

Mr. Binyoti Amungwafor
Hydrogeologist
Wisconsin Department of Natural Resources – Southeast Region
2300 Dr. Martin Luther King, Jr. Drive
Milwaukee, WI 53212

**INFILTRATION APPROVAL REQUEST FOR IN-SITU ENHANCED
REDUCTIVE DECHLORINATION THROUGH SOIL BLENDING**

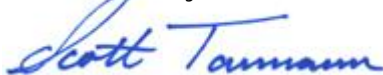
Dear Mr. Amungwafor:

On behalf of the Ehrlich Family Limited Partnership, Ramboll Environ US Corporation (Ramboll Environ) has prepared the attached Infiltration Approval Request for the Former Express Cleaners Site in Racine, Wisconsin (the Site) in accordance with the Wisconsin Pollutant Discharge Elimination System (WPDES) general permit requirements to request a temporary exemption for injection in accordance with Wisconsin Administrative Code (WAC) NR 140.28(5), and approval to inject remedial materials under WAC NR 812.05. Injection/infiltration of remedial materials are proposed for discharge to groundwater at the Site.

Based on the evaluation of remedial technologies presented in the *Proposal for Remedial Action Services* dated August 30, 2016, Ramboll Environ recommended implementation of enhanced reductive dechlorination of a combined *in-situ* chemical and biological reduction approach through *in-situ* blending of zero-valent iron (ZVI) and carbon amendment. The Wisconsin Department of Natural Resources (WDNR) approved the proposed remedial activities in a letter dated September 22, 2016. Soil blending activities are anticipated to begin on October 31, 2016.

Included with this submittal please find the Infiltration Approval Request and accompanying attachments. If you have any questions or comments regarding this submittal, please feel free to contact me.

Yours sincerely,



Scott Tarmann
Senior Manager

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cc: Ms. Nancy Ryan, WDNR
Mr. William Scott, Mallery & Zimmerman, S.C.

Attachments: Infiltration Approval Request

September 30, 2016

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Prepared for

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INFILTRATION APPROVAL REQUEST

FORMER EXPRESS CLEANERS SITE
3921-3941 N. MAIN STREET
RACINE, WISCONSIN

BRRTS NO. 02-52-547631
FID NO. 252010000

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FIGURES

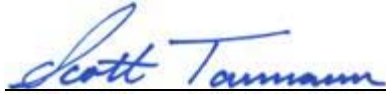
- Figure 1: Site Location Map
- Figure 2: Recommended Soil and Groundwater Treatment Area
- Figure 3: Proposed Pre-Remediation Soil Sample Locations

APPENDICES

- Appendix A: Request for Initial Coverage Under WPDES (WI-0046566-06)
- Appendix B: Material Safety Data Sheets for Proposed Remedial Amendments
- Appendix C: Soil and Groundwater Analytical results from Previous Investigations

CERTIFICATIONS

I, Scott W. Tarmann, hereby certify that I am a Professional Engineer as that term is defined in s. NR 712.03(2), 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. NR 700 to 726, Wis. Adm. Code.

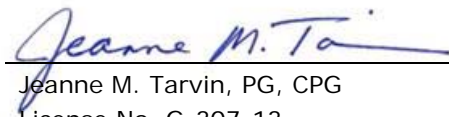


Scott W. Tarmann, PE
License No. 33530-006

September 30, 2016

Date

I, Jeanne Tarvin, hereby certify that I am a Hydrogeologist as that term is defined in s. NR 712.03(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. NR 700 to 726, Wis. Adm. Code.



Jeanne M. Tarvin, PG, CPG
License No. G-307-13

September 30, 2016

Date

1. INTRODUCTION AND BACKGROUND

On behalf the Ehrlich Family Limited Partnership, Ramboll Environ US Corporation (Ramboll Environ) has prepared this Infiltration Approval Request for the Former Express Cleaners Site in Racine, Wisconsin (the Site), in accordance with the Wisconsin Pollutant Discharge Elimination System (WPDES) general permit requirements to request a temporary exemption for injection in accordance with Wisconsin Administrative Code (WAC) NR 140.28(5) and approval to inject remedial materials under WAC NR 812.05. Injection/infiltration of remedial materials are proposed for discharge to groundwater at the Site.

A *Proposal for Remedial Action Services* (Ramboll Environ, August 2016) was submitted to the Wisconsin Department of Natural Resources (WDNR) for review on August 30, 2016. As part of the *Proposal for Remedial Action Services*, remedial technologies for impacted soil, groundwater, and soil vapor were identified and screened based on effectiveness, implementability and cost criteria. The technologies evaluated are potentially applicable for the conditions at the site and can most effectively address chlorinated volatile organic compounds (CVOCs) detected in the soil, groundwater, and soil vapor, and achieve WAC NR 140 enforcement standard (ES) values within a reasonable timeframe. Based on this evaluation of remedial technologies, the August 30, 2016 Ramboll Environ *Proposal for Remedial Action Services* recommended implementation of enhanced reductive dechlorination of a combined *in-situ* chemical and biological reduction approach through *in-situ* soil blending of zero-valent iron (ZVI) and carbon amendment.

In a letter dated September 22, 2016, the WDNR approved the remedial activities described in the August 30, 2016 *Proposal for Remedial Action Services*. This Infiltration Approval Request meets the following requirements:

- WAC Chapter NR 140, NR 700, and NR 800 Rule Series; and
- WDNR Publication PUB-RR-935 (Infiltration and Injection Requests).

A WAC NR 724 Remedial Action Plan (RAP) documenting the intended implementation methodology of the selected remedial action option at the Site is currently being prepared and will be submitted to the WDNR under separate cover.

1.1 Regulatory Agency/Project Manager

Ms. Nancy Ryan
Wisconsin Department of Natural Resources
2300 North Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128

1.2 Responsible Party/Site Owner

Ehrlich Family Limited Partnership
c/o Mr. James Small, Trustee
P.O. Box 081007
Racine, Wisconsin 53408-1007

1.3 Consultant Information

Mr. Scott Tarmann, PE
Ramboll Environ US Corporation
175 North Corporate Drive, Suite 160
Brookfield, Wisconsin 53045

1.4 Owner's Representative

Mr. William P. Scott
Mallery & Zimmerman, S.C.
731 North Jackson Street, Suite 900
Milwaukee, Wisconsin 53202-4697

1.5 Site Setting

The Site is located at 3921-3941 N. Main Street in the Northeast 1/4 of the Northeast 1/4 of Section 33, Township 4 North, Range 23 East, City of Racine, Racine County, Wisconsin (Figure 1). The geographic position of the Site in WTM 91 (x, y) coordinates obtained from the WDNR Remediation and Redevelopment (RR) interactive Site Map (<http://dnrmmaps.wi.gov>) is 701507, 257580. The Site is on a 0.77-acre parcel located at 3921-3941 North Main Street and also includes an adjacent 0.45-acre lot located at 3936 North Bay Drive, Racine, Wisconsin 53402-3611 (Figure 2).

The Site is vacant and contains a concrete slab-on-grade that was once part of a 1-story, 6,804 square foot strip mall (without a basement). The northern unit of the strip mall (3941 N. Main Street) was formerly the location of a dry cleaning operation from 1971 until approximately 2006. A release of the dry cleaning solvent tetrachloroethene (PCE) was detected in 2006, the nature and extent of which was evaluated through a series of subsurface investigations that were conducted between 2006 and 2011.

1.6 Project Contacts and Emergency Procedures

The proposed *in-situ* enhanced reductive dechlorination using *in-situ* blending methods will be performed on behalf of the Ehrlich Family Limited Partnership (property owner), under the direction of Ramboll Environ and the oversight of the WDNR. The project contact personnel for the enhanced reductive dechlorination program are as follows:

Regulating Agency: Wisconsin Department of Natural Resources

- Nancy Ryan, WDNR Project Manager

Responsible Party's Environmental Consultant: Ramboll Environ US Corporation

- Jeanne M. Tarvin, Project Principal, Direct: (262) 901-0085, Cell: (414) 326-5365
- Scott W. Tarmann, Project Manager, Direct: (262) 901-0093, Cell: (262) 853-9964

Chemical and Biological Reduction Injection Contractor: Redox Tech, LLC

- Steve Markesic, Project Manager, Direct: (630) 705-0390

Local community questions or concerns should be directed to the attention of Ms. Tarvin and/or Mr. Tarmann of Ramboll Environ. In the event of an emergency, the primary contact is Mr. Tarmann of Ramboll Environ and the secondary contact is Ms. Tarvin of Ramboll Environ.

2. SITE INVESTIGATION INFORMATION

2.1 Geologic and Hydrologic Setting

The ground surface slopes radially from the site building. Surface-water runoff at the Site flows to the east within the eastern portion of the Site and to the west within the western portion of the Site. The Site and vicinity commercial properties are served by the Racine municipal water supply that obtains potable water from Lake Michigan. The nearest surface water body is Lake Michigan, which is located approximately 0.4 mile to the east of the Site.

Up to 4 feet of sand and gravelly sand underlie the Site building and vicinity. Native soils consisting of silty sand underlie the fill or are present at the surface in areas where no fill is present, and extend to depths of approximately 6 to 8 feet below ground surface (bgs). The silty sand is underlain by silty clay that extends to at least 16 feet bgs (the maximum depth investigated). Silurian-age dolomite bedrock is present in the vicinity of the Site at depths ranging from 50 to 150 feet bgs (Trotta and Cotter, 1973).

Water level measurements were collected by Ramboll Environ from existing monitoring wells on September 14, 2016. Based on these measurements, the depth to the water table ranges from approximately 4 to 7 feet bgs across the Site. A shallow groundwater divide is present beneath the existing building in which groundwater flows to the east at locations east of the building and to the west/southwest at locations west of the building. Based on the results of *in-situ* hydraulic conductivity tests, the estimated hydraulic conductivity of the silty sand is approximately 2.1×10^{-4} centimeters per second (cm/sec).

2.2 Previous Investigations

Several investigation reports have been submitted to the WDNR by previous consultants that contain background information regarding this Site, as follows:

1. *Site Investigation Dry Cleaner Solvent Release*, Express Cleaners, Inc., 3941 N. Main Street, Racine, Wisconsin, BRRTS #02-52-547631, prepared by Northern Environmental Technologies, Incorporated, May 14, 2008.
2. *Additional Information*, Express Cleaners, 3941 N. Main Street, Racine, Wisconsin, BRRTS #02-52-547631, prepared by Northern Environmental Technologies, Incorporated, January 14, 2009.
3. *Additional Investigation Activities*, Express Cleaners, 3941 N. Main Street, Racine, Wisconsin, BRRTS #02-52-547631, prepared by Bonestroo/Northern Environmental, June 9, 2009.
4. *Additional Investigation Activities*, Express Cleaners, 3941 N. Main Street, Racine, Wisconsin, BRRTS #02-52-547631, prepared by Bonestroo, May 2, 2011.

Based on the information contained in these documents, from April 2006 through April 2011, a total of 43 Geoprobe® borings (identified as B1 through B34 and BA1 through BA9) were advanced on the Site and at adjacent properties. Two of these borings were completed as temporary groundwater monitoring wells (B5/TW1 and B7/TW2). Fifteen monitoring wells (MW1 through MW15) and one piezometer (PZ1) were also installed, and *in-situ* hydraulic conductivity testing was conducted at monitoring well MW3 and piezometer PZ1. Additionally, six soil vapor samples have been obtained (VP1 through VP6).

The results of these investigations revealed the presence of PCE and its degradation products in soil, groundwater, and soil vapor samples obtained from the Site. Detected concentrations of PCE, trichloroethene (TCE), cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC) in groundwater have exceeded their respective WAC NR 140 ES values. Maximum concentrations of PCE and TCE in soils beneath portions of the paved surfaces and building slab within 4 feet of the ground surface exceed their respective industrial direct contact residual contaminant levels (RCLs). PCE has been detected in soil vapor samples obtained in 2007 and 2008 from beneath and adjacent to the Site building, at a maximum concentration that exceeds the current WDNR vapor risk screening level (VRSL). An April 2011 groundwater sample obtained from a water table monitoring well (identified as MW15) located approximately 75 feet to the west (hydraulically downgradient) of the Site did not contain PCE or its degradation products above laboratory analytical detection limits. A summary of the soil and groundwater analytical results are provided in Appendix C.

2.3 September 2016 Investigation

In accordance with the August 30, 2016 *Proposal for Remedial Action Services*, Ramboll Environ conducted pre-remedial soil and groundwater sampling at the Site in September 2016. The results from the pre-remedial soil samples will be used to refine the boundaries/volume of soil targeted for remediation and to determine if the volume estimates provided in the August 2016 proposal will meet the remedial objectives based on current data.

Ramboll Environ collected the pre-remedial soil samples using a Geoprobe™ at 16 soil boring locations (12 soil borings on the Former Express Cleaners property and four borings on the adjacent Former Community Gardens site). The locations of the proposed Geoprobe soil borings are illustrated on Figure 3 (shown as B35 through B50). The Geoprobe™ borings were advanced to an average depth of 10 feet bgs at each location.

Baseline groundwater monitoring was also conducted in September 2016, which included sampling of all 14 monitoring wells. The 14 monitoring wells were sampled for VOCs, and wells MW-3 and MW-8 (near the treatment area) were also sampled for the following natural attenuation parameters: ethene/ethane/methane, dissolved iron, total organic carbon, nitrate+nitrite, and sulfate.

A vapor assessment of the former Pugh Oil building located adjacent to the northern property boundary of the Main Street portion of the Site was also conducted in September 2016. The vapor assessment consisted of the installation of two soil vapor pins in the building floor followed by the collection of two sub-slab soil vapor samples. The soil vapor samples were collected using 6-liter Summa canisters that were submitted for laboratory analysis of VOCs using United States Environmental Protection Agency (USEPA) Method TO-15. The results of the September 2016 soil, groundwater, and soil vapor sampling activities will be submitted to the WDNR under separate cover.

2.4 Potential Receptors and Migration Pathways

Potential routes of exposure related to impacted soil and groundwater at the Site include direct contact (dermal and inhalation), vapor intrusion, and groundwater ingestion. Lake Michigan is located approximately 0.4 mile to the east of the property. As such, the surface water pathway is not complete on site.

The depth to the water table at the Site ranges from approximately 4 to 7 feet bgs. Based on their invert elevations relative to the water table, the sanitary sewer and water service utility corridors associated with the former strip mall (Figure 2) represent potential contaminant migration pathways of interest.

Previous subsurface investigations have indicated the presence of CVOCs in soil at the Site. Potential scenarios by which CVOCs may come in contact with receptors include direct contact (dermal and inhalation) during soil blending activities. Such activities at the Site will be monitored to reduce potential risk due to inhalation of vapors or particulate matter and dermal protection will be utilized as necessary to protect field personnel from direct contact.

Potential ingestion of CVOC-impacted groundwater could hypothetically occur if affected groundwater were to migrate off site to a private or municipal well used for potable water supply. However, no such groundwater receptors are currently present within the Site vicinity, as it is served by the Racine municipal water supply that obtains potable water from Lake Michigan. As such, the groundwater exposure pathway is not complete.

Potential concerns for sites with CVOC contamination include vapor migration into buildings. WDNR vapor intrusion guidance for CVOCs indicates that the vapor intrusion pathway should be investigated if any of the following conditions are met:

- the building of interest is located over a CVOC source;
- the building is located within 100 feet of a CVOC source;
- the building overlies a groundwater plume that exceeds WAC NR 140 ES concentrations;
- groundwater with CVOC concentrations that exceed WAC NR 140 Preventive Action Limit (PAL) values is entering the building or is in contact with the building foundation or sump; and
- impacted soil vapor has the potential to enter preferential pathways that connect to the building.

Based on these criteria, the occupied building located on the former Pugh Oil property approximately 40 feet north of the Site is within sufficient proximity to the CVOC-impacted soil and groundwater to warrant investigation of the vapor intrusion pathway. The vapor intrusion pathway at this off-site building is therefore being evaluated as discussed in Section 2.3.

3. APPLICATION COMPONENTS

3.1 Description of Proposed Remedial Technology

As indicated in Section 1, the evaluation of remedial alternatives documented in the August 30, 2016 Ramboll Environ *Proposal for Remedial Action Services* resulted in the identification of combined *in-situ* chemical and biological reduction via *in-situ* soil blending as the preferred remedial alternative for the Site.

Treatment of CVOCs by ZVI and carbon amendment has been demonstrated and widely-accepted as an effective *in-situ* remediation technology. ZVI destroys CVOCs in groundwater, including PCE and degradation products detected in soil and groundwater at the Site. The abiotic reductive dehalogenation process occurs on the surface of the granular iron, with the iron acting as an electron source. Additional electron donor is provided via fermentation of carbon amendment, which facilitates biotic reductive dehalogenation. This reductive dehalogenation remedial alternative is consistent with and supportive of naturally-occurring degradation of the detected PCE in Site groundwater (based on the presence of PCE degradation products).

3.2 Implementation of *In-Situ* Enhanced Reductive Dechlorination

The preliminary extent of the treatment area based on currently-available data is shown on Figure 2. The designated soil blending treatment area will be gridded into 20-foot by 20-foot treatment cells and uploaded into an electronic mapping system, with alphabetical columns and numerical rows that will be based on the surveyed site coordinate system.

In-situ soil blending involves using an *in-situ* blender to effectively distribute chemical amendments throughout the soil medium to treat the contaminants of concern. The *in-situ* blender is a proprietary system that is mounted on a large excavator with a modified diesel engine and hydraulic system. The *in-situ* blender utilizes a 28-inch diameter mixing drum with specially designed "teeth" which rotates at speeds up to 120 revolutions per minute (rpm) with torque in excess of 20,000 foot-pounds. This allows the mixing drum to penetrate all soil types, even backfill materials such as bricks, rebar, and small rocks.

An excavator will work in tandem with the *in situ* blending equipment. The excavator will be used to excavate soils as needed and to "loosen" the soils prior to blending and verify that there are no buried items such as boulders or debris that may damage the blending head. The excavator will also help to manage soil and movement of the chemical amendments as needed.

The in situ blending process will be performed systematically in treatment cells that are approximately 20-feet by 20-feet across the treatment area as indicated above. The treatment volume for each cell will be further subdivided into two lifts, from 0 to 4.5 feet and from 4.5 to 9 feet bgs. The depth will be verified visually by a visible mark on the boom of the excavator and the soil blender. When the target depth has been reached, this mark will be level with ground surface and will allow all field personnel to verify that the required treatment depths have been achieved.

When soil blending within a treatment cell, the upper 4.5 feet of soil will be excavated and placed on the adjacent cell within the treatment area. Once the lower lift has been blended with the predetermined quantity of ZVI and carbon amendment (ABC+), the upper lift will be backfilled and the process repeated with additional ABC+. The purpose of performing the soil blending in lifts is to verify that the amendments are properly distributed throughout the soil column and to thoroughly mix and homogenize the entire cell. Each cell will be blended independently. Only after a targeted cell/lift has been fully completed will the equipment move the next cell/lift. The strategy proposed is intended as a guide and is subject to change if field conditions require. The specific soil blending strategy will be at the discretion of the operator and field lead.

The application of approximately 37,500 pounds of ZVI and carbon amendment is recommended to treat the target CVOC-impacted soil and groundwater. The ZVI content will be equivalent to approximately 0.5 percent of the weight of the target treatment volume. The blending and addition of amendments and water will increase the volume of soils. After soil blending has been completed, any mounded or excess soil will be segregated into roll off boxes, or appropriately managed within the treatment area on-site pending laboratory analysis of the soil for TCLP-VOCs for appropriate landfill acceptance. The *in-situ* soil blending activities are anticipated to be completed within a 2-week timeframe.

3.3 Notifications and Permits

The following sections identify the permits and notifications that are anticipated to be required to conduct the proposed soil blending activities.

3.3.1 Wisconsin Pollutant Discharge Elimination System Coverage

A "Request for Coverage Under Wisconsin Pollutant Discharge Elimination System (WPDES) Wastewater Discharge Permit (WI-0046566-06) for Contaminated Groundwater from Remedial Action Operations" is provided as Appendix A.

3.3.2 Potable Water Use

Potable water will be obtained from the City of Racine fire hydrant located along the N. Main Street right-of-way (approximately 100 feet to the west of the blending area) to assist in the soil blending process. The remediation contractor will use potable water (estimated to be less than 500 gallons per treatment cell) to attain a homogeneous consistency of soil and treatment amendments within the soil blending area. The amount of water that is used will be monitored using a meter that will be connected to the fire hydrant. The City of Racine Water Utility will install a back-flow preventer, meter, and sweeper valve, with chain for safety and security purposes.

3.3.3 Air Permit Applicability

Based on the previous investigation results, Ramboll Environ completed an evaluation of CVOC mass present in Site soil and groundwater within the 1,840 cubic yard target treatment volume. Based on the results of this evaluation, the estimated PCE mass totals 259 pounds, the estimated TCE mass totals 2.72 pounds, the estimated DCE mass (cDCE and tDCE) totals 4.50 pounds, and the estimated aggregate CVOC mass totals 266 pounds. Ramboll Environ anticipates that two treatment cells, each with dimensions of 20 feet by 20 feet by 9 feet, will be blended per day. As such, approximately 14.5 percent of the target treatment volume is anticipated to be subjected to soil blending per day.

Emissions of VOCs from the blended soils will be substantially suppressed by the application of an estimated 15,000 to 30,000 gallons of water that will be mixed with the ZVI and carbon amendment, in addition to groundwater present with the treatment zone itself. Emissions of VOCs will be further reduced by relatively low ambient temperatures, as the soil blending activities are scheduled to be conducted during late October and November 2016. Moreover, the remedial process consists of enhanced reductive dechlorination of CVOCs, with no component of soil vapor extraction. Regardless, based on the implausible assumption that 100 percent of the estimated CVOC mass within the target treatment volume could be discharged to the atmosphere during the soil blending process, such hypothetical air emissions are below the corresponding WAC NR 445 Regulatory Thresholds and WAC NR 406 General Exemption Levels, as provided below:

Contaminant	Assumed Emissions	NR 445 Regulatory Threshold	NR 406 General Exemption
1,2-Dichloroethene	0.082 lbs/hr or 4.50 lbs/yr	---	---
Tetrachloroethene	4.69 lbs/hr or 259 lbs/yr	9.11 lbs/hr or 301 lbs/yr	---
Trichloroethene	0.049 lbs/hr or 2.72 lbs/yr	14.4 lbs/hr or 888 lbs/yr	---
Total VOCs	4.8 lbs/hr	---	5.7 lbs/hr

3.4 Remedial Action Monitoring

3.4.1 Ambient Air

During implementation of the *in-situ* soil blending activities, air quality around the Site will be monitored to verify that safe conditions are maintained and on-Site workers and the surrounding community is protected. Air monitoring is also useful in determining the necessary level of worker respiratory protection. It can also provide first indication that emissions are elevated and gives workers and Site managers an early warning that elevated emissions are present before air quality at the perimeter zone is affected.

Work Zone Monitoring: The purpose of monitoring air quality within the work zone is to verify worker safety and provide an early warning (before air quality at the perimeter zone is affected) that elevated emissions are present. A portable instrument (Gasmeter DX4040) will be used to measure the levels of VOCs in the areas where workers are located--generally on the edge of the immediate work zone, around stockpiled material, near mixing operations, etc. The instrument will be operated by trained air monitoring technicians, who will move around the work zone. Additional information on the air monitoring in the work zone will be provided in a project Health and Safety Plan. These monitors will provide the most immediate alert if emissions are becoming elevated.

During operations, if it is determined that a contaminant-specific action level has been exceeded in the work zone, work will be stopped, the level of personal protective equipment (PPE) for on-Site workers will be upgraded as necessary, and actions will be initiated to reduce volatile air emissions.

Vapor controls will be provided during soil blending activities to suppress volatile vapors that may be driven off during soil blending that are in excess of the established work zone monitoring action levels. If necessary, a vapor control system consisting of Rusmar® Foam will be used to produce a thick, long-lasting, viscous foam barrier within the blending area for immediate control of VOCs. The foam will be applied during active soil blending activities or for overnight coverage of exposed contaminated soils within the blending area. The foam can supply up to 17 hours of continuous and effective emission control and is non-hazardous, non-combustible, biodegradable, and safe for Site personnel and the environment.

Perimeter Zone Monitoring: During routine operations, the air monitoring technician will monitor the air concentration around the property boundary at 30-minute to 1-hour intervals using the calibrated portable FTIR described above. As previously noted, exceedance of the perimeter zone action level is unlikely since the air monitoring system is designed to register an exceedance of an action level in the work zone before the perimeter zone is affected. If the air action level at a perimeter location is exceeded or if operations in the work zone require an increase in respiratory protection, actions will be immediately implemented to reduce air emissions and continuous monitoring at a downwind perimeter location will be initiated and continued until air quality is below the established action level. If necessary, vapor controls (Rusmar® Foam) will be applied to the treatment area to suppress volatile vapors that may be driven off during soil blending that are in excess of the established perimeter zone monitoring action levels.

3.4.2 Soil

Verification of soil remediation will be conducted through confirmation soil sampling and analysis. To evaluate post-remediation soil conditions, eight hydraulic probes will be installed approximately 3 months after completion of the *in-situ* enhanced reductive dechlorination remedial action. The hydraulic probes will be installed to depths of approximately 9 feet bgs.

Two soil samples will be collected from each of the probes, one between 0 to 4 feet bgs and one between 4 and 9 feet bgs, for a total of 16 post-remediation soil samples to be submitted for laboratory analysis of VOCs using USEPA Method 8260. Following soil sample collection, each sample container will be labelled with the sample location identification, date of sample collection, and intended analysis. The sample containers will then be packed in an iced, insulated container. A chain-of-custody form will be filled out upon completion and will accompany the container of soil samples to the laboratory. The samples will be transported from the Site to the laboratory via same-day or overnight courier.

Laboratory results of soil samples collected prior to commencement of *in-situ* chemical reduction that revealed detectable concentrations of PCE will be compared to the results of soil samples collected after completion of *in-situ* chemical reduction. The goal of the soil remediation is to reduce the overall soil concentrations to below the remedial action goal of 1,500 micrograms per kilogram ($\mu\text{g}/\text{kg}$) PCE. This would correlate to a 93 percent reduction in the maximum documented soil concentration and a 95 percent overall contaminant mass reduction in source soil. The soil concentration for PCE within the treatment area will be used to evaluate the effectiveness of the remediation and attainment of the remedial action goal. Soil remediation will be considered complete when the concentration of PCE from each of the 16 verification soil samples within the treatment area is below the established soil remedial action goal.

3.4.3 Groundwater

Subsequent to completion of the *in-situ* soil blending remedial action, natural attenuation monitoring will be implemented on a quarterly basis to evaluate and document the progress of groundwater remediation at the Site. Groundwater monitoring will be initiated approximately 5 months following the completion of the soil remediation to allow for the new well installation and stabilization of the groundwater following *in-situ* enhanced reductive dechlorination of the source area. Modification to this monitoring program may be recommended, based on an evaluation of the results received.

A total of eight quarterly groundwater monitoring events will be conducted. As part of this task, seven existing monitoring wells (MW-1, MW-2, MW-6, MW-8, MW-9, MW-12, and MW-15) and two new monitoring wells (MW-3R and MW-16) will be sampled for VOCs (Method 8260). Monitoring wells MW-4, MW-5, MW-10, MW-11, MW-13, MW-14, and PZ-1 have historically not revealed notable VOC concentrations, and therefore those seven monitoring wells will not be included as part of the subsequent quarterly monitoring program. However, all 16 wells will be sampled as part of the

eighth (and assumed final) quarterly groundwater monitoring event prior to preparation of a Case Closure Request.

Monitoring wells MW-3R and MW-8 (near the treatment area) will also be sampled at least once for the following natural attenuation parameters: ethene/ethane/methane (Method 8015), dissolved iron (Method 8146), total organic carbon (Method 5310), nitrate+nitrite (Method 353.2), and sulfate (Method 300). One QA/QC duplicate groundwater sample and one QA/QC laboratory trip blank sample will be submitted for laboratory analysis of VOCs as part of each groundwater monitoring event. All monitoring wells will be sampled for VOCs (Method 8260).

Groundwater elevations will also be collected and documented from the quarterly groundwater monitoring events and will be used to plot equipotential contours of shallow groundwater. The resulting equipotential contours will be used to evaluate hydraulic gradients across the Site, to assist with the estimation of groundwater flow and solute transport analysis.

3.5 Level of Contaminated Groundwater Pre-Treatment Prior to Reinfiltration

The proposed electron donor soil blending activities at the subject property will not involve reinfiltration or reinjection of contaminated groundwater.

3.6 Types and Quantities of Substances Proposed for Soil Blending

The soil within the target treatment zone will be blended with approximately 32,000 pounds of ZVI, 5,500 pounds of carbon amendment and 15,000 to 30,000 gallons of water. The ZVI content will be equivalent to approximately 0.5 percent of the weight of the soil within the target treatment volume. Material safety data sheets (MSDS) for the carbon amendment and ZVI are provided in Appendix B. The carbon amendment is identified (in Appendix B) as "Anaerobic BioChem (ABC)," and the ZVI is identified as "ATOMET."

3.7 Locations Where Remedial Material will be Blended

The soil mixing zone will cover an approximate 5,500-square-foot area, as shown on Figure 2. The vertical treatment zone will extend to approximately 9 feet bgs. This area may be modified based on the results of the September 2016 sampling data.

3.8 Project Schedule

The following estimated milestone initiation dates are provided after receipt of WDNR approval to this Infiltration Approval Request:

Task	Anticipated Completion Date
In-Situ Soil Blending Event	November 2016
Initial Groundwater Monitoring Event ¹	April 2017

4. REFERENCES

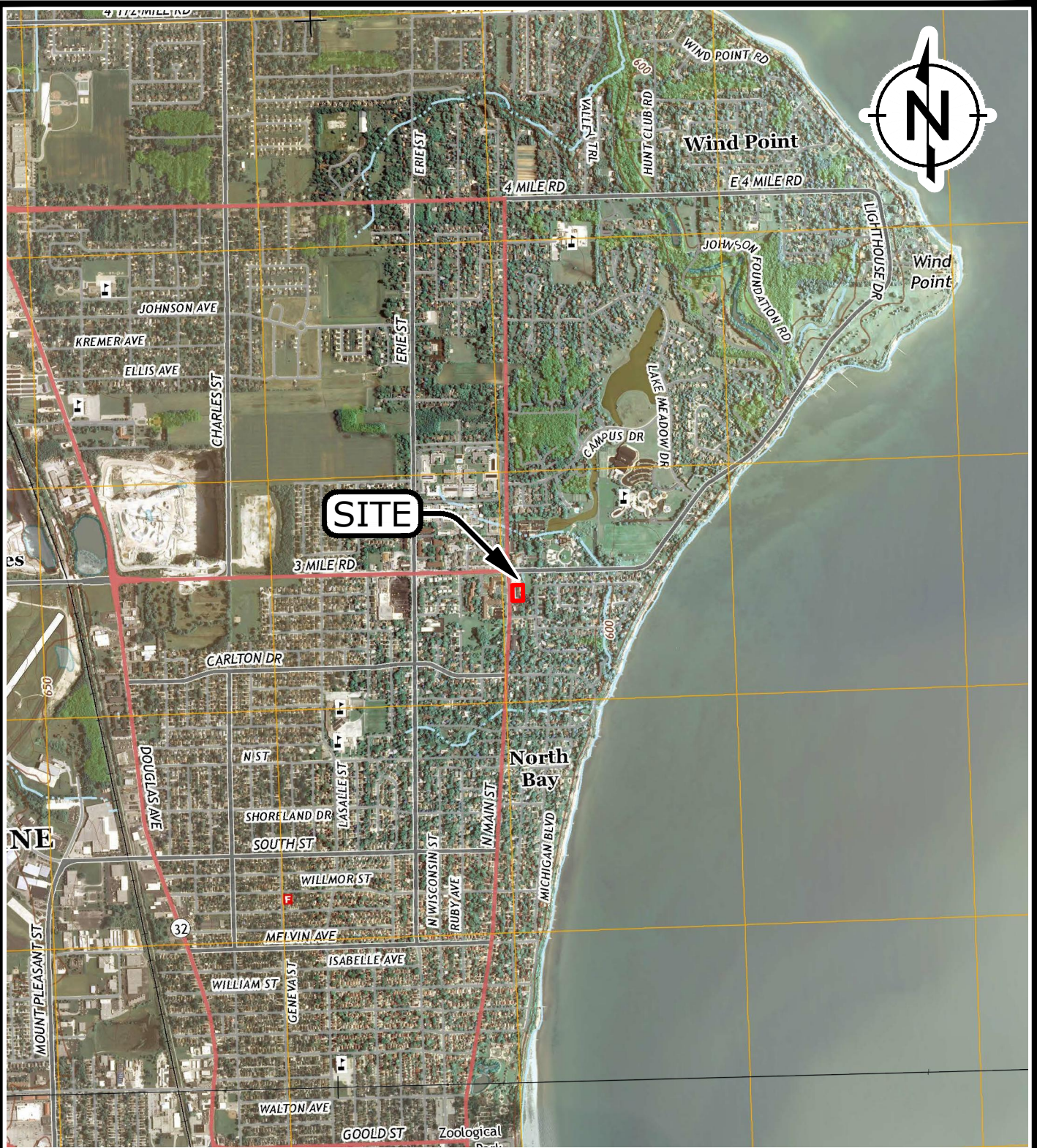
Ramboll Environ, 2016. *Proposal for Remedial Action Services, Former Express Cleaners Site, Racine, Wisconsin, BRRTS #02-52-547631, FID #252010000*. August 30.

Trotta, L.C. and R.D. Cotter, 1973. "Depth to Bedrock in Wisconsin." Madison, WI: Geological and Natural History, University of Wisconsin. 1 map (1:1,000,000)."

¹ Represents initial groundwater monitoring event in terms of post-blending quarterly groundwater monitoring.


FIGURES

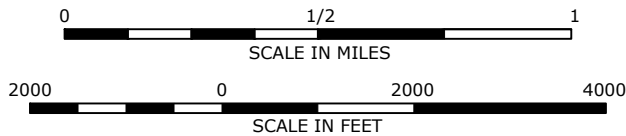
L:\Loop Project Files\00_CAD FILES\NO# 3941 North Main Street Racine Wisconsin\2016-09\01_Site Location Map.dwg



CONTOUR INTERVAL 10 FEET

LEGEND:

 PROPERTY BOUNDARY (APPROXIMATE)



QUADRANGLE LOCATION

Source: USGS 7.5 minute series (topographic)
 Quadrangle: Racine North, Wisconsin (2013), Racine South, Wisconsin (2013).



SITE LOCATION MAP
 EXPRESS CLEANERS, INC.
 3941 NORTH MAIN STREET
 RACINE, WISCONSIN

FIGURE
1



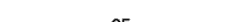

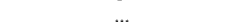
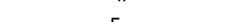











DRAFTED BY: CKL

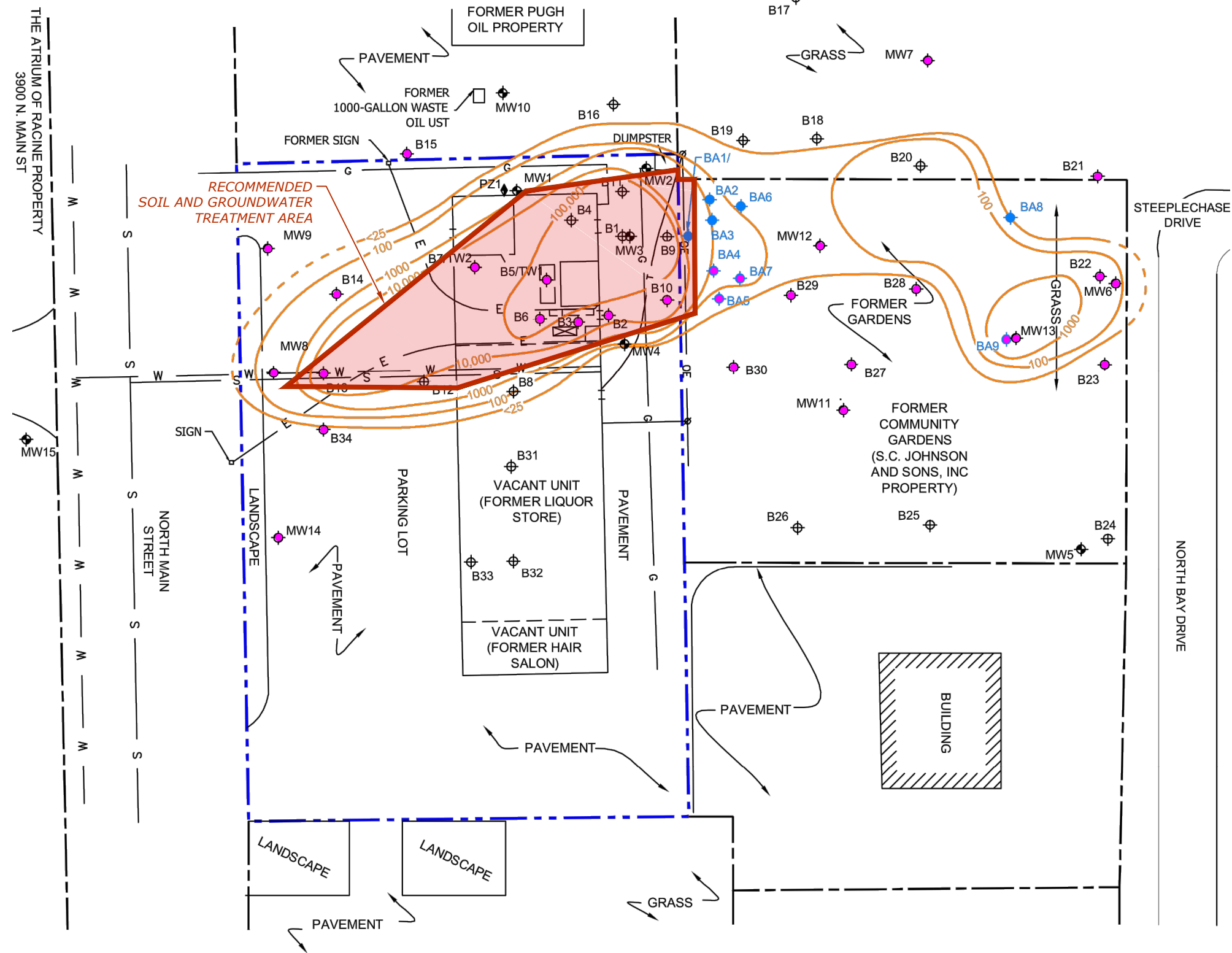
DATE: 9/27/16

21-41301A



LEGEND

-  SUBJECT PROPERTY BOUNDARY
-  ADJACENT PROPERTY BOUNDARIES
-  OVERHEAD ELECTRIC LINE
-  UNDERGROUND GAS LINE
-  WATERMAIN
-  BURIED ELECTRIC LINE
-  BURIED SANITARY SEWER
-  BURIED TELEPHONE LINE
-  UTILITY POLE
-  FORMER DRY CLEANING MACHINE LOCATION
-  EXISTING DRY CLEANING MACHINE
-  2" MONITORING WELL LOCATION AND IDENTIFICATION
-  BOREHOLE LOCATION AND IDENTIFICATION
-  HAND AUGER NEAR SURFACE SAMPLE LOCATION AND IDENTIFICATION
-  PIEZOMETER LOCATION AND IDENTIFICATION
-  1" TEMPORARY MONITORING WELL LOCATION AND IDENTIFICATION
-  UNSATURATED SOIL PCE ISOCONCENTRATION LINE IN MICROGRAMS PER KILOGRAM (DASHED WHERE INFERRED)



SOURCE: BASE FIGURE FROM REPORT BY BONESTROO, "ADDITIONAL INVESTIGATION ACTIVITIES, EXPRESS CLEANERS", MAY 22, 2011



RECOMMENDED SOIL AND GROUNDWATER TREATMENT AREA
 EXPRESS CLEANERS, INC.
 3941 NORTH MAIN STREET
 RACINE, WISCONSIN

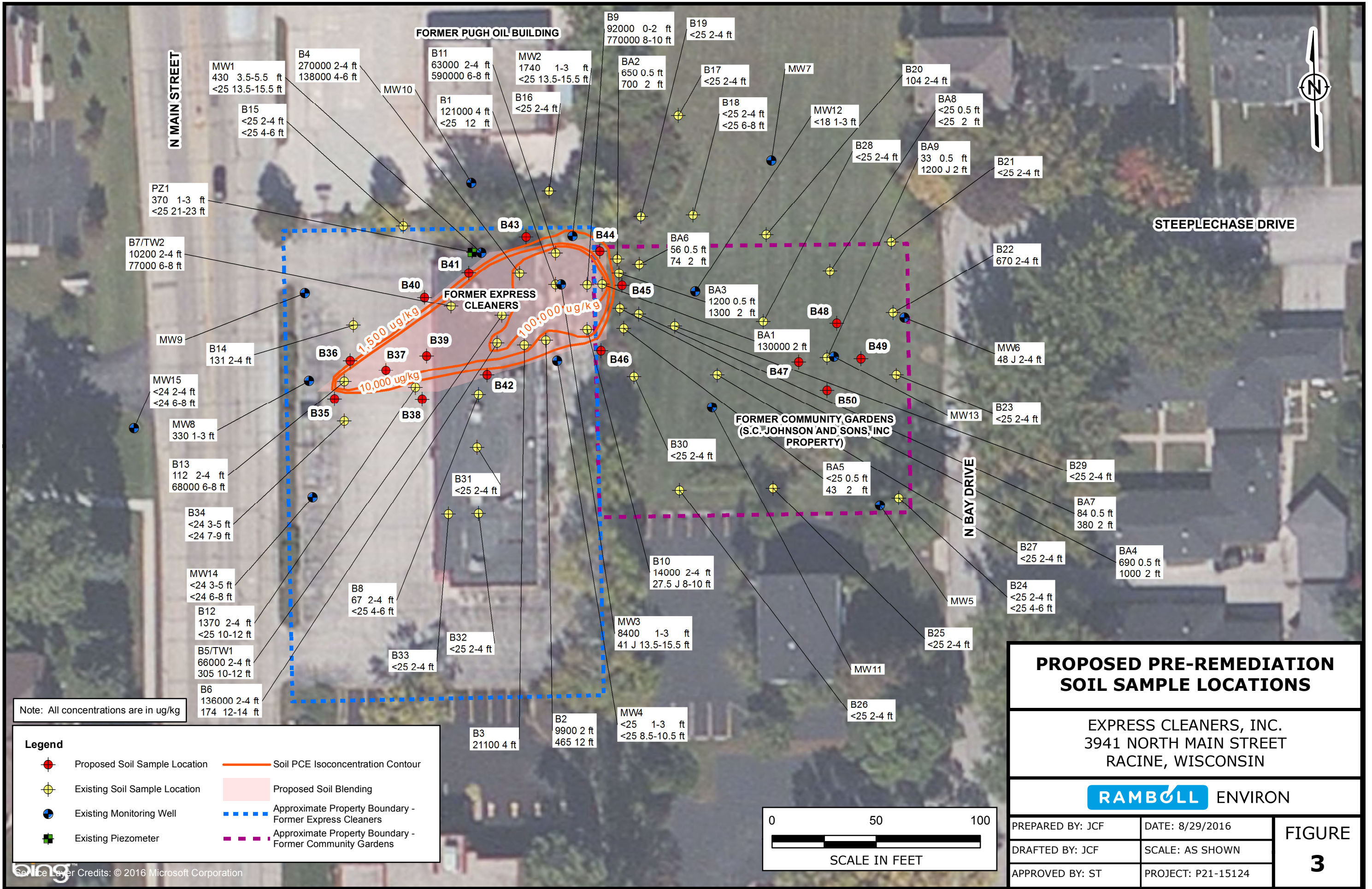
FIGURE
2

DRAFTED BY: CKL/APR DATE: 9/30/16

21-41301A

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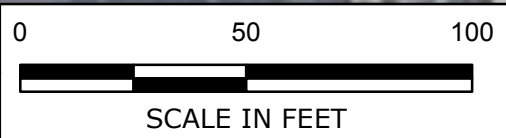
M:\Client Project Files\21-41301A_M&Z Express Cleaners Remedial Action\05 - Data + Drawings\GIS\WKD\Figure 1_Proposed Pre-Remediation Soil Sample Locations.mxd



Note: All concentrations are in ug/kg

Legend

- Proposed Soil Sample Location
- Existing Soil Sample Location
- Existing Monitoring Well
- Existing Piezometer
- Soil PCE Isoconcentration Contour
- Proposed Soil Blending
- Approximate Property Boundary - Former Express Cleaners
- Approximate Property Boundary - Former Community Gardens



PROPOSED PRE-REMEDIATION SOIL SAMPLE LOCATIONS

EXPRESS CLEANERS, INC.
 3941 NORTH MAIN STREET
 RACINE, WISCONSIN

RAMBOLL ENVIRON

PREPARED BY: JCF	DATE: 8/29/2016	FIGURE 3
DRAFTED BY: JCF	SCALE: AS SHOWN	
APPROVED BY: ST	PROJECT: P21-15124	

APPENDIX A

Request for Initial Coverage Under WPDES (WI-0046566-05,12/07)

**Request for Coverage Under
Wisconsin Pollutant Discharge Elimination System (WPDES)
Wastewater Discharge Permit (WI-0046566-06) for
Contaminated Groundwater from Remedial Action Operations**

(Revised 8 / 2012)

Please type or print required information, except for the signature.

I. GENERAL INFORMATION

A: FACILITY LOCATION INFORMATION		
Name of Facility / Project Former Express Cleaners Site	Official Representative Onsite Mr. James Small	Title Trustee
(Address or Highway / Road with Distance and Direction from nearest City) 3921-3941 N. Main Street	Telephone No.: (262) 898-9404	Fax # (262) 898-9399
City, State, Zip Code Racine, Wisconsin 53402	County Racine	Email Address jsmall@mallerpetersoncpa.com

B: Individual, parent company, or organization with direct control over the facility. Enter full official legal name of the owner or parent company, if there is one, the mailing address, and the name and title of the official representative (responsible party) signing this application <u>if he/she is located at address of parent company.</u>		
Parent Company/Owner Ehrlich Family Limited Partnership	Company Contact Mr. James Small	Title Trustee
Mailing Address - PO Box, Street, or Route P.O. Box 081007	Telephone No.: (262) 898-9404	Fax # (262) 898-9399
City, State, Zip Code Racine, Wisconsin 53402	Email Address jsmall@mallerpetersoncpa.com	

C: Consulting Firm for Groundwater		
Company Name Ramboll Environ US Corporation	Company Contact Mr. Scott Tarmann	Title Senior Manager
Mailing Address - PO Box, Street, or Route 175 N. Corporate Drive Suite 160	Telephone No.: (262) 901-0093	Fax # (262) 901-0079
City, State, Zip Code Brookfield, Wisconsin 53045	Email Address starmann@ramboll.com	

D. Name of Person to Receive Discharge Monitoring Report Forms from Department:

Mr. Scott Tarmann, (262) 901-0093, starmann@ramboll.com

E. Any Other Necessary Contact Person (name, phone, email)

Mr. Mark Mejac, (262) 901-0127, mmjec@ramboll.com

F. DNR Environmental Response & Repair Project Number, and DNR Project Manager name:

BRRTS No. 02-52-547631, Ms. Nancy Ryan

II. SPECIFIC INFORMATION ON PROJECT

A. Pollutants

1. The suspected **sources of the pollutants** (estimate of material release quantity and contributing activities) As indicated in the attached Ramboll Environ US Corporation Infiltration Approval Request.

2. Check **all fuel and waste types** suspected in the contamination at this site:

- | | | |
|--|--|--------------------------------------|
| <input type="checkbox"/> Unleaded Gasoline | <input type="checkbox"/> Jet Fuel | <input type="checkbox"/> Pesticides |
| <input type="checkbox"/> Leaded Gasoline | <input type="checkbox"/> Waste Oil | <input type="checkbox"/> Fertilizers |
| <input type="checkbox"/> Diesel Fuel | <input checked="" type="checkbox"/> Solvents | |
| <input type="checkbox"/> Heating Oil | <input type="checkbox"/> Other: | |

3. Check **all pollutants identified at this site**:

- | | |
|--|---|
| <input type="checkbox"/> BETX (Benzene, Ethylbenzene, Toluene, Xylene) | <input type="checkbox"/> Pesticides/Fertilizers |
| <input type="checkbox"/> PAHs (Polynuclear aromatic hydrocarbons) | <input type="checkbox"/> Total Recoverable Lead * |
| <input checked="" type="checkbox"/> VOCs (Volatile Organic Chemicals) | <input type="checkbox"/> Other _____ |

* Include upstream receiving water hardness analysis if lead is detected.

B. Treatment

1. **Describe the existing treatment system:**

In-Situ enhanced reductive dechlorination of chlorinated volatile compound impacted soil and groundwater through soil blending with the addition of carbon amendment and zero valent iron (ZVI).

Treatment Techniques Used

- | |
|--|
| <input type="checkbox"/> Pump & Treat
<input type="checkbox"/> Air stripping
<input type="checkbox"/> GAC (Granular Activated Carbon)
<input checked="" type="checkbox"/> Augmented Insitu Bioremediation
(with chemicals or nutrient addition)
<input type="checkbox"/> Other (describe) |
|--|

2. **If any cleaning, softening or descaling of the treatment system**

a. Identify any additives that are proposed or being used for cleaning, softening, or descaling of the treatment system. Provide Material Safety Data Sheets, and describe dosage.

Not applicable as no cleaning, softening, or descaling activities will be conducted. Material safety data sheets for carbon amendment and ZVI are provided as Appendix B of the Infiltration Approval Request.

b. Describe what is done to clean, soften or descale, and how often it is done.

c. Where is the reject water from cleaning and descaling discharged?

- | | | |
|---|---|--|
| <input type="checkbox"/> same discharge point as treated effluent | <input type="checkbox"/> sanitary sewer | <input type="checkbox"/> other (please describe) |
|---|---|--|

3. **Anticipated operating schedule** during the new permit term (2012 – 2017)

October/ November 2016

4. **Anticipated flowrate** (in gpm), and total volume of treated water to be discharged per month:

Approximately 37,500 pounds of ZVI and carbon amendment will be blended with soil in the treatment area during one mobilization, anticipated to be conducted over a 1-2 week timeframe.

5. **Effluent discharge point location:**

As indicated in the attached Ramboll Environ US Corporation Infiltration Approval Request.

6. Is an **air permit** from the DNR air management program required? If not, why not

Not required, as indicated in the attached Ramboll Environ US Corporation Infiltration Approval Request.

III. DISCHARGE MANAGEMENT PLAN UPDATE

Include the following information: As indicated in the attached Ramboll Environ US Corporation Infiltration Approval Request.

1. A **summary** of analytical results for contaminants **detected** at the site.
2. Results from the most recent **volatile organic compounds (VOC) scan**, including methods used and detection levels.

3. Results from an analysis of the **poly-nuclear aromatic hydrocarbons (PAHs)** shown on the right, including methods used and detection levels (unless PAH data are already submitted)

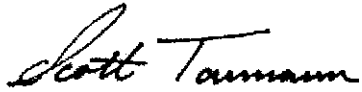
The lab needs to reach the lowest detection level achievable for each parameter because of the low limit for total PAHs. EPA test method SW-846 8310 is recommended.

benzo(a)anthracene	dibenzo(a,h)anthracene
benzo(a)pyrene	fluoranthene
benzo(b)fluoranthene	indeno(1,2,3-cd)pyrene
benzo(g,h,i)perylene	naphthalene
benzo(k)fluoranthene	phenanthrene
chrysene	pyrene


4. **Contaminants proposed for periodic monitoring** and demonstration of why any monitoring required in the permit should be exempted due to low level of contaminants in the wastewater discharge.
5. **Information to support request for any alternate effluent limit** for discharges to groundwater (Part 5 of permit) or request for temporary exemption for in-situ discharges (Part 6 of permit).
6. **Plans and specifications for the proposed treatment system** identifying sampling points. For supplier furnished package treatment units, only a flow diagram, design summary, and unit sizing calculations are required.
7. **General description of operations**, identifying operational tasks, who is responsible to do that task, and how frequently the task is done (particularly needed at pump & treat systems).
8. A **site plan** that identifies general land uses, underground storage tanks and pipelines, groundwater monitoring and recovery wells, contaminant plume definition and zone of influence, other known spills in the area, septic tanks and drain fields, separation distances to potable water supply wells and residences, and other pertinent information.
9. A **detailed map** of the discharge location, showing if discharge is direct or via a storm sewer or other conveyance. Indicate distance from site to discharge location and other impacted water bodies or wetlands.
 - If a city storm sewer is used, approval from the municipality is required.
 - If a new outfall structure is proposed, the plans should identify the outfall and incorporate appropriate erosion control methods. A permit for riprap projects (available at most DNR offices) should be obtained.
 - Wetland discharges are not allowed unless they meet wetland protection requirements of Ch. NR 103, Wis. Admin. Code.

III. SIGNATURES

A. Signature of person completing the form, attesting to the accuracy and completeness of the statements made.

	Senior Manager	9/29/2016
Name	Title	Date Signed
175 N. Corporate Drive Suite 160, Brookfield, WI 53045	starmann@ramboll.com	(262) 901-0093
Address	Email	Telephone Number

B. This application must be signed by the official representative of the permitted facility (responsible party) who is: the owner, the sole proprietor for a sole proprietorship, a general partner for a partnership, or by a ranking elected official or other duly authorized representative for a unit of government, or an executive officer of at least the level of vice president for a corporation, having overall responsibility for the operation of the facility. If the application is not signed, or is found to be incomplete, it will be returned.

JAMES C SMALL	TRUSTEE
Typed or Printed Name of Official Representative	Title
	9-30-16
Signature of Official Representative	Date Signed

Submit this General Permit Request for Coverage:

Department of Natural Resources,
 Water Permits Central Intake - WT/3,
 P.O. Box 7185,
 Madison, WI 53707-7185.

The decision on whether to cover this discharge under the remediation general permit will be made by regional DNR wastewater staff. Upon receipt in Madison, this application will be forwarded to the appropriate regional staff person.

A copy of the submittal should also be sent to the Department Remediation & Redevelopment Project Manager.
 Watershed Central:\General Permits\Reissue Docs\Grw Remediation\Request For Coverage 2012.doc

APPENDIX B

Material Safety Data Sheets for Proposed Chemical Amendments

Material Safety Data Sheet

ATOMET

QMP

21S/24/25/28/29/30/50/55/59/669/67/70/75/95/95SP/414/SURV95



Section 1. Chemical product and company identification

Common name : ATOMET 21S, ATOMET 24, ATOMET 25, ATOMET 28, ATOMET 29, ATOMET 30, ATOMET 50, ATOMET 55, ATOMET 59, ATOMET 669, ATOMET 67, ATOMET 68, ATOMET 70, ATOMET 75, ATOMET 86, ATOMET 95, ATOMET 95SP, ATOMET 414, ATOMET SURV95

Material uses : Powdered metallurgy.

Supplier/Manufacturer :	Quebec Metal Powders Ltd 1655 Marie-Victorin Sorel-Tracy, Québec Canada, J3R 4R4 Tel : 450-746-5050	QMP Metal Powders (Suzhou) D-008, No. 1 Su Hua road Suzhou Industrial Park Suzhou, China, 215021 Tel: 86-512-67613161	QMP METAL POWDERS GmbH Postfach 100253 D-41002 Mönchengladbach Germany Tel: 49-2161-352-800 Fax: 49-2161-352-8017
--------------------------------	---	--	---

In case of emergency : America : +1-450-746-5050
Europe : +49-2161-352-800
Asia: +86-512-67613161

Section 2. Hazards identification

Physical state : Solid. (Powder.)

Emergency overview : No specific hazard.

USE WITH CARE.

Follow good Industrial hygiene practice.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes : May cause eye irritation.

Skin : No known significant effects or critical hazards.

Inhalation : May cause respiratory tract irritation.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
Mutagenic effects: Not available.

Teratogenic effects: Not available.

Medical conditions aggravated by over-exposure : Repeated exposure of the eyes to a low level of dust can produce eye irritation.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

Ingredient name	Classification						
	UN number	IDLH	H	F	R	Special CAS number	% by weight
North America Iron	Not regulated.	-	0	0	1	7439-89-6	> 90
Europe Iron	Classification					EC number	
	Not classified.					231-096-4	

See section 16 for the full text of the R-phrases declared above

This material is classified as not hazardous under OSHA regulations in the United States, the WHMIS in Canada, the NOM-018-STPS-2000 in Mexico, Brazil NBR 14725:2001, the European Directives and in any other country in Asia/Pacific, Africa or the Middle-East.

See Sections 8, 11 and 14 for details.

Date of Issue : 03/30/2008
Authored by KEMIKA

Page: 1/5

Approved by ATRION

**ATOMET**

21S/24/26/28/29/30/50/55/59/669/67/68/70/75/86/95/95SP/414/SURV95

Section 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention if irritation occurs.
- Skin contact** : Wash with soap and water. Get medical attention if irritation occurs.
- Inhalation** : Move person to fresh air. Get medical attention if breathing difficulty persists.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Notes to physician** : No specific antidote.

Section 5. Fire fighting measures

- Flammability of the product** : Non-flammable.
- Fire-fighting media and instructions** : Use a fog nozzle to spray water. SEE SPECIAL REMARKS ON FIRE HAZARDS.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment.
- Special remarks on fire hazards** : As with any finely granulated product, (i.e flour) a risk of fire is present should the material be dispersed in air and exposed to a source of ignition. Fine powder forms flammable and explosive mixtures in air.

Section 6. Accidental release measures

- In case of a major spill**
- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8).
- Environmental precautions** : Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal. Avoid creating dusty conditions and prevent wind dispersal.

Section 7. Handling and storage

- Handling** : Avoid breathing dusts. Avoid prolonged contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container in a ventilated area.
- Storage** : Keep container closed. Keep container in a ventilated area.

Section 8. Exposure controls, personal protection

- Engineering controls** : Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal protection

- Eyes** : Safety eyewear complying with an approved standard should be used and selected based on the task being performed and the risks involved (avoid exposure to liquid splashes, mists, gases or dusts). Where there is a risk of exposure to high velocity particles safety glasses or face shield complying with an approved standard should be used to protect against impact. Where there is a risk of exposure to dusts, goggles should be used. Recommended: Safety glasses.
- Respiratory** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.



**ATOMET**

21S/24/25/28/29/30/50/55/59/669/67/68/70/75/86/95/95SP/414/SURV95

Hands : Recommended: Leather gloves.**Skin/Body** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
Recommended: Overall.**Personal protection in case of a large spill** : Safety glasses and or goggles and or face shield should be used depending on the task being performed. Leather gloves. Overall. Boots. Wear MSHA/NIOSH approved respiratory apparatus or equivalent if required.**Product name** Iron
Exposure limits
ACGIH TLV (United States).
TWA: 10 mg/m³ 8 hour(s). Form: Inhalable particle.

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties**Physical state** : Solid. (Powder.)
Color : Gray.
Melting/freezing point : 1535°C (2795°F)
Specific gravity : 7.86
Bulk density : 2.4 to 3.2 g/cm³
Dispersibility properties : Not dispersible in cold water, hot water.
Solubility : Insoluble in cold water, hot water.**Section 10. Stability and reactivity****Stability and reactivity** : The product is stable.
Incompatibility with various substances : Reactive with oxidizing agents and reducing agents.
Hazardous polymerization : Will not occur.**Section 11. Toxicological information****Acute Effects****Eyes** : May cause eye irritation.
Skin : No known significant effects or critical hazards.
Inhalation : May cause respiratory tract irritation.
Ingestion : No known significant effects or critical hazards.
Potential chronic health effects : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
Mutagenic effects: Not available.
Teratogenic effects: Not available.**Section 12. Ecological information****Products of degradation** : Some metallic oxides.**Section 13. Disposal considerations****Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements.

Consult your local or regional authorities.



ATOMET

21S/24/25/28/29/30/50/55/59/689/67/68/70/75/86/95/95SP/414/SURV95

Section 14. Transport information

Classification

ADN /ADR /TDG /DOT/ IMDG/ IATA: Not regulated.

Label

Not applicable.

Additional information

Not applicable.

Section 15. Regulatory information

United States

HCS Classification

: Not regulated.

U.S. Federal regulations

: TSCA : All components listed.
 SARA 302/304/311/312 extremely hazardous substances: No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 302/304/311/312 hazardous chemicals: No products were found.
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
 Clean Water Act (CWA) 307: No products were found.
 Clean Water Act (CWA) 311: No products were found.
 Clean Air Act (CAA) 112 accidental release prevention: No products were found.
 Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
 Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations

: Pennsylvania RTK Sulfur alloyed: (generic environmental hazard)
 Massachusetts RTK: Sulfur alloyed
 New Jersey: Sulfur alloyed
 No products were found.

Canada

WHMIS (Canada)

: Not regulated.
 DSL : All components listed.

Mexico

Classification

:  **Flammability**
Health **Reactivity**
Special

EU regulations

Product use

: Classification and labelling have been performed according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and the intended use.
 - Industrial applications.

International regulations

International lists

: This product is not listed on major international inventories or exempted from being listed in Australia (AICS), Europe (EINECS/ELINCS), Korea (TCCL), Japan (METI/MOL), Philippines (RA6969).

ATOMET
21S/24/25/28/29/30/50/55/59/660/67/68/70/75/88/95/95SP/414/SURV95

Section 16. Other information

Label requirements : USE WITH CARE.

Hazardous Material Information System (U.S.A.)	Health	0
	Fire hazard	3
	Reactivity	1
	Personal protection	C

National Fire Protection Association (U.S.A.)		Flammability
	Health	Instability
	Special	

Full text of R-phrases referred to in sections 2 and 3 - Europe : Not applicable.

Full text of classifications referred to in sections 2 and 3 - Europe : Not applicable.

References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Official Mexican Standards NOM-018-STPS-2000 and NOM-004-SCT2-1994. Brazil NBR 14725:2001.

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Version : 2

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Anaerobic BioChem (ABC)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Anaerobic BioChem
GENERAL USE: Bioremediation of halogenated organics and metals

MANUFACTURER:

Redox Tech, LLC
200 Quade Drive
Cary, NC 27513
919-678-0140

EMERGENCY TELEPHONE:

Within USA and Canada: 1-800-424-9300
+1 703-527-3887 (collect calls accepted)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product is generally recognized as safe. May cause irritation exposure to eyes. Long term contact to skin may cause some drying and minor irritation.

3. COMPOSITION INFORMATION ON INGREDIENTS

Proprietary mixture of fatty acids, glycerol, lactates and dipotassium phosphate.

4. FIRST AID MEASURES

EYES: Immediately flush with water for up to 15 minutes. If irritation persists, seek medical attention.

SKIN: Rinse with water. Irritation is unlikely, but if irritation occurs or persists, seek medical attention.

INGESTION: Generally safe to ingest but not recommended.

INHALATION: No first aid required.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Deluge with water

FIRE/EXPLOSION HAZARDS: Product is combustible only at temperatures above 600C

FIRE FIGHTING PROCEDURES: Use flooding with plenty of water, carbon dioxide or other inert gasses. Wear full protective clothing and self-contained breathing apparatus. Deluging with water is the best method to control combustion of the product.

FLAMMABILITY LIMITS: non-combustible

SENSITIVITY TO IMPACT: non-sensitive

SENSITIVITY TO STATIC DISCHARGE: non-sensitive

6. ACCIDENTAL RELEASE MEASURES

Confine and collect spill. Transfer to an approved DOT container and properly dispose. Do not dispose of or rinse material into sewer, stormwater or surface water. Discharge of product to surface water could result in depressed dissolved oxygen levels and subsequent biological impacts.

7. HANDLING AND STORAGE

HANDLING: Protective gloves and safety glasses are recommended.

STORAGE: Keep dry. Use first in, first out storage system. Keep container tightly closed when not in use. Avoid contamination of opened product. Avoid contact with reducing agents.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
ABC	NA	NA	NA

ENGINEERING CONTROLS: None are required

PERSONAL PROTECTIVE EQUIPMENT

EYES and FACE: Safety glasses recommended

RESPIRATOR: none necessary

PROTECTIVE CLOTHING: None necessary

GLOVES: rubber, latex or neoprene recommended but not required

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	none to mild pleasant organic odor
Appearance:	clear to light amber
Auto-ignition Temperature	Non-combustible
Boiling Point	>600 C
Melting Point	NA
Density	1.15 gram/cc
Solubility	infinite
pH	7-9

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Do not contact with strong oxidizers

STABILITY: product is stable

POLYMERIZATION: will not occur

INCOMPATIBLE MATERIALS: strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS:

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

A: General Product Information

Acute exposure may cause mild skin and eye irritation.

B: Component Analysis - LD50/LC50

No information available.

B: Component Analysis - TDLo/LDLo

TDLo (Oral-Man) none

Carcinogenicity

A: General Product Information

No information available.

B: Component Carcinogenicity

Product is not listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Epidemiology

No information available.

Neurotoxicity

No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Discharge to water may cause depressed dissolved oxygen and subsequent ecological stresses

Environmental Fate

No potential for food chain concentration

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Material is not considered hazardous, but consult with local, state and federal agencies prior to disposal to ensure all applicable laws are met.

14. TRANSPORT INFORMATION

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

Shipping Name: Not Regulated
 Hazard Class: Not Classified
 UN/NA #: Not Classified
 Packing Group: None
 Required Label(s): None

50th Edition International Air Transport Association (IATA):

Not hazardous and not regulated

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

Material is not regulated under IMDG

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III

SECTION 311 No Hazard for Immediate health Hazard

SECTION 312 No Threshold Quantity

SECTION 313 Not listed

CERCLA NOT REGULATED UNDER CERCLA

TSCA NOT REGULATED UNDER TSCA

CANADA (WHIMS): NOT REGULATED

16. OTHER INFORMATION

HMIS:

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	E

E: Safety Glasses, gloves

APPENDIX C

Soil and Groundwater Analytical Results from Previous Investigations

Table 2 Soil Sample Field Screening and Laboratory Analytical Results, Express Cleaners, Racine, Wisconsin

Borehole Number	Sample Number	Date Sampled	Sample Depth (feet)	PID Response (iu)		Description	Detected Volatile Organic Compounds (µg/kg)				Total Organic Carbon (milligrams per kilogram)	Bulk Density (pounds per cubic feet)
				Rae Systems Meter (Parts Per Billion)	Thermo Instruments Meter (Parts Per Million)		cis 1,2-Dichloroethene (cis 1,2-DCE)	trans-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Soil to Groundwater							60	110	4.1	3.7		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Ingestion							156,000	313,000	1,230	160		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Fugitive Dust							7.74x10 ¹¹	7.74x10 ¹¹	3.25x10 ⁸	1.71x10 ⁶		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Inhalation of Volatiles							NE	NE	2100	14		
PZ1	PZ1-1	03/27/07	1-3	6703	1	Silty sand, Eolian deposits	<25	<25	370	<25	-	-
	PZ1-2	03/27/07	3.5-5.5	4831	1	Silty sand, Eolian deposits	-	-	-	-	-	-
	PZ1-3	03/27/07	6-8	5648	1	Silty clay, till	-	-	-	-	-	-
	PZ1-4	03/27/07	8.5-10.5	5123	1	Silty clay, till	-	-	-	-	-	-
	PZ1-5	03/27/07	11-13	3958	0	Silty clay, till	-	-	-	-	-	-
	PZ1-6	03/27/07	13.5-15.5	3869	1	Silty clay, till	-	-	-	-	-	-
	PZ1-7	03/27/07	16-18	4326	0	Silty clay, till	-	-	-	-	-	-
	PZ1-8	03/27/07	18.5-20.5	5260	0	Silty clay, till	-	-	-	-	-	-
	PZ1-9	03/27/07	21-23	1846	0	Silty clay, till	<25	<25	<25	<25	-	-
	PZ1-10	03/27/07	23.5-25.5	1891	0	Silty clay, till	-	-	-	-	-	-
	PZ1-11	03/27/07	26-28	1935	0	Silty clay, till	-	-	-	-	-	-
	PZ1-12	03/27/07	28-30	1897	0	Silty clay, till	-	-	-	-	-	-
MW1	MW1-1	03/27/07	1-3	2925	1.5	Silty sand, Eolian deposits	-	-	-	-	-	-
	MW1-2	03/27/07	3.5-5.5	1748	3	Silty sand, Eolian deposits	<25	<25	430	<25	-	-
	MW1-3	03/27/07	6-8	1369	0	Silty clay, till	-	-	-	-	-	-
	MW1-4	03/27/07	8.5-10.5	2193	0	Silty clay, till	-	-	-	-	-	-
	MW1-5	03/27/07	11-13	1989	0	Silty clay, till	-	-	-	-	-	-
	MW1-6	03/27/07	13.5-15.5	1884	0	Silty clay, till	<25	<25	<25	<25	-	-
MW2	MW2-1	03/27/07	1-3	9989	4	Silty sand, Eolian deposits	38 "J"	<25	1740	58 "J"	-	-
	MW2-2	03/27/07	3.5-5.5	1709	1	Silty sand, Eolian deposits	-	-	-	-	-	-
	MW2-3	03/27/07	6-8	2401	2	Silty clay, till	-	-	-	-	-	-
	MW2-4	03/27/07	8.5-10.5	1492	1	Silty clay, till	-	-	-	-	-	-
	MW2-5	03/27/07	11-13	2317	2	Silty clay, till	-	-	-	-	-	-
	MW2-6	03/27/07	13.5-15.5	2147	1	Silty clay, till	<25	<25	<25	<25	-	-
MW3	MW3-1	03/27/07	1-3	32,000	10	Silty sand, Eolian deposits	124	<25	8400	113	-	-
	MW3-2	03/27/07	3.5-5.5	27,000	5	Silty sand, Eolian deposits	-	-	-	-	-	-
	MW3-3	03/27/07	6-8	2713	2	Silty clay, till	-	-	-	-	-	-
	MW3-4	03/27/07	8.5-10.5	2221	1	Silty clay, till	-	-	-	-	-	-
	MW3-5	03/27/07	11-13	1436	0	Silty clay, till	-	-	-	-	-	-
	MW3-6	03/27/07	13.5-15.5	1605	1	Silty clay, till	<25	<25	41 "J"	<25	-	-
MW4	MW4-1	03/27/07	1-3	1955	3	Silty sand, Eolian deposits	<25	<25	<25	<25	-	-
	MW4-2	03/27/07	3.5-5.5	1424	2	Silty sand, Eolian deposits	-	-	-	-	-	-
	MW4-3	03/27/07	6-8	1087	3	Silty clay, till	-	-	-	-	-	-
	MW4-4	03/27/07	8.5-10.5	1102	2	Silty clay, till	<25	<25	<25	<25	-	-
	MW4-5	03/27/07	11-13	1677	3	Silty clay, till	-	-	-	-	-	-
	MW4-6	03/27/07	13.5-15.5	1097	2	Silty clay, till	-	-	-	-	-	-
MW5		01/04/08	Blind drilled to 13 feet below grade									
MW6	MW6-1	01/04/08	0-2	-	3	Silty sand, some clay, topsoil, fill	-	-	-	-	-	-
	MW6-2	01/04/08	2-4	-	6	Silty sand, Eolian	<25	<25	48 "J"	<25	-	-
	MW6-3	01/04/08	4-6	-	6	Silty clay, till	-	-	-	-	-	-
			Blind drilled to 13 feet below grade									
MW7		01/04/08	Blind drilled to 13 feet below grade									
MW8	MW8-1	01/04/08	1-3	-	18	Silty sand, Eolian	<25	<25	330	<25	-	-
	MW8-2	01/04/08	3-5	-	21	Silty sand, Eolian	-	-	-	-	-	-
	MW8-3	01/04/08	5-7	-	34	Silty sand, Eolian	-	-	-	-	-	-
	MW8-4	01/04/08	7-9	-	43	Silty sand, Eolian	-	-	-	-	-	-
	MW8-5	01/04/08	9-11	-	21	Silty clay, till	-	-	-	-	-	-
			Blind drilled to 12.5 feet below grade									
MW9		01/04/08	Blind drilled to 12.5 feet below grade									
MW10		01/04/08	Blind drilled to 12.5 feet below grade									
MW11	MW11-1	05/14/09	1-3	-	0	Topsoil, silty sand, Eolian	-	-	-	-	-	-
	MW11-2	05/14/09	3.5-5.5	-	0	Silty sand, Eolian	-	-	-	-	-	-
	MW11-3	05/14/09	6-8	-	1	Silty clay, till	-	-	-	-	-	-
	MW11-4	05/14/09	8.5-10.5	-	0.8	Silty clay, till	-	-	-	-	-	-
	MW11-5	05/14/09	11-13	-	0.8	Silty clay, till	-	-	-	-	-	-
MW12	MW12-1	05/14/09	1-3	-	1	Topsoil, silty sand, Eolian	<24	<29	<18	<20	-	-
	MW12-2	05/14/09	3.5-5.5	-	0.6	Silty sand, Eolian	-	-	-	-	-	-
	MW12-3	05/14/09	6-8	-	2	Silty clay, till	-	-	-	-	-	-
	MW12-4	05/14/09	8.5-10.5	-	2	Silty clay, till	-	-	-	-	-	-
	MW12-5	05/14/09	11-13	-	1	Silty clay, till	-	-	-	-	-	-
MW13	MW13-1	05/14/09	1-3	-	0	Topsoil, silty sand, Eolian	-	-	-	-	-	-
	MW13-2	05/14/09	3.5-5.5	-	0	Silty sand, Eolian	-	-	-	-	-	-
	MW13-3	05/14/09	6-8	-	0	Silty sand, Eolian	-	-	-	-	-	-
	MW13-4	05/14/09	8.5-10.5	-	0	Silty clay, till	-	-	-	-	-	-
	MW13-5	05/14/09	11-13	-	0	Silty clay, till	-	-	-	-	-	-
MW14	MW14-1	04/01/11	1-3	-	0.6	Silty Sand	-	-	-	-	-	-
	MW14-2	04/01/11	3-5	-	2.1	Silty Sand	<14	<22	<24	<17	-	-
	MW14-3	04/01/11	5-7	-	1.2	Silty Sand, till	-	-	-	-	-	-
	MW14-3.5	04/01/11	6-8	-	1.4	Silty Sand, till	<14	<22	<24	<17	-	-
	MW14-4	04/01/11	7-9	-	1.5	Silty Clay, till	-	-	-	-	-	-
	MW14-5	04/01/11	9-11	-	0.8	Silty Clay, till	-	-	-	-	-	-
	MW14-6	04/01/11	11-13	-	0.4	Silty Clay, till	-	-	-	-	-	-
MW14-7	04/01/11	13-15	-	1	Silty Clay, till	-	-	-	-	-	-	

Table 2 Soil Sample Field Screening and Laboratory Analytical Results, Express Cleaners, Racine, Wisconsin

Borehole Number	Sample Number	Date Sampled	Sample Depth (feet)	PID Response (iu)		Description	Detected Volatile Organic Compounds (µg/kg)				Total Organic Carbon (milligrams per kilogram)	Bulk Density (pounds per cubic feet)
				Rae Systems Meter (Parts Per Billion)	Thermo Instruments Meter (Parts Per Million)		cis 1,2-Dichloroethene (cis 1,2-DCE)	trans-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Soil to Groundwater							60	110	4.1	3.7		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Ingestion							156,000	313,000	1,230	160		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Fugitive Dust							7.74x10 ¹¹	7.74x10 ¹¹	3.25x10 ⁸	1.71x10 ⁶		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Inhalation of Volatiles							NE	NE	2100	14		
MW15	MW15-1	04/01/11	0-2	-	1.4	Sand	-	-	-	-	-	-
	MW15-2	04/01/11	2-4	-	1.7	Sand	<14	<22	<24	<17	-	-
	MW15-3	04/01/11	4-6	-	2.5	Sand	-	-	-	-	-	-
	MW15-4	04/01/11	6-8	-	1.6	Sand, Silty Clay	<14	<22	<24	<17	-	-
	MW15-5	04/01/11	8-10	-	1.7	Silty Clay, till	-	-	-	-	-	-
	MW15-6	04/01/11	10-12	-	1.8	Silty Clay, till	-	-	-	-	-	-
	MW15-7	04/01/11	12-14	-	0	Silty Clay, till	-	-	-	-	-	-
B1*	B1-2	04/12/06	4	-	0	Clay	461	<5	121,000	610	-	-
	B1-6	04/12/06	12	-	0	Clay	<5	<5	<25	<5	-	-
B2*	B2-2	04/12/06	2	-	0	Sand	<5	<5	9900	<250	-	-
	B2-6	04/12/06	12	-	0	Clay	26	<5	465	<5	-	-
B3*	B3-2	04/12/06	4	-	0	Clay	6	<5	21,100	346	-	-
B4	B4-1	03/28/07	0-2	144,000	146	Silty sand, Eolian deposits	-	-	-	-	-	-
	B4-2	03/28/07	2-4	199,000	451	Silty sand, Eolian deposits	<2500	<2500	270,000	<2500	-	-
	B4-3	03/28/07	4-6	164,000	110	Silty sand, Eolian deposits	<2500	<2500	138,000	<2500	-	-
	B4-4	03/28/07	6-8	147,000	126	Silty sand, Eolian deposits	-	-	-	-	-	-
	B4-5	03/28/07	8-10	3159	1	Silty clay, till	-	-	-	-	-	-
	B4-6	03/28/07	10-12	9086	13	Silty clay, till	-	-	-	-	-	-
	B4-7	03/28/07	12-14	4266	1	Silty clay, till	-	-	-	-	-	-
	B4-8	03/28/07	14-16	9877	5	Silty clay, till	<25	<25	270	<25	-	-
B5/TW1	B5-1	03/28/07	0-2	103,000	71	Silty sand, Fill	-	-	-	-	-	-
	B5-2	03/28/07	2-4	185,000	88	Silty sand, Fill	<2500	<2500	66,000	<2500	-	-
	B5-3	03/28/07	4-6	22,000	14	Silty sand, Eolian deposits	-	-	-	-	-	-
	B5-4	03/28/07	6-8	79,000	47	Silty sand, Eolian deposits	-	-	-	-	-	-
	B5-5	03/28/07	8-10	2919	1	Silty clay, till	-	-	-	-	-	-
	B5-6	03/28/07	10-12	7106	4	Silty clay, till	1390	27.2 "J"	305	33 "J"	-	-
	B5-7	03/28/07	12-14	4607	3	Silty clay, till	-	-	-	-	-	-
	B5-8	03/28/07	14-16	4560	2	Silty clay, till	-	-	-	-	-	-
B6	B6-1	03/28/07	0-2	109,000	71	Silty sand, Fill	-	-	-	-	-	-
	B6-2	03/28/07	2-4	199,000	338	Silty sand, Fill	<2500	<2500	136,000	<2500	-	-
	B6-3	03/28/07	4-6	40,000	32	Silty sand, Eolian deposits	-	-	-	-	-	-
	B6-4	03/28/07	6-8	45,000	103	Silty sand, Eolian deposits	-	-	-	-	-	-
	B6-5	03/28/07	8-10	4316	5	Silty clay, till	-	-	-	-	-	-
	B6-6	03/28/07	10-12	5539	5	Silty clay, till	-	-	-	-	-	-
	B6-7	03/28/07	12-14	6324	6	Silty clay, till	<25	<25	174	<25	-	-
	B6-8	03/28/07	14-16	4915	5	Silty clay, till	-	-	-	-	-	-
B7/TW2	B7-1	03/28/07	0-2	4925	16	Silty sand, Eolian deposits	-	-	-	-	-	-
	B7-2	03/28/07	2-4	37,800	55	Silty sand, Eolian deposits	108	<25	10,200	87	-	-
	B7-3	03/28/07	4-6	6168	13	Silty sand, Eolian deposits	-	-	-	-	-	-
	B7-4	03/28/07	6-8	28,000	45	Silty sand, Eolian deposits	870	<25	77,000	650	-	-
	B7-5	03/28/07	8-10	4704	9	Silty clay, till	-	-	-	-	-	-
	B7-6	03/28/07	10-12	4311	4	Silty clay, till	-	-	-	-	-	-
	B7-7	03/28/07	12-14	2647	5	Silty clay, till	-	-	-	-	-	-
	B7-8	03/28/07	14-16	4350	4	Silty clay, till	<25	<25	<25	<25	-	-
B8	B8-1	03/28/07	0-2	2045	1	Silty sand, fill	-	-	-	-	-	-
	B8-2	03/28/07	2-4	3083	1	Silty sand, fill	<25	<25	67	<25	4200	147
	B8-3	03/28/07	4-6	3248	0	Silty sand, Eolian deposits	<25	<25	<25	<25	-	-
	B8-4	03/28/07	6-8	3239	1	Silty sand, Eolian deposits	-	-	-	-	-	-
	B8-5	03/28/07	8-10	2941	0	Silty sand, silty clay, till	-	-	-	-	-	-
	B8-6	03/28/07	10-12	3152	1	Silty sand, silty clay, till	-	-	-	-	-	-
	B8-7	03/28/07	12-14	2633	2	Silty clay, till	-	-	-	-	-	-
	B8-8	03/28/07	14-16	4112	2	Silty clay, till	<25	<25	<25	<25	-	-
B9	B9-1	03/29/07	0-2	199,000	170	Silty sand, fill	17,400	<2500	92,000	11,500	-	-
	B9-2	03/29/07	2-4	199,000	202	Silty sand, Eolian deposits	-	-	-	-	-	-
	B9-3	03/29/07	4-6	20,000	25	Silty sand, Eolian deposits	-	-	-	-	-	-
	B9-4	03/29/07	6-8	159,000	167	Silty clay, till	-	-	-	-	-	-
	B9-5	03/29/07	8-10	199,000	323	Silty clay, till	<5000	<5000	770,000	<5000	-	-
	B9-6	03/29/07	10-12	5014	3	Silty clay, till	-	-	-	-	-	-
	B9-7	03/29/07	12-14	3516	1	Silty clay, till	-	-	-	-	-	-
	B9-8	03/29/07	14-16	3311	1	Silty clay, till	<25	<25	<25	<25	-	-
B10	B10-1	03/29/07	0-2	8315	7	Silty sand, fill	-	-	-	-	-	-
	B10-2	03/29/07	2-4	9214	8	Silty sand, fill	<2500	<2500	14,000	<2500	-	-
	B10-3	03/29/07	4-6	4275	1	Silty sand, Eolian deposits	-	-	-	-	-	-
	B10-4	03/29/07	6-8	3250	1	Silty clay, till	-	-	-	-	-	-
	B10-5	03/29/07	8-10	3074	1	Silty clay, till	<25	<25	27.5 "J"	<25	-	-
	B10-6	03/29/07	10-12	2343	1	Silty clay, till	-	-	-	-	-	-
	B10-7	03/29/07	12-14	1256	2	Silty clay, till	-	-	-	-	-	-
	B10-8	03/29/07	14-16	2543	1	Silty clay, till	-	-	-	-	-	-
B11	B11-1	03/29/07	0-2	82,000	68	Silty sand, fill	-	-	-	-	-	-
	B11-2	03/29/07	2-4	115,000	156	Silty sand, Eolian deposits	<1250	<1250	63,000	<1250	-	-
	B11-3	03/29/07	4-6	9217	8	Silty sand, Eolian deposits	-	-	-	-	-	-
	B11-4	03/29/07	6-8	199,000	350	Silty clay, till	<1250	<1250	590,000	2760 "J"	-	-
	B11-5	03/29/07	8-10	27,000	17	Silty clay, till	-	-	-	-	-	-
	B11-6	03/29/07	10-12	7464	4	Silty clay, till	-	-	-	-	-	-
	B11-7	03/29/07	12-14	4075	3	Silty clay, till	-	-	-	-	-	-
	B11-8	03/29/07	14-16	3000	3	Silty clay, till	-	-	-	-	-	-

Table 2 Soil Sample Field Screening and Laboratory Analytical Results, Express Cleaners, Racine, Wisconsin

Borehole Number	Sample Number	Date Sampled	Sample Depth (feet)	PID Response (iu)		Description	Detected Volatile Organic Compounds (µg/kg)				Total Organic Carbon (milligrams per kilogram)	Bulk Density (pounds per cubic feet)
				Rae Systems Meter (Parts Per Billion)	Thermo Instruments Meter (Parts Per Million)		cis 1,2-Dichloroethene (cis 1,2-DCE)	trans-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Soil to Groundwater							60	110	4.1	3.7		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Ingestion							156,000	313,000	1,230	160		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Fugitive Dust							7.74x10 ¹¹	7.74x10 ¹¹	3.25x10 ⁸	1.71x10 ⁶		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Inhalation of Volatiles							NE	NE	2100	14		
B12	B12-1	03/29/07	0-2	2577	1	Silty sand, fill	-	-	-	-	-	-
	B12-2	03/29/07	2-4	5615	3	Silty sand, Eolian deposits	<25	<25	1370	<25	3700	161.7
	B12-3	03/29/07	4-6	1751	1	Silty sand, Eolian deposits	-	-	-	-	-	-
	B12-4	03/29/07	6-8	1479	1	Silty clay, till	-	-	-	-	-	-
	B12-5	03/29/07	8-10	1692	1	Silty clay, till	-	-	-	-	-	-
	B12-6	03/29/07	10-12	1096	0	Silty clay, till	<25	<25	<25	<25	-	-
	B12-7	03/29/07	12-14	1089	0	Silty clay, till	-	-	-	-	-	-
	B12-8	03/29/07	14-16	459	0	Silty clay, till	-	-	-	-	-	-
B13	B13-1	11/14/07	0-2	1673	0	Asphalt, silty sand, fill	-	-	-	-	-	-
	B13-2	11/14/07	2-4	2667	12.5	Silty sand, eolian deposits	<25	<25	112	<25	-	-
	B13-3	11/14/07	4-6	978	21.9	Silty sand, eolian deposits	-	-	-	-	-	-
	B13-4	11/14/07	6-8	35,900	316.0	Silty clay, eolian deposits	330	<25	68,000	390	-	-
B14	B14-1	11/14/07	0-2	3263	6	Asphalt, silty sand, fill	-	-	-	-	-	-
	B14-2	11/14/07	2-4	3478	12	Silty sand, eolian deposits	<25	<25	131	<25	-	-
	B14-3	11/14/07	4-6	916	3	Silty sand, eolian deposits	-	-	-	-	-	-
	B14-4	11/14/07	6-8	395	0	Silty sand, eolian deposits	-	-	-	-	-	-
B15	B15-1	11/14/07	0-2	186	0	Silty sand, eolian deposits	-	-	-	-	-	-
	B15-2	11/14/07	2-4	249	0	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B15-3	11/14/07	4-6	2462	12	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B15-4	11/14/07	6-8	1190	6	Silty sand, eolian deposits	-	-	-	-	-	-
B16	B16-1	11/14/07	0-2	226	0	Asphalt, silty sand, fill	-	-	-	-	-	-
	B16-2	11/14/07	2-4	446	0	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B16-3	11/14/07	4-6	71	0	Silty sand, eolian deposits	-	-	-	-	-	-
	B16-4	11/14/07	6-8	119	0	Silty sand, eolian deposits	-	-	-	-	-	-
B17	B17-1	11/14/07	0-2	182	3	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B17-2	11/14/07	2-4	532	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B17-3	11/14/07	4-6	229	0	Silty sand, eolian deposits	-	-	-	-	-	-
	B17-4	11/14/07	6-8	769	0	Silty clay, till	-	-	-	-	-	-
B18	B18-1	11/14/07	0-2	0	0	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B18-2	11/14/07	2-4	870	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B18-3	11/14/07	4-6	1135	9	Silty clay, till	-	-	-	-	-	-
	B18-4	11/14/07	6-8	1185	9	Silty clay, till	<25	<25	<25	<25	-	-
B19	B19-1	11/14/07	0-2	1572	12.0	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B19-2	11/14/07	2-4	1730	12.5	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B19-3	11/14/07	4-6	1520	9	Silty clay, till	-	-	-	-	-	-
	B19-4	11/14/07	6-8	1399	9	Silty clay, till	-	-	-	-	-	-
B20	B20-1	11/14/07	0-2	1175	6	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B20-2	11/14/07	2-4	1279	9	Silty sand, eolian deposits	<25	<25	104	<25	-	-
	B20-3	11/14/07	4-6	1242	9	Silty clay, till	-	-	-	-	-	-
	B20-4	11/14/07	6-8	1389	9	Silty clay, till	-	-	-	-	-	-
B21	B21-1	11/14/07	0-2	1304	9.0	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B21-2	11/14/07	2-4	1600	9.4	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B21-3	11/14/07	4-6	1126	9.4	Silty clay, till	-	-	-	-	-	-
	B21-4	11/14/07	6-8	1525	9.4	Silty clay, till	-	-	-	-	-	-
B22	B22-1	11/14/07	0-2	1271	9	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B22-2	11/14/07	2-4	1731	12	Silty sand, eolian deposits	<25	<25	670	<25	-	-
	B22-3	11/14/07	4-6	1523	9	Silty sand, eolian deposits	-	-	-	-	-	-
	B22-4	11/14/07	6-8	1390	9	Silty clay, till	-	-	-	-	-	-
B23	B23-1	11/14/07	0-2	937	6	Topsoil, silty sand, eolian deposits	-	-	-	-	-	-
	B23-2	11/14/07	2-4	1059	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B23-3	11/14/07	4-6	788	6	Silty sand, eolian deposits	-	-	-	-	-	-
	B23-4	11/14/07	6-8	1194	6	Silty sand, eolian deposits	-	-	-	-	-	-
B24	B24-1	11/14/07	0-2	706	3	Topsoil, silty sand, fill	-	-	-	-	-	-
	B24-2	11/14/07	2-4	1087	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B24-3	11/14/07	4-6	645	3	Silty clay, till	<25	<25	<25	<25	-	-
	B24-4	11/14/07	6-8	631	3	Silty clay, till	-	-	-	-	-	-
B25	B25-1	11/14/07	0-2	1160	3	Topsoil, silty sand, fill	-	-	-	-	-	-
	B25-2	11/14/07	2-4	1248	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B25-3	11/14/07	4-6	1121	6	Silty clay, till	-	-	-	-	-	-
	B25-4	11/14/07	6-8	1200	6	Silty clay, till	-	-	-	-	-	-
B26	B26-1	11/14/07	0-2	1082	3	Topsoil, silty sand, fill	-	-	-	-	-	-
	B26-2	11/14/07	2-4	1189	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B26-3	11/14/07	4-6	783	3	Silty sand, eolian deposits	-	-	-	-	-	-
	B26-4	11/14/07	6-8	714	6	Silty sand, eolian deposits	-	-	-	-	-	-
B27	B27-1	11/14/07	0-2	1387	6	Topsoil, silty sand, fill	-	-	-	-	-	-
	B27-2	11/14/07	2-4	1427	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B27-3	11/14/07	4-6	1443	3	Silty sand, eolian deposits	-	-	-	-	-	-
	B27-4	11/14/07	6-8	1399	6	Silty sand, eolian deposits	-	-	-	-	-	-
B28	B28-1	11/14/07	0-2	1361	6	Topsoil, silty sand, fill	-	-	-	-	-	-
	B28-2	11/14/07	2-4	1373	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B28-3	11/14/07	4-6	1671	6	Silty sand, eolian deposits	-	-	-	-	-	-
	B28-4	11/14/07	6-8	1253	3	Silty clay, till	-	-	-	-	-	-

Table 2 Soil Sample Field Screening and Laboratory Analytical Results, Express Cleaners, Racine, Wisconsin

Borehole Number	Sample Number	Date Sampled	Sample Depth (feet)	PID Response (iui)		Description	Detected Volatile Organic Compounds (µg/kg)				Total Organic Carbon (milligrams per kilogram)	Bulk Density (pounds per cubic feet)
				Rae Systems Meter (Parts Per Billion)	Thermo Instruments Meter (Parts Per Million)		cis 1,2-Dichloroethene (cis 1,2-DCE)	trans-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Soil to Groundwater							60	110	4.1	3.7		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Ingestion							156,000	313,000	1,230	160		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Fugitive Dust							7.74x10 ¹¹	7.74x10 ¹¹	3.25x10 ⁸	1.71x10 ⁶		
U.S. Environmental Protection Agency Site-Specific Soil Screening Levels for Inhalation of Volatiles							NE	NE	2100	14		
B29	B29-1	11/14/07	0-2	1267	6	Topsoil, silty sand, fill	-	-	-	-	-	-
	B29-2	11/14/07	2-4	1265	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B29-3	11/14/07	4-6	10,500	56	Silty sand, eolian deposits	-	-	-	-	-	-
	B29-4	11/14/07	6-8	2005	9	Silty clay, till	-	-	-	-	-	-
B30	B30-1	11/14/07	0-2	1002	3	Topsoil, silty sand, fill	-	-	-	-	-	-
	B30-2	11/14/07	2-4	1366	6	Silty sand, eolian deposits	<25	<25	<25	<25	-	-
	B30-3	11/14/07	4-6	1107	3	Silty sand, eolian deposits	-	-	-	-	-	-
	B30-4	11/14/07	6-8	912	3	Silty clay, till	-	-	-	-	-	-
B31	B31-1	11/15/07	0-2	2025	6	Silty sand, fill	-	-	-	-	-	-
	B31-2	11/15/07	2-4	2384	6	Silty sand, fill	<25	<25	<25	<25	-	-
	B31-3	11/15/07	4-6	1825	6	Silty sand, eolian deposits	-	-	-	-	-	-
	B31-4	11/15/07	6-8	1769	6	Silty clay, till	-	-	-	-	-	-
B32	B32-1	11/15/07	0-2	1515	3	Silty sand, fill	-	-	-	-	-	-
	B32-2	11/15/07	2-4	1579	6	Silty sand, fill	<25	<25	<25	<25	-	-
	B32-3	11/15/07	4-6	1529	3	Silty sand, eolian deposits	-	-	-	-	-	-
	B32-4	11/15/07	6-8	1186	3	Silty sand, eolian deposits	-	-	-	-	-	-
B33	B33-1	11/15/07	0-2	609	3	Silty sand, fill	-	-	-	-	-	-
	B33-2	11/15/07	2-4	685	3	Silty sand, fill	<25	<25	<25	<25	-	-
	B33-3	11/15/07	4-6	49	3	Silty sand, eolian deposits	-	-	-	-	-	-
	B33-4	11/15/07	6-8	148	3	Silty sand, eolian deposits	-	-	-	-	-	-
B34	S3401	04/01/11	1-3	-	2.1	Silty Clay	-	-	-	-	-	-
	S3402	04/01/11	3-5	-	2	Silty Sand, till	<14	<22	<24	<17	-	-
	S3403	04/01/11	5-7	-	3	Silty Clay, till	-	-	-	-	-	-
	S3404	04/01/11	7-9	-	3.7	Silty Sand, till	<14	<22	<24	<17	-	-
BA1	BA1-1	07/19/07	2	-	500	Native silty sand, eolian	<25	<25	130,000	<25	-	-
BA2	BA2-1	07/19/07	0.5	-	3	Silty sand, clay, topsoil	<25	<25	650	<25	-	-
	BA2-2	07/19/07	2	-	4	Native silty sand	<25	<25	700	<25	-	-
BA3	BA3-1	07/19/07	0.5	-	5	Silty sand, some clay, topsoil	<25	<25	1200	<25	-	-
	BA3-2	07/19/07	2	-	8	Native silty sand	<25	<25	1300	<25	-	-
BA4	BA4-1	07/19/07	0.5	-	5	Silty sand, clay, topsoil	<25	<25	690	<25	-	-
	BA4-2	07/19/07	2	-	6	Native silty sand	<25	<25	1000	<25	-	-
BA5	BA5-1	07/19/07	0.5	-	4	Silty sand, clay, fill	<25	<25	<25	<25	-	-
	BA5-2	07/19/07	2	-	5	Native silty sand	<25	<25	43	<25	-	-
BA6	BA6-1	07/19/07	0.5	-	4	Silty sand, fill	<25	<25	56	<25	-	-
	BA6-2	07/19/07	2	-	3	Native silty sand	<25	<25	74	<25	-	-
BA7	BA7-1	07/19/07	0.5	-	3	Silty sand, fill	<25	<25	84	<25	-	-
	BA7-2	07/19/07	2	-	4	Native silty sand	<25	<25	380	<25	-	-
BA8	BA8-1	07/19/07	0.5	-	4	Silty sand, clay	<25	<25	<25	<25	-	-
	BA8-2	07/19/07	2	-	4	Native silty sand	<25	<25	<25	<25	-	-
BA9	BA9-1	07/19/07	0.5	-	4	Silty sand, clay, fill	<25	<25	33	<25	-	-
	BA9-2	07/19/07	2	-	5	Native silty sand	<25	<25	1200"J"	<25	-	-

Note:
 PID = photoionization detector
 iui = instrument units as isobutylene
 µg/kg = micrograms per kilogram
 NE = not established by U.S. Environmental Protection Agency
 <x = compound not detected to a detection limit of x
 - = not analyzed
 J = analyte detected between the limit of detection and the limit of quantitation
 * = borehole completed by Gabriel Environmental Services

XXX = compound concentration exceeds Environmental Protection Agency site-specific soil screening levels for soil to groundwater

Table 3 Groundwater Quality Analytical Results, Express Cleaners, Racine, Wisconsin

Well ID	Date Sampled	Water Table Elevation (feet above mean sea level)	Detected Volatile Organic Compounds (micrograms per liter)					
			Chloroform	cis-1,2-Dichloroethene (cis-1,2-DCE)	trans-1,2-Dichloroethene	Tetra-chloroethene (PCE)	Trichloroethene (TCE)	Vinyl Chloride (VC)
NR 140, Wis. Adm. Code Preventive Action Limit			0.6	7	20	0.5	0.5	0.02
NR 140, Wis. Adm. Code Enforcement Standard			6	70	100	5	5	0.2
MW1	04/27/07	611.79	<4.8	13.6 "J"	<9.5	330	<4.4	<2
	01/15/08	610.82	<4.8	13.9 "J"	<9.5	179	<4.4	<2
	04/07/11	610.82	<0.49	15.3	<0.79	173	4.9	<0.18
MW2	04/27/07	611.91	<4.8	<6.8	<9.5	370	16.2	<2
	01/15/08	611.30	<4.8	21.1 "J"	<9.5	223	14.7	<2
	04/07/11	610.04	<0.49	22.7	0.86 "J"	94	9	<0.18
	* 04/07/11		<2.45 *	17.8	<3.95	58	6.5 "J"	<0.9
MW3	04/27/07	612.26	<24	1100	<47.5	2520	279	<10
	* 04/27/07		<24	1090	<47.5	2410	284	<10
	01/15/08	611.18	<9.6	3800	54 "J"	2380	410	5.6 "J"
	* 01/15/08		<9.6	3600	42 "J"	1990	340	<4
	04/07/11	610.97	<24.5	600	<39.5	770	82	<9
MW4	04/27/07	612.38	<0.48	<0.68	<0.95	<0.52	<0.44	<0.2
	01/15/08	611.31	<4.8	<0.68	<0.95	<0.52	<0.44	<0.2
	04/07/11	610.83	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
MW5	01/15/08	610.49	<0.48	<0.68	<0.95	<0.52	<0.44	<0.2
	04/07/11	610.02	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
MW6	01/15/08	610.28	<0.48	<0.68	<0.95	2.42	1.67	<0.2
	04/07/11	610.02	<0.49	19.1	<0.79	6.5	3.03	<0.18
MW7	01/15/08	611.27	<0.48	<0.68	<0.95	<0.52	<0.44	<0.2
	04/07/11	611.04	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
MW8	01/15/08	608.66	0.55 "J"	220	8.6	826	36	<0.2
	04/07/11	608.19	<24.5	99 "J"	<39.5	810	<23.5	<9
MW9	01/15/08	609.17	<0.48	<0.68	<0.95	<0.52	<0.44	<0.2
	04/07/11	608.99	<0.49	<0.74	<0.79	1.52	<0.47	<0.18
MW10	01/15/08	610.77	<0.48	<0.68	<0.95	<0.52	<0.44	<0.2
	04/07/11	610.68	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
MW11	05/19/09	610.66	<1.48	<0.68	<0.61	<0.42	<0.39	<0.2
	04/07/11	611.20	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18

Table 3 Groundwater Quality Analytical Results, Express Cleaners, Racine, Wisconsin

Well ID	Date Sampled	Water Table Elevation (feet above mean sea level)	Detected Volatile Organic Compounds (micrograms per liter)					
			Chloroform	cis-1,2-Dichloroethene (cis-1,2-DCE)	trans-1,2-Dichloroethene	Tetra-chloroethene (PCE)	Trichloroethene (TCE)	Vinyl Chloride (VC)
NR 140, Wis. Adm. Code Preventive Action Limit			0.6	7	20	0.5	0.5	0.02
NR 140, Wis. Adm. Code Enforcement Standard			6	70	100	5	5	0.2
MW12	05/19/09	610.52	<1.48	7.3	<0.61	22.6	0.62 "J"	<0.2
	04/07/11	611.10	<0.49	1.91 "J"	<0.79	5.4	<0.47	<0.18
MW13	05/19/09	610.22	<1.48	<0.68	<0.61	<0.42	<0.39	<0.2
	04/07/11	610.83	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
MW14	04/07/11	609.28	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
MW15	04/07/11	609.52	<0.49	<0.74	<0.79	<0.44	<0.47	<0.18
PZ1	04/27/07	596.53	<4.8	<0.68	<9.5	<0.52	<0.44	<2
	01/15/08	606.65	<0.48	<0.68	<0.95	1.16 "J"	<0.44	<0.2
	04/07/11	606.67	<0.49	<0.74	<0.79	2.34	<0.47	<0.18
TW1	04/27/07	611.67	<24	310	<47.5	6000	92	<10
TW2	04/27/07	611.30	<24	1250	<47.5	5900	162	<10

Note:

<x = not detected above laboratory Limit of Detection of X

* = duplicate sample

XXX = exceeds Chapter NR 140, Wisconsin Administrative Code (NR 140, Wis. Adm. Code) preventive action limit

XXX = exceeds NR 140, Wis. Adm. Code enforcement standard