	Well Name		
C & L Industrial Clearners STS No. 20060332		ft. □ N.	ft.	□ E. □ W.		V-20	
Facility License, Permit or Monitoring No.	Local Grid Origin	(estimated:) or V	Well Location	Wis. Unique Well No.		ber
Facility ID	St. Plane	ft. N,		ft. ES/C/N	Date Well Installed	0/2006	
Type of Well	Section Location	of wasterSource	. .	🛛 H	Well Installed By: (Per	rson's Name and F	Firm)
Well Code 11/mw Distance from Waste/ Enf. Stds.				N, R. 23 V Gov. Lot Number	Well Installed By: (Per V Ray G &	& Chris D	
Source ft.	u 🗆 Upgradie d 🗆 Downgra	nt s□Si dient n□N	degradient ot Known		STS Cons	ultants, Ltd.	_
A. Protective pipe, top elevation	ft. MSL			1. Cap and lock?		🛛 Yes 🗆	No
B. Well casing, top elevation	607.57 ft. MSL -			 Protective cover a. Inside diamete 		9	9.0
C. Land surface elevation	608.0 ft. MSL 🦴			b. Length:		1	1.0
D. Surface seal, bottom ft. MS	Lor <u>1.0</u> ft.		15.315.31	c. Material:		Steel 🛛	
12. USCS classification of soil near screen:		ENERY EN	AXCONTON	d. Additional pro		🛛 Yes 🗆	
	SWD SPD		$\mathbb{K} \setminus$	If yes, describ	e:		
Bedrock				3. Surface seal:		Bentonite □ Concrete ⊠	01
	Zes ⊠ No					Other 🗆	教育学
14. Drilling method used: Rot Hollow Stem Au	ary □ 50 mer ⊠i 4.1			4. Material betweer	well casing and protectiv	Bentonite	30
	her		×		sand	Other 🗆	
			SM	5. Annular space se	al: a. Granular/Chipp	ped Bentonite	33
5	Air 🗆 01		a	-	mud weight Bentoni	•	
Drilling Mud 🗆 0 3 No	me 🖾 99			-	mud weight Be	•	
16. Drilling additives used?	es ⊠No		N	d% Bento	³ volume added for any of	-cement grout	50
			X	f. How installed		Tremie	01
Describe			ă –			emie pumped	
17. Source of water (attach analysis, if require	(d):		8			Gravity 🛛	08
				6. Bentonite seal:		onite granules	
E. Bentonite seal, top607.0 ft. MSI	or <u>1.0</u> ft.	、		c		entonite chips 🖾 Other 🗆	
F. Fine sand, top605.0 ft. MSI	or <u>3.0</u> ft.			a	al: Manufacturer, produc Badger #45-55		ze
C Eiterneite ter 605.0 & MSI	or <u>3.0</u> ft.		∛∕.		ial: Manufacturer, produc	t ³	
G. Filter pack, top605.0 ft. MSI	or <u> </u>		/ /	a	Badger #45-55		,12C
H. Screen joint, top603.0 ft. MSI	or <u>5.0</u> ft.			b. Volume added	f	ť	
50 2 0	15.0		9	Well casing:	Flush threaded PVC		
	or <u>15.0</u> ft.			<u> </u>	Flush threaded PVC	Other 🛛	200720
J. Filter pack, bottom592.5 ft. MSI	or <u>15.5</u> ft.		10). Screen material:	PVC sch.4		11
K. Borehole, bottom592.5 ft. MSI	or <u>15.5</u> ft.			a. Screen Type:	Co	Factory cut ⊠ ontinuous slot □ Other □	01
L. Borehole, diameter <u>8.0</u> in.			۹ (b. Manufacturer	Buffalo		
M. O.D. well casing <u>2.38</u> in.			\backslash	c. Slot size:d. Slotted length	:		010 0.0
			× 11	-	(below filter pack):	None 🛛	14
N. I.D. well casing 2.07 in.				<u> </u>		Other 🗆	061953
I hereby certify that the information on this for			mowledge.				
Signature August August	Біп	ⁿ STS Consultan	ts Ltd.				Т
Please complete both Forms 4400-113A and 4400-1	cuear			Completion of		1- 1(0 201 202 2	Fa

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route To: Watershed/W	astew	ater		Wa	ste Management 🗌]						
Remediation	Redev	velop	oment 🗌	Oth	er 🗖							
Facility/Project Name		Ī	County			W	ell Name					
C & L Industrial Clearners STS No. 2006	0332	27]	Ken	osha			M	W-20			
Facility License, Permit or Monitoring Number		0	County Code		s. Unique Well Nur	mber		DNR Well				
			30		PM09	97						
			·····									
1. Can this well be purged dry?	ØY	Yes	🗆 No			Bef	ore Deve	elopment	After	Deve	elop	ment
				11.	Depth to Water							
2. Well development method:					(from top of	a.		7.69 ft.			7.6	58 ft.
surged with bailer and bailed		41			well casing)							
surged with bailer and pumped		61										
surged with block and bailed		42			Date	b.	8/14/	2006		8/14	/200)6
surged with block and pumped		62										
surged with block, bailed, and pumped		70						S 🛛				🛛 a.m.
compressed air		20			Time	c.]	l 2:00 □ p).m.		12:0)0 □ p.m.
bailed only		10					•	•		~	•	
pumped only		51		12.	Sediment in well		0.	2 inches		0	. 0 i	nches
pumped slowly		50			bottom	_			-			
other surged & purged with pump	\boxtimes			13.	Water clarity	Cle	ear □ 1 rbid ⊠ 1	0	Clear Turbid		0	
								2			. 5	
3. Time spent developing well			min.			•	scribe)		(Describ	e)		
			-			da	ark gray					
4. Depth of well (from top of well casing)		14	.6 ft.									
		~										
5. Inside diameter of well		2.0	07 in.									
6. Volume of water in filter pack and well			gal.									
casing			gai.	EII	in if drilling fluids		wood and u	all is at col	id wasta f	adiity		
		_	0	rm	in a drilling fluids	swele	useu anu w	en is at soi	iu waste i	acinty	•	
7. Volume of water removed from well		2	.0 gal.	114	Total suspended			mg/l				mg/l
		0	01	14.	solids			ing/1				ing/i
8. Volume of water added (if any)		Ų	0.0 gal.		Sondo							
0. Source of water added				15.	COD			mg/l				mg/l
9. Source of water added	• • • • • •											
				16.	Well developed by	: Pers	on's Name	and Firm			··	
10. Analysis performed on water added?		Yes	D No		Adam H							
(If yes, attach results)					Adam r		L					
					STS Co	onsult	tants, Ltd	l.				

17. Additional comments on development:

Surged & purged well dry 6 times

Facility Address or Owner/Responsible Party Address	I hereby certify that the above information is true and correct to the best of my
Name: Adam Florin	knowledge.
Firm: STS Consultants, Ltd.	Signature: Adam Florm (lh)
Street: 11425 W. Lake Park Drive	Print Name: Adam Florin
City/State/Zip: Milwaukee, Wisconsin 53224	Firm: STS Consultants Ltd.

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

SOIL BORING	LOG INFORMATION
Form 4400-122	Rev. 7-98

orm 4400-122	
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Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other 🗌

Page 1 of 1											1						
Facility	-					License/Permit/Monitoring Number Boring Number MW-21											
				rners STS No. 200 crew chief (first, last) at		Date Dri	lling St	arted		Dat	ate Drilling Completed					Drilling Method	
Ray		<i>D</i> <u>j</u> .		erew errer (msi, iusi) u						Da	Due Dhining Completed				hollow stem		
STS	5 Expl	oratio	on		· · · · · · · · · · · · · · · · · · ·	8/11/2006					8/11/2006				auger		
WIUn	ique W			DNR Well ID No.	Common Well Name	Final Sta			el 👘		e Elevat			Bo		Diameter	
Local	PM Grid Or	099	[] (ec	timated: 🔲) or Bor	MW-21		Feet I	MSL			607.4 Feet MSL				8.0 inches		
State 1		igin		— ,	E S/C/N	Lat ' "				Local Grid Location							
NE	1/4	of S	E 1/	4 of Section 18,	t 1 n, r 23 e	Long	0 1 11				Feet D S]	E Feet 🗌 W	
Facility	Facility ID County							Civil T		ity/ or \	/illage						
				Kenosha		30		Keno	sha	T		0.11					
San	nple											Soil	Prope	rties	r		
	Length Att. & Recovered (in)	nts	Cet		ock Description			1			ive						
ber ype	h At erec	Cou	InI		ologic Origin For h Major Unit		s	<u>.</u>	l g	A	ress	n te		ity		lents	
Number and Type	Length Att. Recovered (Blow Counts	Depth In Fcet	Eac	in Major Onic		sc	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	200	RQD/ Comments	
1 M	고 <u>~</u> 24	<u>m</u> 4	-	Fill: Clayey Silt and Fir	ne to Medium Sand, Trac	e Coarse	Þ			8.5	N C	20	ЦЦ	E E	<u>~</u>	<u> </u>	
ss	13.2	5 6	E 1.5	Sand and Fine Gravel - 1 - moist - organic oder	black, green, dark brown,	, and tan	and tan										
2	24	6	FI				Fill			22.7							
ss X	16.8	3 3	-3.0						22.7								
3	24	4 6	E, I	Clayey Silt and Fine to I	Gravel		XXX		10.6								
ss X	21.6	34	-4.5 F	- gray and light brown -	e Glaver	ML			10.0								
A	24	5	E-6.0	Silty Fine to Madium S	and - brown and gray - m	oist				20.7							
ss	24 18	5 4	E	Sity File to Medium Sa	and - brown and gray - m	oist	SM]	20.7							
ĘÅ		5 7	-6.0 -7.5	City on L Die a Court Trace	Classical				1								
$\frac{5}{\text{ss}}$	24 20.4	6 7	E-9.0	12.0'	ce Clay - gray - moist to w	vet at			1	3.1							
_ <u> </u>		13	L 1														
$\frac{6}{\text{ss}}$	24 22.8	15 12	E 10.5							5.0							
Δ		5 11	-12.0														
$\frac{7}{\text{ss}}$	24 22.8	15	Ē							0							
N		16 10	-13.5				SM		}								
s^{8}	24 24	7 6	E-15.0							1.3							
Ň		6 2	E 13.0														
s^{9}	24 24	3	- 16.5							0							
55 M	24	4 4	Ē.														
÷		woh 1	-18.0														
		2 2		End of Boring Boring	advanced to 18.5 feet by	hollow											
		2		stem auger. Groundwat 18.0 feet.	ter monitoring well install	led to											
				10.0 1001													
												-					
							L		I				_				
I neret	by certif	yinat	ine into	mation on this form is tr	ue and correct to the be	st of my kr	iowledg	ge.									

Signature Firm STS Consultants Ltd. Ulluba

Te Fax

State of Wisconsin Department of Natural Resources	_	_	
Route To:	Watershed/Wastewater	Waste Management	MONITORING WELL CONSTRUCTION
	Remediation/Redevelopment	Other D	Form 4400-113A Rev. 7-98
Facility/Project Name			Well Name
C & L Industrial Clearners STS No. 200603327	7ft. □ N.	ft. 🗄 🙀	MW-21
Facility License, Permit or Monitoring No.	Local Grid Origin [] (estimat	ted:) or Well Location	Wis. Unique Well No. DNR Well Number
	Lat	Long or	PM099
Facility ID	St Plane ft N	ft. E. S/C/N	Date Well Installed
			08/11/2006
Type of Well		18 m 1 22 🛛 🖾 🗄	08/11/2006 Well Installed By: (Person's Name and Firm) Ray G & Chris D
Well Code 11/mw	<u>NE 1/4 of SE 1/4 of Sec.</u>	<u>18</u> , T. <u>1</u> , N, R. <u>25</u> W	Ray G & Chris D
Distance from Waste/ Enf. Stds.		te/Source Gov. Lot Number Sidegradient	
Source ft. Apply		Not Known	STS Consultants, Ltd.
	ft. MSL	1. Cap and lock?	∑ Yes □ No
		2. Protective cover p	
B. Well casing, top elevation6	06.93_ ft. MSL	a. Inside diameter	
C. Land surface elevation	607.4 ft. MSL	b. Length:	<u> 1.0 f</u>
		c. Material:	Steel 🖾 04
D. Surface seal, bottom606.4 ft. MSI	or <u>1.0</u> ft.	1 2 1 2 1 1 2 1 2 1	Other
12. USCS classification of soil near screen:		d. Additional prot	
			no
	і сна		Bentonite 🛛 30
Bedrock		3. Surface seal:	Concrete 🖾 01
13. Sieve analysis attached?	es 🖾 No		Other 🛛 🛄
	ry 🗆 5 0	3. Surface seal: 4. Material between	well casing and protective pipe:
Hollow Stem Aug			Bentonite \boxtimes 30
	er D		sand Other □
		×	
15. Drilling fluid used: Water 0 2 A	.ir □01		al: a. Granular/Chipped Bentonite 🛛 3 3
Drilling Mud D 0 3 Not		NO21	nud weight Bentonite-sand slurry 🗆 3 5
			nud weight Bentonite slurry 🗆 3 1
16. Drilling additives used?	es 🛛 No		$\begin{array}{llllllllllllllllllllllllllllllllllll$
			volume added for any of the above
Describe		f. How installed	
17. Source of water (attach analysis, if required			Tremie pumped 🔲 02
17. Source of water (attach analysis, if required	⁷ 8		Gravity 🖾 08
	🕅	6. Bentonite seal:	a. Bentonite granules 🔲 33
	🕅	b. □1/4 in. ⊠	$3/8$ in. $\Box 1/2$ in. Bentonite chips $\boxtimes 32$
E. Bentonite seal, top606.4 ft. MSL	or ft	C	Other 🛛 🧾
		7. Fine sand materia	l: Manufacturer, product name & mesh size
F. Fine sand, top 603.4 ft. MSL	or ft.	8 / a	Badger #45-55
		b. Volume added	ft ³
G. Filter pack, top603.4 ft. MSL	or ft.	8. Filter pack materi	al: Manufacturer, product name & mesh size
		a	Badger #45-55
H. Screen joint, top599.4 ft. MSL	or <u>8.0</u> ft.	b. Volume added	ft ³
		9. Well casing:	Flush threaded PVC schedule 40 🛛 23
I. Well bottom589.4 ft. MSL	or <u>18.0</u> ft.	I I I I I I I I I I I I I I I I I I I	Flush threaded PVC schedule 80 🛛 24
		<u> </u>	Other 🛛 🛄
J. Filter pack, bottom588.9 ft. MSL	or18.5_ft	10. Screen material:	PVC sch.40
· · · · · · · · · · · · · · · · · · ·		a. Screen Type:	Factory cut 🛛 1 1
K. Borehole, bottom588.9 ft. MSL	or <u>18.5</u> ft.		Continuous slot \Box 01
		%	Other 🛛 💆
L. Borehole, diameter <u>8.0</u> in.		b. Manufacturer	
		c. Slot size:	<u>0.010</u> ir
M. O.D. well casing <u>2.38</u> in.		d. Slotted length:	<u> 10.0 f</u>
		11. Backfill material	
_N. I.D. well casing in.			Other □
I hereby certify that the information on this form	n is true and correct to the heat of -	ny knowledge	
Signature	4		······································
Daught belen	Brue Firm STS Consul	itants Ltd.	Tel
1 I WWWW WAW			Fax

MONITORING WELL DEVELOPMENT Rev. 7-98

Form 4400-113B

Route To: Watershed/W	Vastewa	ter	Wa	ste Management L						
Remediation	/Redeve	elopment 🗖	Oth	ner 🗖						
Facility/Project Name		County			Well	Name				
C & L Industrial Clearners STS No. 2006	50332'	7	Ken	osha			M	N-21		
Facility License, Permit or Monitoring Number		County Code		s. Unique Well Nur	mber		DNR Well	Number		
		30		PM09	9					
1. Can this well be purged dry?	X Y	es 🗆 No			Befor	e Deve	elopment	After De	evelo	pment
			11.	Depth to Water						
2. Well development method:				(from top of	a.		8.71 ft.		8	.71 ft.
surged with bailer and bailed		41		well casing)						
surged with bailer and pumped		61								
surged with block and bailed		4 2		Date	b.	8/14/	/2006	8/	/14/20	006
surged with block and pumped		62								
surged with block, bailed, and pumped		70					🖾 a			🖾 a.m.
compressed air		20	1	Time	с.		12:00 🗆 p	.m.	12	2:00 □ p.m.
bailed only		10								
pumped only		51	12.	Sediment in well		0.	4 inches		0.0	inches
pumped slowly		50		bottom	-					
other surged & purged with pump			13.	Water clarity	Clear		0	Clear 🛛	20	
					Turbio		5	Turbid 🗖	25	
3. Time spent developing well		min.			(Descr	ibe)		(Describe)		
					dark	c gray				
4. Depth of well (from top of well casing)		17.7 ft.								
5. Inside diameter of well		2.07 in.								
6. Volume of water in filter pack and well										
casing		gal.								
			Fill in if drilling fluids were used and well is at solid waste facility:							
7. Volume of water removed from well		6.0 gal.								
		e	14	Total suspended			mg/l			mg/l
8. Volume of water added (if any)		0.0 gal.		solids						
		2								
9. Source of water added			15.	COD			mg/l			mg/l
				· ·						
			16.	Well developed by	: Person'	s Name	and Firm			
10. Analysis performed on water added?	ΠY	es 🛛 No		Adam F	Jorin					
(If yes, attach results)										
				STS Co	nsultan	ts, Ltc	l			
17. Additional comments on development:										

Surged & purged well dry 6 times

Facility Address or Owner/Responsible Party Address	I hereby certify that the above information is true and correct to the best of						
Name: Adam Florin	knowledge.						
Firm: STS Consultants, Ltd.	Signature: _ adam Florn (lb)						
Street: 11425 W. Lake Park Drive	Print Name: Adam Florin						
City/State/Zip: Milwaukee, Wisconsin 53224	Firm: STS Consultants Ltd.						

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

SOIL BORING L	OG INFORMATION
Form 4400-122	Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other 🗌

	Page 1 of 1																
Facility	-				×02207	License/Permit/Monitoring Number Boring Number MW-23											
				arners STS No. 200 f crew chief (first, last) a		Date Drilling Started Date Dri				te Drilli					Drilling Method		
Ray	Dinia	I Dy.								C DIM	e Drilling Completed				hollow stem		
STS	Expl	oratio	on			8/11/2006					8/11/2006				auger		
WI Uni				DNR Well ID No.	Common Well Name	Final Static Water Level Surface Elev								Bo		rehole Diameter	
		[100			MW-23		Feet 1	MSL_		6	508.0 I				8.0	inches	
Local G		igin	[] (e		ring Location	1.		0	,	"	Local G	rid Lo	cation				
State P			с,		E S/C/N	Lat				м 🗆 и							
NE Facility							de l	Civil To	wn/C	ity/ or V	Village	Feet				Feet 🗌 W	
raenity	Ш			Kenosha		County Co 30		Keno		ity, or	, mage						
Sam	ple		-		· · · · · · · · · · · · · · · · · · ·		I			1		Soil	Prope	erties			
			1	Soil/F	Rock Description												
	d (i)	unts	Fee		eologic Origin For						sive					ţ	
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		ch Major Unit		CS	hic	Well Diagram	ED	Compressive Strength	Moisture Content	P	icity		RQD/ Comments	
uny L pu	ceng leco	Blow	Cept		,		n s o	Graphic Log	Well Diagr	PID/FID	om	Moisture Content	Liquid Limit	Plasticity Index	200	D D III	
4.0				Fill: Gravel			Fill				0 0	20			<u>a</u> ,	<u> </u>	
$\frac{1}{\text{ss}}$	18 18	1 1	Ē	Fill: Silty Fine to Medi	ium Sand - brown - moist		Fill			0							
	10	1	-1.5				1.111										
$\frac{2}{SS}$	24 20.4	$\frac{1}{2}$	Ē	Fine to Medium Sand, tan and light brown - m	Trace Silty Clay From 6.0	' to 8.0' -				0							
Ŭ, N	20.4	2 2	E ^{3.0}														
3 H	24	3 4 3				0											
$\frac{3}{SS}$	24	3 4.5 3 SP															
M			F.				· · · ·										
$\frac{4}{\text{ss}}$	24 24	3 3 2 2	E 6.0				0	0									
33 X	24	23	-7.5														
ς Η	24	7	= ^{7.5}	Silty Fine to Medium S	and - gray - moist to wet a	+ 9.0'				0							
5 SS	24	7 11	E_9.0	Sity The B Meaning	and " gruy - moist to wet a		SM										
Μ		13	E				2										
6	24	15 6	E-10.5	Silty Fine Sand - gray -	wet ·					0							
ss 🕅	21.6	7 10	Ē												5 		
4		11	-12.0														
			Ę				SM										
7 SS	36 19.2	13 13	-13.5							0							
	17.2	11	F														
M		11	E 15.0														
Ц					advanced to 15.5 feet by h			- 1 - 1 - 1		1							
			[15.0 feet.	ter monitoring well installe												
				2													
I hereby	certif,	that	the info	rmation on this form is t	rue and correct to the bes	t of my kn	owledg	ge.			d						

Signature Firm STS Consultants Ltd. 9 M

Te Fax

Department of Natural Resources	Route To:		astewater 🔲 Redevelopment		nagement		MONITORING V Form 4400-113A	VELL CONSTRU Rev. 7-9	
Facility/Project Name		Local Grid Loc	ation of Well				Well Name		
C & L Industrial Clearners STS No	o. 200603327		ft. 🗆 N.	ft.	$\square E.$		Wis. Unique Well	/W-23	
Facility License, Permit or Monitor	ing No.	Local Grid Orig	gin 🔲 (estim	ated: 🗌) or V	Well Locatio	on 🗌	Wis. Unique Well	No. DNR Well N	Jumber
		Lat	· ·	Long	·	or	PM100		
Facility ID		1		l,			Date Well Installed		
							C	8/11/2006	
Type of Well		NE	SE	10 1		NBE	Well Installed By: Ray	(Person's Name a	nd Firm)
Well Code 11/mw		<u>NE1/4 of _</u>	<u>SE</u> 1/4 of Sec Il Relative to W	<u>18</u> , T. <u>1</u>	<u>N, R.</u> <u></u>	<u>.3 </u>	Pau	G & Chris D	
Distance from Waste/ Enf.	Stds.	u D Upgrad		aste/Source □ Sidegradient	Gov. Lot N	Number	Кау	O & CIII'S D	
Source ft. Apply	^у п	d 🗆 Opgrad				·	STS C	Consultants, Ltd.	
A. Protective pipe, top elevation		ft. MSL			1. Cap and				s 🗆 No
B. Well casing, top elevation	60	07.54 ft. MSL			 Protective a. Inside 	e cover pi diameter:	pe:	_	<u>9.0</u> ir
C. Land surface elevation	(608.0_ ft. MSL			b. Length	1:		-	<u> 1.0 f</u>
D. Surface seal, bottom607	7.0 ft. MSL	or <u>1.0</u> ft	1.211-211 1.211-211	1. 21. 21	c. Materi	al:		Steel Other	⊠ 04
12. USCS classification of soil ne	ar screen:		210-210-210-01 21/2-21/2-21	X ANGULAN	d. Additi	onal prote	ction?		s 🗆 No
GP GM GM GC GC G			I XI	$ X \setminus$		-		10	_
SM 🗆 SC 🗆 ML 🖾		Г СН П						Bentonite	
Bedrock 🗆					Surface s	seal:		Concrete	
13. Sieve analysis attached?	\Box Y	es 🖾 No						Other	
14. Drilling method used:	Rota	ry ⊡50			4. Material	hetween v	vell casing and prot		
1 -	ow Stem Aug	•					on owing and prot	Bentonite	⊠ 30
		er 🗆 💶					sand	Other	20.040000005
					5 Annular		Commutan/C		
15. Drilling fluid used: Water	□02 A	.ir □01					: a. Granular/C 1d weight Ben		
Drilling Mud		ne ⊠99					id weight Den		
_					d9	_		nite-cement grout	
16. Drilling additives used?	$\Box Y$	es 🖾 No					volume added for ar	-	L 30
					f. How			•	
Describe						mouned.		Tremie pumped	
17. Source of water (attach analys	sis, if required	l):							\boxtimes 08
					6. Bentonite		- F	Bentonite granules	
			1 🕅				a. ∟ /8 in. □1/2 in.		
E. Bentonite seal, top60	7.0 A MOT	- 1.0	A 8				/om. 🗆 1/2 m.		
E. Bentonne seal, top		or <u> </u>	\ K				Manufacturer, pro		
F. Fine sand, top 60	5.0 a MST	or <u>3.0</u>	ft.		a	i materiai.	Badger #45-55	duct name de mes	II SIZC
· · · ·		01	n			a addad	Budger in 15 55	ft ³	
G. Filter pack, top60	5.0 A MST	or <u>3.0</u>					: Manufacturer, pr		-h size
G. Philei pack, top	IL MOL	01	"·· \		o. Filler pac	K materia	Badger #45-55		sh size
H. Screen joint, top60	3.0 A MSI	or5.0			a			ft ³	<u> </u>
	n. MSL	01	n				Thush days do d		B 33
I. Well bottom59	3.0 A MSI	or <u>15.0</u>	A .		9. Well casi	ing:		PVC schedule 40	
		01	··· \				Flush threaded	PVC schedule 80	80128 (SvS)
L Filtermark hattan	25 6 10	or <u>15.5</u>					PVC s	Other	
J. Filter pack, bottom 59	n. MSL	or	n 🔰		0. Screen m		FVC S		<u></u>
K Deach de Lattern 50	25 0 100	or <u>15.5</u>			a. Screer	n Type:		Factory cut	
K. Borehole, bottom59	<u>2.5</u> II. MSL	or	п					Continuous slot	2000/06/2010
L. Borehole, diameter8.0						<u> </u>	Buffalo	Other	
L. Borehole, diameter8.0	<u>)</u> in.		_			facturer	Dullan	and the second se	0.010 .
MOD	2.				c. Slot si				0.010 ir 10.0 f
M. O.D. well casing2.38	<u>s</u> in.			\backslash .	d. Slotte		1 51 1		
				. 1	I. Backfill r	material (b	elow filter pack):		⊠ 14
N. I.D. well casing2.07	in.							Other	
I hereby certify that the informatio	n on this form		iirma		·				
Signature A . All	10 Alo	$\mathcal{L} \mathcal{O}^{\dagger}$	Firm STS Con	sultants Ltd.					Tel
Please born for both Forms (400, 113	A and AADO 11	walk	to the appropriat	DND offers and h	<u> </u>	lation of the	to reports is required	husha 160 201 20	Fax

State of Wisconsin

MONITORING WELL DEVELOPMENT Rev. 7-98

Form 4400-113B

Route To: Watershe	d/Wastewate	er 🛄	Waste Manag	ement 🗌]			
Remediat	ion/Redevel	opment 🗌	Other					
Facility/Project Name		County			Well N	ame		
C & L Industrial Clearners STS No. 20)0603327		Kenosha			M	N-23	
Facility License, Permit or Monitoring Number		County Code	Wis. Unique	Well Nun	nber	DNR Well		
		30		PM10	0			
					·			
1. Can this well be purged dry?	🛛 Yes	s 🗆 No			Before	Development	After D	evelopment
			11. Depth to					
2. Well development method:			(from top		a.	8.16 ft.		8.16 ft.
surged with bailer and bailed	□ 4	1	well casi	ng)				
surged with bailer and pumped		1						
surged with block and bailed	□ 4	2	Date		b.	8/14/2006	8	/14/2006
surged with block and pumped		2						
surged with block, bailed, and pumped		0				⊠a		🛛 a.m
compressed air	□ 2	0	Time		c.	12:00 🗆 p	.m.	12:00 🗆 p.m
bailed only		0						
pumped only		1	12. Sediment	t in well		0.0 inches		0.0 inches
pumped slowly		0	bottom					
other surged & purged with pur	mp 🛛 🗌		13. Water cla	arity			Clear 🛛	
					Turbid	☑ 15	Turbid 🛛	2 5
3. Time spent developing well		min.			(Describ	e) .	(Describe)	
					gray			
4. Depth of well (from top of well casing)	.1	4.3 ft.						
5. Inside diameter of well	2	2.07 in.						
6. Volume of water in filter pack and well								
casing		gal.						
			Fill in if drilli	ing fluids	were used	and well is at soli	id waste fac	ility:
7. Volume of water removed from well		4.0 gal.	1					
		B	14. Total sus	pended		mg/l		mg/l
8. Volume of water added (if any)		0.0 gal.	solids					
		U						
9. Source of water added			15. COD			mg/l		mg/l
			16. Well deve	loped by:	Person's	Name and Firm		· · · · · · · · · · · · · · · · · · ·
10. Analysis performed on water added?	🗆 Yes	s 🗆 No		Adam F	lorin			
(If yes, attach results)								
				STS Co	nsultants	s, Ltd.		
17 Additional comments on developments								

17. Additional comments on development: Surged & purged well dry 5 times

Ì

Facility Address or Owner/Responsible Party Address	I hereby certify that the above information is true and correct to the best of my						
Name: Adam Florin	knowledge.						
Firm: STS Consultants, Ltd.	Signature: Adan Floren (lb)						
Street: 11425 W. Lake Park Drive	Print Name: Adam Florin						
City/State/Zip:Milwaukee, Wisconsin 53224	Firm: STS Consultants Ltd.						

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

Ray

NE

Number and Type

1

SS

2

SS

3

SS

4

SS

5

SS

6

SS

7

SS

Signature

V

SOIL BORING LOG INFORMATION Rev 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other

1 of 1 Page Boring Number Facility/Project Name License/Permit/Monitoring Number **MW-24** C & L Industrial Clearners STS No. 200603327 Drilling Method Boring Drilled By: Name of crew chief (first, last) and Firm Date Drilling Started Date Drilling Completed hollow stem 8/10/2006 8/10/2006 auger STS Exploration Borehole Diameter DNR Well ID No. Final Static Water Level Surface Elevation WI Unique Well No. Common Well Name 8.0 inches **MW-24** Feet MSL Feet MSL PM098 (estimated:) or Boring Location Local Grid Location Local Grid Origin .. E S/C/N N, ΠE State Plane Lat ΠN 0 Feet 🗌 S Feet 🗌 W 1/4 of SE 1/4 of Section 18, т1 N, R 23 E Long Civil Town/City/ or Village Facility ID County County Code 30 Kenosha Kenosha Soil Properties Sample Soil/Rock Description ઝ Recovered (in) Depth In Feet Blow Counts Compressive Length Att. And Geologic Origin For Comments Moisture Diagram Plasticity S Graphic PID/FID Strength Content Liquid Each Major Unit υ P 200 RQD/ Index Well Log Ñ oncre Concrete Fill: Fine to Coarse Sand, Some Concrete, Trace 136 16 18 Cinders/Slag, Trace Fine to Medium Gravel - white, Fill 18 10 -1.5 green, and black - moist - odor 8 Fill: Fine to Medium Sand, Trace Clay, Trace Organic 101 24 3 1 20.4 Matter - dark brown and black - moist Fill ·3.0 24 22 22 1 Clay and Fine to Medium Sand, Some Coarse Sand, 35.3 24 -4.5 Trace Fine Gravel - brown - moist 18 CL 6.0 47.3 24 Clayey Silt and Fine to Medium Sand, Little Fine Gravel, woh Trace Broken Rock - brown and gray - wet 14.4 ML 6 8 10 Silty Fine to Medium Sand - gray - wet 23.1 24 6 9 24 <u>–</u>9.0 11 10.5 12 12 24 6 8 SM 12 10 11 17.3 Clayey Silt, Some Fine Sand - light brown - wet 36 6 13.5 10 24 ML 11 10 -15.0 End of Boring. Boring advanced to 15.5 feet by hollow stem auger. Groundwater monitoring well installed to 15.0 feet.

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

Firm STS Consultants Ltd.

Tel: Fax:

	Department of Natural Resources Route To:		astewater 🔲 Redevelopment 🗔	Waste Ma	nagement	MONITORING WELL Form 4400-113A	, CONSTRI Rev. 7-98	
	Facility/Project Name	Local Grid Loc	ation of Well			Well Name		
	C & L Industrial Clearners STS No. 200603327	1	ft. □ S	ft	□ E. □ W.	MW	-74	
	Facility License, Permit or Monitoring No.	Local Grid Ori	gin (estimate	d: 🗌) or V	Well Location	Wis. Unique Well No.		lumber
			" L			PM098		
	Facility ID	1		-		Date Well Installed		
		Section Location	on of Waste/Source		ft. ES/C/N	08/10/2	2006	
-	Type of Well	1				Well Installed By: (Perso		nd Firm)
	Well Code 11/mw	<u>INE 1/4 of _</u>	<u>SE</u> 1/4 of Sec	<u>18</u> , T. <u>1</u>	<u>N, R. 23</u>	Ray G &	Chris D	
	Distance from Waste/ Enf. Stds.	u D Upgrad		Source Sidegradient	Gov. Lot Number			
	Source ft. Apply	d 🗆 Down		Not Known		STS Consul	tants, Ltd.	-
	A. Protective pipe, top elevation	ft. MSL			1. Cap and lock?	•	🛛 Yes	🗆 No
	B. Well casing, top elevation61	11.31 ft. MSL			 Protective cover p a. Inside diameter 	•		<u>4.0</u> i
	C. Land surface elevation	608.4 ft. MSL			b. Length:		_	7.0 f
	D. Surface seal, bottom607.9ft. MSL			1897891	c. Material:			⊠ 04
		or II		51351	1 1 1 1 1 1	··· •	Other	
	12. USCS classification of soil near screen:				d. Additional prot	ection?	🛛 Yes	L No
		W SP CH			If yes, describe		D !:	_
ι.	Bedrock				3. Surface seal:		Bentonite	
	13. Sieve analysis attached?	es 🖾 No				· · · · · · · · · · · · · · · · · · ·	Concrete	
		ry □ 5 0			4 Material between	well casing and protective		
	Hollow Stem Aug				4. Material between	went casing and protective	Bentonite	⊠ 30
		$er \square \square$				sand	Other	2014 Mar 2017
				×	5 Annular maga aga			
	15. Drilling fluid used: Water 02 A	.ir □01				I: a. Granular/Chippe and weight Bentonite		
	Drilling Mud 03 Nor	ne ⊠99		MX1	-	ud weight Bentonne	•	
				KX1	d% Benton	-	•	
	16. Drilling additives used?	es 🖾 No			eFt ³	volume added for any of t		
	Deresite			8	f. How installed:		Tremie	01
	Describe 17. Source of water (attach analysis, if required	ı).		8		Trer	nie pumped	
	17. Source of water (attach analysis, if required	1).		8			Gravity	⊠ 08
					6. Bentonite seal:		ite granules	
	(07.0				b. 🗆 1/4 in. 🖾		tonite chips	2517 1813
	E. Bentonite seal, top607.9 ft. MSL	or0.5	ft.		C		Other	
	605 4 a a c c	2.0	ft.			I: Manufacturer, product 1 Badger #45-55	name & mesl	h size
	F. Fine sand, top 605.4 ft. MSL	or <u>3.0</u>	ft.	``` / /	a			
Ĩ.	G. Filter pack, top605.4 ft. MSL	30			b. Volume added	al: Manufacturer, product		ah aiga
1	G. Filter pack, top605.4 ft. MSL	or	n.		-	Badger #45-55	name & me	sn size
	H. Screen joint, top603.4 ft. MSL	or 5.0			a b. Volume added			
	1. oeroen jonn, op n. MSL	01			9. Well casing:	Flush threaded PVC	schedule 40	⊠ 23
	I. Well bottom 593.4 ft. MSL	or15.0	ft. 、		. men easing.	Flush threaded PVC		
							Other	Sugar a
	J. Filter pack, bottom592.9 ft. MSL	or <u>15.5</u>	ft		0. Screen material:	PVC sch.40		
	•				a. Screen Type:		Factory cut	⊠ 11
	K. Borehole, bottom592.9 ft. MSL	or15.5	ft		••		tinuous slot	
				X		·····	Other	
	L. Borehole, diameter8.0 in.				b. Manufacturer	Buffalo		
					c. Slot size:		_	<u>0.010</u> i
	M. O.D. well casing 2.38 in.		,		d. Slotted length:			10.0
	0.07			`1	1. Backfill material (below filter pack):		⊠ 14
	N. I.D. well casing 2.07 in.					· · · · · · · · · · · · · · · · · · ·	Other	
_								
	I hereby certify that the information on this form		Firm	<u> </u>				
ì	KANEN MALI	, ba. O	Firm STS Consul	tants Ltd.				Te
L	Please complete both Forms 4400-113A and 4400-11	3B and return the	m to the appropriate I	NR office and bu	reau. Completion of the	nese reports is required by chs	160, 281, 28	Fax 33, 289.
	291, 292, 293, 295, and 299, Wis. Stats., and ch. NR	141, Wis, Adm, O	Code. In accordance w	vith chs. 281, 289	291, 292, 293, 295, ar	d 299. Wis. Stats., failure to	file these form	is may

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result in a 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 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

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route To: Watershed/W Remediation/J			Waste Management [Other 🔲				
Facility/Project Name		County		Well Name			
C & L Industrial Clearners STS No. 2006	03327	-	Kenosha		MW	/-24	
Facility License, Permit or Monitoring Number		County Code	Wis. Unique Well Nu	mber	DNR Well		
		30	PM0	98			
 Can this well be purged dry? Well development method: 	⊠ Yes	🗆 No	11. Depth to Water (from top of	Before Deve	elopment		opment
surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped	□ 41 □ 61 □ 42 □ 62	1	well casing) Date	b. 8/14/	2006	8/14/	2006
surged with block, bailed, and pumped compressed air bailed only pumped only	□ 7(□ 2(□ 1(□ 51)))	Time		⊠ a.r 12:00 □ p.1 1 inches	m.	⊠ a. 12:00 □ p. 0 inches
pumped slowly other <u>surged & purged with pump</u>	5 ()	bottom 13. Water clarity	Clear □ 1 Turbid ⊠ 1	0 5	Clear ⊠ 20 Turbid □ 23)
3. Time spent developing well		min.		(Describe) dark gray	(Describe)	
4. Depth of well (from top of well casing)	18	3.2 ft.					
5. Inside diameter of well	2.	07 in.					
6. Volume of water in filter pack and well casing		gal.	Fill in if drilling fluid:			waste facilita	
7. Volume of water removed from well	4	5.0 gal.	14. Total suspended	s were used and w	mg/l	waste facility:	mg/l
8. Volume of water added (if any)	(0.0 gal.	solids				
9. Source of water added			15. COD		mg/l		mg/l
	□ Yes	□ No	16. Well developed by Adam I		and Firm		
(If yes, attach results)			STS Co	onsultants, Ltd			

17. Additional comments on development: Surged & purged well dry 6 times

Facility Address or Owner/Responsible Party Address Name:	I hereby certify that the above information is true and correct to the best of my knowledge.
Firm: STS Consultants, Ltd.	Signature: Adam Floren (lla)
Street: 11425 W. Lake Park Drive	Print Name: Adam Florin
City/State/Zip: Milwaukee, Wisconsin 53224	Firm: STS Consultants Ltd.

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

State of Wisconsin Department of Natural Resources

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Signature

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SOIL BORING LOG INFORMATION

Form 4400-122

Rev. 7-98

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other 🛛

													Pag		of	1
Facility	-					License/F	Permit/	Monitor	ring N	umber		Boring	Numbe		w ac	
				arners STS No. 2000		Date Dri	ling Ct	mtod		IDe	te Drilli	Corr	nlatad	IVI	N-26	ing Method
0		ву: г	vame or	crew chief (first, last) ar	ia riim	Date Dri	ining Su	arteu		Da	te Driin	ing Con	ipicicu			llow stem
Ray STS	Explo	oratio	m				8/11/	2006			2	8/11/2006 auger				
	ique We			DNR Well ID No.	Common Well Name	Final Sta	-		l	Surfac	e Elevat			Bo		Diameter
	PM	101			MW-26	1	Feet N	ASL_				t MSI			8.0	inches
Local (gin	(es	timated: 🗋) or Bor		1.		0	,	"	Local G	rid Loc	cation			
State I			•	,	E S/C/N	Lat		 0	<u> </u>			-				Ε
NE Facility		of SH	1/	4 of Section 18, County	T1 N, R 23 E	Long	de la	Civil To		ity/ or	Village	Feet	□s		1	Feet 🗌 W
racinty	ш			Kenosha		30		Keno		ity/ OI	v mage					
Sam	nple									1		Soil	Prope	rties		
	· · · · · ·			Soil/R	ock Description											
	d (i)	unts	Fee		ologic Origin For						sive			_		Its
ber Type	th A vere	S	h H		h Major Unit		CS	hic	ram	FID	pres	sture	id i	icity x	0)/ Imer
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		2		U S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	24	10		Fill: Fine to Medium Sa	nd, Some Coarse Sand, I	Little				0						
ss	20.4	13 15	E.I	Fine Gravel - brown - m	oist - odor		Fill									
Д		14	E-1.5	0.11.0				<u></u>								
$\frac{2}{\text{SS}}$	24	-	F al	Split Spoon Refusal						-						
M		-	-3.0													
3	24	2	E_4.5		Medium Sand - brown, gr	ray and		TTT	1	0						
ss	24	1 1	Ē	tan - moist			ML									
	24	1	E-6.0	Citty Fire to Madium St	nd - gray - moist with we	ttaac at				0				[
$\frac{4}{ss}$	24 21.6	2 3	E	7.0'	ind - gray - moist with we	euless at										
Μ		4 5	-7.5													
5 SS	24	5	-				SM			0						
ssiy	18	7 7	-9.0						1							
Á		7	ΕI	Silte Claused Fine See	1					0						
$\frac{6}{\text{ss}}$	24 14.4	3 4	-10.5	Silty Clay and Fine San	i - gray - wet								1		ļ	
Μ		3 3	Ē													
L_:		2	- 12.0													
7	36	4	E				ML		1	0						
ss	18	3	= 13.5 E													
ΙX		4 4	-15.0													
1			- 15.0						$\frac{1}{2}$			ł				
L_						hallas										
				stern auger. Groundwat	advanced to 15.5 feet by er monitoring well install											
				15.0 feet.												
		1			re and correct to the he			1	I		1	I			L	I

Firm STS Consultants Ltd.

Tel: Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion 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 <u>Route To:</u>	Watershed/Wastewater		nagement	MONITORING WELL CON	
		Remediation/Redevelop				/. 7-98
•••	Facility/Project Name	Local Grid Location of W	ell J	□E.	Well Name	
	C & L Industrial Clearners STS No. 200603327		ft.		MW-26	Vall Number
	Facility License, Permit or Monitoring No.	Local Grid Origin			Wis. Unique Well No. DNR W	vell Number
	Facility ID	Lat			PM101 Date Well Installed	
1	Facility ID	St. Plane	_ ft. N,	<u>ft. E. S/C/N</u>		
	Type of Well	Section Location of Waste	e/Source	ME	08/11/2006 Well Installed By: (Person's Na	ma and Firm)
		<u>NE</u> 1/4 of <u>SE</u> 1	of Sec. <u>18</u> , T. <u>1</u>	. N, R. <u>23</u>	Well instance by: (Ferson's Na	,
	Well Code 11/mw Distance from Waste/ Enf. Stds.			Gov. Lot Number	Ray G & Chris I)
	Source Apply	u 🗆 Upgradient	s 🗆 Sidegradient		STS Consultants, L	tđ
		d 🗆 Downgradient		1. Cap and lock?		Yes D No
	A. Protective pipe, top elevation	ft. MSL		 Cap and lock? Protective cover pi 		
L	B. Well casing, top elevation6	06.53_ ft. MSL	- HIV	a. Inside diameter:	-	<u>4.0</u> ir
	C. Land surface elevation	603.6 ft. MSL 🔨		b. Length:		
				c. Material:		Steel 🖾 04
(,	D. Surface seal, bottom603.1 ft. MSI	or <u>0.5</u> ft.	1.21.21 1.21		(Other 🗆 🛄
	12. USCS classification of soil near screen:	27/17.2/15 2/17.2/15		d. Additional prote		Yes 🗆 No
I.		wo spo 🗎 🔪	$ X \setminus$	If yes, describe:	no	
۲.,				Surface seal:	Bent	onite 🛛 30
I.	Bedrock			3. Surface seal:		crete 🖾 01
	13. Sieve analysis attached?	es 🖾 No		·		Other 🗆 🛄
	14. Drilling method used: Rota	ry 🗆 5 0		4. Material between	well casing and protective pipe:	
	Hollow Stem Aug					onite 🖾 30
	Oth	er D	· 🕅 📓		sand C	Other 🛛 🛄
			· · · · · · · · · · · · · · · · · · ·	5. Annular space sea	l: a. Granular/Chipped Bent	onite 🛛 33
		ir □01		-	ud weight Bentonite-sand s	•
	Drilling Mud 0 3 Not	ne ⊠99		cLbs/gal m	+	slurry 🗆 31
	16. Drilling additives used?	es 🖾 No		d% Benton	-	-
					volume added for any of the abo	
	Describe			f. How installed:		remie 🗆 01
-L,	17. Source of water (attach analysis, if required	i):			-	mped \Box 02
		,				avity 🖾 08
				6. Bentonite seal:	a. Bentonite gran	
	602.1	0.5				chips ⊠ 32
ľ	E. Bentonite seal, top603.1 ft. MSL	or ft.		C	: Manufacturer, product name &	Other 🗆 🛄
	5 5 6 0 6 6 3 6 1	30 0			Badger #45-55	
	F. Fine sand, top600.6 ft. MSL	or <u>3.0</u> ft.		a b. Volume added		
	G. Filter pack, top600.6_ft. MSL	or3.0_ ft.			al: Manufacturer, product name a	& mech size
1	G. Filler pack, lop II. MSL	01 <u> </u>		-	Badger #45-55	
	H. Screen joint, top598.6 ft. MSL	or5.0 ft		a b. Volume added		<u>20-12</u>
	in serven joing top it. MSL	n.		9. Well casing:	Flush threaded PVC schedu	le 40 ⊠ 23
	I. Well bottom588.6 ft. MSL	or <u>15.0</u> ft.	E E I Z		Flush threaded PVC schedu	
		" <u> </u>				Other
	J. Filter pack, bottom588.1 ft. MSL	or <u>15.5</u> ft.		0. Screen material:	PVC sch.40	
				a. Screen Type:	Factor	ycut ⊠ 11
	K. Borehole, bottom588.1 ft. MSL	or <u>15.5</u> ft.		<i></i>		s slot □ 01
						Other 🗆 🛄
	L. Borehole, diameter <u>8.0</u> in.			b. Manufacturer	Buffalo	-
5			\backslash	c. Slot size:		<u>0.010</u> ir
E	\square M. O.D. well casing <u>2.38</u> in.		\backslash	d. Slotted length:		<u> 10.0 f</u>
			1	 Backfill material (• /	None 🖾 14
	N. I.D. well casing 2.07 in.			<u>-</u>	(Other 🛛 🛄
Ļ	I hereby certify that the information on this for	· . · · · · · · · · · · · · · · · · · ·	best of my knowledge.			
n.	Signature	Pinm STS	S Consultants Ltd.			Tel
	/ Junit Uls	MOUK				Fax
	Please complete both Forms 4400-113A and 4400-11 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR					
	result in a forfeiture of between \$10 and \$25,000, or					

1	result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved.	Personally identifiable i
	forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the complete	ed forms should be sent.

State of Wisconsin Department of Natural Resources

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MONITORING	WELL DEVELOPMENT
Form 4400-113B	Rev. 7-98

Form 4400-113B

C & L Industrial Clearners STS No. 200603327 Facility License, Permit or Monitoring Number 1. Can this well be purged dry? Z. Well development method: surged with bailer and bailed get with bailer and pumped surged with block and bailed get with block and pumped surged with block, bailed, and pumped get with block, bailed, and pumped get with block and	County County Code 30	Other	01 Before Der a. b. 8/1 c. Clear □	DNR Well	After De 8/ a.m.	10.62 ft 14/2006 12:00 0.0 inche 2 0
C & L Industrial Clearners STS No. 200603327 Facility License, Permit or Monitoring Number 1. Can this well be purged dry? Z. Well development method: surged with bailer and bailed auged with bailer and pumped bailed surged with block and pumped compressed air bailed only pumped slowly other surged & purged with pump	County Code 30	Wis. Unique Well Nur PM1(11. Depth to Water (from top of well casing) Date Time 12. Sediment in well bottom	mber)1 Before Der a. b. 8/1 c. () Clear	MV DNR Well velopment 10.63 ft. 4/2006 12:00 □ p 0.2 inches 1 0	After De After De 8/ a.m. p.m.	10.62 ft 14/2006 12:00 0.0 inche 2 0
Facility License, Permit or Monitoring Number C 1. Can this well be purged dry? ☑ Yes 2. Well development method: □ 41 surged with bailer and bailed □ 41 surged with bailer and pumped □ 61 surged with block and pumped □ 62 surged with block, bailed, and pumped □ 70 compressed air □ 20 bailed only □ 10 pumped slowly □ 50 other surged & purged with pump 3. Time spent developing well	<u>30</u> □ No	Wis. Unique Well Nur PM1(11. Depth to Water (from top of well casing) Date Time 12. Sediment in well bottom	01 Before Der a. b. 8/14 c. () Clear □	DNR Well velopment 10.63 ft. 4/2006 12:00 [] p 0.2 inches 1 0	After De After De 8/ a.m. p.m.	10.62 ft 14/2006 12:00 0.0 inche 2 0
1. Can this well be purged dry? ☑ Yes 2. Well development method: □ 41 surged with bailer and bailed □ 41 surged with bailer and pumped □ 61 surged with block and pumped □ 62 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 surged & purged with pump 3. Time spent developing well	<u>30</u> □ No	PM10 11. Depth to Water (from top of well casing) Date Time 12. Sediment in well bottom	01 Before Der a. b. 8/14 c. () Clear □	velopment 10.63 ft. 4/2006 12:00 p 0.2 inches 10	After De 8/ a.m. p.m. Clear 🛛	10.62 ft 14/2006 12:00 0.0 inche 2 0
 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 _surged & purged with pump 3. Time spent developing well 	□ No	 11. Depth to Water (from top of well casing) Date Time 12. Sediment in well bottom 	Before De a. b. 8/14 c. () Clear □	10.63 ft. 4/2006 12:00 □ p 0.2 inches 1 0	a.m. p.m. Clear ⊠	10.62 ft 14/2006 12:00 0.0 inche 2 0
 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 _surged & purged with pump 3. Time spent developing well 		(from top of well casing) Date Time 12. Sediment in well bottom	a. b. 8/1 c. Clear []	10.63 ft. 4/2006 12:00 □ p 0.2 inches 1 0	a.m. p.m. Clear ⊠	10.62 ft 14/2006 12:00 0.0 inche 2 0
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 surged & purged with pump □ 3. Time spent developing well □	min.	(from top of well casing) Date Time 12. Sediment in well bottom	b. 8/1 c. (Clear □	4/2006 ⊠ a 12:00 □ p 0.2 inches 1 0	a.m. p.m. Clear 🛛	14/2006 12:00 0.0 inche 2 0
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 surged & purged with pump □ 3. Time spent developing well □	min.	well casing) Date Time 12. Sediment in well bottom	b. 8/1 c. (Clear □	4/2006 ⊠ a 12:00 □ p 0.2 inches 1 0	a.m. p.m. Clear 🛛	14/2006 12:00 0.0 inche 2 0
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 surged & purged with pump 3. Time spent developing well	min.	Time 12. Sediment in well bottom	c. (Clear	⊠ a 12:00 □ p 0.2 inches 10	a.m. p.m. Clear 🛛	2 0
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 <u>surged & purged with pump</u> ⊠ □ 30	min.	Time 12. Sediment in well bottom	c. (Clear	⊠ a 12:00 □ p 0.2 inches 10	a.m. p.m. Clear 🛛	2 0
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 surged & purged with pump ∞ 3. Time spent developing well □	min.	Time 12. Sediment in well bottom	c. (Clear	⊠ a 12:00 □ p 0.2 inches 10	a.m. p.m. Clear 🛛	2 0
surged with block, bailed, and pumped □ 70 compressed air □ 20 bailed only □ 10 pumped only □ 51 pumped slowly □ 50 other _surged & purged with pump ∞ 3. Time spent developing well □	min.	12. Sediment in well bottom	(Clear 🗆	12:00 □ p 0.2 inches 10	p.m. Clear 🛛	12:00 E
compressed air □ 20 bailed only □ 10 pumped only □ 51 pumped slowly □ 50 other surged & purged with pump ⊠ 3. Time spent developing well □	min.	12. Sediment in well bottom	(Clear 🗆	12:00 □ p 0.2 inches 10	p.m. Clear 🛛	12:00 E
bailed only □ 10 pumped only □ 51 pumped slowly □ 50 other surged & purged with pump ⊠ □ 3. Time spent developing well	min.	12. Sediment in well bottom	(Clear 🗆	0.2 inches 10	Clear 🛛	0.0 inche 20
pumped only □ 51 pumped slowly □ 50 other surged & purged with pump ⊠ □ 3. Time spent developing well	min.	bottom	Clear 🗆	10		20
pumped slowly □ 50 other surged & purged with pump ⊠ □	min.	bottom	Clear 🗆	10		20
other <u>surged & purged with pump</u> 3. Time spent developing well	min.					
B. Time spent developing well	min.	13. Water clarity				
	min.					25
	min.		(D 1)	15		
Donth of well (from ton of well coging)			(Describe)		(Describe)	
Double of well (from top of well cooring) 18			light gray	у		
. Depth of wen (from top of wen casing)	.4 ft.		·····			
5. Inside diameter of well 2.0)7 in.					·
6. Volume of water in filter pack and well						
casing	gal.					
		Fill in if drilling fluids	s were used and	well is at sol	id waste facil	lity:
7. Volume of water removed from well 4	.0 gal.					
	C	14. Total suspended		mg/l		mg
8. Volume of water added (if any) 0	.0 gal.	solids				
9. Source of water added		15. COD		mg/l		mg
		16. Well developed by	: Person's Nam	e and Firm		
10. Analysis performed on water added?	LI No	Adam I	Florin			
(If yes, attach results)		STS Co	onsultants, L	tđ.		
17. Additional comments on development:		51500	, L			

Facility Address or Owner/Responsible Party Address	I hereby certify that the above information is true and correct to the best of my
Name: Adam Florin	knowledge.
Firm: STS Consultants, Ltd.	Signature: dam Floun (lla)
Street: 11425 W. Lake Park Drive	Print Name: Adam Florin
City/State/Zip: Milwaukee, Wisconsin 53224	Firm: STS Consultants Ltd.

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



APPENDIX B

Investigative Waste Disposal Documentation

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Plea	se prin	nt or type. (Form designed for use on elite (12-pitch) typewriter.)								d. OMB N	No. 2050-0	039
1		ORM HAZARDOUS 1. Generator ID Number	2. Page 1 of	I '	gency Respon		4. Manifest				111/	
		ASTE MANIFEST	!		7		than mailing addre		310	<u> </u>	JJN	_
	1.3	ty of Khonnesse -		Generato			and making baare					
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		rator's Phone:										
	6. Trar	nsporter 1 Company Name		_			U.S. EPA ID					-
	14,	avangeae kanageran ak on Kidi - Eren									· ;	
	7. Trar	nsporter 2 Company Name					U.S. EPA ID	Number				
	8. Des	signated Facility Name and Site Address					U.S. EPA ID	Number				\neg
	E	2、11年1月19日1年1月1日1月1月1日1月1日										
		Burns Brancis - Will An State Strand Brancis										
	Facilit	ys Phone: 515 200 0117 office						T	1			_
	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Cont No.	ainers Type	11. Total Quantity	12. Unit Wt./Vol.	13	3. Waste C	odes	
I M	5.4	To prove the contractive operative succession							1.631.6	1.445	. 1	
GENERATOR	X	- 41 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1			01	t dyr	55	6.4		+		
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		3.										
		4.				1				-	+	-
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		Decial Handling Instructions and Additional Information										
	r E	GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby deciare that the contents of this marked and labeled/placarded, and are in all respects in proper condition for transport acc Exporter, I certify that the contents of this consignment conform to the terms of the attached certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a lar	cording to appli ed EPA Acknow	cable inter ledgment	mational and n of Consent.	ational goven	nmental regulations	hipping nam s. If export s	e, and are c hipment and	lassified, p I I am the P	backaged, Primary	
		rator's/Offeror's Printed/Typed Name		nature					N	ionth	Day Yea	
Ļ					. * *				1		110	6
TRANSPORTER INT'L +		ternational Shipments Import to U.S.	Export from (U.S.		entry/exit:						_
~		sporter signature (for exports only):			Date lea	iving U.S.:						-
Ē		ansporter Acknowledgment of Receipt of Materials porter 1 Printed/Typed Name	Sig	nature		1			M	lonth I	Day Yea	ar
PO-		DATENLAL		L	الأريك	r 10			1	12	NIC).
ANS	Transp	porter 2 Printed/Typed Name	Sig	inature					M	onth	Day Yea	ar
Ř												
1	\vdash	screpancy										
	18a. C	Discrepancy Indication Space Quantity Type		L	Residue		Partial Re	jection		📙 Full	Rejection	
				Ma	anifest Referen	ce Number						
	18b. A	Nternate Facility (or Generator)		ITIG			U.S. EPA ID	Number		_		-
CILI												
F		y's Phone:										
DESIGNATED FACILITY	18c. S	Signature of Alternate Facility (or Generator)							!'	Month	Day Ye	ear
IGN	10 11-	azardous Waste Report Management Method Codes (i.e., codes for hazardous waste trea	atment dispose	al and reco	voling systems)	·				1	
DES	19. na 1.	22. 2.	3.	.,	,		4.					\neg
		1 * 1 - 2										
	20. De	esignated Facility Owner or Operator: Certification of receipt of hazardous materials cover			ot as noted in it	em 18a						
	Printe	d/Typed Name	Sig	inature					1	Month	Day Ye	ar
↓												

...

3. Gene	NON-HAZARDOUS				1				
3. Gene	WASTE MANIFEST	1. Generator's U	IS EPA ID No.	Manifest Bocument No./	2. Pag of	ye 1			
City 892	erator's Name and Mailing Address y of Kenosha 27 Sheridan Road nosha yyi 53143 erator's Phone (4 1 4) 5 7 7								
	nsporter 1 Company Nome	<u> </u>	6. US EPA	ID Number	A. Tra	nsporter's l	hone		
	door Disposal of Will buc	-	WIBGA	He for He for the f	1			d 762- 4176	
	sporter 2 Company Name		1	ID Number	B. Tra	nsporter's F	hone		
9. Desig	gnated Facility Name and Site Address			ID Number	C. Fac	ility's Phon	e		
561	dger Disposal of WI, Inc. 11 West Hemlock Street						41	4 760 9175	222
	warkee <u>WI 53003</u> aste Shipping Name and Description		IW: Dgg	<u>e ; e ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;</u>		12. Con		13.	14.
11. Wa						No.	Туре	Total Quantity	Unit Wt/Ve
a. Nor	n-regulated material					h.	-	00.7.7.0	
b.				· · · · · · · · · · · · · · · · · · ·					
с.	عر								
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d.	e e dela								
	litional Descriptions for Materials Listed Ab W8010173, Soc	ove			E. Hor	dling Code	es for W	astes Listed Abov	'e
	ecial Handling Instructions and Additional Emergency Contact: Badger Di		36-1080		<u> </u>				
14 65		·							
	NERATOR'S CERTIFICATION: 1 certify the ted/Typed Name	materials described ab	Signature	e not subject to tederal re	igulations i	for reporting	proper (Month Da	
	Cizz		Signatore -		and a magazine b radius	and a standard at		210	10.
	nsporter 1 Acknowledgement of Receipt of ted/Typed Name	Materials	Signature) ()	0	-		Month Da	y Year
18 Tron	nsporter 2 Acknowledgement of Receipt of	Materials		10 Same	1				0.0
Print	ted/Typed Name		Signature					Month Da	y Year
19. Discr	repancy Indication Space			•					_
20. Facil	lity Owner or Operator: Certification of re	ceint of waste mate	rials covered by this	monifest except as not	ed in Iten	19			
Print	ted/Typed Name		Signature					Month Day	y Year
		GEN	ERATOR'S COP	NV .					

Plea	se pri	nt or type. (Form desig				-		-			n Approved.	OMB No. 2	2050-0039
1		FORM HAZARDOUS	1. Generator ID Numbe	er (J.). (C. e)			rgency Response	Phone	4. Manifest		340	0 J	IK
		nerator's Name and Mailin	ng Address			Generat	or's Site Address	(if different th	an mailing addre	SS)			
		lly ch benerstander T. Z. Strongeberg bier	Sw?										
		Service WI 131											
	Gene	rator's Phone: 4 1	d	1 7 4. 4									
	6. Tra	insporter 1 Company Nam	le			-			U.S. EPA ID	Number			
	5.5	neichen f herburch	I O MI THE						122 1	•		n 1946	R
	7. Tra	insporter 2 Company Nam	le						U.S. EPA ID	Number			
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		signated Facility Name an							U.S. EPA ID	Number			
		a have thispace of c											
		and Wheest Hornson AWIN Anderson WALLEN											
		ty's Phone:							44				+ 5
		Í .		pping Name, Hazard Clas	s ID Number		10. Contair	hers	11. Total	12. Unit			-
	9a. HM	and Packing Group (if a		pping runne, nazare ener			No.	Туре	Quantity	Wt./Vol.	13.	Waste Code:	
		1	states and the states							-			
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	14. S	pecial Handling Instruction	s and Additional Informa	ation						1			
	4) Missberger in	alle mater with	ICE SYMMIN	unsatingups' E 150	189 98:03							
11													
		GENERATOR'S/OFFERO											
		marked and labeled/placa Exporter, I certify that the						onal governm	nental regulations	. If export sh	ipment and I	am the Prima	агу
		certify that the waste min						ill quantity ge	nerator) is true.				
	Gener	rator's/Offeror's Printed/Ty	ped Name			Signature						nth Day	
11	-		p*										
INTL	16. Int	ternational Shipments	import to U.S	3.	Export f	rom U.S.	Port of en	try/exit:		-			
N	Trans	sporter signature (for expo					Date leavi	ng U.S.:					
TRANSPORTER	-	ansporter Acknowledgmer											
E	Trans	porter 1 Printed/Typed Na		1		Signature	.] .	4			Mor	th Day	Year
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AN	Trans	porter 2 Printed/Typed Na	me			Signature					Mot	th Day	Year
Ĕ											- L.	1	
1	18. Di	iscrepancy											
	18a. D	Discrepancy Indication Sp.	ace Quantity		Туре		Residue		Partial Re	ection	[Full Reje	ction
1	401	Alternate Frederic C	anta d			M	anifest Reference	Number:		lumber			
E	18b. A	Alternate Facility (or Gene	rator)						U.S. EPA ID I	umber			
2													1.1
E		ty's Phone: Signature of Alternate Fac						•			T O	ath Day	Veer
	160. 3	Signature of Alternate Fac	inty (or Generator)								IVIC	inth Day	Year
DESIGNATED FACILITY	40.11			les Ceretert			veliat					_	
ESI	19. Ha	azardous Waste Report M	anagement Method Cod	ies (i.e., codes for hazard	ous waste treatment, dis	posal, and rec	ycling systems)		4.				
0	1.	机制料	2.			5.			1.				
	20 0	esignated Facility Owner	or Operator: Contification	of receipt of harandese	natorials anyond by the		at an motod in liter	18a					
		esignated Facility Owner (d/Typed Name	or operator. Certification	or receipt or nazaroous r	naterials covered by the	Signature	a as noted in iten				Mo	nth Day	Year
											1	1	1

Facility Site Addres	State Manifest Number: 002123400JJK
Badger Disposal of WI, Inc. 5611 West Hemlock Street Milwaukee WI 53223 EPA Id: WID988580056	Federal Manifest Number:
Generator Mail Addres	Generator Site Address
City of Kenosha	City of Kenosha
8927 Sheridan Road	8927 Sheridan Road
Kenosha WI 53143	Kenosha WI 53143
EPA Id: WIR000110676	

Manifest Line Item: 1 a C	ertification: General Certification	te	Treatabi	lity Group	
Profile Name: purge water with TCE			ww	NWW	
Profile Number: WS008899	Aproval Code: WS008899	Aproval Status: Approved		X	

A. F001 - F005 Solvent Restrictions

This restricted waste category is banned from land disposal under 40 CFR 268.30 and is subject to one or more treatment standards under 40 CFR Subpart D.

10						_
1	EPA Code	Hazardous Constituent	CAS	WW Standard	NWW Standard	
	F002	Tetrachloroethylene	127-18-4	0.056	6.0	

F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, trichloromoriofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in §261.31.

B. Other Regulated Waste Notification

This section includes all wastes restricted from land disposal not included in other sections. If any treatment standards reference 40 CFR 268.48, then all underlying hazardous constituents are listed in Section D.

EPA Code	Hazardous Constituent	Waste Description and Treatment/ Regulatory Subcategory	CAS	WW Standard	NWW Standard
----------	-----------------------	--	-----	-------------	--------------

C. D001 - D043

If any treatment standards reference 40 CFR 268.48, then all underlying hazardous constituents are listed in Section D.

EPA Code	Hazardous Constituent	Waste Description and Treatment/ Regulatory Subcategory	CAS	WW Standard	NWW Standard
D039	Tetrachloroethylene	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	127-18-4	0.056 and meet §268.48 standards	6.0 and meet §268.48 standards

D. Underlying Hazardous Constituents

This section contains the list of all constituents listed in 40 CFR 268.48, Table UTS - Universal Treatment Standards, except anadium and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a oncentration above the constituent-specific UTS treatment standard.

Hazardous Constituent

WW Standard NWW Standard

E. Non-Hazardous / Non-Restricted Waste

There are no EPA waste codes that are not subject to land disposal restrictions as specified in 40 CFR Subpart D or applicable prohibitions in 40 CFR 268.32 or RCRA.

Facility Site Addres

Badger Disposal of WI, Inc. 5611 West Hemlock Street Milwaukee WI 53223 EPA Id: WID988580056

Generator Mail Addres

City of Kenosha 8927 Sheridan Road Kenosha WI 53143 EPA Id: WIR000110676 State Manifest Number: 002123400JJK Federal Manifest Number:

Generator Site Address City of Kenosha 8927 Sheridan Road Kenosha WI 53143

I hereby notify that this shipment contains waste restricted under 40 CFR 268, Land Disposal Restrictions. I hereby certify that all information submitted in this and all attached documents is complete, contains true and accurate descriptions and is representative of the waste material, and that all relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

Signature

Date

Facility Site Addres	State Manifest Number: 002123165JJK
Badger Disposal of WI, Inc. 5611 West Hemlock Street	Federal Manifest Number:
Milwaukee WI 53223	7
EPA Id: WID988580056	
Generator Mail Addres	Generator Site Address
City of Kenosha	City of Kenosha
8927 Sheridan Road	8927 Sheridan Road
Kenosha WI 53143	Kenosha WI 53143
EPA Id: WIR000110676	

Manifest Line Item: 1 a	Certification: General Certificat	e	Treatabili	ity Group
Profile Name: purge water with TCE			WW	NWW
Profile Number: WS008899	Aproval Code: WS008899	Aproval Status: Approved		X

A. F001 - F005 Solvent Restrictions

This restricted waste category is banned from land disposal under 40 CFR 268.30 and is subject to one or more treatment standards under 40 CFR Subpart D.

-			CHC		
4	EPA Code	Hazardous Constituent	CAS	WW Standard	NWW Standard
	F002	Tetrachloroethylene	127-18-4	0.056	6.0

F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, trichloromonofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in §261.31.

B. Other Regulated Waste Notification

This section includes all wastes restricted from land disposal not included in other sections. If any treatment standards reference 40 CFR 268.48, then all underlying hazardous constituents are listed in Section D.

EPA Code	Hazardous Constituent	Waste Description and Treatment/ CAS Regulatory Subcategory	WW Standard	NWW Standard

C. D001 - D043

If any treatment standards reference 40 CFR 268.48, then all underlying hazardous constituents are listed in Section D.

EPA Code	Hazardous Constituent	Waste Description and Treatment/ Regulatory Subcategory	CAS	WW Standard	NWW Standard
D039	Tetrachloroethylene	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	127-18-4	0.056 and meet §268.48 standards	6.0 and meet §268.48 standards

D. Underlying Hazardous Constituents

This section contains the list of all constituents listed in 40 CFR 268.48, Table UTS - Universal Treatment Standards, except vanadium and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standard.

Hazardous Constituent

WW Standard NWW Standard

E. Non-Hazardous / Non-Restricted Waste

There are no EPA waste codes that are not subject to land disposal restrictions as specified in 40 CFR Subpart D or applicable prohibitions in 40 CFR 268.32 or RCRA.

Facility Site Addres

Badger Disposal of WI, Inc. 5611 West Hemlock Street Milwaukee WI 53223 EPA Id: WID988580056

Generator Mail Addres

City of Kenosha 8927 Sheridan Road Kenosha WI 53143 EPA Id: WIR000110676 State Manifest Number: 002123165JJK **Federal Manifest Number:**

Generator Site Address City of Kenosha 8927 Sheridan Road Kenosha WI 53143

hereby notify that this shipment contains waste restricted under 40 CFR 268, Land Disposal Restrictions. I hereby certify that all information submitted in this and all attached documents is complete, contains true and accurate descriptions and is representative of the waste material, and that all relevant information regarding known or suspected hazards in the possession of Tepresentative of the mass. The generator has been disclosed.

Signature

Date



September 22, 2006

City of Kenosha 8927 Sheridan Road Kenosha, WI 53143

Badger Disposal of WI., Inc. is pleased to notify you that we have the requisite permits to accept your waste material listed below for management at our recycling facility.

The proposed method of management for this waste stream is:

Landfill

Material Description:SoilApproval Number (WS#):WS010173

This acceptance is based upon the information provided by the waste profile sheet you provided for the waste stream.

Badger Disposal of WI., Inc. is looking forward to assisting you with your recycling needs.

Sincerely,

Badger Disposal of WI, Inc.

Dobtin

Sarah L. Wetsten Approvals Coordinator

PLEASE MAINTAIN THIS COPY FOR YOUR FILE.



September 20, 2006

City of Kenosha 8927 Sheridan Road Kenosha, WI 53143

Badger Disposal of WI., Inc. is pleased to notify you that we have the requisite permits to accept your waste material listed below for management at our recycling facility.

The proposed method of management for this waste stream is:

Fuel Blending

Material Description:purge water with TCEApproval Number (WS#):WS008899

This acceptance is based upon the information provided by the waste profile sheet you provided for the waste stream.

Badger Disposal of WI., Inc. is looking forward to assisting you with your recycling needs.

Sincerely,

Badger Disposal of WI, Inc.

Notitu

Sarah L. Wetsten Approvals Coordinator

PLEASE MAINTAIN THIS COPY FOR YOUR FILE.



5611 W. Hemlock St. Milwaukee, WI 53223

866-271-0961 • 414-760-9175 • Fax: 414-760-9189 • www.badgerdisposal.com



APPENDIX C

2006 Hydraulic Gradient Calculations

THE INFRASTRUCTURE IMPERATIVE

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Horizontal Hydra	aulic Gradient -	MW-2 to B-12	
		i = <u>h1-h2</u> L	
Wells Referenced in Calculation:		MW- 2 B 12	
L = Distance between wells (ho	rizontal)	615 ft	
h1 = groundwater elevation at	MW- 2	602.21 ft	
h2 = groundwater elevation at	B 12	601.32 ft	
	i = 0.	00145 ft/ft	

Ŧ

/

Linear Velocity (Seepage Velocity)	/) - MW-2 to B-12	
	v = <u>Ka * i</u> Ne	
Wells Referenced in Calculation:	MW- 2 B 12	
v = Linear groundwater flow velocity Ka = Mean hydraulic conductivity (geometric) Conversion factor for cm/sec to ft/sec = cm/sec *3.28E-2 i = Horizontal gradient Ne = Effective porosity (estimated)	0.001612357 5.29E-05 0.001447154 0.25	
v = <u>5.29E-05</u> ft/sec	X 0.001447154 ft/ft 0.25	
= 3.0613E-07 ft/sec	X 3.15E+07 sec/yr	
V =	9.64 ft/yr	

ulic Gradie	nt - B-5 to MW	-2	
	i =	h1-h2	
		L	
	В 5 MW- 2		
izontal)		50 ft	
B 5		602.32 ft	
MW- 2		602.21 ft	
i =	0.00220 ft/ft		
	izontal) B 5 MW- 2	i = B 5 MW- 2 izontal) B 5 MW- 2	B 5 MW- 2 izontal) 50 ft B 5 602.32 ft MW- 2 602.21 ft

A.A

1

Linear Velocity (Seepage Velocity) - B-5 to MW-2							
	v =	Ka * i					
		Ne					
Wells Referenced in Calculation:	В 5						
	MW- 2						
= Linear groundwater flow velocity							
a = Mean hydraulic conductivity (geometric)		0.00135041					
onversion factor for cm/sec to ft/sec = cm/sec *3.28E-2		4.4 3 E-05					
= Horizontal gradient		0.0022					
e = Effective porosity (estimated)		0.25					
v = 4.43E-05 ft/sec	х	0.0022 ft/ft					
		0.25					
= 3.8978E-07 ft/sec	Х	3.15E+07 sec/yr					
v =	12.28 ft/y	r					

Horizontal Hydraulic Gradient - MW-5 to MW-4								
		i =	h1-h2					
			L					
Wells Referenced in Calculation:		MW- 5						
		MW- 4						
L = Distance between wells (hor	rizontal)		35 ft					
h1 = groundwater elevation at	MŴ- 5		601.26 ft					
h2 = groundwater elevation at	MW- 4		601.17 ft					
	i =	0.00257 ft/ft						
	-							

Linear Velocity (Seepage Velocity)	- MW-5 to	> MW-4
	v =	Ka * i Ne
Wells Referenced in Calculation:	MW- 5 MW- 4	
 v = Linear groundwater flow velocity Ka = Mean hydraulic conductivity (geometric) Conversion factor for cm/sec to ft/sec = cm/sec *3.28E-2 = Horizontal gradient Ne = Effective porosity (estimated) 		0.0013 4.26E-05 0.002571429 0.25
v = 4.26E-05 ft/sec	X	0.002571429 ft/ft 0.25
= 4.3858E-07 ft/sec	х	3.15E+07 sec/yr
	13.82 ft/y	r

Vertical Hydrauli	c Gradient -	MW-5 to MW-	5P
		i =	h1-h2
			L
Vells Referenced in Calculation:		MW- 5 MW- 5P	
L = Distance between wells (ver	tical)		20 f
h1 = groundwater elevation at	MW- 5		601.26 f
h2 = groundwater elevation at	MW- 5P		600.23 f
	i =	0.05150 ft/ft	

٠

I

Vertical Velocity (Seepage Velocity) - MW-5 to	MW-5P		
	v =	Ka*i		
		Ne		
Wells Referenced in Calculation:	MW- 5			
	MW- 5P			
v = Linear groundwater flow velocity				
Ka = Mean hydraulic conductivity (geometric)		0.000220393		
Conversion factor for cm/sec to ft/sec = cm/sec *3.28E-2		7.23E-06		
i = Horizontal gradient	0.0515			
Ne = Effective porosity (estimated)		0.25		
v = 7.23E-06 ft/sec	X	0.0515 ft/ft		
		0.25		
= 1.4891E-06 ft/sec	X	3.15E+07 sec/yr		
v =	46.91 ft/yr			



APPENDIX D

SSRCL Calculations

Soil Screening Guidance Calculator

Equation Values for Ingestion - NON - INDUSTRIAL
--

Noncarcinogenic Parameter	Value	Carcinogenic Age-adjusted Parameter	Value	Carcinogenic Nonadjusted Parameter	Value
Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E-7	Target Risk (unitless)	1.0E-6
Body Weight (kg)	15	Adult Body Weight (kg)	70	Body Weight (kg)	70
		Child Body Weight (kg)	15		
Exposure Duration (yr)	6	Adult Exposure Duration (yr)	24	Exposure Duration (yr)	25
		Child Exposure Duration (yr)	6		
Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	250
Intake Rate (mg/day)	200	Adult Intake Rate (mg/day)	100	Intake Rate (mg/day)	100
		Child Intake Rate (mg/day)	200		
		Average Lifetime (yr)	70	Average Lifetime (yr)	70
		Age-adjusted Ingestion Factor (mg-yr/kg-day)	114.29		

Soil Screening Levels for Ingestion (mg/kg)

Analyte	Cas Number	Oral RfD	Oral Slope Factor	Noncarcinogenic	Carcinogenic (Age-adjusted)	Carcinogenic (Nonadjusted)		
Benzene	71432	4.00E-03	5.50E-02 ª	6.26E+01	1.16E+00	5.20E+01		
Dichloroethylene, 1,2-cis-	156592	1.00E-02 ^b		1.56E+02				
Dichloroethylene, 1,2-trans-	156605	2.00E-02 ª		3.13E+02				
Ethylbenzene	100414	1.00E-01 ^a		1.56E+03				
Naphthalene	91203	2.00E-02 ª		3.13E+02				
Tetrachloroethylene	127184	1.00E-02 ª	5.20E-02 ⊻	1.56E+02	1.23E+00	5.50E+01		
Toluene	108883	8.00E-02 ª		1.25E+03				
Trichloroethylene	79016	3.00E-04 ⊻	4.00E-01 ⊻	4.69E+00	1.60E-01	7.15E+00		
Trimethylbenzene, 1,2,4-	95636	5.00E-02		7.82E+02				
Trimethylbenzene, 1,3,5-	108678	5.00E-02		7.82E+02				
Vinyl Chloride	75014	3.00E-03 <u>a</u>	1.50E+00 ^a	4.69E+01	4.26E-02	1.91E+00		
Xylene, m-	108383	2.00E-01 ^b		3.13E+03				

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Xylene, o-	95476	2.00E+00 ^b	3.13E+04		
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Volatilization Factor Parameter	Value	Soil Saturation Concentration Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5			Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E- 7
City (climate zone)	Minneapolis (V)			Exposure Duration (yr)	30	Exposure Duration (yr)	30
Q/C (g/m ² -s per kg/m ³)	93.77358			Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350
Fraction organic carbon (unitless)	0.006	Fraction organic carbon (unitless)	0.006			Average Lifetime (yr)	70
Dry soil bulk density (g/cm ³)	1.5	Dry soil bulk density (g/cm ³)	1.5				
Soil particle density (g/cm ³)	2.65	Soil particle density (g/cm ³)	2.65				
Water-filled soil porosity (L _{water} /L _{soil})	0.15	Water-filled soil porosity (L _{water} /L _{soil})	0.2				
Exposure interval (s)	9.5e08						

Equation Values for Inhalation of Volatiles - NON INDUSTRIAL

Soil Screening Levels for Inhalation of Volatiles (mg/kg)

Analyte	Cas Number	Inhalation RfC	Inhalation Unit Risk	Volatilization Factor	Soil Saturation Concentration	Noncarcinogenic	Carcinogenic
Benzene	71432	3.0E-02 ª	7.8E-06 ª	3.7E+03	9.1E+02	2.3E+01	1.1E-01
Dichloroethylene, 1,2-cis-	156592			3.9E+03	1.3E+03		
Dichloroethylene, 1,2-trans-	156605			3.1E+03	3.2E+03		
Éthylbenzene	100414	1.0E+00 ª		7.3E+03	4.0E+02	1.5E+03	
Naphthalene	91203	3.0E-03 ª		7.5E+04		4.7E+01	*
Tetrachloroethylene	127184	6.0E-01 ⊻	5.8E-07 ⊻	3.4E+03	2.4E+02	4.3E+02	1.4E+00
Toluene	108883	5.0E+00 ª		5.4E+03	6.7E+02	5.6E+03	
Trichloroethylene	79016	4.0E-02 ⊻	1.1E-04 [⊻]	4.4E+03	1.3E+03	3.7E+01	9.7E-03
Trimethylbenzene, 1,2,4-	95636	6.0E-03		2.7E+04	1.3E+03	3.4E+01	
Trimethylbenzene, 1,3,5-	108678	6.0E-03		1.6E+04	4.8E+02	2.0E+01	
Vinyl Chloride	75014	1.0E-01 ª	8.8E-06 ª	1.4E+03	1.2E+03	2.9E+01	3.9E-02
Xylene, m-	108383	1.0E-01 ª		8.2E+03	4.2E+02	1.7E+02	

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Xylene, o-	95476	<u>a</u>	8.3E+03	4.2E+02
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Equation Values for Ingestion

Noncarcinogenic Parameter	Value	Carcinogenic Age-adjusted Parameter	Value	Carcinogenic Nonadjusted Parameter	Value
Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E-7	Target Risk (unitless)	1.0E-6
Body Weight (kg)	15	Adult Body Weight (kg)	70	Body Weight (kg)	70
		Child Body Weight (kg)	15		
Exposure Duration (yr)	6	Adult Exposure Duration (yr)	24	Exposure Duration (yr)	25
		Child Exposure Duration (yr)	6		
Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	250
Intake Rate (mg/day)	200	Adult Intake Rate (mg/day)	100	Intake Rate (mg/day)	100
		Child Intake Rate (mg/day)	200		
		Average Lifetime (yr)	70	Average Lifetime (yr)	70
		Age-adjusted Ingestion Factor (mg-yr/kg-day)	114.29		

Soil Screening Levels for Ingestion (mg/kg)

Analyte	Cas Number	Oral RfD	Oral Slope Factor	Noncarcinogenic	Non Jheuste, al Carcinogenic (Age-adjusted)	Industrial Carcinogenic (Nonadjusted)
Dichlorobenzene, 1,4-	106467	2	.40E-02 ^b		2.66E+00	1.19E+02

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Volatilization Factor Parameter	Value	Soil Saturation Concentration Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5	anna a ann an Anna an Anna an Anna an Anna a Anna Anna an Anna		Target Hazard Quotient (unitless)	0.2	Target Risk (unitless)	1.0E- 7
City (climate zone)	Minneapolis (V)			Exposure Duration (yr)	30	Exposure Duration (yr)	30
Q/C (g/m²-s per kg/m³)	93.77358	·		Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	350
Fraction organic carbon (unitless)	0.006	Fraction organic carbon (unitle ss)	0.006			Average Lifetime (yr)	70
Dry soil bulk density (g/cm ³)	1.5	Dry soil bulk density (g/cm ³)	1.5				
Soil particle density (g/cm3)	2.65	Soil particle density (g/cm ³)	2.65				
Water-filled soil porosity (L _{water} /L _{soil})	0.2	Water-filled soil porosity (L _{water} /L _{soil})	0.2				
Exposure interval (s)	9.5e08						

Equation Values for Inhalation of Volatiles

Soil Screening Levels for Inhalation of Volatiles (mg/kg)

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Analyte	Cas Number	Inhalation RfC	nalation Unit Volatiliza	Volatilization Factor	Saturation Concentration	Noncarcinogenic	Carcinogenic
Dichlorobenzene, 1,4-	106467	8.0E-01 ª		2.4E+04		4.0E+03	

Industrial not room Ingestion prove conservative

Equation Values for Soil to Ground Water

Partitioning Equation Parameter	Value
Dilution factor (unitless)	2
Fraction organic carbon in soil (unitless)	0.006
Water-filled soil porosity (L _{water} /L _{soil})	0.2
Dry soil bulk density (kg/L)	1.5
Soil particle density (kg/L)	2.65

Soil Screening Levels for Soil to Ground Water (mg/kg)

Analyte	Cas Number	Ground Water Concentration [*] (mg/L)	Ground Water Concentration Source	Soil Screening Level
Dichlorobenzene, 1,4-	106467	1.5E-01	MCLG	5.8E-01
*		tion Downer X Dilution Franker	ייש בערים איז	

*Ground Water Concentration=Ground Water Concentration Source \times Dilution Factor

MLLG = ES

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Equation Values for Ingestion - Industrial

Noncarcinogenic Parameter	Value	Carcinogenic Age-adjusted Parameter	Value	Carcinogenic Nonadjusted Parameter	Value
Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E-7	Target Risk (unitless)	1.0E-6
Body Weight (kg)	70	Adult Body Weight (kg)	70	Body Weight (kg)	70
		Child Body Weight (kg)	15		
Exposure Duration (yr)	25	Adult Exposure Duration (yr)	24	Exposure Duration (yr)	25
		Child Exposure Duration (yr)	6		
Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	350	Exposure Frequency (day/yr)	250
Intake Rate (mg/day)	100	Adult Intake Rate (mg/day)	100	Intake Rate (mg/day)	100
		Child Intake Rate (mg/day)	200		
		Average Lifetime (yr)	70	Average Lifetime (yr)	70
		Age-adjusted Ingestion Factor (mg-yr/kg-day)	114.29		

Soil Screening Levels for Ingestion (mg/kg)

Analyte	Cas Number	Oral RfD	Oral Slope Factor	Noncarcinogenic	Carcinogenic (Age-adjusted)	Carcinogenic (Nonadjusted)
Benzene	71432	4.00E-03	5.50E-02 ^a	4.09E+03	1.16E+00	5.20E+01
Dichloroethylene, 1,2-cis-	156592	1.00E-02 ^b		1.02E+04		
Dichloroethylene, 1,2-trans-	156605	2.00E-02 ^a		2.04E+04		
Ethylbenzene	100414	1.00E-01 ª		1.02E+05		
Naphthalene	91203	2.00E-02 ^a		2.04E+04		
Tetrachloroethylene	127184	1.00E-02 ^a	5.20E-02 Y	1.02E+04	1.23E+00	5.50E+01
Toluene	108883	8.00E-02 a		8.18E+04		
Trichloroethylene	79016	3.00E-04 ⊻	4.00E-01 ≚	3.07E+02	1.60E-01	7.15E+00
Trimethylbenzene, 1,2,4-	95636	5.00E-02		5.11E+04		
Trimethylbenzene, 1,3,5-	108678	5.00E-02		5.11E+04		
Vinyl Chloride	75014	3.00E-03 ª	1.50E+00 ^a	3.07E+03	4.26E-02	1.91E+00
Xylene, m-	108383	2.00E-01 ^b		2.04E+05		
Xylene, o-	95476	2.00E+00 b		2.04E+06		

Volatilization Factor Parameter	Value	Soil Saturation Concentration Parameter	Value	Noncarcinogenic Parameter	Value	Carcinogenic Parameter	Value
Surface Area (acres)	0.5		na Amir University en el estel en yeu	Target Hazard Quotient (unitless)	1	Target Risk (unitless)	1.0E- 6
City (climate zone)	Minneapolis (V)			Exposure Duration (yr)	25	Exposure Duration (yr)	25
Q/C (g/m²-s per kg/m³)	93.77358			Exposure Frequency (day/yr)	250	Exposure Frequency (day/yr)	250
Fraction organic carbon (unitless)	0.006	Fraction organic carbon (unitless)	0.006			Average Lifetime (yr)	70
Dry soil bulk density (g/cm ³)	1.5	Dry soil bulk density (g/cm ³)	1.5				
Soil particle density (g/cm3)	2.65	Soil particle density (g/cm ³)	2.65				
Water-filled soil porosity (L _{water} /L _{soil})	0.2	Water-filled soil porosity (L _{water} /L _{soil})	0.2				
Exposure interval (s)	9.5e08						

Equation Values for Inhalation of Volatiles - Industrial

Soil Screening Levels for Inhalation of Volatiles (mg/kg)

Analyte	Cas Number	Inhalation RfC	inhalation Unit Risk	Volatilization Factor	Soil Saturation Concentration	Noncarcinogenic	Carcinogenic
Benzene	71432	3.0E-02 ª	7.8E-06 ^a	5.2E+03	9.1E+02	2.3E+02	2.7E+00
Dichloroethylene, 1,2-cis-	156592			5.6E+03	1.3E+03		
Dichloroethylene, 1,2-trans-	156605			4.4E+03	3.2E+03		
Ethylbenzene	100414	1.0E+00 ª		1.0E+04	4.0E+02	1.5E+04	
Naphthalene	91203	3.0E-03 ª		1.0E+05		4.6E+02	
Tetrachloroethylene	127184	.0E-01 ⊻́	5.8E-07 ⊻	4.8E+03	2.4E+02	4.2E+03	3.4E+01
Toluene	108883	5.0E+00 ª		7.5E+03	6.7E+02	5.5E+04	
Trichloroethylene	79016	4.0E-02 ⊻	1.1E-04 ⊻	6.1E+03	1.3E+03	3.6E+02	2.3E-01
Trimethylbenzene, 1,2,4-	95636	6.0E-03		3.8E+04	1.3E+03	3.3E+02	
Trimethylbenzene, 1,3,5-	108678	6.0E-03		2.2E+04	4.8E+02	1.9E+02	
Vinyl Chloride	75014	1.0E-01 ª	8.8E-06 a	1.9E+03	1.2E+03	2.8E+02	8.9E-01
Xylene, m-	108383	1.0E-01 ^a		1.1E+04	4.2E+02	1.7E+03	

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Xylene, o- 95476 a 1.1E+04 4.2E+02

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★AL based soil to groundwater screening level-generic calculations with WDNR default values and site specific TOC ■sed DAF = 1 plus the equation below

-AL based RCL = the SSL at DAF 1 times 20 times PAL divided by HBL or MCLG

Calculated September 19, 2006 by L. Altenbach as Site Specific Calculation for C&L Industrial Cleaners, Kenosha, WI

All units are micrograms per kilogram

SSL at DAF=1	PAL	HBL or MCLG	Soil to Groundwater Calculated PAL- based RCL micrograms per kg	milligrams/kg
41000	96	1800	43,733	43.73
18000	96	1800	19,200	19.2
8900	8	730	1,951	1.95
0.84	0.02	2	0.17	0.00017
	DAF=1 41000 18000 8900	DAF=1 PAL 41000 96 18000 96 8900 8	DAF=1 PAL HBL or MCLG 41000 96 1800 18000 96 1800 8900 8 730	SSL at Calculated PAL- based RCL micrograms per kg 41000 96 1800 43,733 18000 96 1800 19,200 8900 8 730 1,951

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Equation Values for Soil to Ground Water

Partitioning Equation Parameter	Value
Dilution factor (unitless)	2
Fraction organic carbon in soil (unitless)	0.006
Water-filled soil porosity (L _{water} /L _{soil})	0.2
Dry soil bulk density (kg/L)	1.5
Soil particle density (kg/L)	2.65

Soil Screening Levels for Soil to Ground Water (mg/kg)

Analyte	Cas Number	Ground Water Concentration [*] (mg/L)	Ground Water Concentration Source	Soil Screening Level
Benzene	71432	1.0E-02	MCL	5.2E-03
Dichloroethylene, 1,2-cis-	156592		MCLG	5.2E-02
Dichleroethylene,-1,2-trans	156605		MGLG	1:0E-01
Ethylbenzene	100414	1:4E+00	MCLS	3.3톤+00
Naphthalene	91203	1.5E+00 ·····	HBL	1.8E+01
Tetrachloroethylene	127184	1.0E-02	MCL	1.2E-02
Toluene		2:0E+00	MCLG	2.5E+00
Trichloroethylene	79016	1.0E-02	MCL	1.2E-02
Trimethylbenzene, 1,2,4-	95636	3.7E+00	HBL	8.2E+01
Trimethylbenzene; 1,3,5-	108678	3.7E+00		3:6E+01
∀inyl Chloride	75014	4.0E-03	MCL	1.7E=03
Xylene, m-	108383	2.0E+01	MCLG	5:2E+01
Xylene, o-	95476	2:0E+01	MGL-G	4.7E+01

^{*}Ground Water Concentration=Ground Water Concentration Source \times Dilution Factor



Equation Values for Soil to Ground Water

Partitioning Equation Parameter	Value
Dilution factor (unitless)	4
Fraction organic carbon in soil (unitless)	0.006
Water-filled soil porosity (L _{water} /L _{soil})	0.2
Dry soil bulk density (kg/L)	1.5
Soil particle density (kg/L)	2.65

Soil Screening Levels for Soil to Ground Water (mg/kg)

Analyte	Cas Number	Ground Water Concentration [*] (mg/L)	Ground Water Concentration Source	Soil Screening Leve
Benzene	71432	2:0E-02		1.0E-02
Dichloroethylene, 1,2-cis-	156592	2.8E-01	MCLG	1.0E-01
Dichloroethylene, 1,2-trans-	156605	4.0E-01	MCLG	2.0E-01
Ethylbenzene	100414	2.8E+00	MCLG	6.6E+00
Naphthalene				3.5E+01
-Tetrachloroethylene	127184	2:0E-02	MGL-	<u>2.4E-02</u>
Toluene	108883	4.0E+00	MCLG	5.1E+00
- Tr ichlereethylene		2:0E-02	MGL	2:4E-02
Trimethylbenzene, 1,2,4-	95636	7.3E+00		1.6E+02
Trimethylbenzene, 1,3,5-		7:3E+00		7.2E+01
-Vinyl-Chloride	75014			3.3E+03
Xylene, m-	108383	4.0E+01	MCLG	1.0E+02
Xylene, o-	95476	4.0E+01	MCLG	9.4E+01

*Ground Water Concentration=Ground Water Concentration Source × Dilution Factor

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Equation Values for Soil to Ground Water -

Partitioning Equation Parameter	Value
Dilution factor (unitless)	
Fraction organic carbon in soil (unitless)	0.006
Water-filled soil porosity (L _{water} /L _{soil})	0.2
Dry soil bulk density (kg/L)	1.5
Soil particle density (kg/L)	2.65

Soil Screening Levels for Soil to Ground Water (mg/kg)

Analyte	Cas Number	Ground Water Concentration [*] (mg/L)	Ground Water Concentration Source	Soil Screening Level
Benzene	71432	5.0E-03 = Es	MCL	2.6E-03
Dichloroethylene, 1,2-cis-	156592	7.0E-02 = ES	MCLG	2.6E-02
Dichloroethylene, 1,2-trans-	156605	1.0E-01 = ÉS	MCLG	5.1E-02
Ethylbenzene	100414	$7.0E-01 = \frac{25}{5}$	MCLG	1.7E+00
Naphthalene	91203	7.3E-01 未ES	HBL-minist Cala	lafe 8.9E+00
Tetrachloroethylene	127184	5.0E-03 = ٤>	MCL	5.9E-03
Toluene	108883	1.0E+00 = ES	MCLG	1.3E+00
Trichloroethylene	79016	5.0E-03 ニ そら	MCL	6.0E-03
Trimethylbenzene, 1,2,4-	95636	1.8E+007	HBL must cala	4.1E+01
Trimethylbenzene, 1,3,5-	108678	1.8E+00 5 7 ES	HBL & Must (ala	1.8E+01
Vinyl Chloride	75014	. 2.0E-03 - must calc	MCL	-8.4E-04-
Xylene, m-	108383	1.0E+01	MCLG	2.6E+01
Xylene, o-	95476	1.0E+01 {= ES	MCLG	2.3E+01

*Ground Water Concentration=Ground Water Concentration Source × Dilution Factor

http://risk.lsd.ornl.gov/cgi-bin/epa/ssl2.cgi

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TABLE 5 2004 Soil Analytical Results - TOC Kenosha Brownfield Investigation - C&L Industrial Cleaners STS Project No. 86415XD

		Total
Sample	Depth	Organic
Location/Sample	(feet bgs)	Carbon
Number		(mg/kg)
GP-23	0.5-2'	4,200
GP-23	4-6'	5,000
GP-25	0.5-2'	450,000
GP-25	4-5.3'	2,400
GP-30	0.5-2'	9,800
GP-30	4-6'	4,200
GP-33	0.5-2'	9,700
GP-33	4-5'	3,300
GP-40	0.5-2'	15,000
GP-40	4-6'	2,000
GP-42	0.5-2'	6,300
GP-42	4-6'	3,100
GP-48	0.5-2'	31,000
GP-48	2.5-4'	790

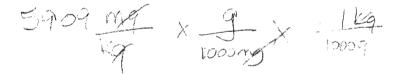
Average Concentration

5,909 (excludes GP-25 [0.5-2'])

Notes:

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mg/kg = Milligrams per kilogram bgs - Below ground surface



= 1005909 gm/gm 811,001