

**PROPOSAL TO COMPLETE
REMEDIAL ACTIONS UNDER DERP
FORMER BELOIT ROAD VALET CLEANERS
6854 WEST BELOIT ROAD
WEST ALLIS, WISCONSIN
BRRTS #02-41-271535**

PREPARED FOR:

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PREPARED BY:

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PROJECT REFERENCE #6515

DECEMBER 10, 2002

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1. INTRODUCTION

1.1 **Statement of Understanding.** As presented in a November 22, 2002 letter, Reinhart Boerner Van Deuren S.C., on behalf of Mr. Norman Getz, requested a proposal for remedial action activities to address environmental contamination in the subsurface soil and groundwater due to chlorinated volatile organic compounds (CVOCs) associated with the former dry cleaning operations located at 6854 West Beloit Road, West Allis, Wisconsin (hereinafter the "site"). Sigma Environmental Services, Inc. (Sigma) understands that the client desires to remediate the CVOC impacts to soil and groundwater associated with the site in such a manner to maximize eligibility for reimbursement funds available through the Wisconsin Department of Natural Resources' (WDNR's) Dry Cleaning Environmental Response Program (DERP). Therefore, Sigma has prepared this proposal to complete remedial action activities in accordance with s. 292.65 Wis. Stats. and Chapter NR 169, Chapter NR 140, and Chapters NR 700 through 728 of the Wisconsin Administrative Code in a manner that is consistent with the client's goals.

1.2 **Background.** In September 2002, Sigma presented a subsurface investigation report and remedial option evaluation report¹ to the WDNR, which was subsequently approved by the WDNR on October 30, 2002. In summary, the site investigation defined soil impacts through the collection of soil samples from Geoprobe®, hand auger, and hollow stem auger soil borings; the extent of groundwater impacts was delineated through the collection of groundwater samples from ten shallow groundwater monitoring wells and one piezometer. For reference, a copy of the site plan map is included as **Figure 1**.

The highest tetrachloroethene (PCE) concentrations in soil were detected in samples collected beneath the building in the northwest corner of the site, and outside the west wall of the building. The highest PCE concentrations in groundwater were detected at monitoring well MW-3, which is located near the northwest corner of the building. Based on the soil and groundwater quality conditions, site features (including the presence of multiple underground utilities in the area of highest subsurface impacts), and the geology/hydrogeology beneath the site, Sigma recommended that potassium permanganate solution be introduced into the subsurface to reduce contaminant concentrations.

2. REMEDIAL ACTIONS

2.1 **Purpose.** The purpose of the proposed remedial actions are to: (1) reduce CVOC concentrations in the subsurface to reduce the environmental risks to human health and the environment, (2) prepare a written report to document the completed remedial actions and post-remediation groundwater quality monitoring, and (3) obtain case closure from the WDNR, which will likely also include, but not be limited to, listing the site on the WDNR's Geographic Information System (GIS) Registry of closed remediation sites.

¹ "DERP Subsurface Investigation Report and Remedial Option Evaluation for Beloit Road Valet Cleaners, 6854 West Beloit Road, West Allis, Wisconsin" by Sigma Environmental Services, Inc. (September 2002)

Sigma proposes that remediation goals be established to measure the success of the remedial efforts and establish when case closure is appropriate. Site remediation goals as defined by Sigma for the purpose of this proposal include the following:

- (1) The remedial action will reduce CVOC concentrations in the soil such that post-remedial soil quality meets site-specific residual contaminant levels (which will be established prior to implementing the remedial action) and soil saturation limits.
- (2) The remedial action will reduce CVOC concentrations in groundwater such that stable or decreasing plume conditions are demonstrated, making natural attenuation a viable long-term remedy for the residual subsurface impacts.

The goals defined above should be achieved by completing the tasks outlined in Sigma's Scope of Work.

Please note, three phases to address environmental impact issues exist under DERP. The three phases include: (1) immediate actions, (2) interim actions, and (3) site investigation and remedial actions. Sigma has designed this proposal to meet the requirements under the site investigation and remedial actions phase (more specifically, the remedial actions of this phase) of DERP. At any time should additional site information warrant a change in project scope, Sigma will notify the client or their representatives immediately in order to discuss and adjust the project plan.

2.2 Remedial Action Scope of Work. Based on Sigma's remedial options evaluation in the September 2002 report, chemical oxidation of residual CVOCs via potassium permanganate introduction into the subsurface was determined to be the most technically feasible and economic remedial action. Many other remedial strategies were considered, but severe limitations were realized. For example, (1) soil excavation is impractical because of multiple subsurface utilities in the unsaturated zone of soil and the presence of the building, (2) *in situ* nutrient addition/bioaugmentation in conjunction with natural attenuation is not a viable option because of the high contaminant concentrations and the apparent toxic environment for anaerobic microbes (as evidenced by the lack of proportionate concentrations of break-down products of PCE in well MW-3), and (3) soil vapor extraction technologies would be limited by the presence of subsurface utilities, vertical foundation structures, the subsurface geology, and limited space for (safe) vertical well installation.

Sigma's remedial action approach has been designed to meet the client's goals, optimize the client's reimbursement under DERP, address the most toxic compounds in a relatively aggressive manner, and satisfy regulatory requirements in a reasonable time frame. In general, the remedial actions proposed by Sigma are designed to meet the requirements of Chapter NR 169, Chapters NR 700 through 728, and s. 292.65 Wis. Stats.

The following is a discussion of the remedial actions, which have been segregated into six tasks: (1) pilot testing and remediation system design, (2) construction of infiltration galleries, (3) first year of operation and maintenance, (4) second year of operation and maintenance, (5) post-remediation groundwater monitoring, and (6) remedial action completion report/case closure request preparation.

2.2.1 Pilot Testing/Remedial System Design. Sigma proposes to introduce potassium permanganate solution into the subsurface via shallow infiltration galleries. At this time, Sigma anticipates that a network of shallow perforated piping will be used to laterally distribute the potassium permanganate solution to the impacted unsaturated soils in the northwestern portion of the site. The system will also be designed with sumps to the shallow groundwater table to quickly mobilize the potassium permanganate solution into the area of highest groundwater and saturated soil impacts (particularly, well MW-3). Infiltration will allow the potassium permanganate solution to move through the impacted soils to the shallow groundwater table interface.

Additional soil sampling is also included with the remedial system design task to: (1) complete pilot testing to determine the optimum potassium permanganate solution concentration for the field application and system layout design, and (2) determine the handling/disposal requirements for excess soil generated during the system installation.

For the purpose of this proposal, it has been assumed that the soil can be handled as special waste (not hazardous waste) until the proposed additional soil analyses indicate otherwise.

2.2.2 Construction of Remediation System. Following the completion of Sigma's design plans for the remediation system, the infiltration galleries and associated components will be installed at the site. Sigma anticipates that the infiltration galleries will be constructed of perforated pipes (placed at the bottom of the trenches and backfilled with gravel) to evenly distribute the solution over the intended application area. It has been assumed that the construction will take place when the ground is not frozen, and Sigma and its subcontractor(s) will have access to the northwest portion of the existing site building during the system installation and operation. Sigma will provide construction oversight services, and document the as-built construction details of the system.

2.2.3 First Year of Operation and Maintenance. Based on preliminary calculations, Sigma anticipates that approximately one pore volume (based on the approximate soil treatment volume) of potassium permanganate solution will be introduced into the subsurface through the infiltration galleries. Potassium permanganate solution will be prepared in a mixing tank(s) on a periodic basis (initially weekly) and emptied into the infiltration galleries; flow rates and solution volumes will be adjusted as needed. Due to cold weather considerations and the potential for freezing in the outdoor infiltration

galleries, it is assumed that the bulk of the system operation will occur over approximately eight months of the year.

During the first year of operation and maintenance, two semi-annual groundwater sampling events will be completed to evaluate groundwater quality during the potassium permanganate treatment. Groundwater samples from each monitoring well (MW-1 through MW-10) and piezometer (PZ-1), including quality assurance/quality control samples, will be submitted for laboratory analysis of volatile organic compounds (VOCs). During each sampling event, depth to water measurements will be collected at each well to evaluate the horizontal and vertical hydraulic gradients. *In situ* field parameters (dissolved oxygen, redox, pH, temperature, and ferrous iron) will also be measured.

For the purpose of this proposal, it has been assumed that the groundwater generated from monitoring well purging during the sampling events can be disposed of at a municipal wastewater treatment plant.

- 2.2.4 Second Year of Operation and Maintenance. In order to flush approximately two pore volumes of potassium permanganate solution through the treatment area, Sigma anticipates that a second year of treatment will be necessary. Again, it is assumed that approximately one pore volume of potassium permanganate solution will be introduced into the subsurface through the infiltration galleries over an eight-month period. Pending groundwater quality results from the first year, potassium permanganate solution injection rates or concentrations may be adjusted to better address the residual groundwater impacts.

During the second year of operation and maintenance, two semi-annual groundwater sampling events will be completed to evaluate groundwater quality during the potassium permanganate treatment. Groundwater samples from each monitoring well (MW-1 through MW-10) and piezometer (PZ-1), including quality assurance/quality control samples, will be submitted for laboratory analysis of VOCs. During each sampling event, depth to water measurements will be collected at each well to evaluate the horizontal and vertical hydraulic gradients. *In situ* field parameters (dissolved oxygen, redox, pH, temperature, and ferrous iron) will also be measured.

For the purpose of this proposal, it has been assumed that the groundwater generated from monitoring well purging during the sampling events can be disposed of at a municipal wastewater treatment plant.

After the potassium permanganate treatment activities are completed, post remediation soil sampling will be completed to evaluate the effectiveness of the remedial actions. Post-remediation soil quality data will be compared to soil saturation limits and site-specific clean up objectives that will be established for the site in the pilot testing phase of the remedial activities.

2.2.5 Natural Attenuation Groundwater Monitoring. Four groundwater sampling events will be completed to evaluate post-remediation groundwater quality. Groundwater samples from each monitoring well (MW-1 through MW-10) and piezometer (PZ-1), including quality assurance/quality control samples, will be submitted for laboratory analysis of VOCs. Additionally, groundwater samples from two of the four events will be submitted for laboratory analysis of methane, ethane, and ethene to further evaluate the degradation of CVOCs in the groundwater system. During each sampling event, depth to water measurements will be collected at each well to evaluate the horizontal and vertical hydraulic gradients. *In situ* field parameters (dissolved oxygen, redox, pH, temperature, and ferrous iron) will also be measured.

For the purpose of this proposal, it has been assumed that the groundwater generated from monitoring well purging during the sampling events can be disposed of at a municipal wastewater treatment plant.

2.2.6 Remedial Action Completion Report/Request for Case Closure. Following the remedial activities and post-remediation groundwater quality monitoring, Sigma will prepare a comprehensive report to document the activities. At this time, it is assumed that case closure will be appropriate for the site upon the completion of four rounds of post-remediation groundwater monitoring. The report will summarize the remediation activities and results; documentation to be included in the report will be presented in various formats, including:

- Figures depicting property boundaries, remediation system layout and construction details, major utility corridors, facility structures, and significant man-made features at the site;
- Groundwater contaminant concentration map(s);
- Tables of soil quality results, groundwater elevations, groundwater quality results, and remediation system details; and
- All raw data generated during the investigation, including laboratory analytical reports and WDNR forms.

2.3 Project Management. Sigma will provide the overall project management during site remedial action activities. Sigma's responsibilities will include, but not be limited to, securing and documenting commodity service bids, reviewing and approving consultant and commodity service invoices, and coordinating all proposed remedial action activities.

Upon reaching specified Chapter NR 169 milestone dates, Sigma, on the client's behalf, will prepare a claim for all eligible costs incurred through the milestone – claim preparation costs are not budgeted in this proposal. At the time of the claim preparation, it will be the client's responsibility to provide canceled checks demonstrating payment of the invoices to be submitted for reimbursement and to provide all other information outlined in Chapter NR 169.17 that is not obtainable

through reasonable effort by Sigma. Claim milestone dates applicable under this proposal include:

- Per Chapter NR 169.17(4)(c): "Not including the final application submitted after closure has been granted, an owner or operator may not submit more than 2 applications per facility for remedial action reimbursement per fiscal year."

3. STATEMENT OF QUALIFICATIONS AND EXPERIENCE

3.1 **Firm Profile.** Sigma is a Wisconsin-based, inter-disciplinary team of scientists, engineers, and technicians providing environmental consulting and engineering to a wide variety of industrial, municipal, and commercial sector clients. Sigma (operating as the technical services division of CBC Environmental Services until 1990) has been providing site investigation, remediation, and environmental compliance services since 1983. The vast majority of Sigma's work has been with the commercial and industrial community in Wisconsin providing technical and management assistance in such areas as:

- Air Emissions Management
- Waste Management
- Wastewater/Storm Water
- Storage Tank Management
- Pollution Prevention
- Facility Engineering
- Investigation and Remediation
- Real Estate and Development

In performing site investigation, remediation, and other services for our clients, we have developed a very strong understanding of Wisconsin's rules and regulations; an effective relationship with the WDNR's technical staff; a firm grasp of the local geology and hydrogeology; and most importantly, a proven commitment to proactive client advocacy.

Sigma is currently engaged and has successfully completed hundreds of investigation/corrective action (closure) projects for clients relative to hydrocarbon, organic compounds, and heavy metal contaminated sites (**Appendix A**). We have developed investigation closure plans, implemented work plans, performed evaluations, and completed corrective actions under the requirements of the State's solid waste program (Chapter NR 500 series), RCRA program (Chapter NR 600 series), groundwater regulations (Chapter NR 140), and the remediation of contaminated land regulations (Chapter NR 700 series).

Our current staff of approximately 70 personnel includes registered professional engineers, professional hydrogeologists and geologists, certified hazardous materials managers, and additional scientists, technicians, and compliance specialists who have experience in providing environmental consulting assistance to our clientele.

3.2 Project Team. Sigma's view of its role for this project is to provide the necessary technical and strategic support to achieve the client's desired outcomes. Our project team (see **Appendix B**) has been assembled to combine the skills and abilities needed to complete the Scope of Services properly, timely, and in economically efficient manner.

The Sigma project team is comprised of highly-qualified professionals whose collective experience in hazardous waste projects, soil and groundwater quality investigations, and remediation actions is very significant. The team members have a thorough understanding of soil and groundwater contamination, contaminant transport and associated investigation and remediation techniques, and have been assembled specifically with the following attributes in mind:

- A general understanding of the client's objectives, principles, operations, and constraints;
- Comprehensive knowledge and experience in performing remedial investigations, closures, and site clean-ups consistent with the requirements of s. 292.65 Wis. Stats. and Chapter NR 169, Chapter NR 140, and Chapters NR 700 through 728 of the Wisconsin Administrative Code;
- Substantial experience in conducting characterization corrective measures studies, designing and operating remedial activities, and performing monitoring associated with soil and groundwater contamination with closure objectives;
- Demonstrated ability to work with the WDNR to determine practical solutions;
- Working experience at sites located in this geographical area; and
- A strong partnership attitude.

In addition to the above-listed attributes, all of Sigma's field and professional staff have received 40 hours of health and safety training in accordance with OSHA standards, as well as annual refresher courses, and are experienced and equipped to safely work in a wide variety of hazardous situations and within contaminated soil and groundwater sites.

4. INSURANCE, FINANCIAL, AND CONTRACT INFORMATION

4.1 Insurance. Sigma currently maintains \$1 million in professional/environmental liability insurance for all PECFA and DERP project work (see a copy of Sigma's insurance certificate included as **Appendix C**). Sigma's professional liability and environmental impairment liability coverage will be provided by the American International Specialty Lines Insurance Company, rated A + + by A.M. Best and part of the American International Group.

In addition, all commodity service providers (drillers, laboratories, etc.) are also required to maintain \$1 million in professional environmental liability insurance. Commodity service providers are required by Sigma to:

- Provide insurance coverage by a firm that has an A.M. Best rating of at least "A-";
- Notify the consultant immediately if the insurance coverage required is interrupted, suspended, lapsed or terminated for any reason;
- Indemnify consultant or client for all commodity service costs in question determined to be ineligible for DERP reimbursement by the DERP staff due to commodity service providers failure to maintain the required insurance coverage; and
- Honor unit costs for one calendar year starting on the first day work is performed.

4.2 Project Budget and Invoicing. A cost estimate, based upon the Scope of Services defined, has been prepared and is included as **Appendix D**. The costs presented are estimates based on our understanding of the services requested by the client, our review of the subsurface characterization data, and the assumptions provided in this proposal. In summary, the total project estimate is approximately \$209,800, which includes approximately \$83,900 in consulting fees, \$15,000 in laboratory analytical fees, and \$110,900 in contractor/commodity fees.

While rates listed in the fee schedule are appropriate for all professional services provided by Sigma under this contract, please note that all commodity services shall be bid out (3 bid) on a task-by-task basis. For the purpose of this proposal, unit rates for commodity services (were applicable) have been estimated based on Sigma's experience with similar environmental projects. All commodity service invoices will be direct billed to the client; however, all commodity service invoices will be reviewed by Sigma for accuracy before payment is recommended.

4.3 Contract. A professional service contract is included in **Appendix E**. As Sigma's authorization to proceed with the Scope of Work presented in this proposal, please execute and return the contract to Sigma.

4.4 Time Schedule. The remedial activities presented in this scope of work will be implemented according to the following time schedule:

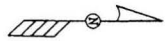
• Remediation system design, pilot testing, project scheduling	3 months
• Construction of remediation system	1 month
• First year of operation and maintenance of remedial system	1 year
• Second year of operation and maintenance of remedial system	1 year
• Post-remediation groundwater quality monitoring; remedial action completion report/request for case closure	1 year
TOTAL	Approximately 3 to 4 years

4.5 Certification Statement. As specified in Chapter NR 169.21(6)(a), a statement of certification is included with this proposal:

"Sigma certifies that the consultant and contract services will comply with applicable requirements of Chapter NR 140, Chapter NR 169, and Chapters NR 700 through NR 728 of the Wisconsin Administrative Code. Furthermore, Sigma will make available to the WDNR upon request, for inspection and copying, all of Sigma's documents and records related to these contract services."

Signature of Authorized Sigma Representative

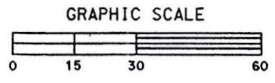
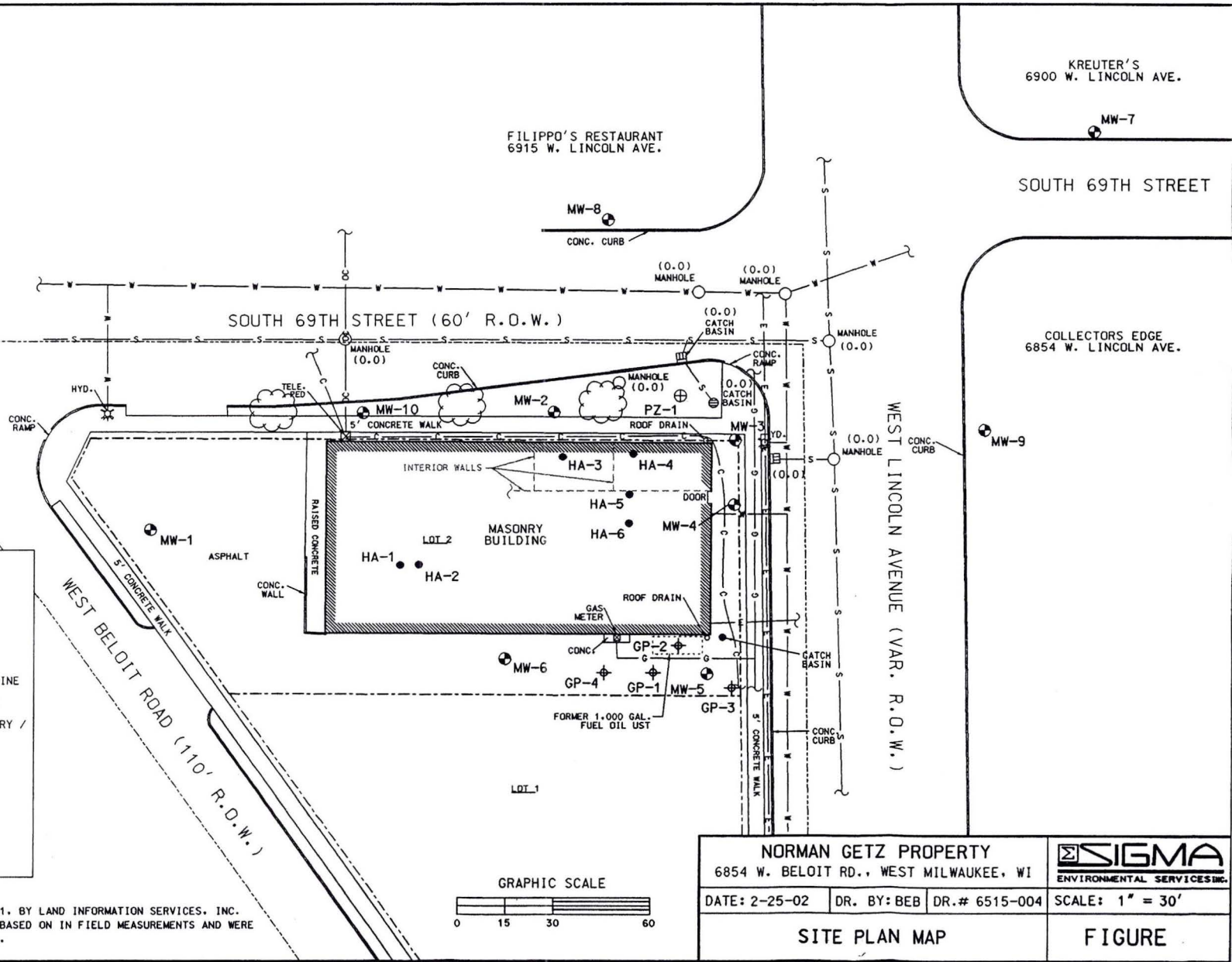
Date



LEGEND

- ⊕ = GEOPROBE BORING LOCATION
- ⊕ = PIEZOMETER LOCATION
- ⊙ = MONITORING WELL LOCATION
- = HAND AUGER BORING LOCATION
- c— = UNDERGROUND COMMUNICATION LINE
- oc— = OVERHEAD COMMUNICATION LINE
- s— = UNDERGROUND COMBINED SANITARY / STORM SEWER LINE
- e— = UNDERGROUND ELECTRIC LINE
- w— = UNDERGROUND WATER LINE
- g— = UNDERGROUND GAS LINE
- () = PHOTOIONIZATION DETECTOR MEASUREMENTS IN PPM

NOTES:
 1. MAP BASED ON SURVEY PERFORMED ON 12-7-01, BY LAND INFORMATION SERVICES, INC.
 2. HA- BORING LOCATIONS AND UTILITIES ARE BASED ON IN FIELD MEASUREMENTS AND WERE NOT INCLUDED AS PART OF THE SITE SURVEY.



NORMAN GETZ PROPERTY 6854 W. BELOIT RD., WEST MILWAUKEE, WI			
DATE: 2-25-02	DR. BY: BEB	DR. # 6515-004	
SITE PLAN MAP			FIGURE

APPENDIX A
CLIENT REFERENCES

CLIENT REFERENCES

Mr. Donald Gallo
Rienhart Boerner Van Dueren S.C.
1000 N. Water Street, Suite #2100
Milwaukee, WI 53202
Telephone: (414) 298-1000

Mr. Jon Raymond
Sta-Rite Industries
293 S. Wright Street
Delavan, WI 53115
Telephone: (262) 728-5551

Mr. Robert Hoffmeier
Harley-Davidson Motor Company
11700 W. Capitol Drive
Milwaukee, WI 53223
Telephone: (414) 502-8558

Mr. Mark Redmond
Redmond Commercial Development
W228 N745 Westmound Drive
Waukesha, WI 53186
Telephone: (262) 549-9600

APPENDIX B
PROJECT TEAM



Mafizul Islam, P.E.



Mr. Islam is a senior project engineer with 15 years of experience in remedial investigation and feasibility studies, evaluation and design of remedial action measures, and construction management services during remedial actions activities. His expertise includes flow system modeling to design pumping schemes and predict contaminant movement, determination of hydraulic parameters by field, laboratory and analytical methods, data acquisition systems, telemetry, and CADD and computer simulations.

Bachelor of Science—Civil Engineering, Bangladesh University of Engineering and Technology, 1981

Master of Science—Civil Engineering, Clemson University, South Carolina, 1985

Engineer: Wisconsin No. 25981

 **SIGMA**

Investigation & Remediation Services

Serving as a project manager/project engineer for an on-going soil and groundwater investigation for chlorinated solvent contamination at a former landfill site. Previous subsurface investigations conducted at the site indicated the presence of VOC impacts in both the soil and groundwater. Additional subsurface investigation activities at the site are being implemented in order to better define site hydrogeologic and groundwater flow characteristics, to better define the extent and magnitude of groundwater VOC impacts on the property and downgradient locations, to evaluate contributing impacts from adjacent properties, and to obtain preliminary data to perform an initial screening of remedial technologies to address chlorinated solvent contamination at the site.

Acted as project manager for a soil and groundwater investigation and remediation project for chlorinated solvent contamination. Tasks included remedial investigation and feasibility studies, evaluation of the effectiveness of various remedial technologies, design and installation of a vacuum-enhanced groundwater extraction and soil vapor extraction system, and provided litigation support for cost recovery in accordance with the CERCLA program.

Served as the project manager and principal author for a remedial investigation and alternative analysis for a national furniture manufacturing concern. Evaluated appropriate treatment technologies including a cost-effective analysis for remediation of soil and groundwater contamination resulting from paint-mix room operations, plating operations and leaking storage systems. Negotiated technical aspects of the remedial strategy with a state agency in compliance with Michigan Act 307 Rules. Designed and performed construction oversight for implementation of the remedial actions, prepared the on-site RCRA facility closure document, reviewed closure plans/activities, and negotiated with agency for facility closure.

Assisted in developing and implementing remedial investigation and remedial action plan following the Michigan DNR guidelines, oversaw the field activities and presented the investigative findings and recommendation in a report in 1988 for a chemical manufacturing company in Michigan. Laboratory grade solvents were stored in on-site USTs. A subsurface environmental site assessment was initiated in July of 1987 in response to release(s) detected in groundwater. The study was designed to evaluate the conditions surrounding the USTs, the feasibility of their abandonment, evaluation of remedial measure to address subsurface contamination, and to develop a comprehensive groundwater monitoring plan.

Acting as project engineer for an on-going soil and groundwater remediation

██████████
Mafizul Islam, P.E.
(cont.)
██████████

process, non-contact cooling and storm water; confirmation of discharge points via dye testing (i.e. storm sewer vs. sanitary sewer) for process and storm water flow; filed Notice of Intent to Discharge with the MMSD for these sources; prepared or modified Baseline Monitoring Report; and complied with NR 216 requirements for storm water discharge and a Tier II storm discharge permit for storm runoff.

Assisted a manufacturing facility in upgrading and expanding its production capacity. Activities included detailed evaluation of current manufacturing practice such as chemical storage, chemical handling and personal protective equipment, waste disposal and recovery, and regulatory reporting requirements. Developed an effective materials balance and inventory for the proposed pilot scale and full-scale production levels planned by the facility. Potential for employee exposure was evaluated and specific recommendations were made in regard to worker protection including manufacturing process strategies.

Professional Affiliations

American Society of Civil Engineers

Association of Groundwater Scientists and Engineers

Federation of Environmental Technologists



Randy E. Boness, P.G.



Mr. Boness is a senior project manager, responsible for the efficient and effective operation of the geosciences group. In this role he has overall responsibility for identifying projects and client objectives and planning investigation and remediation strategies for soil and groundwater contaminated sites. He has greater than 10 years experience in the geological and management disciplines and has provided technical consulting services for a wide variety of industrial and municipal clients.

Bachelor of Science—Economics, University of Wisconsin, Madison, 1980

Bachelor of Science—Geology, University of Wisconsin, Madison, 1986

Geologist: Wisconsin No. 844



Investigation & Remediation Services

Project Manager for a large hydrocarbon terminal project where 950,000 gallons of product was released from an AST system. Work activities included the development of a remedial investigation work plan, completion of a phased soil and groundwater investigation, and development of a comprehensive remedial action plan. Negotiated with the regulatory agency to control/remediate the on-site hydrocarbon source area, and addressed affected soil material using in-situ bioremediation.

Project coordinator for a superfund landfill project in central Indiana. Soil and groundwater issues included hydrocarbon and chlorinated solvent constituents. Responsibilities included the coordination and implementation of two phases of field work, data validation and analysis, and preparation of the interim and final remedial investigation reports.

Project coordinator of extensive pesticide investigation in northwestern Wisconsin. Non-point and site-specific soil and groundwater issues resulted in contamination of numerous shallow domestic water supply wells. Remedial technologies employed included source removal and design of a large municipal well system to supplement and/or replace the individual water supplies. Project manager performing environmental assessment activities at a large paper mill company in northern Wisconsin. The constituents of concern included nitrate and sulfate. Investigation techniques included the use of surface and down-hole geophysical techniques. Negotiated limited action alternatives with regulatory agency.

Project manager for a soil and groundwater investigation involving a chlorinated solvent release in southeastern Wisconsin. A groundwater recovery and operation and maintenance program was implemented. The site is presently approaching closure status.

Client/project manager of 34 hydrocarbon contamination investigation and remediation projects for a large national oil company. The project goals generally involved development of a scope-of-work that focused on obtaining site closure in an efficient and cost-effective manner. Worked with the State of Wisconsin Reimbursement Program to maximize coverage of applicable site. The remedial technologies employed included groundwater/product recovery utilizing recovery wells and trenches, vacuum-enhanced groundwater recovery, in-situ soil vapor extraction with thermal and catalytic off-gas treatment, and in-situ bioremediation.

Professional Affiliations

National Groundwater Association



James M. Westerman, CHMM



Mr. Westerman is a project manager and hydrogeologist, responsible for project organization and management operations. In this role he has overall responsibility for directing site environmental investigations, project technical strategies, site remediations, and client development. He has over seven years of experience in geology and project management disciplines and has provided environmental project management consulting services for industrial, municipal, and small business clients.

Bachelor of Science—Hydrogeology, Winona State University, Minnesota, 1994

Asbestos Inspector: Wisconsin and EPA No. AII-13813

Lead Inspector/Risk Assessor: Wisconsin No. LRA-13813

Certified Hazardous Materials Manager (Master Level): No. 10820



Investigation & Remediation Services

Project manager and team leader for the investigation and remediation of brownfield redevelopment sites.

Project manager for site redevelopment activities, including asbestos and lead identification and abatement, demolition activities, and client representation.

Project manager and field scientist for the identification and proper disposal of unknown containerized materials and wastes.

Project manager, field supervisor, and scientist for multiple leaking underground and aboveground storage tank environmental investigations and remediations including site Phase I investigations, subsurface Phase II investigations, remedial technology design tests, remedial technology application, and operation and maintenance including soil excavation, SVE, groundwater air sparging, enhanced bioremediation through nutrient application, and natural attenuation monitoring.

Project manager and field scientist for the emergency response and remediation of petroleum hydrocarbon spills.

Field Services

Field manager and scientist for site environmental investigations and remediations under the LUST, DERF, ACCP, VPLEP and PECFA programs. Duties included development and the application of soil and groundwater sampling programs to support the delineation, remedial design, and remediation of the impacted sites.

Field manager and scientist for emergency response cleanup of petroleum hydrocarbon spills in accordance with State of Wisconsin regulations. Duties included the planning, organization, and oversight of emergency containment and remediation measures associated with a petroleum hydrocarbon spill and design and implementation of a soil and groundwater sampling program to document completed abatement measures.

Site manager and scientist for the identification and disposal of containerized wastes. Duties included design of health and safety plans, completion of site assessment and unidentified material inventory, and documentation.

Industrial Services

Project manager for chlorinated and non-chlorinated VOC site environmental investigations and remediations for an internal combustion engine manufacturer, a commercial printing company, a newspaper publisher, and a petroleum products company.



Martin D. Nessman, P.G.



Mr. Nessman is a staff hydrogeologist responsible for conducting site investigations and design tests, interpreting and evaluating data for the implementation of remediation systems and strategies, and documenting and reporting findings to clients and regulatory agencies. He has over seven years of experience as a hydrogeologist, including project management.

Bachelor of Science—Geology,
University of Wisconsin, Madison,
1993

Hydrogeologist per NR 712.03
(1)

PECFA Consultant/Site Assessor:
Wisconsin No. 41794

Professional Geologist:
No. 1168

 **SIGMA**

Investigation & Remediation Services

Staff hydrogeologist managing and providing support to project managers throughout project development. Responsibilities include conducting site investigations and design tests, interpreting and evaluating data for the implementation of remediation systems, and documenting and reporting findings to clients and regulatory agencies.

Hydrogeologist for the WDNR as a project manager within the LUST program. Responsible for high, medium and low priority sites. Activities included the review of investigation, remedial action, and closure reports, and presentation of sites to the District Closure Committee.

Field Services

Field manager for drilling activities associated with the RI/FS phase of many projects within the PECFA program and under WDNR Chapter NR 700. Duties included developing and implementing a soil and groundwater sampling program to support a remedial design for impacted sites.

Field manager for soil excavation activities during the remediation of many projects within the PECFA program and under NR 700. Duties included soil disposal tracking, field screening of soils during excavation and the collection of confirmatory soil samples.

Project hydrogeologist for the WDNR within the Water Supply program. Position responsibilities included sampling private water supply wells for naturally occurring arsenic and heavy metals. Evaluated geological information to determine sample locations, took water samples, evaluated sample results. Reported results to well owners and summarized data in a report for the WDNR.

Acted as the Private Well Compensation Program contact for the Southern District DNR. Activities included reviewing applications for program eligibility, proposed well specifications, and well placement. Pre-inspected wells, supervised new well installation and inspected new wells, and processed compensation claims.

Real Estate/Development Services

Implemented Phase II investigations for property developers to facilitate real estate transactions.

Professional Affiliations

Wisconsin Groundwater Association



Adam J. Roder, E.I.T.



Mr. Roder is a staff geologic engineer responsible for designing and implementing subsurface investigations, interpreting soil and groundwater data, evaluating potential remediation strategies, performing computer analyses, and completing reports for clients and regulatory agencies. He has over four years of experience as a geologic engineer in Wisconsin and Illinois.

Bachelor of Science—Geology and Geological Engineering (double major), University of Wisconsin, Madison, 1997

Engineer-in-Training: Wisconsin No. 15208

Site Assessor: Wisconsin No. 699399

40-Hour OSHA Site Safety Training

 **SIGMA**

Investigation & Remediation Services

Prepared budgets for site investigations (soil borings, monitoring wells), pilot tests (soil vapor extraction, *in situ* treatment studies) and remediation projects (soil vapor extraction, engineered barriers, soil excavation and disposal, groundwater remediation by natural attenuation).

Completed underground storage tank/piping closure reports, site investigation reports, case closure requests, and WDNR Geographic Information System packages for petroleum-contaminated sites.

Evaluated innovative remedial options for chlorinated volatile organic compound contamination to soil and groundwater at a large industrial facility in southeast Wisconsin and presented options to client. Also completed supplemental site investigation activities at the site, and prepared multiple status reports for the client and WDNR.

Completed technical review of a Remedial Action Plan for municipal property in a Lake Michigan community; review resulted in reduced remedial actions and a cost savings to the community.

Prepared and analyzed slope stability, local/regional groundwater flow, and groundwater seepage models with computer programs.

Field Services

Performed environmental drilling activities (soil and bedrock) at landfills, railroad properties, active/former petroleum storage sites, industrial facilities, and a federal laboratory. Responsible for classifying soil and bedrock samples, installing monitoring wells and piezometers, and preserving samples for environmental laboratory analyses.

Completed pilot tests for groundwater extraction and soil vapor extraction systems at petroleum-contaminated properties.

Provided oversight services for soil excavations of petroleum contaminated sites. Responsible for documenting field activities and collecting soil samples for laboratory analyses.

Completed slug testing in monitoring wells to determine the hydraulic conductivity of saturated subsurface soils.

Developed, purged, and sampled groundwater monitoring wells.

Performed geotechnical drilling activities (soil and bedrock) at quarries, industrial facilities, steel mills, and private properties. Responsible for classifying soil and bedrock samples, installing monitoring wells, and preserving samples for geotechnical/physical analyses.

Provided construction quality assurance testing for landfill caps (soil and geosynthetic liners), building foundations (soil and concrete), and roadway construction (soil, concrete, and asphalt).

APPENDIX C
CERTIFICATE OF INSURANCE

ACORD™ CERTIFICATE OF LIABILITY INSURANCE Page 1 of 3

DATE
08/16/2002

PRODUCER 877-559-6769 Willis North America, Inc. - Regional Cert Center 11201 N. Tatum Boulevard Suite 300 Phoenix, AZ 85028	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
INSURERS AFFORDING COVERAGE	
INSURED Sigma Environmental Services, Inc. 220 East Ryan Road Oak Creek, WI 53154	INSURER A: American International Specialty Lines In 26883-001 INSURER B: Commerce and Industry Insurance Company 19410-001 INSURER C: Virginia Surety Company, Inc. 40827-100 INSURER D: INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS		
A	GENERAL LIABILITY	PRO1950864	8/1/2002	8/1/2003	EACH OCCURRENCE	\$ 1,000,000	
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	\$ 100,000	
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person)	\$ 25,000	
	<input checked="" type="checkbox"/> Prof Liab claims made				PERSONAL & ADV INJURY	\$ 1,000,000	
	<input checked="" type="checkbox"/> Poll Liab claims made				GENERAL AGGREGATE	\$ 1,000,000	
	GENTL AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	\$ 1,000,000	
	<input type="checkbox"/> POLICY				<input type="checkbox"/> PRO-JECT	<input type="checkbox"/> LOC	
B	AUTOMOBILE LIABILITY	CA5054315	8/1/2002	8/1/2003	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000	
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$	
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$	
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	\$	
<input type="checkbox"/> HIRED AUTOS							
<input type="checkbox"/> NON-OWNED AUTOS							
GARAGE LIABILITY					AUTO ONLY - EA ACCIDENT	\$	
<input type="checkbox"/> ANY AUTO					OTHER THAN EA ACC	\$	
					AUTO ONLY: AGG	\$	
A	EXCESS LIABILITY	PRO1950865	8/1/2002	8/1/2003	EACH OCCURRENCE	\$ 5,000,000	
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE	\$ 5,000,000	
	<input type="checkbox"/> DEDUCTIBLE					\$	
	<input checked="" type="checkbox"/> RETENTION \$ 10,000					\$	
						\$	
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	B0200218124	8/1/2002	8/1/2003	<input checked="" type="checkbox"/> WC STATUTORY LIMITS	<input type="checkbox"/> OTHER	
					E.L. EACH ACCIDENT	\$ 1,000,000	
					E.L. DISEASE - EA EMPLOYEE	\$ 1,000,000	
					E.L. DISEASE - POLICY LIMIT	\$ 1,000,000	
OTHER							

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
 Policy #PRO1950864, Retro Active Date: 08/01/94 refers to Professional and Pollution Liability
 Umbrella does set above Professional Liability Coverage.

CERTIFICATE HOLDER <input checked="" type="checkbox"/> ADDITIONAL INSURED; INSURER LETTER:	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL _____ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE <i>Carlton H. Buisse</i>
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APPENDIX D
PROJECT BUDGET

Estimated Costs for Infiltration Gallery Remediation and Groundwater Monitoring
Norman Getz Property - 6854 W. Beloit Road, West Milwaukee, WI
Sigma Project Reference #6515

Work Item	Quantity	Units	Unit Price	Consultant	Laboratory	Subcontractor	Totals
Remediation System Design/Pilot Testing							
Additional soil sampling/pilot tests/disposal profile							
Total VOCs	30	samples	70		\$2,100		
TCLP VOCs	3	samples	140		\$420		
SPLP VOCs	3	samples	140		\$420		
Staff Geologist/Scientist	30	hours	\$65	\$1,950			
Project Engineer/Hydrogeologist	35	hours	\$85	\$2,975			
Senior Hydrogeologist	35	hours	\$100	\$3,500			
Senior Project Engineer	20	hours	\$105	\$2,100			
Subtotal				\$10,525	\$2,940	\$0	\$13,465
Infiltration Gallery Installation - Inside Building							
Cut concrete floors	300	LF	\$3.15			\$945	
Permit to remove sidewalk slabs	1	LS	\$250			\$250	
Skid steer rental for week	1	LS	\$1,000			\$1,000	
Concrete rubble-dumpster rental	1	LS	\$750			\$750	
Concrete rubble-disposal fee	15.4	tons	\$20			\$308	
Soil - dumpster rental	1	LS	\$750			\$750	
Soil - disposal fee (<i>assume special waste</i>)	51.5	tons	\$20			\$1,030	
Piping materials	1	LS	\$8,000			\$8,000	
Backfill with pea gravel around pipes	44	tons	\$10			\$440	
6 inches topsoil at ground surface	7.7	tons	\$17			\$131	
Filter fabric between gravel/top soil	1	LS	\$200			\$200	
Replace concrete	8	CY	\$75			\$600	
Man hours (3 man crew for 2 weeks)	240	hours	\$70			\$16,800	
Plastic storage tanks, fittings, pumps	1	LS	\$6,000			\$6,000	
Project management	40	hours	\$85	\$3,400			
Construction oversight	80	hrs	\$75	\$6,000			
Vehicle mileage (10 days @ 30 mi)	300	miles	\$0.50	\$150			
Subtotal				\$9,550	\$0	\$37,204	\$46,754
Year 1 - Application of Potassium Permanganate and Semi-Annual Groundwater Monitoring							
Weekly application over 34 weeks							
Field Technician (4 hours per event)	136	hours	\$65	\$8,840			
Vehicle mileage (34 days @ 30 mi)	1020	miles	\$0.50	\$510			
Potassium permanganate (~538 lb/event)	18,300	lb	\$1.65			\$30,195	
Water (from on-site source)	1	LS	\$1,000			\$1,000	
11 well locations							
11 VOCs + 1 dup per event x 2 events	24	samples	\$70		\$1,680		
Field Technician (12 hours per event)	24	hours	\$65	\$1,560			
Equipment							
Vehicle mileage (1 vehicle @ 30 miles/event)	60	miles	\$0.50	\$30			
Bailer kits (11 kits per event)	22	kits	\$15	\$330			
Water level indicator	2	events	\$25	\$50			
Dissolved oxygen meter	2	events	\$25	\$50			
pH meter	2	events	\$15	\$30			
Redox meter	2	events	\$25	\$50			
Drums (2 drums per event)	4	drums	\$35	\$140			
Groundwater disposal	1	LS	\$200			\$200	
Project management, reporting, data analysis							
Project Manager	40	hours	\$85	\$3,400			
Staff Geologist/Scientist	40	hours	\$65	\$2,600			
Senior Project Engineer	8	hours	\$100	\$800			
CADD	8	hrs	\$60	\$480			
Office Support	4	hrs	\$40	\$160			
Subtotal				\$19,030	\$1,680	\$31,395	\$52,105

Estimated Costs for Infiltration Gallery Remediation and Groundwater Monitoring
Norman Getz Property - 6854 W. Beloit Road, West Milwaukee, WI
Sigma Project Reference #6515

Work Item	Quantity	Units	Unit Price	Consultant	Laboratory	Subcontractor	Totals
Year 2 - Application of Potassium Permanganate, Groundwater Monitoring, Post-Remediation Soil Sampling							
Weekly application over 34 weeks							
Field Technician (4 hours per event)	136	hours	\$65	\$8,840			
Vehicle mileage (34 days @ 30 mi)	1020	miles	\$0.50	\$510			
Potassium permanganate (~ 538 lb/event)	18,300	lb	\$1.65			\$30,195	
Water (from on-site source)	1	LS	\$1,000			\$1,000	
11 well locations							
11 VOCs + 1 dup per event x 2 events	24	samples	\$70		\$1,680		
11 methane, ethene, ethane x 0 of 2 events	11	samples	\$100		\$1,100		
Field Technician (12 hours per event)	24	hours	\$65	\$1,560			
Equipment							
Vehicle mileage (1 vehicle @ 30 miles/event)	60	miles	\$0.50	\$30			
Bailer kits (11 kits per event)	22	kits	\$15	\$330			
Water level indicator	2	events	\$25	\$50			
Dissolved oxygen meter	2	events	\$25	\$50			
pH meter	2	events	\$15	\$30			
Redox meter	2	events	\$25	\$50			
Drums (2 drums per event)	4	drums	\$35	\$140			
Groundwater disposal	1	LS	\$200			\$200	
Post-remediation soil sampling							
Total VOCs	10	samples	70		\$700		
Geoprobe equipment	1	LS	\$500	\$500			
Staff Geologist/Scientist	12	hours	\$65	\$780			
Equipment	1	LS	\$100	\$100			
Project management, reporting, data analysis							
Project Manager	40	hours	\$85	\$3,400			
Staff Geologist/Scientist	40	hours	\$65	\$2,600			
Senior Project Engineer	8	hours	\$100	\$800			
CADD	8	hrs	\$60	\$480			
Office Support	4	hrs	\$40	\$160			
Subtotal				\$20,410	\$3,480	\$31,395	\$55,285
Year 3 - Natural Attenuation Groundwater Monitoring							
11 well locations							
11 VOCs + 1 dup per event x 4 events	48	samples	\$70		\$3,360		
11 methane, ethene, ethane x 2 of 4 events	22	samples	\$100		\$2,200		
Field Technician (12 hours per event)	48	hours	\$65	\$3,120			
Equipment							
Vehicle mileage (1 vehicle @ 30 miles/event)	120	miles	\$0.50	\$60			
Bailer kits (11 kits per event)	44	kits	\$15	\$660			
Water level indicator	4	events	\$25	\$100			
Dissolved oxygen meter	4	events	\$25	\$100			
pH meter	4	events	\$15	\$60			
Redox meter	4	events	\$25	\$100			
Drums (2 drums per event)	8	drums	\$35	\$280			
Groundwater disposal	1	LS	\$400			\$400	
Project management, reporting, data analysis							
Project Manager	20	hours	\$85	\$1,700			
Staff Geologist/Scientist	20	hours	\$65	\$1,300			
Senior Project Engineer	8	hours	\$100	\$800			
CADD	8	hrs	\$60	\$480			
Office Support	4	hrs	\$40	\$160			
Subtotal				\$8,920	\$5,560	\$400	\$14,880
Closure Report Preparation							
Well/system abandonment							
Field technician	16	hours	\$65	\$1,040			
Bentonite, concrete supplies	1	LS	\$500	\$500			
Senior Engineer	10	hrs	\$105	\$1,050			
Senior Hydrogeologist	20	hrs	\$100	\$2,000			
Project Engineer	30	hrs	\$85	\$2,550			
CADD	8	hrs	\$60	\$480			
Office Support	4	hrs	\$40	\$160			
WDNR GIS Registry Fees						\$450	
Subtotal				\$7,780	\$0	\$450	\$8,230
Totals				\$76,215	\$13,660	\$100,844	\$190,719
10% Contingency							\$19,072
Total Project Estimate							\$209,791

Notes:

- Costs for disposal of soil generated during remediation system installation assume soil will be handled and disposed as special waste.
- Costs for disposal of groundwater generated during the purging of wells during groundwater sampling events assumes disposal at a municipal wastewater treatment facility.

APPENDIX E
PROFESSIONAL SERVICE CONTRACT

**SIGMA ENVIRONMENTAL SERVICES, INC.
AGREEMENT**

Project Reference #6515

THIS AGREEMENT is entered into on this 9th day of December 2002 by and between Sigma Environmental Services, Inc. (hereinafter called "Sigma"), and Mr. Norman Getz (hereinafter called the "Client").

WITNESSETH:

WHEREAS, Client desires that Sigma perform professional consulting services as described in the proposal and as further described on a task order basis jointly executed in writing by the Client and Sigma under this agreement; and

WHEREAS, Sigma has agreed to perform such services in accordance with the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the premises and of the mutual covenants contained herein, the parties hereto agrees as follows:

1. **Site.** "Site" means: Former Beloit Road Valet Cleaners
6854 West Beloit Road
West Allis, WI 53219

2. **Services.**

"Services" means those services to be performed by Sigma pursuant to this Agreement, as set forth in the Proposal and as modified in writing on a task order basis or by written change order. It is Sigma's duty to render Services to the Client and to exercise that degree of care, skill and judgment which is usually exercised under like or similar circumstances by Consultants practicing in this state. Sigma shall commence and complete the Services promptly following the execution and delivery of this Agreement, or at such later time as the parties shall agree upon in writing.

If samples collected by Sigma or received by Sigma on behalf of Client contain hazardous substances, Sigma shall, after testing and analysis, return the samples to Client for final disposal or treatment. Client shall complete all forms necessary and pay all costs for storage, transport and disposal or treatment of samples. Client acknowledges and agrees that Sigma is acting as a bailee and at no time assumes title to such samples.

3. **Compensation and Payment.**

(a) Unless the Agreement provides otherwise, the proposed charges represent an estimate of the charges required to complete the described work. Client shall pay to Sigma as compensation for Services based upon the Hourly Rate Fee Schedule, unless the work is agreed to be performed for a fixed price.

(b) Sigma shall submit progress invoices to Client's Representative on a monthly basis showing the Services performed during the invoice period and the charges therefore. Payments shall be due and owing upon receipt of invoice.

(c) Within 15 days of the date of Sigma's invoice delivered to Client, Client shall pay the full amount of such invoice; provided, however, that if Client objects to all or any portion of an invoice, Client shall notify Sigma of Client's objection within 10 days from the date of invoice, and the parties shall immediately make every effort to settle the disputed portion of the invoice.

Client shall, in any event, pay that portion of the invoice which is not in dispute within the 15-day period for payment. Client shall pay an additional charge of 1% per month for any payment made more than 15 days after the date of the invoice; such additional charge shall not apply to any disputed portion of any invoice resolved in favor of Client.

4. Warranty.

(a) Sigma warrants that the Services will be performed by it in a professional manner.

(b) If Sigma breaches the warranty contained in subparagraph (a) of this Paragraph 4, Sigma shall be given an opportunity to correct any Services at no additional charge to Client.

(c) Any claim pursuant to this Paragraph 4 must be in writing and such claim shall set forth in reasonable detail all known facts upon which it is based.

(d) Sigma shall not be liable for damage or injury to any subterranean structures (including, but not limited to, pipes, tanks, and telephone cables) or any existing subterranean conditions; or the consequences of such damage or injury.

(e) The Petroleum Environmental Cleanup Fund ("PECFA") is administered by the Department of Commerce ("COMM") under section 101.143, Petroleum Storage Remedial Action. Wis. Stats. and under ILHR 47 Petroleum Environmental Cleanup Fund regulations, Wis. Adm. Code. The PECFA program is currently legislated to sunset December 22, 2001 for those claims, which are not confirmed before December 22, 2001, and for such activities that have not been initiated prior to December 22, 2001. Since its initial enactment in 1987, the PECFA program statutes and regulations have been revised numerous times. Sigma Environmental Services, Inc. (Sigma) cannot warrant or represent that all of its services will be entirely eligible under the program due to these continuing numerous changes and various interpretations by the PECFA staff. Sigma will, however, use all reasonable efforts in a manner consistent with a level of care and skill ordinarily exercised under similar circumstances by other professionals working in this industry to maximize to the extent practicable PECFA eligibility. No other representations, expressed or implied of warranty or guarantee are included or intended by this agreement, or in any report, opinion, document, and professional advice or otherwise.

5. Indemnification.

(a) Subject to the provisions of subparagraph 5(c) and except as expressly set forth in subparagraph (b) of this Paragraph 5, Client shall indemnify and hold Sigma, its directors, officers, and employees harmless from and against any and all liabilities, losses, damages, costs, and expenses (excluding attorney's fees) which Sigma, its directors, officers, and employees may hereafter suffer in connection with any claim, action, or right of action (at law or in equity) because of any injury (including death) or damage to person or property which arises out of any act of negligence or willful misconduct by Client or its directors, officers or employees, agents or invitees.

(b) Subject to the provisions of subparagraph 5(c) and except as expressly set forth in subparagraph (a) of this Paragraph 5, Sigma shall indemnify and hold Client, its directors, officers, and employees harmless from and against any and all liabilities, losses, damages, costs and expenses (excluding attorney's fees) which Client, its directors, officers, and employees may hereafter suffer in connection with any claim, action or right of action (at law or in equity) because of any injury (including death) or damage to person or property which arises out of any act of negligence or willful misconduct by Sigma or its directors, officers, employees, agents, independent contractors, material suppliers or invites. This indemnity shall be limited to the insurance coverage and dollar amounts listed under Paragraph 6 Insurance.

(c) In the event there is joint negligence on the part of Client and Sigma, the responsibility therefore and the indemnification obligations set forth in Paragraphs 5(a) and 5(b) shall be prorated to reflect the relative degree of negligence or fault attributable to Client and Sigma.

(d) At the Client's option, Sigma may be asked, to participate on an advisory basis at Sigma's currently existing hourly rates, in the defense of any claim or action referred to in Subparagraph (a) of Paragraph 5.

6. Insurance.

Sigma shall maintain in connection with the Services, for the term of this Agreement, one or more insurance policies with the following coverage and limits:

Worker's Compensation	Statutory
Employer's Liability	\$100,000 per accident \$100,000 per employee (disease)
Commercial General Liability Bodily Injury and Property Damage (including Environmental Impairment Coverage or Pollution coverage endorsement)	\$1,000,000 per occurrence \$1,000,000 aggregate
Professional Liability Errors	\$2,000,000 limit
Automobile Liability	\$1,000,000 per occurrence

7. Permits, licenses and access agreements.

Client shall cooperate with Sigma in obtaining any permits or licenses required for the performance of the Services. Client shall obtain access agreements when necessary for the performance of services. Client shall pay all costs and fees necessary for such permits, licenses and access agreements.

8. Suspension of Services or Termination of Services.

(a) Client may suspend, at any time, all or any part of the Services, or terminate all of the remaining Services to be performed pursuant to this Agreement either For Cause or due to the Client's wishes, by giving to Sigma two days prior written notice. Upon receipt of such notice, Sigma shall promptly discontinue the Services except to the extent specified in such notice. Client shall pay and reimburse Sigma per one of the following methods:

(i) Termination of Services For Cause: if Client terminates the Services For Cause, payment shall be made in accordance with the process presented in Paragraph 3(c); or

(ii) Suspension of Services: if Client suspends services payment shall be made in full for all of the Services performed by Sigma prior to the effective date of said notice for which payment has not already been made; and all reasonable costs associated with demobilization of Sigma's personnel and equipment, and all other costs which Sigma is or will become legally obligated to pay in connection with the performance of the Services (including, but not limited to, amounts due under the subcontracts and supply agreements).

(b) Sigma may suspend, any time, all or any part of the Services, or terminate all of the remaining Services to be performed pursuant to this Agreement either For Cause or due to Force Majeure, by giving to Client five days prior written notice. Upon providing of such notice, Sigma shall promptly discontinue the Services except to the extent specified in such notice. Client shall pay and reimburse Sigma in accordance with the process presented in Paragraph 3(c).

(i) Termination of Services for Cause:

(a) Client is in default in its payment obligations under Paragraph 3; or

(b) Sigma reasonably believes, in Sigma's sole decision, that Client is withholding information, is not cooperating or is materially hindering Sigma's performance of its obligations under this Agreement, or in violation of laws and is not willing to take appropriate or sufficient corrective action; or

(c) Client does not accept and act upon Sigma's professional advice and there exists a disagreement as to course of action or methodology for addressing specific issues.

(ii) Termination of Services due to Force Majeure, as set forth in Paragraph 10 hereof, causes an uninterrupted continual delay of 30 days or more.

9. Sigma As Independent Contractor.

Sigma, in performing the Services, shall be deemed to be an independent contractor and not an agent or employee of Client.

10. Force Majeure.

No delay or failure in performance by either party hereto shall constitute default hereunder or give rise to any claim for damages, if, and to the extent, such delay or failure is caused by an occurrence beyond the reasonable control and without the fault or negligence of the party affected and by which said party is unable to prevent or provide against by exercise of reasonable diligence, including, but not limited to, acts of God or the public enemy, expropriation or confiscation of facilities, material changes in applicable law, war, legal disputes, rebellion, sabotage or riots, floods, unusually severe weather, fires, explosions, or other catastrophes (collectively, "Force Majeure"). Unless such Force Majeure substantially frustrates performance of this Agreement, it shall not operate to excuse, but only to delay performance hereunder, except as provided in Paragraph 8(b)(ii) hereof.

11. Access to Site and Information.

In order that Sigma may perform the Services, Client represents, warrants, and covenants that:

(a) prior to the execution and delivery of this Agreement, Client has supplied to Sigma all information and documents in its possession, custody, or control known to the Client and material to the Site and necessary for the performance of the Services, including the location of subterranean structures and conditions such as, but not limited to, pipes, tanks, and telephone cables; and

(b) during the term hereof,

(i) Sigma will have complete access to the Site and any facilities located thereon required to perform the services;

(ii) Client shall continue to supply to Sigma all material information and documents in its possession, custody or control known to the Client and material to the Site and the Services; and

(iii) Client will give prompt notice to Sigma whenever it becomes actually aware of any development that materially and adversely affects the scope or timing of the Services.

12. Assignment of Agreement.

Neither party shall assign this Agreement or any part hereof without the prior written consent of the other party. Any assignment not made in accordance with this Agreement shall be void.

13. Subcontracts.

Sigma may subcontract any part of the Services without the prior written approval of Client, but such subcontracting shall not relieve Sigma of any of its obligations under this Agreement.

14. Survival of Obligations.

Obligations of the parties under this Agreement shall survive termination or suspension of the Services or of this Agreement.

15. Entire Agreement.

This Agreement constitutes the entire Agreement between the parties and supersedes all prior negotiations, representations or agreements relating thereto, written or oral, except to the extent they are expressly incorporated herein. Unless otherwise provided for herein, no amendments, changes, alterations or modifications of this Agreement shall be effective unless in writing signed by Client and Sigma.

16. Successors and Assigns.

This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of the parties.

17. Notices.

Any notice required or permitted to be given under this Agreement shall be in writing and shall be deemed duly given if delivered by facsimile, delivered by Federal Express, if delivered in person or deposited in the United States mail, first-class certified or registered mail, postage prepaid, return receipt requested.

18. Nondiscrimination.

Sigma covenants that, in providing the Services, no person, on the grounds of race, color, age, religion, sex, or natural origin, shall be excluded from participation therein, denied the benefits thereof, or otherwise be subjected to discrimination with respect thereto.

19. Governing Law.

The laws of the State of Wisconsin hereto shall govern this Agreement and the legal relations of the parties.

20. Severability.

The various terms, provisions and covenants herein contained shall be deemed to be separable and severable, and the invalidity or unenforceability of any of them shall in no manner affect or impair the validity or enforceability of the remainder hereof.

21. Disposal of Contaminated Material.

Sigma is not, and has no authority to act as, a handler, generator, operator, treater, storer, transporter or disposer of hazardous waste, substances, pollutants or contaminants found or identified at the site. Sigma shall have no responsibility for the transportation, storage, treatment or disposition of contaminated or potentially contaminated waste materials of any kind, which are directly or indirectly generated from Sigma's performance of the Services hereunder. Client shall be responsible for the disposal of any such waste materials and shall be the named party on any such waste manifests.

22. Changed Conditions.

The discovery of any hazardous waste, substances, pollutants, or contaminants; underground obstructions, conditions or utilities at the Site which were not brought to the attention of Sigma prior to the date of this agreement will constitute a materially different site condition entitling Sigma, at its option, to terminate the contract (and to receive payment for all work performed up to and including the date of such termination) or to receive an equitable adjustment in the contract price and time for performance.

23. Reports and Ownership of Documents.

Sigma shall furnish one (1) copy of each report to Client. Additional copies shall be furnished for the cost of copying. With the exception of Sigma's final report(s) to Client, all other documents relating to the preparation of the report, including but not limited to, notes, support data, text data, memoranda and other preparation materials are and remain the property of Sigma. Sigma agrees to return all reports and information supplied by the Client.

24. Wisconsin Construction Lien Law.

AS REQUIRED BY THE WISCONSIN CONSTRUCTION LIEN LAW, SIGMA HEREBY NOTIFIES CLIENT THAT PERSONS OR COMPANIES FURNISHING LABOR OR MATERIALS FOR THE CONSTRUCTION ON CLIENT'S LAND MAY HAVE LIEN RIGHTS ON CLIENT'S LAND AND BUILDINGS IF NOT PAID. THOSE ENTITLED TO LIEN RIGHTS, IN ADDITION TO SIGMA, ARE THOSE WHO CONTRACT DIRECTLY WITH THE CLIENT OR THOSE WHO GIVE THE CLIENT NOTICE WITHIN 60 DAYS AFTER THEY FIRST FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION. ACCORDINGLY, CLIENT PROBABLY WILL RECEIVE NOTICES FROM THOSE WHO FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION, AND SHOULD GIVE A COPY OF EACH NOTICE RECEIVED TO THE MORTGAGE LENDER, IF ANY. SIGMA

AGREES TO COOPERATE WITH CLIENT AND THE CLIENT'S LENDER, IF ANY, TO SEE THAT ALL POTENTIAL LIEN CLAIMANTS ARE DULY PAID.

IN WITNESS WHEREOF, this Agreement has been executed on behalf of Sigma and on behalf of Client as of the date first above written.

Client: _____

By: _____

Title: _____

Date: _____

Attest: _____

SIGMA ENVIRONMENTAL SERVICES, INC.

By: _____

Title: _____

Date: _____

Attest: _____

Project Reference # 6515